PHASE I ARCHAEOLOGICAL SURVEY OF A PROPOSED EXPANSION AT THE HUGHES INDUSTRIAL PARK HARDIN COUNTY, KENTUCKY

December 2013

Lead Federal Agency: USACE, Louisville District

Brockington

CULTURAL RESOURCES CONSULTING

Phase I Archaeological Survey of a Proposed Expansion at the Hughes Industrial Park

Hardin County, Kentucky

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Management Summary

Between October 28 and November 1, 2013, Brockington and Associates, Inc. of Elizabethtown, Kentucky completed a Phase I archaeological survey of a proposed expansion of the Hughes Industrial Park in Hardin County, Kentucky. The cultural resources requirement for this study relates to a Nationwide Permit necessitated by relocation of an intermittent stream associated with Rudes Creek. The drainage runs approximately 900 feet (274 meters) traversing the central portion of the Area Of Potential Effect from northeast to southwest. The archaeology survey presented herein encompasses the stream corridor associated with the Nationwide Permit, as well as the entire proposed industrial park expansion area of approximately 215 acres.

Mr. Rick Games, CEO and President of the Elizabethtown-Hardin County Industrial Foundation of Elizabethtown, Kentucky, contracted Brockington and Associates to conduct Phase I archaeological investigations in support of the project. The Phase I survey complies with Section 106 of the National Historic Preservation Act of 1966 (36 CFR Part 800, as amended), as well as Kentucky Heritage Council/State Historic Preservation Office guidelines and specifications. The US Army Corps of Engineers, Louisville District is the lead agency for this project.

The archaeological survey methods included shovel testing and surface inspection/walkover at 20m intervals within the 215-acre project parcel. One archaeological site (15HD997) previously recorded by Brockington and Associates is located in the southwest corner of the survey, but was not re-investigated. In addition one newly recorded archaeological site (4423-001) and one isolated find (4423-ISO-001) were recorded during the Phase I survey for the proposed undertaking. Of the three resources found within the Area of Potential Effect, none are recommended eligible for listing to the National Register of Historic Places. As no significant cultural resources are present, the proposed stream relocation and industrial park expansion will not affect historic properties listed to or eligible for listing to the National Register of Historic Places. Accordingly, no additional cultural resources investigations are warranted and the undertaking should be allowed to proceed without further encumbrance from the Section 106 process.

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1.0 Introduction

The Elizabethtown-Hardin County Industrial Foundation, Inc. (EHCIF) of Elizabethtown, Kentucky contracted Brockington and Associates, Inc., (Brockington), of Elizabethtown, Kentucky to conduct a Phase I archaeological investigation for proposed expansion of the Hughes Industrial park in Hardin County, Kentucky (Figures 1 and 2). Presented in this report are the results of the Phase I archaeological investigation conducted as part of EHCIF's compliance efforts regarding Section 106 of the National Historic Preservation Act (NHPA) of 1966for the proposed industrial park expansion. The NHPA requires that EHCIF take into account the effects of its proposed undertaking on archaeological resources located within the project Area of Potential Effect (APE). A Nationwide Permit is required of this undertaking, as an intermittent stream associated with Rudes Creek which runs for approximately 900 feet (274 meters) from northeast to southwest across the central portion of the parcel must be relocated. The Louisville District of the US Army Corps of Engineers (LRL) is the Lead Federal Agent for this undertaking.

Services described in this report were conducted in accordance with state (*Specifications for Conducting Fieldwork and Preparing Cultural Resource Assessment Reports*, Kentucky State Historic Preservation Office, Kentucky Heritage Council (KHC) Site Protection Program [Sanders 2006]) and federal (*Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation* [National Park Service 1983]) guidelines for conducting archaeological investigations. The principal investigator, James C. Pritchard, RPA, is qualified to serve in this capacity as she meets or exceeds the qualifications described in the Secretary of the Interior's "Professional Qualifications Standards" (48 FR 44738-9).

Brockington completed the fieldwork for the project during a week-long mobilization during the week of October 28, 2013. This work consisted of approximately 93 field hours and was completed under the supervision of principal investigator James C. Pritchard, RPA. Field technicians for the project included Michael Creswell, Christopher Sims, and Christopher Lankford of Brockington and Associates, as well as Shawn Webb, Zada Komara, and Ryan Harris of Appalachian Archaeology. Mr. Sims served as the primary author for the report. Dr. Eric Poplin oversaw the laboratory. Meagan Brady conducted the historic artifact analysis, and Jeffery Sherard conducted the lithic analysis. Dave Dellenbach of Brockington and Associates prepared graphics for the report. Mr. James C. Pritchard, RPA contributed to Chapters 2, 3, and 4 that address the environmental and cultural contexts, as well as the previous investigations conducted in the project vicinity. Further, Mr. Pritchard provided a peer review and technical edit, checking the report against the *Specifications for Conducting Fieldwork and Preparing Cultural Resource Assessment Reports* (Sanders 2006).

Figure 1. Cecilia, KY (1992)/Elizabethtown, KY 7.5 Minute Series (Topographic)-1991 (USGS) Showing Location of the Project APE.

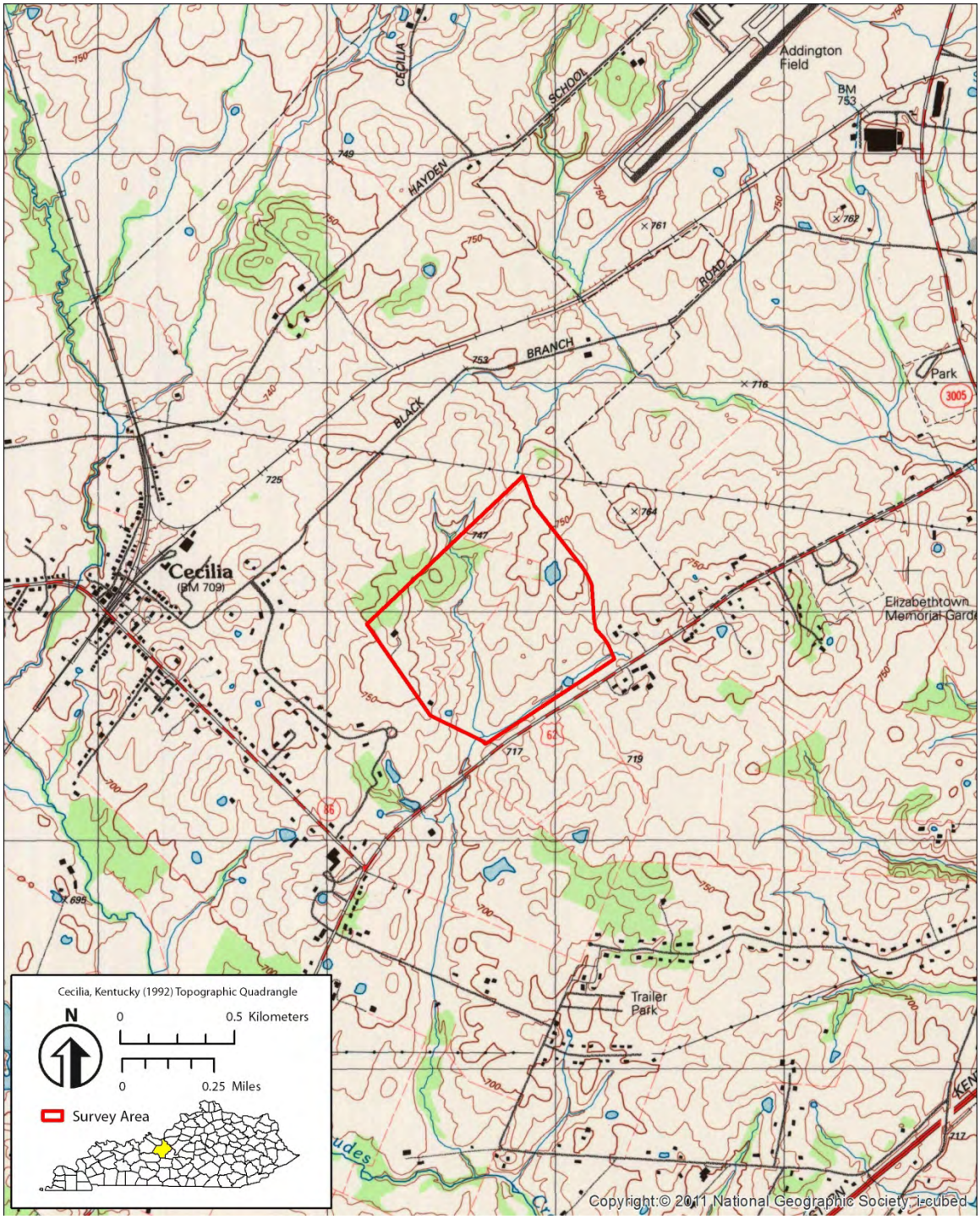
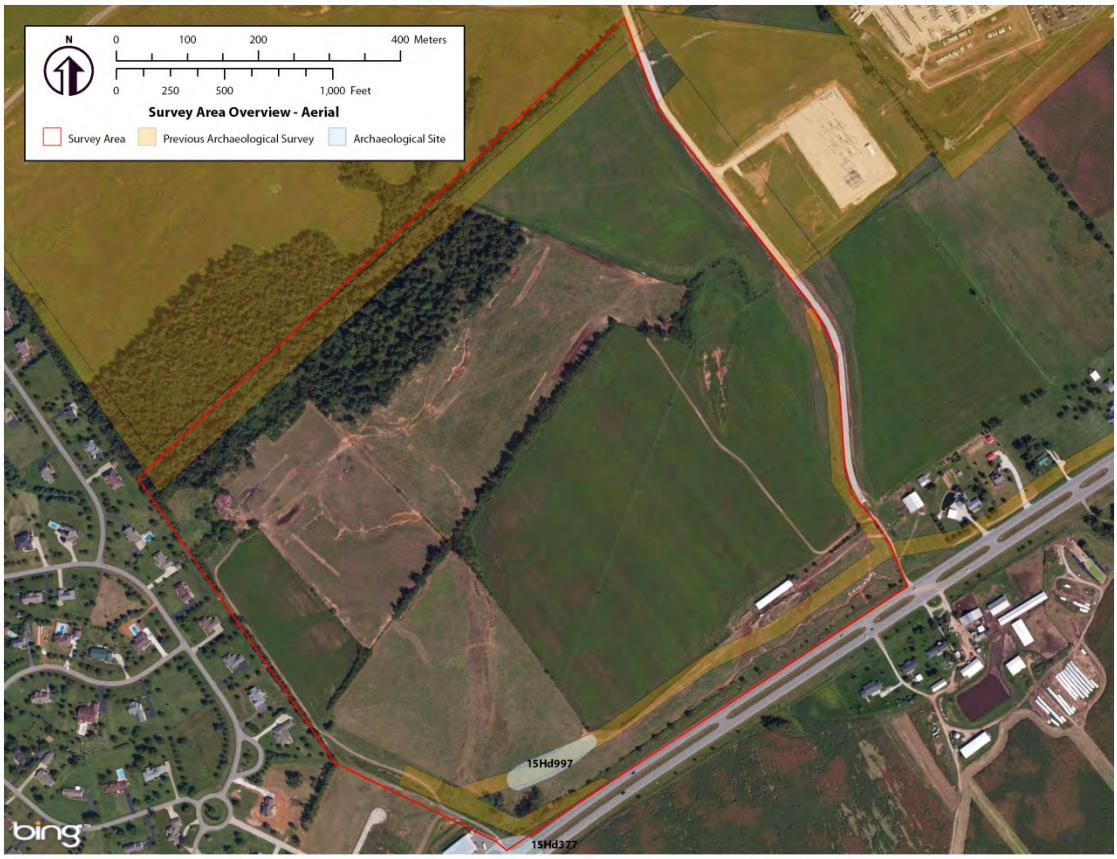


Figure 2. Aerial Photograph Showing the Project APE



1.1 Report Organization

This report is organized into seven numbered chapters and one appendix. Chapter 1 provides an overview and summary of the project as well as various administrative details. Chapter 2 presents an environmental overview. Chapter 3 discusses the prehistoric and historic cultural background for the project area. Chapter 4 describes the previous archaeological research conducted in the area, discusses the previously recorded cultural resources, and assesses the archaeological sensitivity of the area. Chapter 5 presents the project field methods. Chapter 6 describes the typological approach used for artifact analysis and provides descriptions of prehistoric artifacts recovered during these investigations. Finally, Chapter 7 discusses the project results, conclusions, and management recommendations. Site by site descriptions are provided, as are photographs of each of the newly recorded resources. The appendix contains the Phase I artifact catalog.

1.2 Project Description

The Scope of Work (SOW) for this project called for the archaeological resources inventory of all sites identified within the project APE. These investigations were undertaken in accordance with *Specifications for Conducting Fieldwork and Preparing Cultural Resource Assessment Reports* (Sanders 2006) as outlined by the Kentucky Heritage Council. Due to the lightly rolling nature of the project area (characterized by slopes not typically exceeding 15 percent), it was anticipated that shovel testing would be conducted across the entire APE. Surface inspection survey also was to be conducted on an opportunistic basis where ground surface visibility allowed.

Based on the background research and literature review, Brockington and Associates identified very few areas within the project APE that should retain a high probability for hosting cultural resources. Areas in this region likely to contain archaeological sites include topographic highs within close proximity to water sources. Once such landform located to the immediate southeast of an infilled pond occurs within the project area. The majority of the survey parcel is either situated in seasonally plowed and harvested corn fields, or in cow pastures (Figures 3 and 4). The conditions of the soils associated with both active and inactive cow pastures include moderate to severe erosion, ponding of water, and deeply incised gullies along drainage contours (Figure 5). These conditions present low probability for the presence of cultural resources within the project area.

The northern boundary of the project area is characterized by scrubby wild grasses predominantly overlying subsoil. The northern area is of the project is near North Black Branch Road. The eastern area of the survey area is bounded by an unnamed gravel access road that extends approximately north-south between North Black Branch Road and Leitchfield Road (State Highway 62). This gravel road is the proposed path for the Pritchard Parkway. A large portion of the survey area (roughly the southern half of the parcel) was planted with feed corn at the time of survey. The survey area is also dominated by active cow pastures that encompass roughly the northern half of the project APE. This land use activity has impacted the potential for cultural material in regard to the deflation of soils and deeply

Figure 3. Typical View of Standing Corn within the Project APE

Figure 4. Typical View of Dairy Cattle in the Northwestern Quadrant of the APE

Figure 5. Typical View of the APE Showing Erosion Caused by Cattle Farming

incised, eroded gullies along drainage contours. The southern boundary of the project area is near Leitchfield Road (State Highway 62), and is bounded by a previous survey corridor completed for the proposed Elizabethtown Municipal Utilities project (Mills 2013). The project area is bounded to the west by George Hebron Road, a gravel farm access road.

The field survey methodology developed for this project was geared towards the identification and recordation of archaeological sites. No historic structures were identified within the project APE, and impacts to viewshed are not considered due to the precedence of large industrial facilities in the surrounding vicinity. Accordingly, no standalone culture/historic investigations were undertaken. The APE was treated as a single survey unit. A standard 20-meter interval was utilized across the entire proposed corridor. A combination of shovel testing and surface observation was employed to ensure total survey coverage of the area proposed for the industrial park. The survey interval was dropped to a 10-meter interval within the boundaries of archaeological sites.

In total, one site previously identified by Brockington (15HD997) was noted to fall within the project APE. In addition, one previously unknown archaeological site (4423-001) and one previously unknown isolated find (4423-ISO-001) were identified. With the exception of the ¼-inch St. Louis chert flake fragment collected from 4423-001, all of the archaeological material recovered is historic as regards their temporal affiliation. The historic items recovered are comprised of nineteenth century architectural, tableware, toys, and

miscellaneous functional group material confined to the plowzone/surface layer (A/Ap horizon). Neither the previously known site, nor the newly recorded site or isolated find is recommended eligible for the National Register of Historic Places (NRHP). No further study of these archaeological resources is warranted. All sites are discussed and organized by site numbers and these discussions sites are provided in below in Chapters 6 and 7.

1.3 Acknowledgments

Brockington and Associates appreciated the opportunity to work with Mr. Rick Games of the EHCIF. Ms. Christina Pappas of the Office of State Archaeology kindly processed Brockington and Associates' site forms and provided the trinomial site numbers.

2.0 Environmental Context

Hardin County is located in the north-central portion of Kentucky and contains approximately 394,265 acres or 630 square miles (Arms et al. 1979). In 2010, the population of Hardin County was recorded as 105,543 (US Census Bureau 2010). Elizabethtown serves as the county seat, and its boundaries encompass approximately 25 square miles within the central portion of the county.

2.1 Climate

The modern climate of Hardin County is characterized as temperate and humid. The growing season is favorable for the production of corn, tobacco, and small grains, which are the chief crops. Grasses and legumes are grown for hay and pasture on farms where cattle are raised. During winter months, the average daily high is 37 degrees Fahrenheit (F) and the average daily low 27 degrees F. Temperatures during the summer months average 76 degrees, with an average daily maximum of 87 degrees. Slightly more than half of the annual precipitation (51 percent or 61 centimeters) occurs between the months of April and September. Thunderstorms occur regularly in the region, numbering approximately 45 each year.

2.2 Topography, Drainage, and Geology

Hardin County is located in the Salt River Management Area, which contains 14 counties and encompasses an area of 11,261 square kilometers (Pollack 2008). The Ohio River delimits the management area's northwestern boundary, the Green River Management Area its southern and western boundaries, and the Bluegrass Management Area forms its eastern border. Most of the Salt River Management Area lies within the Salt River drainage, though small portions are drained by the Rough River, Kentucky River, and smaller tributaries feeding directly into the Ohio River.

While relatively small in terms of total acres, the Salt River Management Area contains a great deal of environmental diversity, including portions of three physiographic regions (Mississippian Plateaus, Knobs, and Bluegrass). Natural features of the Mississippian Plateaus region is characterized by a strongly developed karst topography that exhibits many sinkholes, springs, and caves. Sandstone clifflines and rockshelters occur in a broad band that borders the Western Coalfield Physiographic Region. Within this band, major streams are deeply incised. Further away from the margin of the Western Coalfield Physiographic Region, stream valleys are somewhat wider, but overall surface drainage in these areas is poorly developed, as most runoff is diverted through the subterranean drainages of the karst terrain. In certain locations, the Mississippian limestones are so high in carbonate content that soil development is inhibited, which resulted in the treeless or cedar-studded barrens

that were noted by early settlers. The Knobs region, a narrow belt of conical hills that encircles the Bluegrass Physiographic Region, is underlain by Silurian and Devonian deposits that are capped with Mississippian limestones. The eastern half of the Salt River Management Area is situated within the Bluegrass Physiographic Region. Most of this area is covered by the Outer Bluegrass and the Eden Hills. The extreme western periphery of the Inner Bluegrass also lies within the Salt River Management Area. Elevations in the county range from roughly 117 to 310 m above sea level.

The bedrock geology of Hardin County is composed of plane bedded sedimentary rocks of the Mississippian and Devonian Periods. Rocks, however, are predominantly of Mississippian age. St. Louis and St. Genevieve Limestones underlie most of the Elizabethtown area. The St. Louis rests upon the Salem, the St. Genevieve upon the St. Louis. Karst topography in Hardin County is mainly associated with the St. Louis and St. Genevieve Limestones. A mantle of windswept silt, or loess, covers many of the gently rolling to rolling uplands in the project vicinity and is thickest on ridges above the Ohio River Valley in the northern part of Hardin County (Arms et al. 1979).

3.0 Prehistoric and Historic Context

This section outlines the prehistory of the Elizabethtown area before the Commonwealth of Virginia provided military land grants from 1782 to 1792 resulting in the settlement of Severns Valley (now Elizabethtown) and the surrounding region. Three distinct temporal-cultural periods may be distinguished within the Kentucky area: prehistoric, Protohistoric, and historic (Griffin 1967). Prehistory (circa 9500 BC to AD 1600) refers to that time before the use of written records within a particular geographical region. Protohistory (circa AD 1540 to 1795) is the period shared between two or more cultural groups within the same area in that only one of the groups makes use of writing. All historic cultural groups use writing as a form of communication and record keeping. The transition from the Protohistoric period to the historic period is generally gradual, consisting of the replacement of non-literate societies by members of a literate society or the adoption of writing by a previously non-literate society. Around Elizabethtown, the historic period begins circa AD 1779, when land entries were made by settlers John Severns, Andrew Hines (Hynes), Thomas Helm, and Jacob Van Meter among others (McClure 1979) and Native Americans were displaced or assimilated.

3.1 Prehistoric Context

The history of human activity in Hardin County and the surrounding region of Kentucky spans several thousand years. The earliest groups to leave a definitive material record of their presence were early Paleoindians who entered the region during the Late Pleistocene glacial epoch more than 10,000 years ago. Their descendants and the descendants of other Native American groups who migrated to the region lived in the Falls of the Ohio area and the lower Ohio River valley for the next 10 millennia. This long prehistoric era lasted until the arrival of the first European explorers and settlers in the seventeenth and eighteenth centuries, the beginning of the historic period. While cultural change is a slow and continual process, archaeologists and other researchers divide the human history of a region into distinct cultural periods.

Researchers define these periods by the observation of critical changes in the material record of these early groups. These material changes are often accompanied by environmental and climatic changes, as well as presumed demographic shifts. Archaeologists and historians recognize four broadly defined prehistoric periods in the lower Ohio River valley. These include the Paleoindian (circa 10000-8000 BC), the Archaic (8000-1000 BC), the Woodland, (1000 BC-AD 900) and the Mississippian or Late Prehistoric period (AD 900-circa 1700). The historic period began with the arrival of the first European explorers and colonists. The modern story of the region began with the establishment of Severns Valley after AD 1779.

This section provides a discussion of the prehistoric cultural/historical context for Hardin County and the surrounding region of Kentucky. It commences with the first arrival of early Native Americans into the region and continues into the beginning of Euro-American colonization in the mid-eighteenth century. This summary is a brief outline of Kentucky archaeological history and draws heavily from *The Archaeology of Kentucky: An Update* (Pollack

2008) as well as *Kentucky Archaeology* (Lewis 1996). The reader is encouraged to refer to these references for far more thorough discussions of Kentucky's archaeological history.

3.1.1 Paleoindian Period, circa 10000-8000 BC

The earliest definitive archaeological remains of the first Americans in the lower Ohio River valley date to the Late Pleistocene glacial period approximately 12,000 years ago. The Ohio River formed the approximate southern extent of the glacial advance, and glacial till deposits are found to the north in Indiana. This earliest culture is referred to as the Clovis culture (Tankersley 1990, 1996). Sites associated with these early groups are marked by the presence of well-crafted lanceolate shaped projectile points or knives with distinctive flake channels or "flutes" found on one or both sides (Justice 1987:17-21). These points, called Clovis points and first identified in Clovis, New Mexico, are found virtually throughout North America north of Mexico and south of the Late Pleistocene glacial margin. Clovis sites are widely scattered with sparse artifact assemblages.

Sites that predate the Clovis culture have been identified elsewhere in the eastern US. The most notable among these is Meadowcroft Rockshelter in southwest Pennsylvania (Adovasio and Carlisle 1982; Adovasio et al. 1990). This site yielded materials from cultural strata that predated Clovis occupations by as much as 1000 years. Meadowcroft and other purported pre-Clovis sites remain controversial, and researchers have yet to find similar early sites in the lower Ohio River valley.

The Early Paleoindian Period (10000-9000 BC). Tankersley defines the Early Paleoindian period as the period when Clovis groups first entered the region (Tankersley 1996:22-30). These early colonizing groups were very small, consisting of one or two family groups. They were highly mobile hunter-gatherers who primarily subsisted by hunting Late Pleistocene fauna like bison, musk ox, caribou, and the now extinct megafauna such as ground sloth, moose-elk, mammoth, and mastodon (Tankersley 1996:26). Early Paleoindian sites in the Ohio River valley are sparse and widely scattered. Most Paleoindian sites are identified as simple isolated finds with single Clovis point fragments.

The Middle Paleoindian Period (9000-8500 BC). According to Tankersley, the Middle Paleoindian period is marked by increased diversity in fluted point styles (Tankersley 1996:31) as well as a more diverse lithic tool kit, including spurred end scrapers and side scrapers, and an increased use of lower quality local cherts. Tankersley suggested these changes reflected an increased reliance on smaller game and even plant resources. Distinctive regional fluted point styles included the Gainey point north of the Ohio River and the Cumberland point found further south in Kentucky. No Middle Paleoindian sites have been identified in Elizabethtown, but possible Cumberland points were recovered from the Longworth-Gick site in southwest Jefferson County (Boisvert et al. 1979:282).

The Late Paleoindian Period (8500-8000 BC). By the Late Paleoindian period, fluted projectile points had disappeared and were replaced by points of the non-fluted Dalton cluster (Justice 1987:35-44; Tankersley 1996:33). The Dalton cluster points display a much greater stylistic variety reflecting greater regional diversity. There was also a wider range of tools associated with the Dalton tool kit as opposed to the earlier Paleoindian groups (Tankersley 1996:33). The regional diversity in point styles may indicate more restricted

regional settlement systems on the part of these later Paleoindian groups, while the more diverse tool kit composition may indicate more intensive exploitation of a wider range of food resources.

3.1.2 Archaic Period, circa 8000-1000 BC

The Paleoindian period ended with the onset of the Holocene geologic period and the final retreat of the Late Pleistocene glaciers far to the north of the Great Lakes. The Archaic encompasses a 7,000-year period in which post-Pleistocene hunter-gatherer groups of the Eastern Woodlands adapted to the changing Holocene environment. The subsistence/settlement patterns of these Archaic populations changed dramatically. By the end of the Late Archaic, the highly mobile hunter-gatherer strategies that marked the outset of the Early Archaic had given way to an increased sedentary lifeway and the beginnings of horticulture. The Archaic is divided into Early Archaic (8000-6000 BC), Middle Archaic (6000-3000 BC), and Late Archaic (3000-1000 BC) periods.

The Early Archaic Period (8000-6000 BC). In many respects, Native American adaptive strategies during the Early Archaic more closely resembled those of their Paleoindian predecessors than those of the later Middle and Late Archaic periods. Like their Paleoindian counterparts, the early Native American Groups of the Early Archaic were hunter-gatherers who incorporated a great deal of mobility into their subsistence/settlement systems. However, the Early Archaic is generally seen as a transitional period when regional populations more fully adapted to the changing environmental conditions that were taking shape during the Early Holocene (Jefferies 1990, 1996). "Modern" game species, such as whitetail deer and turkey, and important subsistence plant species, such as nut-bearing oak, hickory and chestnut trees of the spreading deciduous forest, replaced the Late Pleistocene fauna and flora (Jefferies 1996:40). The lithic tool kits of the Early Archaic were similar to those utilized during the Paleoindian periods. However, there is evidence for increased regionalization during the Early Archaic and intensification of trends first observed during the Late Paleoindian period. While these early groups continued to be highly mobile, their seasonal settlement systems were more regionalized, with different bands and macro-bands restricting the seasonal mobility to specific drainages (Anderson and Sassaman 1996).

Artifact type markers for the early portion of the Early Archaic include Kirk Corner notched points and Thebes Side notched points (Jefferies 1996; Justice 1987). Later Early Archaic point types include Kirk Stemmed points and bifurcate based LeCroy and Kanawha points (Jefferies 1996; Justice 1987).

Early Archaic sites are better represented in the region surrounding Elizabethtown than Paleoindian sites. For example, to date 44 sites with Early Archaic components have been identified at Fort Knox (Sims and Pritchard 2010). Most of these (n=26) Early Archaic sites have been identified in upland contexts (dissected uplands [n=17], hillsides [n=7], and undissected uplands [n=2]), while the remaining 18 Early Archaic sites have been found in floodplain (n=17) and terrace (n=1) settings (OSA GIS files). Important Early Archaic sites are located near Hardin County, including the Longworth-Gick site in Jefferson County that yielded several distinct Early Archaic occupation strata in deeply buried alluvial deposits. Ashworth Rockshelter (15BU236), located in Bullitt County south of Fort Knox yielded Early Archaic human burials. One individual died violently, with a Kirk point embedded in his spine (DiBlasi 1981; Jefferies 1996:46). Similar Ashworth Phase Early Archaic deposits

were found during extensive excavation of the KYANG site (15JF267) on the Shewmaker Base at Standiford Field Airport in Louisville (Granger 1988). Recent excavations across the Ohio River at a series of sites in Indiana have revealed extensive Early Archaic Kirk cluster occupations associated with Muldraugh chert outcrops. While the results of these investigations have yet to be published, they revealed intensive and potentially long-term seasonal occupations.

The Middle Archaic Period (6000-3000 BC). By the onset of the Middle Archaic period, early Native American populations had begun to settle down into increasingly regionalized settlement ranges. Middle Archaic sites along the Ohio River drainage and elsewhere included large base camps used as long-term, perhaps even year-round residential sites (Jefferies 1996:54; Nance 1987). These changes in settlement strategy coincided with the long warm, dry spell which climatologists call the Hypsithermal Climatic Interval. Much of Kentucky became arid grasslands, and the distribution of subsistence game and plant resources was more restricted than in the previous period. Though the Middle Archaic period is poorly understood in Kentucky, it is generally recognized as a period of intensive regionalization when groups began to exploit a wider range of local subsistence resources. Middle Archaic artifact assemblages include the appearance of ground stone tools and pecking stones generally attributed to plant food processing. In the Falls of the Ohio region, the larger Middle Archaic sites tend to be found where the sites' inhabitants would have had easy access to more than one habitat (Janzen 1977:140-141; Jefferies 1996:53).

Middle Archaic groups were able to access a variety of subsistence resources and were able to limit their residential mobility. A plethora of stylistically distinct projectile point types with limited distribution ranges appeared during this time including Morrow Mountain, Matanzas, and Big Sandy II points (Jefferies 1996:47; Justice 1987).

Late Archaic (3000-1000 BC). During the Late Archaic period, the number of prehistoric sites scattered across the Kentucky landscape increased dramatically. The diversity of those sites present in the landscape increased as well. Late Archaic subsistence/settlement strategies emphasized generalized hunter/gatherer strategies and these groups intensively exploited a range of subsistence resources in a variety of environmental settings (Anslinger 1986; Collins and Driskell 1979; Jefferies 1996:64-65). Late Archaic site types in the Falls of the Ohio region included large base campsites on the Ohio River floodplains as well as the interior lowlands along the region's major tributaries such as the Salt River. Many of these floodplain sites yielded thick shell middens indicating the intensive exploitation of river resources. The sites also yielded diverse artifact assemblages indicative of long-term residential activities. Smaller resource extraction sites are scattered throughout the full range of geographic settings in the region. Important local Late Archaic sites include the Rosenberger and Villier sites in southwest Jefferson County.

These sites revealed large and intense base camp occupations with numerous features including large and small circular pits, burned areas, midden scatters, artifact caches, and more than 200 human burials (Driskell 1979:1030; Jefferies 1996:64). Further west in Kentucky, along the Green River drainage, large shell mounds appeared during the Late Archaic, either built intentionally by Late Archaic groups, or built up over time through repeated utilization of the same location. Projectile points indicative of Late Archaic

occupation in the Falls of the Ohio region include McWhinney stemmed, Meromtrimble cluster, and Brewerton points (Jefferies 1996:64).

3.1.3 Woodland Period, circa 1000 BC-AD 1000

There is no clear transition from the Late Archaic to the Early Woodland, but it is generally demarcated by the introduction of ceramic pottery sometime around 1000 BC (Kellar 1973:35; Seeman 1986). The Woodland was a period of great early Native American cultural florescence. Many of the trends initiated in the Late Archaic, such as increased social complexity and a greater reliance on native cultigens, continued into the Woodland period. Like the Archaic, researchers divided the Woodland period into three distinct sub-periods. These include the Early Woodland (1000-200 BC), The Middle Woodland (200 BC-AD 500), and the Late Woodland (AD 500-900).

The Early Woodland (1000-200 BC). The division of the Early Woodland from the proceeding Late Archaic is marked by the appearance of ceramic pottery around 1000 BC. Many Early Woodland projectile point types are indicative of transitional Late Archaic/Early Woodland occupations including Kramer, Wade, Savannah River, Saratoga Stemmed, and various other stemmed points (Justice 1987; Railey 1996). Early Woodland sites are similar in type and distribution to those during the Late Archaic. Large midden sites are located in the alluvial valleys and smaller resource procurement sites are found scattered throughout the landscape. However, the Early Woodland also has the first appearance of distinct ceremonial sites. The most dramatic cultural development during Early Woodland groups was the emergence of the elaborate Adena ceremonial complex that appeared along the Ohio River by the end of the Early Woodland period. Large burial mounds with log tombs, along with an assortment of high status grave goods, characterized this ceremonial complex. There is also evidence for widespread horticulture (Cowen 1985).

Middle Woodland (200 BC-AD 500). Complex ceremonialism continued through the middle part of the Woodland period with the emergence of the Hopewell tradition that replaced the Adena ceremonial tradition (Kellar 1973:36). The Hopewell ceremonial complex was characterized by elaborate mound complexes and earthworks. Sophisticated mortuary practices suggest the appearance of hierarchical social organization and both the Hopewell and the preceding Adena traditions involved long-range trade and ceremonial interaction (Caldwell 1964; Railey 1996:88; Struever 1964). Though hunting and gathering continued to be the major source of subsistence food, the use of horticulture intensified and permanent settlements were firmly established along river bottoms (Prufer and McKenzie 1967). A number of plants were domesticated including sunflower, maygrass, knotweed, little barley, and goosefoot. Other plants included maize, squash, and gourds (Railey 1996:90).

Late Woodland period (AD 500-900). By the beginning of the Late Woodland period, the elaborate Hopewell complex that had replaced the Adena in the Middle Woodland, had essentially collapsed. The major technological change in the Late Woodland was the introduction of the bow and arrow around AD 700-800 (Railey 1996:111; Seeman 1992). This was indicated in the archaeological record by the appearance and proliferation of small triangular points. Other chipped stone tools diagnostic of the Late Woodland include Jacks Reef Corner notched, Commissary knives, and small triangular Madison points believed to be arrow points (Justice 1987:217, 224; Railey 1990, 1996). Increasing regional variability of stylistic motifs on ceramic pottery increased throughout the Late Woodland.

Subsistence/settlement strategies continued the trend toward increased sedentism. Small, nucleated circular villages with circular central plazas appeared in some locations of the state by the Late Woodland (Railey 1996:111-112). The appearance of aggregated settlement may, in part, have resulted from an increased population density and shrinking settlement ranges. Along with aggregating into central village locations, Late Woodland populations lived in small, dispersed settlements and adopted intensive horticulture of maize and domesticated plant seed plants. Unlike the Early and Middle Woodland periods, few ceremonial mounds or earthworks were constructed. The few mounds that were built, such as those associated with the Newtown complex of the central Ohio River valley in northern and central Kentucky, were generally small.

3.1.4 Late Prehistoric Period, circa AD 900-1700

During the Late Prehistoric period, Native American populations in Kentucky and elsewhere in the Eastern Woodlands had settled into large aggregated villages. The intensive horticulture of the Late Woodland had been replaced by intensive agriculture based on maize, beans, and squash. Two major cultures emerged during the Late Prehistoric. The Mississippian cultural tradition first appeared in the central Mississippi Valley around AD 800-900 and spread throughout western Kentucky along the lower Ohio River valley, and through southern Kentucky along the Cumberland River Basin. Further up the Ohio River valley and in central and eastern Kentucky, a distinct cultural tradition, referred to as the Fort Ancient tradition, emerged. Nearby Fort Knox and the Falls of the Ohio River were located at the frontier of both these cultural traditions, and Late Prehistoric sites found in the region often blend elements of the two cultures.

Mississippian culture. Mississippian culture was overwhelmingly dependent on maize agriculture and Mississippian social organization was generally planned around agricultural activities. Mississippian phases and traditions are generally thought to have been chiefdom level societies, with powerful chiefly lineages that dominated and directed the course of civil life. Mississippian populations lived in large towns with smaller associated villages, hamlets, and farmsteads (Lewis 1996:127; Lewis and Stout 1992).

The organization of these different settlements was hierarchical and the political and ideological centers of Mississippian culture were the large towns or villages where the chiefly clans resided. These towns were characterized by a central plaza surrounded by a number of rectangular houses, and were often surrounded by fortifications such as palisade walls and defensive ditches. The central plazas were the sites of social and ceremonial activity and usually contained large platform mounds where the chiefly lineages built their homes, and from where the daily life of Mississippian village activity was directed. The material culture of Mississippian culture includes shell-tempered pottery and a variety of ceramic vessel forms including jars, bowls, bottles, plants, and pans. Lithic artifact assemblages were typically limited to simple tools such as small triangular Hamilton Incurvate and Madison triangular Points (Justice 1987). The presence of marine shell and copper artifacts at Mississippian towns points to participation in long-distance exchange networks and interaction spheres (Lewis 1996).

Large Mississippian sites are best documented in western Kentucky and the lower Ohio River valley. The most notable Mississippian cultural phases of the Ohio River valley are the Early to Middle Mississippian Angel phase (AD 900-1400) followed by the Late

Mississippian Caborn-Welborn phase (AD 1400-1700). Both cultural complexes were centered along the lower Ohio River valley, along the northern fringe of Kentucky's Western Coal Field and adjacent areas in Illinois and western Indiana. It is not known how far upriver along the Ohio River Mississippian culture extended (Lewis 1990). Platform mounds indicative of Mississippian culture have been reported in the Louisville area, but none were ever investigated and have since been destroyed by urban development. It is generally thought that the Salt River draining through Fort Knox served as the northeastern extent of direct Mississippian control along the Ohio River, though this notion is subject to debate (Griffin 1978:551; Sharp 1990). If this is correct, Late Prehistoric sites in Elizabethtown and most of Hardin County would fall under a Mississippian sphere of influence.

Fort Ancient culture. The Fort Ancient culture bore many similarities to its Mississippian counterpart further down river. Like their Mississippian cousins, the Fort Ancient groups of northern Kentucky and southern Ohio practiced intensive maize agriculture and utilized shell tempered ceramics (Henderson et al. 1992; Sharp 1996). However, their subsistence strategies still incorporated some level of horticulture and were augmented by hunting (Breitburg 1992; Rossen 1992:208). Fort Ancient settlement structure and social organization were also fundamentally different from that of the Mississippian groups to the west and south. There is little evidence to suggest that Fort Ancient societies were organized along the lines of a chiefdom, or for that matter even significantly hierarchical (Henderson et al. 1992). Fort Ancient villages consisted of several houses laid out around a central, circular plaza. Mississippian style platform mounds are never present suggesting there is no central "home" for a chiefly lineage. Investigations of Fort Ancient mortuary practices revealed that most individuals were interred with little fanfare and little in the way of prestige items. Although some individuals were buried in mounds, reflecting the heightened importance of some individuals to the community, there was little evidence for a strict hierarchy (Sharp 1996).

Two Late Prehistoric earthen mounds (15HD263 and 15HD273) are found in Hardin County on Fort Knox. Neither of the possible Mississippian earthen mounds has been tested professionally, though both appear to have been heavily looted (O'Malley et al. 1980). In 2010, under a separate Delivery Order, we conducted shovel testing within a 30-m (100-ft) buffer of Site 15HD273 and failed to identify any cultural deposits. Provisionally, we assume that Site 15HD273 is a ceremonial site associated with nearby Fort Ancient site 15HD158/160, although no artifacts were found during our work at the mound site (Jordan et al. 2010).

3.1.5 Contact Period, circa AD 1540-1795

Henderson et al. (1986) focus on the region of northern and eastern Kentucky, just missing the counties occupied by Fort Knox. The general observations and definitions of the Contact period presented in that study apply well to peripheral counties and have been adopted here. Henderson et al. (1986) define the Contact period as beginning when the first indirect effects of the European presence were felt by native cultures, roughly AD 1540. The beginning date was selected based on journals of the 1540s De Soto expedition, which observed that trade goods and European disease were in the area before their arrival. The signing of the Greenville treaty in 1795 acts as the end of this period, since by that document the Native Americans relinquished all claims to land in the region to the new government of the US. The several tribes in various stages of acculturation were removed to small

reservations to the north and west (Henderson et al. 1986:1, 17). The Contact period can be divided into two parts, the Protohistoric period and the Historic Indian period.

Protohistoric Period, circa AD 1540-1730. The term Protohistoric frequently refers to the native culture of North America during that span of time following the first influence of European cultures (primarily through trade goods or disease), and later, when the native cultures were recorded and described by the encroaching Euro-American cultures. Typically during this period, the native cultures underwent acculturation—a virtual breakdown of their former way of life through replacement by or approximation of the cultural norms of the dominant culture. The Protohistoric period spans nearly two centuries, ending AD 1730. The inhabitants of the region during this period probably consisted of diverse groups speaking Algonquian or Iroquoian languages, and basing their economies on a combination of horticulture and fishing, hunting, and gathering. Small encampments at scattered locations would coalesce into larger villages on floodplains in the spring for the cultivation of corn, beans, squash, and a few other selected plants like tobacco (Henderson et al. 1986).

During the Protohistoric period, access to the region by Europeans was almost exclusively from the south by the Spanish in Florida (that extended into present-day Georgia and Alabama), and later from the north by the French, who wrote of the Shawnee living on the Ohio. The few surviving descriptions of inhabitants are indirect and sketchy. Much of what is specifically known centers on archaeological investigations at late Fort Ancient sites on or near the Ohio River. Archaeological studies of a late Fort Ancient site in Greenup County yielded classic prehistoric artifacts in association with European trade goods, beads, jewelry, and trinkets, dating from AD 1550 (+/- 50 years) to AD 1675 (+/- five years) (Hanson 1966:200; Henderson et al. 1986:11).

Early contact of Native Americans with Europeans in what is now Kentucky may have been indirect, with European trade goods and information about Europeans spread through the existing exchange systems. The earliest European exploration of Kentucky has not been established, but some historians argue that Hernando de Soto crossed western Kentucky traveling north from the Clarksville, Tennessee area to Henderson, Kentucky in the early summer of 1541. De Soto then crossed the Ohio River in June of 1541 and traveled north towards Terre Haute, Indiana (Sheppard 1995). In 1673, it is recorded that Marquette and Joliet passed by the mouth of the Ohio, in west Kentucky, during their exploration of the Mississippi River (Alvord 1965:63-64). Other French, English, and Spanish traders and explorers may have passed through the territory in the late seventeenth century to mid-eighteenth century as well (McBride and McBride 1990:583).

Disease increasingly reduced native populations all over the central and eastern parts of the continent during this period. In this region, epidemics are documented from the last decades of the 1500s and into the mid-1600s. In addition, the so-called "Beaver Wars," wars over fur trade competition, enveloped most inhabitants during the mid-1600s and the Iroquois Confederacy overwhelmed many lesser groups. With the introduction of European diseases and Iroquois pressures in the Ohio Valley, depopulation of the area appears to be evident. However, few archaeological site data from this period have been investigated, making this claim difficult to assess. From historical accounts, it is clear that small groups of Shawnee were in the Ohio Valley in the Late Protohistoric period (Henderson et al. 1986).

Historic Indian Period, 1730-1795. The last 65-year segment of the Contact period, as proposed by Henderson et al. (1986), is called the Historic Indian period and spans the years from circa 1730 to 1795. The division between the Protohistoric period and the Historic Indian period is marked by a resurgence of Native American populations, but by peoples not originally from this area. The Miami and Wyandot from the north established villages on the Ohio River. Some Shawnee and Delaware were pushed in from English controlled areas to the northeast and east, and small groups of Mingo, probably a branch of the Seneca, mingled into established villages (Downes 1940; Henderson et al. 1986:14-15). In 1768 at the treaty of Fort Stanwix, the Iroquois, who claimed Kentucky by conquest, signed over the land south of the Ohio River to the British. This action forced the Shawnee and Mingo to wage war on the British, and later Americans, for the next 20 years. They claimed Kentucky as their hunting grounds and refused to recognize the treaty (Downes 1940).

Throughout the Historic period, the Native American hold on their land proved untenable over time as they resisted white settlement first by siding with the French in the French and Indian War (1754-1763), and then siding with the English in the American Revolution. Attacks against settlers continued after the Revolution until the Battle of Fallen Timbers in 1794, when a confederation of tribes was defeated. The ensuing Greenville Treaty (1795) ceded all Native American lands north of the Ohio River and east of the Miami River to the US and displaced Native American populations to the north and west (Downes 1940; Henderson et al. 1986:17).

3.2 Historic Context

3.2.1 Early Exploration and Settlement

Precisely when the first European explorers arrived in the Ohio Valley is uncertain. It is possible that some French trappers, traders, and priests traversed parts of the region during the late seventeenth and early eighteenth centuries, but the first successful English expedition did not occur until 1742 when Virginians John Peter Salley and John Howard sailed down the Ohio to the Mississippi, where they were captured by the French and imprisoned at New Orleans. They escaped in October 1744 and made their way back to Virginia the following May. By the time they returned, the speculative drive for western land had reached a fever pitch. Despite opposition from the British crown, more than 2.5 million acres of land were granted to various speculators between the spring of 1745 and May 1754. Many of the grantees were closely associated with members of the Virginia General Assembly and the royal governors, whose personal interests generally ran counter to those of the crown (Clark 1960:20-22; Harrison 1992:203-14).

One of the largest recipients of western lands was the Loyal Company, which received 80,000 acres in Kentucky. In March 1750, it dispatched a surveying crew headed by Dr. Thomas Walker, a politically well-connected Albemarle County physician, to survey its claim. The following month Walker led his party through Cave Gap, which he renamed for the Duke of Cumberland. Upon completing its mission, Walker's party returned to Virginia with information about the geography and potential riches of the Cumberland Mountains that further excited interest in Kentucky. After Walker returned, his employer's chief rival, the powerful Ohio Company, sent a surveying team headed by Christopher Gist down the Ohio

to lay out a 200,000-acre claim in the vicinity of the Falls of the Ohio. His mission was disrupted, however, when he was warned by friendly Shawnees that native tribes aligned with the French were camped at the falls and that to continue would involve great risk. Gist returned to Virginia without completing his assignment. Eruption of the French and Indian War in January 1754 squelched further exploration and settlement efforts until after the signing of the Treaty of Paris in 1763 passed control of the Ohio Valley to the British (Channing 1977:8; Clark 1960:23).

Even after the treaty was signed, the British crown attempted to restrain land-hungry colonists from moving west. The primary motive for this policy was a desire to avoid the cost of providing troops to protect settlers from Indian attacks instigated by the French, who continued to maintain a presence in the region. During the mid-1760s General Thomas Gage, the British commander in North America, sent a succession of military and diplomatic expeditions down the Ohio River to treaty with tribes in the Wabash River region. In 1768, the English signed the Treaty of Fort Stanwix with the Iroquois and the Treaty of Hard Labor with the Cherokee, under which both tribes relinquished their claims to Kentucky (Clark 1960:28-29; Downes 1940). However, Shawnee tribes were excluded from these treaties. The treaties were signed to create a buffer between colonists and native groups (Downes 1940). These documents were not necessarily intended to open the way for settlement, but they stimulated colonists' appetites for western land and occasional private incursions into the Ohio Valley. Indeed, as early as 1766 Colonel John Smith ventured into the Hardin County area while on a hunting trip, marking the first recorded exploration of the area (O'Malley et al. 1980:26).

Colonists' desires for western land were heightened during the early 1770s when Lord Dunmore, the governor of Virginia, supported land surveys in Kentucky. In 1773, George Washington expressed interest in having land surveyed near the Falls of the Ohio for himself. Therefore, in 1774, a survey expedition left Virginia to survey lands for not only George Washington, but for other notable men like Patrick Henry, Dr. Hugh Mercer, Colonel William Christian, Colonel William Preston, and Dr. John Connolly. Even with the constant warnings from Shawnee braves to stay out of Kentucky, John Floyd led a survey party down the Ohio for the prominent men of Virginia. These land surveys were the source of tension that forced the conflict, known as Dunmore's War, between Shawnees and the white settlers. Later in 1774, the Shawnee signed the treaty of Camp Charlotte, where they yielded their hunting rights in Kentucky to the British (Downes 1940, 152-177).

The earliest Anglo-American exploration in the Elizabethtown vicinity occurred in 1775 when Thomas Denton led a surveying party into the Salt River country. The first documented settlement effort began in July 1776 when a party of Virginia surveyors representing Shane, Sweeney, and Company, led by Samuel Pearman, traveled by flatboat to the mouth of Salt River. Pearman and his associates staked out several thousand acres along the Ohio and Salt Rivers and built a small log cabin at the junction of the Salt and Rolling Fork Rivers. Indian attacks forced Pearman's party to abandon its effort and to return to Virginia, although other settlers soon followed. Meanwhile, George Rogers Clark led a regiment down the Ohio in the spring of 1778 and landed in late May at Corn Island at the Falls of the Ohio. A month later the regiment departed for the Illinois country, where over the next year Clark captured the British forts of Kaskaskia, Cahokia, and Vincennes. While

he was gone, the settlers on Corn Island moved to the Kentucky mainland and established the town of Louisville (Holmberg 1991:5; O'Malley et al. 1980: 27).

Exploration and settlement activity in the Ohio and Salt River valleys accelerated substantially after Clark's expedition, often in the face of native opposition. Squire Boone, Daniel Boone's brother, explored the vicinity on several occasions during the late 1770s, and in 1778, he discovered Doe Run, which flows west of Fort Knox in present day Meade County. The following year, Henry Crist began salt making operations at Bullitt's Lick, located near the junction of Salt River and the Rolling Fork River in present day Bullitt County. Discovered in 1773 by Captain Thomas Bullitt while engaged in his surveying expedition at the Falls of the Ohio, it was for a time the only place near the Falls of the Ohio where pioneers could find salt. The year 1779 also witnessed establishment of Brashear's Station, also known as Froman's Station and Salt River Garrison, nearby at the mouth of Floyd's Fork. Native raids caused the closing of salt-making operations for a time, but production resumed in 1780, under the protection of Mud Garrison, a small fort constructed of a double row of piles filled with dirt and gravel, located on the north bank of Salt River about a half-mile above the mouth of Bullitt's Lick Run. Additional security was added the same year with construction of Dowdell's Station on the north bank of Salt River near present day Shepherdsville (Bush et al. 1989:30-31; Kleber 1992:140-141, 404; O'Malley et al. 1980:26).

The first permanent settlement in the vicinity began in 1780 when Colonel Andrew Hynes, Captain Thomas Helm, and Samuel Haycraft built small forts within a mile of each other in Severns Valley near present-day Elizabethtown. Severns Valley had been surveyed shortly before by John Severns. Each fort attracted a small group of settlers, some of whom returned to Virginia during the severe winter that followed. By 1781, however, the settlement had attracted some 17 families, who came together that year to organize Severn's Valley Baptist Church. While the settlement now had some roots, the surrounding area was still a favored hunting ground for the Native Americans, who came in the spring to plant corn and returned in the fall to hunt and harvest their crop. Conflict between settlers and the native inhabitants erupted in 1792, when a band of 15 natives attacked the settlement and killed two women and five children, burned several cabins, and slaughtered livestock. About 15 men led by Patrick Brown pursued the attackers and killed all but one. It was the last serious confrontation between whites and natives in the area (Kleber 1992:40; O'Malley et al. 1980:27-29).

Settlement accelerated during the 1780s, especially after the end of the American Revolution in 1783. Beginning about 1789 and continuing into the 1790s, Revolutionary War veterans with land grants began developing the settlement of West Point at the confluence of the Ohio and Salt rivers. Among these early settlers were Thomas and Samuel Pearman, Henry Ditto, George Bell, Isaac Vertrees, Joseph Enlan, William Withers, John Hay, Thomas Barbour, and John Campbell. The town was formally platted in 1796 (O'Malley et al. 1980:29).

3.2.2 Formation of Hardin County

Kentucky was part of Virginia until 1792. With the advent of statehood, political life in Kentucky became much more organized. As the population grew, successive counties were formed and organized.

Hardin County, the state's fifteenth county, was created in 1792 from portions of Nelson County. It is named for Colonel John Hardin, a notable Nelson County pioneer and Native American fighter. Originally some 140 miles long and 60 miles wide, it now measures 616 square miles and is the fourth largest county in the state. Currently, it is bounded on the north by the Ohio River and Bullitt and Meade Counties; on the east by Bullitt, Nelson, and Larue Counties; on the south by Larue, Hart, and Grayson Counties; and on the west by Breckinridge, Grayson, and Meade Counties (Kleber 1992:404). The Severns Valley settlement was designated the county seat, which was named Elizabethtown in 1797 in honor of the wife of Colonel Andrew Hynes, one of its founders. The first session of Hardin County Court was held on July 22, 1793, at the home of Isaac Hynes. At that session, Colonel Andrew Hynes set aside 30 acres for county buildings, dividing the tract into 51 lots with streets and alleys (Kleber 1992:290).

3.2.3 The Impact of Transportation

By the turn of the nineteenth century, hundreds of pioneers had planted themselves in more than a score of settlements in and around Hardin County. Over the next six decades, struggling pioneer settlements would grow into thriving villages and towns that provided a variety of marketing, manufacturing, and trade services to nearby farmers. Facilitating these economic activities would be a succession of transportation improvements, such as ferries, roads and turnpikes, steamboats, and railroads, which would carry local goods from the farm to local and regional markets and exchange them for manufactured goods and other products from distant markets. In the long term, as improvements such as the railroad made it possible for consumers to obtain goods of a superior quality at a lower cost from more distant markets, some towns began to decline, even before they were absorbed into the growing military facility that became Fort Knox.

For early pioneers, rivers and streams combined with old buffalo and Indian roads to provide primary arteries for transportation and trade. Many settlers traveled down the Ohio and then made their way inland by way of the Salt River, the Rolling Fork River, Otter Creek, and Doe Run. Others arrived in the region by taking the Wilderness Road through the Cumberland Gap to Lexington and then following either the Falls of the Ohio-Lexington Road or the Harrodsburg Trail to Louisville, where they picked up the Cumberland-Falls of the Ohio Trail, surveyed through the Severns' Valley by John Severns. Places where streams and roads intersected often became town sites, not only because multiple transportation routes created an opportunity to reach multiple markets, but also because such conditions sometimes created the need to unload and reload goods to complete passage or to change the mode of conveyance.

Particularly important were points where streams intersected a road or trail. In an era when public funding for bridges was unavailable, the transportation problem was frequently solved by landowners who established ferry operations to help overland travelers and shippers cross the stream. Two ferrying operations were located at West Point, one which crossed the Ohio River and another that crossed Salt River. Other ferries on the Salt River included Key's Ferry, located six miles upstream from West Point, and the Dowdell and Druin ferries at Pitts Point, where the Salt River meets the Rolling Fork River. The former crossed the Rolling Fork while the latter crossed the Salt River. The Wooldridge Ferry and possibly the Atherton Ferry, located farther upstream, also served travelers crossing the Rolling Fork

(Louisville Corps of Engineers "Analytical/Environmental Report–Fort Knox, Kentucky" 1987, cited in Kempf 1999:21-22).

A major advance in river transportation was the advent of the steamboat, which spurred development of river towns such as West Point, located at the junction of the Ohio and the Salt Rivers, and Pitts Point, at the confluence of the Salt and Rolling Fork Rivers. Steam boating on the Salt River was also the source of a famous saying in Kentucky politics. In 1832, when Henry Clay was campaigning for president of the US against Andrew Jackson, he boarded a steamboat at Pitts Point en route to a speech in Louisville. However, a Jackson partisan supposedly bribed the vessel's captain to take Clay up river instead of down river to the Ohio and on to Louisville. As a result, Clay missed his speech and lost the election, giving rise to the phrase, "up Salt River" in reference to political defeat (Briggs 1955; Kleber 1992:794-95).

For towns that relied primarily on overland transportation, construction of the Louisville and Nashville Turnpike was even more important than the steamboat. More properly known as the Louisville, West Point, and Elizabethtown Turnpike, the road was a reflection of the contemporary political movement to construct a network of internal improvements, particularly roads, to foster economic growth in Kentucky. The turnpike was first chartered by the Kentucky General Assembly in 1829 as the Louisville, West Point, and Elizabethtown Turnpike Road Company, with an authorized capital stock of $100,000. Appointed company commissioners from the vicinity of West Point and Elizabethtown were James Young, Henry Ditto, John Stockman, Horatio G. Wintersmith, and James Crutcher. When the company failed to raise the necessary capital, it was chartered for a second time in 1833, this time with a capital stock of $500,000, and it was extended in 1837, with authorization to build a road from Louisville in the direction of Nashville by way of the mouth of Salt River (West Point), Elizabethtown, Munfordville, and Bowling Green. Construction began in 1837 and 12 years later, the state Board of Internal Improvements reported that nearly 106 miles had been completed. Its original charter specified that the road was to be "artificial" and that it was to be surfaced with "gravel, pounded stone, or small, hard substance." Later charters substituted the term "artificial" with "McAdam," reflecting the construction method developed by Scottish engineer John McAdam (Briggs 1955; Kleber 2000:530-31).

The Louisville and Nashville Turnpike (L&N Turnpike), a forerunner to present-day Dixie Highway, remained a major carrier of both freight and passenger traffic in the region until 1859, when the Louisville and Nashville Railroad was completed between the terminal cities. Construction of the L&N Railroad began at Louisville in early 1853, and by mid-decade, it reached Muldraugh Hill, where builders encountered their first serious obstacle. To overcome this natural barrier, contractors built a series of trestles and blasted a tunnel, 1,986 feet long and 135 feet below the summit. The railroad finally reached Elizabethtown in 1858. The L&N Railroad not only captured most of the freight traffic between communities like West Point, Stithton, and Elizabethtown, it also spurred the creation of new towns such as Brooks Station, Hubers, Gap In Knob, Salt River, Bardstown Junction, Lebanon Junction, Clermont, and Hobbs, which sprang up in Bullitt County along the main line to Nashville and the branch lines to Bardstown and Lebanon. The coming of the railroad also dealt a severe blow to steamboat commerce at Pitts Point (Kleber 1992:140, 660; Kleber 2000:528; Klein 1972:8-9).

An important effect of the development of a multi-modal transportation network during the decades before the Civil War was to promote the growth of existing towns and the development of new ones, and occasionally the decline of towns that lost their transportation advantages to a new mode. During the early nineteenth century, communities such as West Point, Garnettsville, and Elizabethtown played prominent roles, serving as marketing, political, and gathering points for surrounding family farmsteads, especially when the danger of Native American attack still prevailed. After this danger ended, farmsteads became larger and more widely scattered, but farm families still needed ties to a larger town for specialized goods and services. In some cases, this function was served by nuclear settlements, such as the Mill Creek, Cedar Creek, Smith's Valley, Doe Run, and Otter Creek settlements (O'Malley et al. 1980:32-33).

3.2.4 Economic Development

Agriculture. Agriculture was the primary economic pursuit of most residents of Hardin County during most of the nineteenth century, with salt making, milling, timber cutting, and assorted other industrial activities developing at various times and places. Most residents were small-scale farmers who lived in a single or double-pen log cabin, which was enlarged or replaced over time, or a small, wood-frame house. Located nearby were simple wood outbuildings such as barns, corncribs, hog pens, root cellars, springhouses, and utility sheds. The most common crop was corn, but most farmers also raised some tobacco, wheat, and hay along with vegetables and a few head of livestock. Small farmers owned few if any slaves (O'Malley et al. 1980: 31-34).

Less common were large-scale farmers, or planters, who cultivated hundreds or even thousands of acres of bottomland along the Salt, Rolling Fork, and Ohio Rivers. These operations were similar in scale to the plantations of the Deep South and accounted for most of the slaves in this section of Kentucky. Large farmers grew much the same crops as their smaller neighbors, but the stress was on a cash crop, particularly tobacco, for sale at the market. Large-scale landowners usually had much larger and more elaborate houses. Particularly popular was the I-house, usually of frame and/or brick construction on stone foundations. Outbuildings were more numerous and better built than those on small farms, often with stone foundations or retaining walls. These structures also tended to serve more specialized functions, particularly tobacco barns, which varied in construction from those housing livestock and other agricultural functions. Some farms were located near streams where the topography was favorable for the construction of springhouses. These were specialized buildings erected in a spring bed, allowing water to flow through the floor and cool the interior for the storage of perishables (McBride and McBride 1996; O'Malley et al. 1980: 34).

Salt Making. As suggested earlier, salt making was a very important early industrial enterprise, particularly in Bullitt County. Used primarily as a preservative for game and butchered livestock, salt was a very necessary and valuable commodity. The Revolutionary War cut off normal sources of salt, and the mountains were a barrier to practical, efficient transport of salt to the frontier. Established in 1779 by Henry Crist, Bullitt's Lick was Kentucky's first commercial salt works and the only one west of the Alleghenies during the balance of the war. Life at pioneer salt licks was fraught with danger, particularly from Native American attacks. In 1788, Crist and 12 other settlers were navigating a boatload of salt kettles up the Salt River when they were attacked by natives. Ten members of the party

died outright, a woman was captured, another man escaped, and Crist was badly wounded. He eventually recovered and went on to become a prominent politician, serving in the US House of Representatives from 1809 to 1811. After the Revolution, other salt works were established at Long Lick, Dry Lick, and Parakeet Lick, all in Bullitt County. These operations provided the area with its main source of salt until the 1820s, when transportation improvements made it possible to ship salt from distant markets at lower cost (Kleber 1992:140; O'Malley et al. 1980:31).

The salt-making process involved digging wells 30 to 40 feet deep and boiling water in trench-like furnaces lined with slate and mortared with clay. Large kettles were set in the furnaces, often as many as 50 at a time. Fires heated the furnaces with the aid of a stone chimney that provided the draft to feed the fires. Salt making was a very difficult, labor-intensive process of boiling and cooling. To meet the demand for water, pipes made of hollowed-out gum or sassafras logs were sometimes used to create pipeline systems to transport water from a nearby stream. One example was the Eureka Salt Mining Company, whose operation is shown on the 1891 Map of Meade County. Another is a string of pipes that followed the general route of Pitts Point Road to a furnace within the present boundaries of Fort Knox (Bush et al. 1989:32-33; Kleber 1992:794; O'Malley et al. 1980:31).

One particularly notable Bullitt County salt-maker was Ezekial Field. Born to Abraham and Betty Field in Culpepper County in 1773, Ezekial moved with his parents to present day Jefferson County, Kentucky, in 1784. In 1790, Abraham Field purchased a 200-acre farm on Pond Creek in Knobs area of southwestern Jefferson County. The Field farm was located in close proximity to Bullitt's and Mann's Licks in Bullitt County, and in the early nineteenth century Ezekial bought a one-fifth interest in Bullitt's Lick. It is very likely that he was involved in the business as early as 1802 or 1803 and that he employed two of his younger brothers, Joseph and Reubin, in producing salt. This possibility is significant because in October 1803 Joseph and Reubin joined Meriwether Lewis and William Clark's Corps of Discovery, which set out that month to explore the Louisiana Purchase territory (Kleber 1992; Yater and Denton 1992).

Milling. As in most other pioneer agricultural communities where facilities for the processing of grain, timber, and fiber are essential, milling quickly became a primary industrial activity. No comprehensive statistics on milling are available until 1820, when the first census of manufacturing was conducted. However, it counted only Bullitt County, and it was not repeated until 1850, after which it was conducted on a decennial basis. Other records, however, indicate that at least one mill was operating before the beginning of the nineteenth century, and that perhaps as many as 10 were in business by 1820. Most mills were located on the Salt River, Rolling Fork River, Otter Creek, Doe Run, and Mill Creek and their various tributaries. Samuel Haycraft Sr., built Hardin County's first gristmill in 1796, with assistance from Thomas Lincoln, the father of Abraham Lincoln. Thomas Smith petitioned the Bullitt County Court for permission to establish a water-powered gristmill, probably on Cedar Creek, in February 1798. He died in December 1800, and there is no apparent evidence that he built the mill. However, the 1820 census indicates that a mill had been erected on the Smith property, possibly by a Philip Smith (Bush et al. 1989:31; O'Malley 1996:11, 24).

Another very early mill was the Coleman or Doe Run Mill, built about 1800. Garnettsville had several mills at various times, including Crabb's Mill, built about 1804; Overton's Mill, a saw and grist mill; and Grable's Mill, erected about 1805. John Overton, Jr., apparently also built the first flourmill on Otter Creek about 1813, and the town of Plain Dealing grew up around it. David Brandenburg, the son of Solomon Brandenburg, the namesake of the Meade County seat, also built a mill in 1813 at what became Grahamton in 1835. Mills were erected on Mill Creek by a Mr. Tull and a Mr. Bunger. In 1820, Bullitt County had four gristmills, all located on Cedar Creek. The largest was owned by Nathan Harris, whose mill processed twice as much wheat as the other three. The others appear to have been owned by Benjamin Summers, who may have commenced business about 1808; Michael Troutman, who was in business in 1814; and Samuel Simmons, whose mill was operating by 1820 (Bush et al. 1989:31; Holmberg 1991:9-10; O'Malley 1996:23-24; O'Malley et al. 1980:35).

One of the area's more prominent gristmills was Garnett's Mill on Otter Creek. As noted earlier, it was established as early as 1806 by Christopher Grable on land owned by Philip Barbour. While Grable identified himself as the mill's proprietor, it appears from early Hardin County tax and land records that Grable may have been a squatter, and that he may not even have known whose land he was occupying. William Garnett took over the operation in 1812, the same year Barbour's son sold it to William Vertrees. Despite the change in operator, some residents called it Grable's Mill as late as 1817. Garnett operated the mill as a tenant until buying the site from Vertrees in 1822. Garnett appears to have operated the mill quite successfully through the 1830s. Since tax records indicate that he owned several slaves, it is likely he used bondsmen to operate the facility. However, by 1842 he had run up a debt of $5,000 to one George Howard, who in turn had obligations to a William B. Jones. When he was unable to collect, Jones sued both Howard and Garnett, forcing Garnett to sell the mill to Howard for $2,500, which satisfied half of his debt. Meanwhile, Howard mortgaged the mill tract and other properties to Jones as security for his debt to the latter. While other details about Garnett's mill are scarce, the mortgage describes it as "a large water [powered] grist and saw mill (Holmberg 1991:37-38).

In the course of settling Jones's lawsuit against himself and Howard, Garnett was able to purchase four tracts of land in a July 1842 sheriff's sale, including the tract on which his mill stood. While the sale was not recorded until July 1846, control of the mill passed back into Garnett's hands. According to case documents, the mill site also included a distillery. After regaining title to the land, Garnett operated the mill for nearly five more years, until April 1851, when he sold it to James A. Withers, who owned and operated it until his death about 1886. During this period, it operated as J. A. Withers & Son. The 1870 federal census of manufactures indicates that Withers' saw milling operation had a daily capacity of 600 feet of sawed lumber and a daily gristmill capacity of 25 barrels of meal. Annual production is listed as 60,000 feet of lumber and 1,000 barrels of meal (Holmberg 1991:38-39).

Garnett's connection with milling did not end with his own mill. He and his wife Lucy had a large family, and their daughter Nancy married Isaac W. Overton, who in 1825 became owner of Overton's Mill, which had been erected 12 years earlier by his uncle, John Overton, Jr. The younger Overton actually acquired the property from Charles Fishback, who had purchased a half-interest in the site from John Overton eight years earlier. It is not clear if Fishback had an actual operating interest in the mill, but he did use his ownership of the property as collateral for loans. What is notable is that the deed transferring ownership from

Fishback to Isaac Overton twice refers to "mills" rather than "mill." Precisely what this means is not clear. Use of the plural form could mean that Overton was operating two mills. In the context of the milling operation of the time, it also could mean that the same structure provided both grist/flour milling and saw milling services. It is also possible that, given the mill's position between two tributaries of Otter Creek, more than one mill or wheel was erected. Again, that is not known. Whatever its configuration, Overton's Mill served as the center of the community of Plain Dealing and produced flour and meal, sawn lumber, and wood rolls (Holmberg 1991:23-26; O'Malley 1996:15-17).

Overton operated the mill until 1842, when he sold it to Samuel P. Sterrett, an experienced miller and former supervisor at Grahamton Mill, who recently had owned a small interest in that firm. During the next several years, Sterrett made several operational changes, including suspension of saw milling, possibly because Isaac Overton established a sawmill in the vicinity, and the addition of steam power as a supplement to water power. Between 1860 and 1870, he diversified the mill's operations by milling rolled wool, in addition to his flour and grist milling activities. Sterrett continued to operate the mill with his son Calvin until 1884, when he sold it to Virgil S. Long (Holmberg 1991: 26-27).

More important for its association than its industrial significance was Ezekial Field's mill near the L&N Turnpike at Poplar Springs. Field's mill was located within the present boundaries of Fort Knox. It is significant that the owner was the same Ezekial Field who was the brother of Reubin and Joseph Field, who were key members of Meriwether Lewis and William Clark's Corps of Discovery that explored the Louisiana Purchase territory. Ezekial Field died in 1858 at the age of 85 (O'Malley 1996:37).

By 1850, the three-county area (Bullitt, Hardin, and Meade) had at least 19 mills, which employed at least 46 men. This is not a comprehensive list, however, because the census did not include operations that showed an annual production value of less than $500. Hardin County had the largest number of mills, with 11, followed by Bullitt with five, and Meade with three listings. Many of the mills operating in 1850 were "merchant" mills, which specialized in grinding and shipping grain and grain products for the commercial market, as opposed to "custom" mills, which served local customers who brought their grain to the mill and picked it up when the job was completed. Water remained the primary power source for milling at mid-century, but several steam-powered mills were already in operation. Two mills had both grist and sawing operations, and a third complex ground grain, distilled liquors, and provided blacksmithing services (O'Malley 1996:11).

Figures reported in the 1860 census of manufacturing suggests a significant decline in milling operations as the number of mills in Bullitt, Hardin, and Meade Counties dropped to 12. However, examination of other data suggests that this apparent decline is more a result of undercounting than a large reduction in milling operations. Several other trends are evident in the numbers, such as the proportion of mills offering more than one service. In several cases, gristmill operators concentrated on grain processing during the summer and fall and then sawed lumber during the fall and winter. Since increases in value for both processed grain and lumber were substantial during this period, keeping one's mill in operation throughout the year could increase profits significantly. In addition, mills appear to have increased in size and capacity, with an accompanying increase in labor force requirements, as the number of individuals who report milling-related increased to 120. Most mills continued

to use water as their primary source of power, with only three using steam. However, one used waterpower to grind wheat, steam to grind corn, and horsepower to grind rye and buckwheat (O'Malley 1996:12).

Iron Industry. The iron industry in the late eighteenth and early nineteenth centuries grew rapidly in Kentucky. Early settlers noticed the iron ore located at rock outcroppings in eastern and central Kentucky prior to the 1780s where the first ironworks of Kentucky appeared. Later, ironworks spread to the western part of Kentucky. In 1782, Jacob Myers bought land along a branch of Licking River, Bath County, and began the construction of a small furnace for smelting iron (Connelley and Coulter 1922). Jacob Myers manufactured 10-gallon iron kettles for sugar and salt making along with other items required by the Kentuckians. His iron operation reduced the need for settlers to order iron products from as far away as Virginia and Pennsylvania. This ironworks existed for nearly 50 years and played a significant role in the development of the iron industry in Kentucky. By 1830, Kentucky's iron production trailed only Pennsylvania and New York (Enoch 1997).

The settlers found that Kentucky had all the natural resources required for iron production. Iron ore, limestone, wood, and water for power were all necessary to have a successful ironworks. First, the furnaces and accessory structures had to be constructed from cut limestone. Then trees needed to be cut and burnt to make charcoal. Then the iron ore had to be removed from the ground and cleaned. Once the furnace was burning, it had to be tended day and night by an ironmaster. Once the iron became molten iron, it was channeled to a casting house where it was directed into sand trenches to form clay molds. From there, the iron was formed into kettles, plowshares, and other items. Finally, the slag waste had to be hauled away (Enoch 1997). Henry G. Enoch explains, "Mining, woodcutting, hauling, charcoal making, furnace charging and casting went on continuously as long as the furnace was in blast." (1997:39). An iron operation often depleted the surrounding forest within a few years. Consequently, new hauling roads had to be built to new stands of trees. The ironworks process never stopped until a furnace fire was extinguished (Enoch 1997).

While there are few reports of iron mining occurring in this region, it has been reported that iron was mined from Iron Mountain in Hardin County, currently on Fort Knox, in the mid-nineteenth century. The closest iron ore furnace to Iron Mountain was in Belmont in Bullitt County. This ironworks was in operation from the 1830s to the 1860s (Collins 1874: 101). The iron ore mined at Iron Mountain may have been hauled to Belmont for smelting.

Mineral Springs. Numerous mineral springs, the nineteenth-century counterpart to today's health spas, were located near springs and several salt licks. Among the more famous was Paroquet Springs, which was known for its mineral water. An old salt lick where salt had been manufactured about 1803, Paroquet Springs was reopened in 1838 as a watering place, under the ownership of John D. Colmesnil, a prominent Louisville merchant. The spa flourished through the Civil War years, and in 1871 a group of Louisville businessmen purchased it from the aging Colmesnil and built a large, two-story hotel that had two wings and a three-story octagon in its center front, all of which was surrounded by verandas on both levels. The new facility could accommodate 500 guests. However, on May 16, 1879, the new hotel burned to the ground, and Paroquet Springs went into decline (Kleber 2000:694; O'Malley et al. 1980:34).

Another popular watering place was Tioga Spring (also spelled 'Tiouga') and served as a local vacation and recreational destination during the nineteenth and early twentieth century. The spring around which the hotel was built is situated atop the Muldraugh Hill escarpment approximately three miles southwest of the town West Point, Kentucky. Local oral tradition states that the hotel was established before the Civil War; however, the earliest identified historic reference to the site as a hotel appeared in the Breckenridge News in 1893 (Mills 2012). In a trail brochure produced by the US Army Armor Center and Fort Knox (n.d.), the antebellum patrons of the hotel are described as "wealthy Mississippi and Louisiana planters" who sent their families (accompanied by their slaves) north to escape the malarial threat of summer. Gary Kempf and C. Leslie Dawson have published similar descriptions of the site and its patrons in articles for *Ancestral News*, a local historical newsletter (Kempf and Dawson 2009a; Kempf 2010; also cited in Kempf 1999:25, 259; and O'Malley et al. 1980:35). Archaeological investigations conducted at the Tioga Springs Site (15HD914) suggest that it was occupied as early as the 1830s. It is unclear at this time, however, if the site was being operated as a hotel before the onset of the Civil War.

3.2.5 The Civil War

By the mid-1850s, the area encompassed by Hardin County had grown quite prosperous, with a healthy mix of agriculture, commerce, and industry in communities like Elizabethtown, West Point, and Stithton. When the Civil War erupted in April 1861, the Kentucky General Assembly voted to remain neutral. Caught between the northern Union and southern Confederacy, Kentucky supplied approximately 90,000 men to the Union army and up to 40,000 for the Confederate cause. Hardin County, along with the surrounding counties, often saw Union and Confederate armies pass through the area and, periodically, occupy it. Both sides used the Louisville and Nashville Turnpike as a main thoroughfare through this country. The sentiments of citizens in Hardin County, where large landholders owned a considerable number of slaves, tended in favor of the Confederacy. However, Union forces controlled the area militarily. No major battles were fought in this area; however, at times Union and Confederate guerillas attacked those who were not loyal to their cause. Rebels hoping to discourage their support for the north attacked several small communities with businesses loyal to the Union (Bush et al. 1989; Kempf 1999; McClure 1979).

Union forces constructed several earthen forts on Muldraugh Hill along the Louisville and Nashville Railroad. This railroad was a major line of supply for Union troops occupying the south and therefore remained extremely vulnerable to attacks from General John Hunt Morgan's cavalry and rebel partisans.

The most notable fort constructed in this area is Fort Duffield, which overlooks West Point and the Ohio River. In October 1861, General William Tecumseh Sherman established a supply base at West Point. West Point was a natural choice due to its location near the river and the L&N Turnpike. General Sherman chose a hill overlooking West Point, known as Pearman Hill, to fortify his position. He ordered five regiments to construct earthworks on the hill. The 9th Michigan Infantry was placed in charge of the construction, and they named it Fort Duffield in honor of their regimental commander. Once the fort was complete, several companies remained at the fort while the other regiments moved southward. Labeled by the Louisville newspaper as the "Key to Louisville," the fort saw no action against Confederate forces. General Morgan avoided the fort due to its great defenses. Sixty-one

men of the garrison died of disease and were buried in a cemetery by the fort. In 1918, the Army purchased the land Fort Duffield had been built on. In 1978 Fort Duffield was given to the town of West Point by the US Army, and it is now open to the public as a community park (Briggs 1955; Kempf 1999, O'Malley 1999).

During the time of the Civil War, the Armies of both the north and South were known to use the L&N Turnpike. A portion of the tollgate record books kept by George Fisher was published and shows the presence of Union activity on Fort Knox's section of the L&N turnpike in the early years of the war. The 37th Indiana Volunteer Infantry is recorded as passing through on their way from West Point to Bacon Creek with 43 wagons on November 16, 1861, and 107 more wagons on December 9. In December 1862, more entries were made for military movements on the turnpike by unknown regiments. Other December 1862 entries included 800 Cavalry and 22 horse ambulances passing through on the 9th, 600 cavalry on the 11th, and 1600 cavalry on the 14th (Kempf 1999:251).

In 1862, Confederate General Braxton Bragg led an offensive to drive the Union forces from Kentucky. Many thought he would attempt to take the city of Louisville, an assembly point for the Union Army, to drive the Union troops onto northern soil. The city prepared for the attack, building up fortifications and evacuating citizens. During this time, the Confederates won a victory at Munfordville, 80 miles to the south, resulting in the surrender of the Union forces in that area on September 17, 1862. General Don Carlos Buell's Union forces hurried from Nashville to Louisville to stop the possible attack on that city by General Bragg. They arrived well in advance of the Confederates by way of the L&N Turnpike. General Bragg intended to continue north in the direction of Louisville and Cincinnati, perhaps considering the L&N Turnpike as a possible route through present day Fort Knox. However, with General Buell in Louisville, the Confederates had no choice but to abandon their plans of capturing Louisville. Instead, General Bragg chose to reinforce his Army and then turned towards Bardstown (*Harper's Weekly* 1862 article reprinted in Jones 1995; McClure 1979). The two Armies finally met at Perryville, Kentucky.

When General Bragg's Army raced to Louisville, two reporters from Ohio were witness to the mass movement of Union troops from Nashville to Louisville on what is now Fort Knox. In a September 30 article from the *Cincinnati Commercial Courier*, a reporter noted the numbers of soldiers marching, "And now commenced the living stream that flowed incessantly by for two days and half. In cities, people think a regiment of soldiers interminable, but what would the citizens of Cincinnati say, to more than 10 miles of soldiers, on the march -infantry, artillery, and cavalry -filing past, regiment after regiment" (*Cincinnati Commercial Courier*, September 30, 1862). Around Bloomington (New Stithton) the reporters could go no further due to the amount of soldiers and wagons blocking the road. The reporters took a new route, needing to get around the mass of troops heading to Louisville. There was the danger of encountering guerilla activity away from the troops, but the reporters risked a new route by traveling over to Garnettsville and north to West Point (*Cincinnati Commercial Courier*, September 30, 1862, reprinted in Jones 1995).

On December 26, 1862, Confederate General John Hunt Morgan and his raiders approached Elizabethtown and burned two L&N Railroad bridges. The following day, Morgan and his troops surrounded the town, placed artillery on Cemetery Hill, and opened fire on the Illinois Infantry regiment stationed in the town. Outnumbered and under-

equipped, the Federal troops finally waved the white flag of surrender. On the 28th, General Morgan vacated Elizabethtown and destroyed the L&N trestle at Muldraugh Hill, disabling it for several months. Later, General Morgan made another foray through the area in July of 1863. His route took him across the Rolling Fork River past Stithton and Pleasant View to an overnight camp at Garnettsville before reaching the Ohio River at Brandenburg. Using two captured steamboats, the *John T. Combs* and the *Alice Dean*, he ferried his troops across the river and led them on an extended raid across southeast Indiana into Ohio (Kleber 1992:290, 623, 660; Kleber 2000:310; O'Malley et al. 1980:37).

Union forces controlled this area for the remainder of the war, and there was little further conflict between regular Union and Confederate forces in the vicinity. However, Confederate sympathizers formed underground guerrilla units that sometimes wreaked havoc on Union sympathizers and businesses that supplied Federal troops. Other bands sought to represent the northern cause, but in either case, most simply were bandits who preyed on the local populace (Jones 1995; O'Malley et al. 1980:38).

3.2.6 The Post-Civil War Decline

During the decades between the end of the Civil War and the beginning of the twentieth century, Hardin and surrounding counties fell into a general state of economic decline, especially in relation to the states to the north and northwest. In part, this condition was reflected throughout Kentucky, because the state was left behind in a period of rapid industrialization and urbanization. Individual sections of the state had their own problems, and Hardin County was no exception. A major problem was land characteristics that severely limited long-term agricultural expansion, as some of Hardin County, especially in the Fort Knox area, are characterized by a highly dissected topography with limited arable land. Much of Hardin County is characterized by karstic topography, including underground drainage, moderate to severe erosion, and only moderate crop yield (O'Malley et al 1980:38; Whitaker and Waters 1986).

Compounding the region's limited agricultural potential was a shortage of mineral deposits and other resources suitable for industrial development. During the early 1890s, several natural gas wells were sunk in the vicinity of Wither's Landing and Rock Haven in northern Meade County near the Ohio River. Apparently, not enough gas was present to spur a significant rush to develop this resource. As a result of such conditions, large numbers of residents left the area during the closing years of the nineteenth century in pursuit of new opportunities. Many moved to Elizabethtown and Louisville, particularly the latter, which was experiencing a significant industrial expansion. This tendency was aggravated by external forces such as the burgeoning growth of large-scale textile plants in the East and South that captured markets once supplied by mill companies of this region. While the Civil War had a major economic and social impact in freeing the slaves, the area avoided the physical destruction dealt to most of the states that had seceded from the Union. However, because Kentucky's economy was so tightly interwoven with that of the Deep South, the Commonwealth suffered significantly, if indirectly, from the postwar poverty that retarded the development of its southern markets. Communities in Hardin County were no more immune to this impact than the rest of the state (Harrison and Klotter 1997:249-71; O'Malley et al. 1980:38).

3.2.7 Towns of the Area

To a great extent, patterns of daily life in the postwar years continued much as they had before the war. Because of generally adverse economic conditions, few communities grew significantly; but neither did many experience serious losses in population and business, except those by-passed by the expanded railroad network.

Some examples, though difficult to trace, are developments in the Hardin County communities of Tip Top, Easy Gap, and Wigginton. Tip Top, located about 18 miles north of Elizabethtown on the Chesapeake, Ohio and Southwestern Railroad, acquired a post office in April 1878. It served primarily as a shipping point for local dairy farmers, who sent milk to dairies in Louisville. At its peak, the local depot served three trains daily. In 1896, the only year it is recorded in a *Kentucky Gazetteer and Business Directory*, Tip Top had an estimated population of 60. It had numerous businesses that served nearby farmers, including two sawmills, one owned by carpenter George Elliott and the other by G. C. Scheible, who also owned a bone dust factory, served as postmaster, and co-owned a general store. Other agriculture-related businesses included W. G. Anderson & Company, cotton and flour mill; A. M. Curtis, nurseryman; J. M. Faris, produce dealer; William Fisher and Silas Hart, livestock dealers; L. Kindall, meat dealer; and W. B. Jones, lumber dealer (Kempf 1999:240, 242).

Easy Gap, a stop on Collis Huntington's Newport News and Mississippi Valley Railroad line, about 20 miles north of Elizabethtown, had a post office in 1891, thus earning it a place in the *Kentucky Gazetteer*. However, its only enterprises were a general store owned by H. H. Carr, who was also the postmaster, and saw mills owned by John McGrew and C. Pirle. Its population is not listed in the directory. Wigginton, also known as Pleasant View, was located about 19 miles north of Elizabethtown and four and a half miles south of West Point, midway between the Illinois Central Railroad and the Salt River. The town was named for Benjamin Wigginton, the Civil War guerrilla leader, a dry goods merchant and grocer who became the town's first postmaster in 1890. In 1891, Wigginton had all the earmarks of a small country village, with a population of about 50 people and such businesses as a meat market, two cattle dealers, a grist mill, a sawmill, and two dry goods stores, along with two carpenters and a blacksmith. The center of community life was Pleasant View Baptist Church, which was founded in 1858 with 22 charter members and at one time the largest congregation in Hardin County. In 1891, its pastor was the Rev. W. S. Hill (Kempf 1999:240-242, 394-395, 470).

3.2.8 The Early Twentieth Century

The twentieth century was a period of extensive change in the South, especially from the 1930s on. The South went from a poor, agriculturally-based region to the predominant economic and political region of the nation. One of the stimuli for this growth was the influx of federal money that created economic growth. Historian David R. Goldfield (1989:182) argues that during World War I, the federal government had discovered Southern cities and their environs as likely sites for shipyards and military bases. With these bases came more people and the needs that a larger population brings. However, the influx of military construction had actually begun earlier. With a sudden increase in volunteers for the Spanish-American War in 1898, the Army required a means of sheltering the recruits during training and then holding them until they could be transported to Cuba. Consequently, the War Department established a series of 29 temporary encampments across the United States,

with many located in the South. These sites were primarily temporary but were an early illustration of the influx into Hardin County of federal money that would intensify during the New Deal, World War II, and the Cold War (Cannan et al. 1995:51-55).

It was the massive federal expenditures and civil works of the New Deal and the military buildup during World War II that truly changed the South. Between 1933 and 1939, New Deal agencies sent nearly $2 billion into the South, resulting in a change of the physical landscape of the region. New schools, parks, government buildings, as well as dams, lakes and rural electrification were the results. Historian Carroll Van West (2001:5) states that the New Deal federal money in the south served to "modernize the state's public improvements as they also reformed citizens to function better in a modern world."

Neither economic organization nor politics provided success in agriculture; thus, scientific farming and diversification became more important means of strengthening a farmer's position in the late nineteenth- and early twentieth-century marketplace (Fite 1984). Given the area's economic woes at the beginning of the twentieth century, there was cause for some celebration in July 1903 when the Secretary of War notified Kentucky's Adjutant General that the area around West Point had been selected as the site for Army training maneuvers in October. These maneuvers were part of the larger modernizing of the American armed forces characterized as a part of the Progressive Era. Because of lessons learned in the Spanish American War and the US's new role as a world power, Secretary of War Elihu Root instituted several changes to the Army, including introduction of new weapon systems, training systems, and the introduction of a General Staff (Matloff 1969:343-350). Included in these changes were more professional training of the army units—both Regular and National Guard.

The prospect that a local community would be selected for this purpose appeared at least a month earlier when Major General John C. Bates led a delegation of military officials and civilian dignitaries to evaluate the area between West Point and Stithton regarding its suitability for military maneuvers (Briggs 1955; Kempf 1999:42, 144).

In early October, some 30,000 troops from cavalry, infantry, and artillery units in both the Regular Army and the National Guards of surrounding states began pouring into West Point, and for the next few days, the town and the surrounding area became known temporarily as Camp Young. West Point served as headquarters for the operations, and stables were established in the vicinity of Fourteenth and Elm streets. But training activities for both infantry and cavalry units were spread throughout the area surrounding West Point, ultimately resulting in the creation of the area's primary economic driver, Fort Knox (Kleber 1992:345; Kempf 1999:39-41, 144).

3.2.9 World War I and the Advent of Camp Knox

The decades of 1900 to 1920 were characterized by slowly rising agricultural fortunes, as the outbreak of the war in Europe and the subsequent involvement of the United States in World War I increased international demands for farm products. The war also spurred industrial growth, which helped create new markets for agricultural products as more people earned wages from industry and no longer produced their own food. Industrial growth also provided opportunities for some farmers to supplement their incomes with part-time wage labor (Fite 1984).

Throughout this period, the area continued to be dominated by small farms with owners or tenants often working part-time at other employment. This trend established during the Reconstruction period continued into the early twentieth century and brought about greater agricultural intensification, leading to increased soil exhaustion.

With the start of WWI, military maneuvering commenced near West Point once again. Camp Zachary Taylor was organized on the southern edge of Louisville to accommodate training for soldiers. Important as it was, however, Camp Zachary Taylor was lacking in one significant respect. As the war progressed, the Army was fielding a growing number of artillery units, and Camp Taylor lacked the space necessary for range areas. The land near West Point, which had been used in 1903, was well suited for this need. It had a suitable climate for training most of the year, and both rail and highway transportation systems served the area. At first, the government leased the land as an annex to Camp Taylor. But in May 1918, the War Department decided to buy land near West Point, including Stithton and other surrounding towns, and the following month, Congress allocated $1.6 million for that purpose. The site was named Camp Henry Knox in honor of George Washington's chief of artillery during the American Revolution. It was initially designated as a sub-post of Camp Zachary Taylor, with Brigadier General Charles B. Blakely as the first commander (Kleber 1992:345; Kempf 1999:31; RG 407, AG Project file, Fort Knox, 1917-1925, 601.1 [6-3-18] cited in Grandine et al. 1995:13).

While much of the expansion of Hardin County during the WWI and WWII are inextricably tied to the development of Fort Knox, the number and size of industrial developments in the area increased rapidly in the 1960s and 1970s due in part to the Elizabethtown/Hardin County Industrial Foundation which was founded in 1955, and with the strong leadership of key individuals including former mayors Richards, Bean and Pritchard (McClure 1979). Of particular note are the contributions made by former mayor and retired Colonel J. R. Pritchard. Pritchard's administration directed efforts from 1969 to 1980 toward the expansion of utilities, public safety, recreational facilities, and planning and zoning and at the same time increased the City's assets from $6,144,000 at the end of 1970 to $14,521,000 in 1976 (McClure 1979).

Largely due to 2005 BRAC (Base Realignment and Closure) actions, the economy of Hardin County remains largely dominated by the adjacent Fort Knox Military Installation. Approximately $1 billion in federal and state construction funds are scheduled for Fort Knox, and surrounding areas by the end of 2011. On post, new barracks, a dining facility and other structures supporting the new missions locating there, are part of an estimated $800 million to $900 million in new construction at Fort Knox. Recent and incoming groups of military personnel, include the F Company 3rd SARG, the 11th Theater Aviation Command Headquarters, the 19th Engineer Battalion, the 3rd Expeditionary Sustainment Command, the Human Resource Command, the 3rd Brigade, the 1st Infantry Division, the 9th Engineer Battalion, the US Army Accessions Command, and US Army Cadet Command, all of which will be housed at Fort Knox by 2012 (The Lane Report, found online at http://www.lanereport.com/articles/article.cfm?id=672).

4.0 Previous Archaeological Research

Previous archaeological research and archaeological site information presented in this chapter derives from a review of GIS, site file data, and previous technical reports maintained by the Office of State Archaeology (OSA) in Lexington, Kentucky. The background research and literature review was conducted by James C. Pritchard, RPA, with the assistance of GIS Specialist Niki Mills of Brockington and Associates and Christina Pappas of OSA. As part of this effort, we submitted a GIS support request to OSA on November 5, 2013. That request was completed by Ms. Pappas and provided to us on November 6, 2013. The Report Registration number assigned to this study by OSA is FY13-7860.

4.1 Previous Research

Though there was a general knowledge of Kentucky's archaeological heritage throughout the nineteenth century, scientific inquiries into these sites did not occur until the early 1900s. This was especially true of the region surrounding Elizabethtown. In fact, prior to the late 1970s and 1980s, little to no professional archaeological work had been conducted in Hardin County. William S. Webb and William Funkhouser, both professors at the University of Kentucky, provided the earliest professional archaeological study that included Hardin County (Webb and Funkhouser 1932). Webb and Funkhouser cataloged a list of reported archaeological sites for each of Kentucky's 120 counties and reported site locations in Hardin County on property now encompassed by the Fort Knox military reservation. The Webb and Funkhouser report, however, involved no field investigation and they provided no site maps or detailed area maps showing the precise location of the sites in their reports.

Extensive archaeological investigation in Hardin County did not commence until Congress passed the NHPA in 1966. Section 106 of the NHPA requires all Federal agencies, including military facilities, to identify archaeological sites and other cultural resources that might be impacted by federally funded or permitted construction projects or other potentially destructive actions. This legislation spurred a wave of cultural resource management surveys that began in the late 1970s. Currently, Fort Knox is one of the most extensively surveyed areas in Kentucky.

Hardin County falls within the Salt River Management Area (Pollack 2008). The management area is one of the smallest in terms of land area (less than 11 percent of the land area of the state); however, it has one of the highest site densities per square kilometer (0.28 sites/km2). According to the recently updated KHC volume *The Archaeology of Kentucky, Volume 1* (Pollack 2008), almost two-thirds of the sites within this management area were recorded prior to 1987, with many of them having been recorded by the University of Kentucky's major surveys at Fort Knox (Driskell and O'Malley 1979; O'Malley et al. 1980).

According to Pollack (2008), professional archaeologists have surveyed less than three percent of the area and two survey clusters are evident. The first cluster is the result of several projects being undertaken at Fort Knox (such as this study) and in the Taylorsville Lake area. The second cluster is centered on Louisville and Jefferson County. Only 10

archaeological sites in the Salt River Management Area have been listed on the National Register of Historic Places, while the majority of sites overall being prehistoric open habitations without mounds and historic farms.

Pollack (2008) identifies two major studies since 1987 that have been conducted within the Salt River Management Area and both have been conducted at Fort Knox. These include Sections 106 and 110 Phase I archaeological surveys in the Northern Training Complex (Training Areas 16, 17, and 18) and at the Wilcox Range (Pritchard and Pritchard 2004; Pritchard et al. 2005). Since 2005, Brockington has undertaken archaeology survey of over 25,000 acres in the Salt River Management Area at Fort Knox, with many of the Task Orders being larger and more complex than those previously noted for the area.

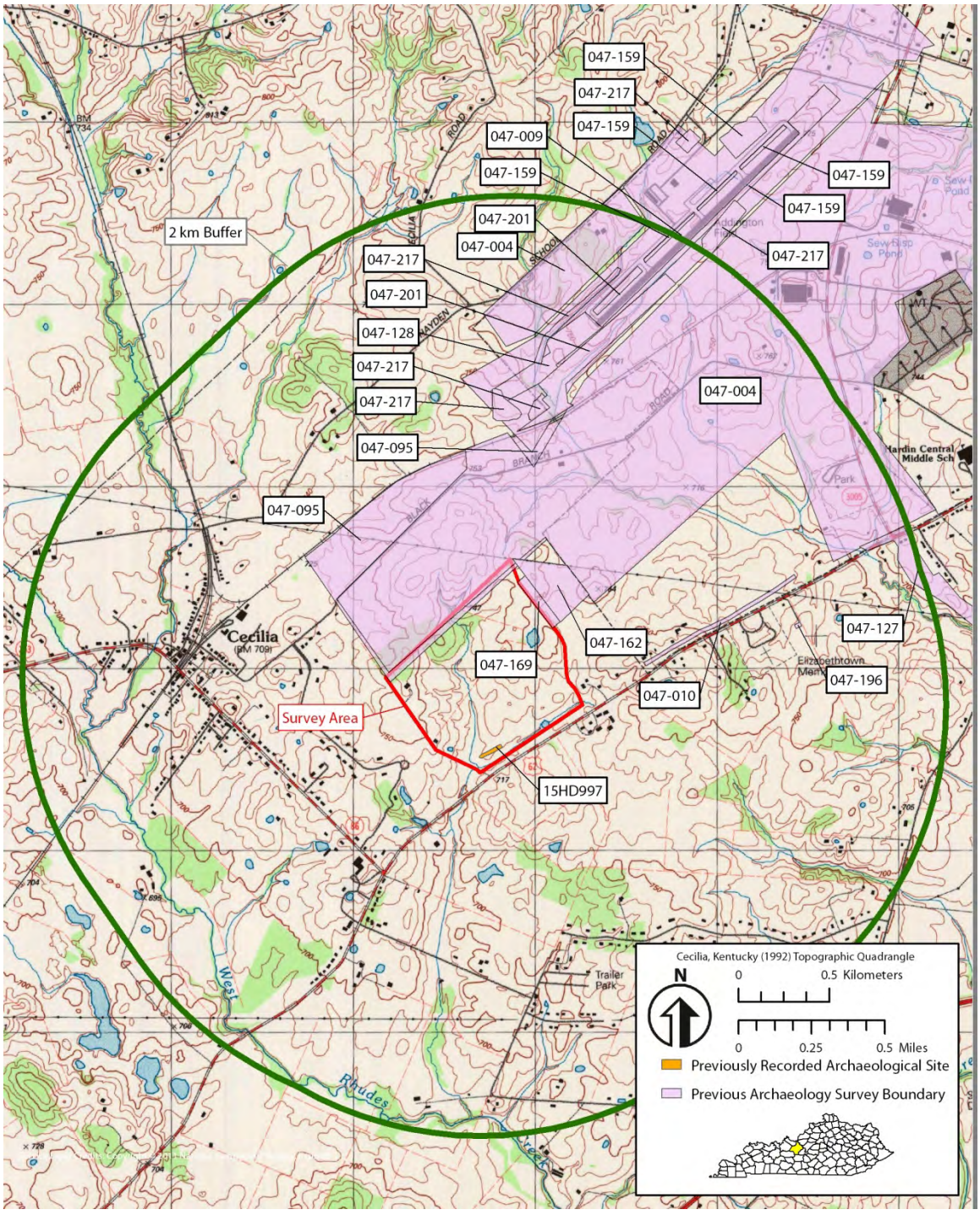
4.2 Previous Archaeological Surveys within 2km of the Project APE

Since the 1970s, 13 separate archaeological investigations have been conducted within two km of the project APE. These professional investigations include 12 Phase I archaeological surveys and one Phase II test excavation (Table 1, Figure 6). The previous studies have been completed for a variety of undertakings, including airport expansions (Schock 1977, Versluis 2008), industrial and other site developments (Fenwick 1976, Stallings and Ross-Stallings 1992), road extensions and realignments (Crider 2003, Schock and Foster 1975), electrical substation improvements (Gibson 2009, Pritchard 2008), and wastewater/storm water improvements (Brooks 1979, Schock 2009).

Table 1. Previous Archaeology Surveys within 2km (OSA files)

Year	Author(s)	Title
1975	Schock, Jack M. and Gary S. Foster	An Archaeological Survey of the Proposed Realignment of U.S. Highway 62, Hardin County, Kentucky
1976	Fenwick, Jason M.	An Archaeological Survey of the Proposed Lincoln Trail Industrial Park Site in Hardin County, Kentucky
1977	Schock, Jack M.	Archaeological Testing of Site 15Hd48 at the Proposed Elizabethtown-Hardin County Airport in Hardin County, Kentucky
1999	Schock, Jack M.	An Archaeological Survey of 305 Acres for an Industrial Park in Hardin County, Kentucky
2003	Crider, Andrea D.	Archaeological Baseline Study of the KY 3005 Extension in Hardin County, Kentucky
2004	McCorkle, Shane A. and Glyn D. DuVall	Phase I Archaeological Survey of the Proposed Addington Field Airport Extension, Elizabethtown, Hardin County, Kentucky
2008	Versluis, Vincent	A Phase I Archaeological Survey of Approximately 40 Acres for Proposed Improvements at the Addington Field Airport in Elizabethtown, Hardin County, Kentucky
2008	Pritchard, James	Phase I Archaeological Investigations of 17 Acres in Support of the Proposed Central Hardin 138-69 kV Substation and Taps, Hardin County, Kentucky
2009	Gibson, Elyse	3.5-Acre Addendum Report: Phase I Archaeological Investigations of 17 Acres in Support of the Proposed Central Hardin 138-69 kV Substation and Taps, Hardin County, Kentucky
2010	Adderley, Anthony	Archaeological Literature Review and Field Reconnaissance for the Proposed Verizon Wireless Joseph Avenue Telecommunications Tower Site in Hardin County, Kentucky
2010	Versluis, Vincent	A Phase I Archaeological Survey of Approximately 26 Acres for Proposed Improvements at the Addington Field Airport in Elizabethtown, Hardin County, Kentucky
2011	Versluis, Vincent	A Phase I Archaeological Survey of Approximately 22 Acres for Proposed Improvements at the Addington Field Airport in Elizabethtown, Hardin County, Kentucky

Figure 6. Previous Archaeological Surveys within 2km of the Project APE



As a result of the 13 previous Phase I survey investigations within two km of our study, archaeologists have identified and documented 12 archaeological sites. All sites previously identified were found during surface inspection of plowed croplands. Previously identified sites were distributed relatively consistently across the landscape and were found specifically

on dissected uplands (n=6) and undissected uplands (n=6). No other landform types are present in the project area APE. Sites were primarily found on Sonora soils (n=6), while Nicholson (n=4), Nolin (n=1), and Crider (n=1) soils were also present at sites documented within two km of our project. Site elevations ranged from 680 to 760 feet above mean sea level (amsl), with the majority (83 percent) falling between 720 and 760 feet amsl, and the average elevation for all sites being 733 feet amsl. Sites were found in closest proximity to permanent (n=4) and intermittent (n=6) streams, or wells (in the case of historic sites) (n=2), with all sites falling between 2 and 15 meters of a water source.

Table 2. Previously Recorded Sites within 2km of the Project APE

Site No.	Temporal Affiliation(s)	Landform	Soil Series	Elevation	Closest Water	Distance to Water (m)
15Hd376	Indeterminate	undissected uplands	Sonora	720	intermittent stream	6
15Hd377	Indeterminate	undissected uplands	Sonora	700	intermittent stream	2
15Hd51	Indeterminate	undissected uplands	Nolin	680	intermittent stream	4
15Hd50	Indeterminate	undissected uplands	Sonora	720	intermittent stream	8
15Hd48	Indeterminate	undissected uplands	Nicholson	760	intermittent stream	2
15Hd615	Historic Euroamerican	dissected uplands	Nicholson	730	well (historic sites only)	5
15Hd614	Historic Euroamerican	dissected uplands	Crider	750	well (historic sites only)	4
15Hd603	Historic Euroamerican	undissected uplands	Nicholson	750	intermittent stream	15
15Hd49	Indeterminate Prehistoric	dissected uplands	Sonora	740	intermittent stream	6
15Hd824	Indeterminate Prehistoric	dissected uplands	Sonora	740	permanent stream	5
15Hd823	Historic Euroamerican	dissected uplands	Nicholson	760	permanent stream	6
15Hd865	Indeterminate Prehistoric	dissected uplands	Sonora	740	permanent stream	8

The previously recorded sites are comprised of eight indeterminate prehistoric sites considered to be open habitations without mounds and four historic Euroamerican sites. Temporal or cultural affiliation could not be assessed for the prehistoric sites, and potential dates for historic sites range from 1801-2000. Of the archaeological sites within the 2km buffer of the project APE, only one of the sites is recommended as **eligible** (15HD823), six of the sites are recommended **not eligible** (sites 15HD49, 15HD603, 15HD614, 15HD605, 15HD824, and 15HD865), and the NRHP eligibility of the other five sites has not been assessed.

5.0 Field Methods and Research Design

The research design presented below is intended for use in reconnaissance level archaeological investigations. The primary purpose of such investigations is to identify any cultural resources that may be affected by the proposed activities. Following individual resource descriptions, a preliminary evaluation for all newly recorded archaeological resources potential for historic significance was made, based on the criteria for eligibility for the NRHP (36 CFR 60.6). These evaluations are provided in Chapter 7.

The primary goals of the archaeological survey were: (1) to evaluate all newly found sites relative to their research potential and NRHP eligibility; and (2) to recommend site management options. All encountered sites were evaluated for their demonstrated potential to contribute to local and regional research relative to current prehistoric and historic contexts.

5.1. Research Themes, Questions, and Datasets

Decisions concerning the significance, historic integrity, documentation, and treatment of historic properties can be made reliable only when the resource is evaluated within its historic context (National Park Service n.d.). General research themes used to contribute to our knowledge of the past include cultural chronology, technology, settlement, subsistence, and site patterning. To promote consistency in site evaluation, Brockington and Associates has adopted research themes, questions, and datasets developed by Pollack (2008). These research datasets derive from several middle-range theoretical and methodological studies conducted in Kentucky during the 1980s (and later refined and expanded over the past 20 years), and include artifact studies, chronological studies, pattern recognition studies, status studies, zooarchaeological studies, and thematic site type studies. To further expand upon the general research themes outlined by Pollack (2008), Brockington and Associates has adopted and further expanded specific research questions developed and applied by Parsons, Inc. (Bupp et al. 2005:3-1 through 3-6) during their 2005 archaeological investigations at the Indiana Army Ammunition Plant in nearby Clark County, Indiana. These evaluation criteria for prehistoric and historic period sites are duplicated below in Tables 3 and 4 (Bupp et al. 2005: Tables 3.1 and 3.2).

Table 3. Prehistoric Research Themes, Questions, and Datasets

Theme	Research question	Dataset
Chronology	Does the variability in projectile point styles reflect functional differences or chronological differences?	Information needed to assess chronology includes securely dated feature contexts or stratigraphic contexts (with datable organic materials) with associated projectile point types and ceramic types.
	What types of projectile point types are consistently associated with ceramic types?	
Lithic Technology	What types of lithic material procurement strategies were used?	Information needed to assess lithic procurement strategies and production technologies includes identification of local and non-local material types, distances to specific lithic source locations, presence or absence of cortex, type of flaking debris and cores and comparison of tool types with material types (e.g., curated tools of non-local materials or expedient tools of local cobbles).
	Were different types of lithic reduction used based on raw material type (i.e. quarried material vs. cobble collection)?	Information needed to assess functionally discrete tool kits includes discrete tool types and tool kits from different types of sites with single components.
	What types of tool kits were manufactured and used during the site occupations?	
	Was lithic material selected based on tool type produced?	
	Are functional distinct tool kits associated with different types of sites?	
Ceramic Technology	What manufacturing variability occurs within ceramic types?	Information needed to assess ceramic technology includes adequate samples of ceramic types containing information on temper, inclusions, manufacture (technique [modeling or coil], thickness, firing), surface treatments (both interior and exterior), and decoration.
	What variability occurs in surface treatment within ceramic types and does it reflect manufacture or social identifiers?	Information needed to assess cordage variability includes adequate samples of ceramic types exhibiting cord marks or net impressions to examine cordage twist and net construction.
	Does the variability of cordage twist within and between ceramic types demonstrate ethnic group affiliations or regional interaction patterns?	
Intrasite Patterning	Household Settlement Patterns- What types of house forms exist?	Information needed to assess household settlement patterns includes intact subsurface features with associated living floors.
	What kinds of variability may be expected in house forms?	Information needed to assess community settlement patterns includes groups of associated features such as intact living floors, postholes, thermally altered stone concentrations, and discrete activity areas.
	Community Settlement Patterns- What types of features are interrelated in consistent patterning that may represent household clusters?	
	How are household clusters associated and patterned within the community?	
Settlement Systems	What types of sites occur on the landscape and what environmental zones are they associated?	Information needed to assess regional settlement patterns includes site and resource location information; floral and/or faunal remains that are seasonally discrete.
Subsistence Systems	What types of subsistence information can be derived from flotation data?	Information needed to assess subsistence practices includes preserved floral and faunal remains and food processing tool kits.

Table 4. Historic Research Themes, Questions, and Datasets

Theme	Research question	Dataset
Chronology	Does the variability in ceramic types reflect functional differences or chronological differences?	Information needed to assess chronology includes securely dated feature contexts or stratigraphic contexts associated with datable ceramics types, glassware, and diagnostic artifacts.
	Was the site occupied during the protohistoric period by Native Americans?	
Domestic Economy	What did the occupants eat? How did they make a living?	Data include securely dated feature contexts or stratigraphic contexts associated with food remains, domestic trash, and privy fill, and pattern analysis of the assemblage of artifacts; and spatial analysis of the artifact and feature distributions.
	Was the site producing any products for use or sale?	Data includes evidence of manufacturing on site from datable features or contexts such as forges, workshops, and activity areas, with assemblages including tools, raw materials, finished products, refuse, and/or wasters from manufacturing activities.
	Did the occupants participate in local, regional, or extra-regional trade?	Trade evidence can be in the form of ceramic, glass, tools, or other artifact classes that are identifiable to country/region of origin.
	Do preferences for types of material culture reflect consumer choice (a conditioned pattern of artifacts present?)	Consumer choice and social category are addressed with a large assemblage of data, including artifacts, often of ceramic and glass that are identifiable by artifact, type, cost, and origin.
	What markers of social groups including ethnicity, socio-economic class, religious group, race, gender, or other subculture are present?	Large data sets of a range of artifact types and features such as ceramics, glass, personal items, storage pits, refuse disposal areas, structures, and other features that may indicate membership in a specific social identity.
	Is there documentary evidence for slavery? If so, in which economic activities did they participate? Is there archaeological evidence for slavery? What distinguishes slave vs. non-slave activity areas and artifact assemblages?	
Agricultural Practices	Did the occupants participate in agriculture or raise stock? Do their techniques and structures reflect type of agricultural practices used? Were standard methods used or were novel, unusual, or innovative methods employed? Are the practices affected by income, class, ethnicity, origin, or religion of the occupants?	Data include reconstruction of cropping strategies, soil enrichment methods (soil chemical analysis) vegetation (paleobotanical data) and architectural patterning and spatial analysis of buildings, features, and artifacts.
	Is there evidence for farming/agrarian life adaptations made in this marginal environment (Knobs Region)?	
Vernacular architecture	Does the architecture present reflect the presence of master crafting and formal design or utilitarian functionality and local vernacular, or a combination?	Architectural features providing data on form, use, construction methods, materials, layout, and function of structures.
Industrial economy	Did occupants produce, distribute, or sell goods, materials, or services for use beyond the household? Were they active in acquiring raw materials for manufacturing?	Data includes evidence of manufacturing at the site in quantities beyond that needed for household consumption from datable features or contexts such as forges, workshops, and activity areas, with assemblages including tools, raw materials, finished products, refuse, and/or wasters from manufacturing activities.
Landscape	How was the landscape altered or manipulated to demonstrate mastery over economic, political, social, or natural circumstances?	Data include spatial information on modification of the physical environment of a site, reconstruction of vegetation (paleobotanical data), map data and GIS- analysis of spatial patterning of features.
Regional Settlement	How did Euro-American and historical Native-American settlement of the site, locality and region proceed?	Information on the initial post-contact settlement of the site, including temporally sensitive assemblages of diagnostic artifacts and features from a range of sites across the region.
Social History	How does the household reflect the social and cultural mores and practices of the time period in the area, region, state, and country?	Large data sets of a range of artifact types and features such as ceramics, glass, personal items, storage pits, refuse disposal areas, structures, and other features that may indicate membership in a specific social identity.

5.2 Pre-Field Planning

The location and boundaries of the project APE was provided by the EHCIF. to Brockington graphically on the engineering drawings. Modern USGS topographic maps and historic mapping relevant to the study area were examined prior to commencement of field activities. Maps representing individual survey parcels were created for the purposes of planning and directing daily field tasks. In many cases, individual survey parcels were broken up into sub-parcels in order to facilitate survey efforts.

5.3 Survey Methods

The archaeological survey methods employed during this investigation primarily involved the excavation of shovel tests on a 20–m grid within designated survey parcels. Survey intervals were reduced to 10 m once cultural materials and/or features were identified. Visual surface inspections were also employed in areas of good surface visibility (>25 percent soil exposure) and in areas suspected to contain evidence of cultural features at ground surface (e.g., historic features such as foundations and cisterns). To establish a survey grid, the field crew navigated to individual survey parcels through the aid of hardcopy maps (aerial and topographic) and with a handheld global positioning system (GPS) unit (Trimble GeoExplorer XT 2005). Once an origin for the survey grid was selected, all shovel test locations were defined based on crew members utilizing a compass to pace the appropriate direction and distance to the next survey grid location (i.e., shovel test location). Survey transects were established along the centerline of each survey parcel (i.e., proposed utility right-of-way). A single transect was excavated the length of each individual alignment and if necessary, shovel tests locations were offset in order to account for previous disturbances or existing utilities. Shovel tests located within paved streets or sidewalks were not excavated.

All shovel tests were excavated between 30 and 35 centimeters (cm) in diameter and excavated to a depth of at least 10 cm into sterile subsoil. Care was taken to maintain a consistent diameter from top to bottom of each shovel test. Excavated soils were screened through one-quarter-inch hardware cloth, and any identified or suspected cultural materials were collected. A record of each shovel test loci was generated using shovel test forms that include information on content (e.g., presence or absence of artifacts, artifact descriptions) and context (e.g., soil color and texture descriptions, depth of definable soil levels, observed natural and cultural features). Crew members flagged and labeled all positive shovel tests (i.e., tests where artifacts were recovered or features were identified) for relocation and mapping purposes. Once cultural materials were identified and collected, they were packaged in re-sealable acid-free artifact collection bags. Artifacts bags were labeled with discrete provenience, including project name, field site number, and transect/shovel test designation (or specific Cartesian grid coordinates). All cultural material recovered from positive shovel tests was collected with the exception of obviously recent objects such as beverage cans, modern bottle glass, aluminum pull tabs, munitions, or floatable jetsam. Additionally, artifacts identified as brick, limestone rubble, and coal were not collected. The presence, distribution, and density of these artifact types was noted on shovel test records, site maps, and in field notes.

5.4 GIS/Spatial Analysis

All geographic data was created, processed, and analyzed using ArcGIS 10.1. Site maps were digitized from hand-drawn sketch maps and supplemented with natural and cultural features represented on historic maps and modern aerial imagery. Aerial imagery was primarily acquired through ArcGIS GIS Servers online (http://services.arcgisonline.com); specifically the World Imagery, ESRI Imagery World 2D, and USA Topo Maps. Additional natural and cultural data (e.g., elevation, soil, geology, and roads) was acquired from the Kentucky Geography Network (http://kygeonet.ky.gov/). All data was created, edited, analyzed, and presented using Universal Transverse Mercator (UTM) coordinate system, North American Datum 1927 (NAD27).

6.0 Materials Recovered

6.1 Prehistoric Artifact Analysis

Brockington recovered 1 flaked stone artifacts from site FS 4423-001 during the Phase I survey. This was the only prehistoric cultural material recovered during this survey. Collected stone artifacts were subjected to three types of analysis: morphological, technological, and functional. The goals of analysis are:

- delimiting the spatial patterning of tool-manufacturing loci;
- discerning patterns in the use of expedient and formal tools;
- documenting differences and diachronic changes in lithic production technologies among the cultural components represented at the site;
- modeling raw material procurement and use; and
- assigning formed hafted bifaces to established culturally or temporally diagnostic types for relative dating purposes.

The analysis of stone artifact morphology was conducted in three stages. First, all artifacts were sorted into three broad groups according to their method of production. Stone artifacts include flaked stone, ground stone, and miscellaneous stone artifacts. Flaked stone is defined as the products and by-products of the manufacture and maintenance of stone tools produced by percussion and/ or pressure-flaking techniques. Artifacts assigned to this class must exhibit at least one of the following attributes: flake scars, striking platforms, or bulbs of force.

Second, artifacts were sorted into one of four general classes: core, debitage (flaked stone waste products), implement (flaked stone and ground stone), and miscellaneous (raw material and FCR).

Finally, formed artifacts were described and assigned to recognized stylistic types (e.g., Fort Ancient) that are culturally or temporally diagnostic. Typological assignments were made based on several morphological and metrical attributes. The collected attribute data include measurements of artifact size, measurements of specific attribute elements, such as hafting elements and blades; and specialized working element morphology; basal preparation; and the extent and position of flaking.

This section describes the lithic artifacts recovered during the Phase I investigations. The purpose of this analysis is to provide an inventory and an analysis of the recovered materials. Analysis of the recovered lithic artifacts included flake debris analysis and technological analysis of the modified implements. The goals of this analysis were to (1) provide information concerning the lithic technology utilized by the site's occupants, (2) explore site use through the lithic artifacts recovered, and (3) explore the intensity of occupation for the components represented at the sites. Flaked stone tools and the associated debris (debitage)

generated during the production of such tools has always been a core element in the analysis and resulting understandings of a site's formation, occupation span, and usage.

Brockington and Associates has developed a lithic analysis methodology based on a set of fundamental questions that directly relate to archaeological investigations conducted in the southeastern and mid-south portions of the United States. The methodology employed in lithic artifact analysis begins with the classification of lithic cultural material into three general categories based on specific morphology: cores, debitage, and tools. For each artifact grouped into one of the three categories, count, weight, material type, thermal alteration if present, and the portion are all recorded variables.

Tool manufacturing is viewed as a set of analytical categories positioned along a technological continuum at the site and/or regional/survey area level. When reduction and tool production are considered in such a context, differences in the diachronic change in lithic production strategies and technologies among the identified cultural components represented at the site(s) can be addressed. Along a similar line, a paramount tradition in southeastern archaeology is the process for assigning formed projectile points to established culturally or temporally diagnostic types for relative dating purposes. In order to address and achieve these goals, Brockington and Associates employs a lithic analysis program that is focused on four primary analytical objectives: raw material type and procurement, lithic reduction through debitage mass analysis, tool production and morphology, and ground stone artifact production.

6.1.1 Raw Material

The first consideration pertains to prehistoric procurement and utilization of lithic raw material. Based on categories of raw material, analysis attempts to delimit the spatial patterning of debitage and tools, and their placement within a reduction sequence. In a broader perspective, a strong understanding of lithic raw material of the southeastern United States allows the analyst, as Odell states, "to derive a large amount of useable information for a reasonable expenditure of effort. In addition, Odell suggests, "the subject itself will force you to become intimately acquainted with your region" (2003:13).

The goal of studying prehistorically utilized raw materials is twofold. First, the identification of raw material utilized within a prehistoric site allows the examination of a site's relationship to the surrounding region by identifying usage patterns between local, intermediate, and non-local lithic resources. Additionally, with a strong understanding of the spatial relationship between an archaeological site and lithic raw material sources, GIS modeling is utilized in order to increase understanding of native population's behavior for acquiring and utilizing local and non-local lithic resources. Furthermore, variability and quality of the raw materials identified through archaeological survey or investigations, is instructive for understanding the duration and intensity of site occupation (Andrefsky 1998).

Prehistoric archaeological sites located in the southeastern United States often maintain a wide variety of raw material types within its lithic assemblage. Each material type identified during artifact cataloging is recorded as its own data set. Commonly, prehistoric groups in the southeast utilized two primary raw material types for flaked stone tool production: chert

and quartz. Chert is a silica residue, compact cryptocrystalline or microcrystalline variety of quartz originating from a sedimentary context. Found within limestone deposits, chert is often a fine-grained material producing concoidal fractures (Andrefsky 1998, Goad 1979). Chert varieties and appearances are quite varied across the southeast. Quartz is also defined as a macrocrystalline and cryptocrystalline silica, however, quartz is understood as a nearly pure form of the material (Jones 2006).

Each Brockington laboratory facility has developed a standardized set of raw material categories developed from studying local and regional geological formations and processes. Physical properties maintained by all raw materials are evaluated through a set of analytical categories (color, translucency, inclusions, texture, cortex, and flaking properties) as proposed by Luedtke (1992) and Randall (2000). These categories are used during lithic analysis and to assess field collected raw material utilized as a laboratory type collection. This foundation in sourcing major raw material types allows for a much stronger understanding of the geographic location of chert bearing geologic formations, prevalence of usage, and preferred source locations of lithic material by prehistoric groups.

Lithic raw material and artifacts, found within an archaeological context, often maintain characteristics that coincide with lithic material that has been thermally altered. In the evaluation of possible heat-treated specimens, color change, thermal shock alteration, and improved flaking characteristics are all considered important diagnostic attributes (Domanski and Webb 2007). Visual inspection is often augmented by experimental thermal alteration studies conducted by Brockington and Associates on material maintained within our raw material collection.

6.1.2 Flake Debris Analysis

Debitage includes the by-products from the manufacturing and maintenance of flaked stone tools and consists of all pieces of lithic material which exhibit evidence (e.g., platforms and bulb of percussion) of intentional removal from a parent mass (e.g., core or biface) and display no evidence of having been used or intentionally retouched. All recovered debitage is size graded using a set of screens with graduated sizes of ¾-inch (25.4 mm), ½-inch (12.7 mm), and ¼-inch (6.4 mm) and analyzed using the mass analysis technique as outlined by Ahler (1989).

In basic terms, once material is processed through a set of nested screens, each size category is sorted by raw material type. Next, these raw material groupings are further categorized by debitage type (e.g., flakes, shatter, etc.). All identified debitage is then sorted in regards to primary, secondary, and tertiary flaking attributes. Brockington and Associates laboratories utilize mass analysis techniques for debitage studies allowing for the identification of general trends in raw material reduction, lithic tool production, and frequency of utilization throughout occupied periods. Mass analysis is efficient in developing large data sets that address site type, site usage, and insights into potential lithic production strategy(s) utilized by inhabitants of the site.

6.1.3 Flake Stone Tool Production and Morphology

Flaked stone tool artifacts represent the results from a lithic continuum that symbolizes the reductive nature of stone tool production (Andrefsky 1998). Because lithic technologies are reductive in nature, it is possible to categorize all stone tools and their byproducts as part of a linear system encompassing raw material acquisition, tool fabrication, use, and discard (Bradley 1975; Collins 1975). Based on this premise, this step in the analysis is directed toward further classification of morphological types within the constructs of a technological system. The production stages are defined as follows: (I) raw material, (II) initial reduction, (III) primary shaping, (IV) secondary shaping, and (V) reworking.

Artifacts assigned to the raw material stage are viewed as stone masses suitable for reduction and may exhibit only simple breaks that suggest initial testing of the material. Initial reduction specimens exhibit large, irregular scars, which tend to indicate attempts to produce flakes, cores, or early stage bifaces. Primary shaping involves deliberate change in overall shape of the artifact with thinning and development of consistent size and form. Specimens in the secondary stage are characterized by edge sharpening, beveling, serration, and notching, which are usually associated with projectile points, hafted bifaces, and drills. Intensive basal modification occurs in the form of a haft element or other basal preparatory work necessary for attachment is completed. The final stage is reworking, which involves the rejuvenation of working edges or recycling of a tool into a new form.

Within this analytical scheme, all lithic tools are first divided into formal and informal analytical categories. For clarity, formal tools maintain a standard morphology that is a recognizable style, exhibited across a clustering of often temporally/culturally associated hafted bifaces and projectile points. Formal tools exhibit intentional modification relating to a particular function or task, regulated by both style and technological considerations imparted by the toolmaker during production. Tools composing this artifact category may include hafted bifaces, projectile points, hafted and unhafted drills, blade and knife-like tools, and curated ground stone objects.

Informal lithic tools are artifacts that, while often fabricated for a specific function, are expedient in nature, presumably utilized for a single task or specific need, and are produced on an as-needed basis. Additionally, a tool may start out informal and eventually become a formal tool (e.g., a preform transitioning into a hafted biface). Specific artifacts relegated to this grouping of lithic tools includes some bifaces, preforms, flake tools, and other lithic material maintaining intentional retouching attributes and/or evidence of utilization. Often formal and informal lithic tools represent two separate analytical and technological trajectories.

As such, these analytical designations function to separate and classify, at an early stage in the analysis, two different technological paths. These designations also, depending on the overall tool assemblage, allow for observations pertaining to the transitioning of early stage bifaces into formal lithic tools when compared with tool production stage.

Analysis of all lithic tools is conducted macroscopically. All complete tool specimens and fragments maintaining critical attributes are subjected to a standardized set of measurements. Developing a standardized set of recorded measurements can also help define fragments of

diagnostic artifacts when key attributes are present. These recorded measurements help in establishing and contributing to ongoing data sets striving to investigate tool size and variability within a group of temporally/culturally associated tools. All flaked stone tools are first placed into a morphological class. This is achieved by inspecting the tool for specific attributes inherent to a particular tool. Each artifact is then described in terms of condition. This includes describing the completeness of a tool or, if fragmentary, describing the remaining portion. Also considered at this point in the analysis are certain artifact conditions that may denote abandonment of a tool during its production. This allows all bifacially reduced tools to become linked with a specific stage of production (i.e., manufacturing, reworking, and discard).

Type names assigned to each tool from an assemblage are not necessarily intended to imply function, but names common in the literature are utilized to facilitate communication and comparative efforts. Brockington and Associates strives to produce analytical data generated from intensive laboratory analysis that is both systematically collected and as a whole forms a comparable data set.

6.1.4 Prehistoric Materials Recovered

Overall, the project team recovered one prehistoric artifact and 27 historic artifacts over the course of the Phase I investigations at 4423-001 and isolate 4423-ISO-001. The prehistoric material consists of a single chert flake fragment at Site FS 4423-001. The lithic assemblage for the project is a single flake fragment (n=1).

4423-001

Brockington and Associates recovered one prehistoric flake fragments during Phase I investigations at 4423-001, manufactured from St. Louis chert. The size-grade of the specimen is categorized as 0.25-inch. Based on the analysis, it appears that the material was manufactured at some stage within the flaked stone reduction sequence. Little more can be deducted from such a limited collection of material. Historic materials recovered from 4423-001 include 24 artifacts. These include cut nails (n=9), window glass fragments (n=6), whiteware fragments (n=4), glass container fragments (n=2), one pearlware fragment, one unidentifiable clear glass fragment, and one iron toy wheel fragment.

6.2 Isolated Finds

Isolated finds are identified as such when a single artifact is recovered from one locale or a limited number of artifacts are located within one shovel test within a locale. In both cases, Brockington and Associates initially identified the find using standard 30-by-30-centimeter shovel tests on a 20-meter grid. Isolate boundaries were delineated by supplementing the excavations with shovel tests in 10-meter intervals out from the positive. These tests were carried out to two negative tests in each direction from the positive. Isolated finds represent

a lack of potential to further inform us about cultural history or land use in Hardin County. Therefore, we recommend 4423-ISO-001 Not Eligible for listing under Criterion D.

6.3 Curation

Curation of artifacts recovered from this project has been negotiated with Mr. Phil Diblasi of the archaeological repository at the University of Louisville. Curation of project materials, data, and artifacts will occur at their facilities in Louisville, Kentucky. Artifacts will be cataloged according to standards developed by the University of Louisville. Data will be stored in a manner consistent with standards described in 36 CFR 79.

7.0 Findings, Recommendations, and Conclusions

7.1 Phase I Survey Results

7.1.1 Previously Recorded Sites within the APE

Site 15HD997 was previously recorded by Brockington staff during Phase I archaeological survey for a multiple utility survey completed for the City of Elizabethtown (Mills 2013 [in KHC review]). The site was identified within the southwestern quadrant of the current APE. Details regarding the site are pulled from the draft report and provided below.

Locational Data
County: Hardin
USGS Quad: Cecilia, Kentucky (1992)
Elevation: 710 ft AMSL
UTM Coordinate: 16 N 593755 4168542 (NAD27)

General Site Data
Field Site Number: 4052-008
Temporal Affiliation: Prehistoric, indeterminate
Site Type: Open Habitation without mounds
NRHP Recommendation: Inventory site, does not presently meet NRHP criteria
Site Dimensions: 4,111 m^2
North-South Axis: 35 m
East-West Axis: 140 m
Site Depth: 30 cmbs

Environmental Data
Topography: Undissected upland
Distance to Water: 45 m
Direction to Water: West
Past Land Use: Agricultural
Current Land Use: Agricultural
Vegetation: Various grasses and herbaceous plants
Soil Type: Pembroke silt loam, 2 to 6 percent slopes
Ground Surface Visibility: 0 percent (100 percent along eastern boundary of site)
Disturbances: Disturbed, percent unknown

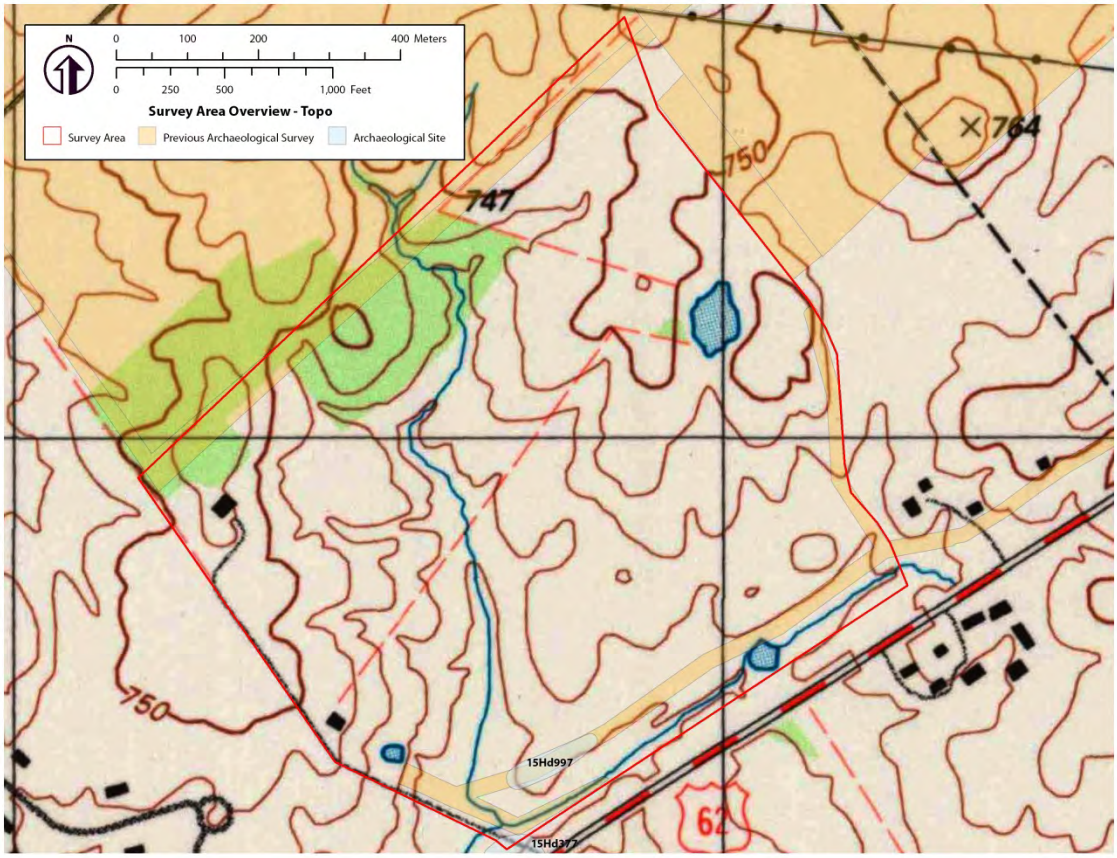
Results Data
Features Identified: none noted
Materials Recovered: Prehistoric (12)

Site 15HD997, a prehistoric resource of indeterminate cultural affiliation, was identified within an open field north of Leitchfield Road (Figure 7). This prehistoric resource was initially identified through the recovery of lithic debitage from three positive shovel tests

excavated at a 20-m interval along a single transect. Delineation efforts (within the project APE) yielded six additional positive shovel tests. A total of 12 lithic artifacts were recovered, including flake fragments (n=10) and non-cortical bifacial reduction flakes (n=2). Two previously recorded prehistoric sites, 15HD376 and 15HD377, are located 100 and 300 m southeast of the site datum, respectively. No diagnostic artifacts were recovered from these two previously-recorded sites, thus their relationship with 15HD997 (if any) remains unknown.

Site 15HD997 is located on a low, relatively level rise that is bound to the west and south by intermittent drainages. The area in which this site is located appears to be utilized as a pasture and is vegetated in mixed grasses and herbaceous plants. Soils documented at this site consist of approximately 32 cm of a dark yellowish brown (10YR4/4) silt clay loam plowzone, underlain by a dark yellowish brown (10YR4/6) silt clay subsoil. Subsoil was excavated to a depth of 42 cmbs.

Figure 7. Previously Recorded Site 15HD997



The cultural materials recovered from 15HD997 suggest that it represents a materially-sparse locus characteristic of ephemeral prehistoric activity. While nine positive tests excavated within the 4,111 square meter (1.01-acre) site area contained prehistoric materials, these nine tests produced just 12 prehistoric specimens from within a plowzone context. Given the

sparse nature of the artifact deposit at this site and the absence of intact features, Site 15HD997 does not appear to have the potential to contain significant information related to regional prehistoric occupation/utilization, nor does it appear to have the potential to inform our understanding of relevant regional research questions (see Table 3). Therefore, Site 15HD997 is recommended as *not eligible* for listing on the NRHP.

The previously surveyed corridor was not revisited during the current project and standard 20m (66-foot)survey intervals did not identify additional positive shovel tests to the north, south, east, or west of the recorded site location. Accordingly, the only new data regarding the site is the confirmation that it does not extend outside of the previously studied corridor. Accordingly, the site remains an inventory site, not eligible for listing on the NRHP.

7.1.2 Newly Recorded Sites and Isolated Finds within the APE

Only one new site and one isolated find were encountered during this survey. Neither poses a management concern for the undertaking. 4423-001 is a nineteenth century artifact scatter representing the ephemeral remains of a likely residential site, as well as a prehistoric isolated find of indeterminate age and function. Brockington recommends no further work on either resource as they do not meet the minimum requirements of Criterion D (data potential).

4423-001
Locational Data
USGS Quad: Cecilia, Kentucky (USGS 1992)
Elevation: 750 ft. amsl
UTM Coordinates: E0594058 N4169162 (NAD 27)

General Site Data
Temporal Affiliation: Mixed component historic Euroamerican and unidentifiable prehistoric
Cultural Affiliation: unassigned
Property Type: agricultural
NRHP Recommendation: not eligible
Site Dimensions: 140-m (N-S)–by-100-m
Site Depth: 0-25 cmbs

Environmental Data
Topography: terrace
Distance To Water: 450 m
Direction To Water: West
Past Land Use: agricultural
Current Land Use: agricultural
Vegetation: grasses
Soil Type: Sonora silt loam, 2-6% slopes
Ground Surface Visibility: Less than 10%
Disturbances: agricultural practices

Results Data
Features Identified: none
Material Recovered: historic artifacts (n=24), prehistoric artifacts (n=1)

4423-001 is identified as an ephemeral scatter of historic cultural material that includes a single prehistoric flaked stone fragment. Brockington Archaeologists documented a very small historic cultural deposit situated on gentle ridge in Hardin County, Kentucky (Figure 8). The site deposit is relatively shallow and is defined by eight positive shovel tests and a low-density surface scatter of brick fragments over a horizontal boundary of 140 meters north-south and 100 meters west-east (Figures 9, 10, and 11). The site extends vertically from surface to 25 cm below surface. The materials recovered include cut nails (n=7), window glass fragments (n=6), whiteware fragments (n=4), glass container fragments (n=3), unidentifiable colorless glass fragment (n=1), and a pearlware fragment (n=1). Visual inspection of the surface area revealed a light scatter of brick fragments, which were not collected. A single prehistoric flake fragment manufactured from St. Louis chert was recovered. No features were identified and no diagnostic materials were recovered from the survey. The land use, erosion, and the ephemeral nature of this site suggest that it is unlikely that a more robust portion of the site is present beyond that which was surveyed.

The site is situated is a cultivated agricultural field exhibiting Sonora silt loam soils. Soil profiles, and the broad dispersal of low-density documented from the shovel tests indicate that the site area has been moderately-to-severely disturbed by agricultural activities and natural erosion patterns to the north and east down slope are probable. The soils consisted of a 10YR4/6 yellowish brown silt loams to a depth of 15 cmbs. This overlays a 7.5YR 4/6 strong brown silt loam to the base of excavation at approximately 25 cmbs. A typical soil profile is shown on Figure 12.

4423-001 does not contain any features or any diagnostic information. We recovered 24 artifacts from a total of eight shovel test locations and the deposit was confined to the plowzone/surface layer (A/Ap horizon). This site does not exhibit National Register qualities and does not represent any new information contributing to the historic or prehistoric record in the region. Brockington does not recommend any further studies on the portion of 4423-001.

7.1.2 4423-ISO-001

Brockington and Associates identified an isolated historic find during Phase I investigations in the project area. The historic material consists of three wire nails found within 0-9 cm of the surface. No other cultural material or features were identified in association with isolate 4423-ISO-001.

Figure 8. Newly Recorded Site and Isolate Shown on the Cecilia, KY (1992) and Elizabethtown, KY

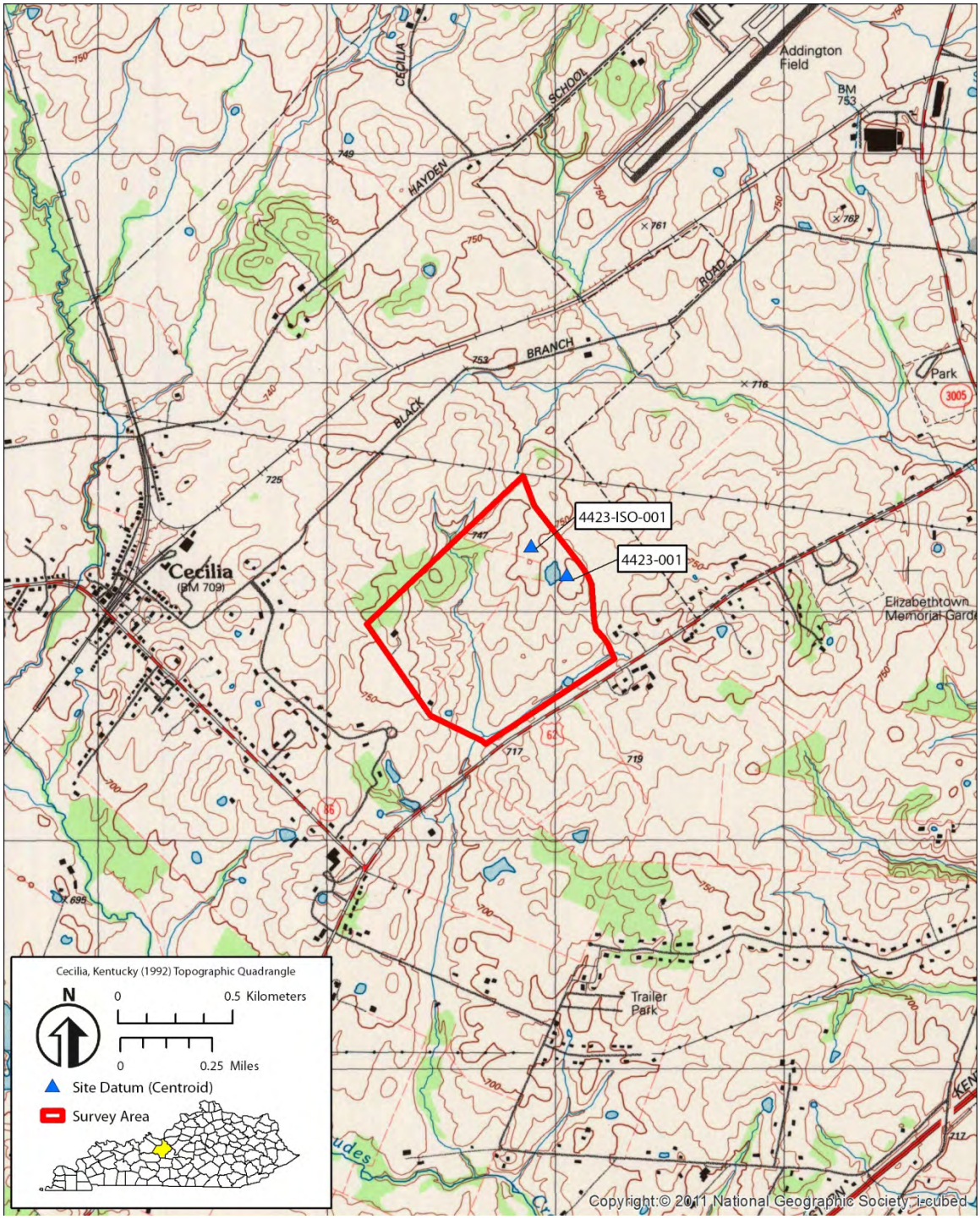


Figure 9. Sketch Map of 4423-001

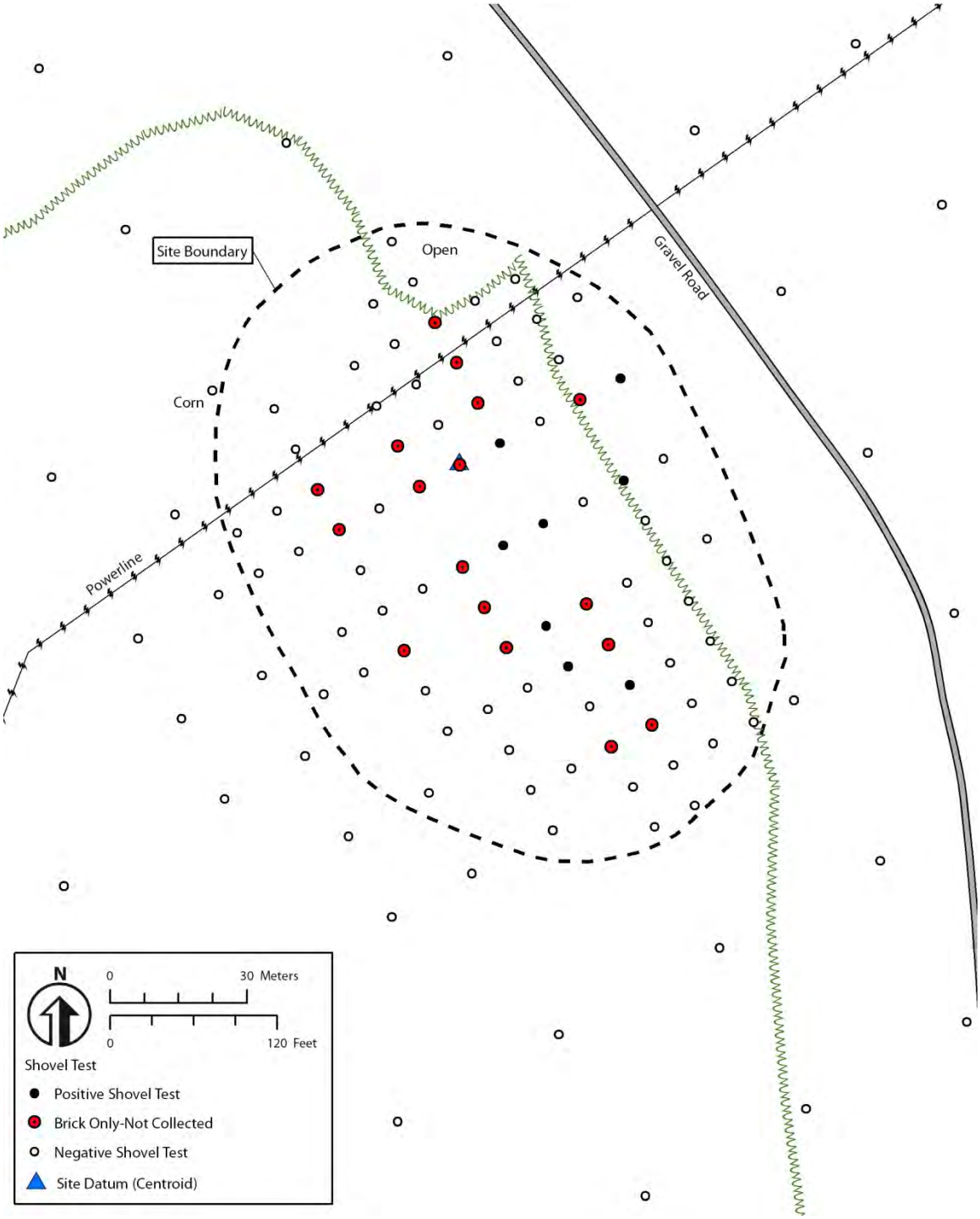
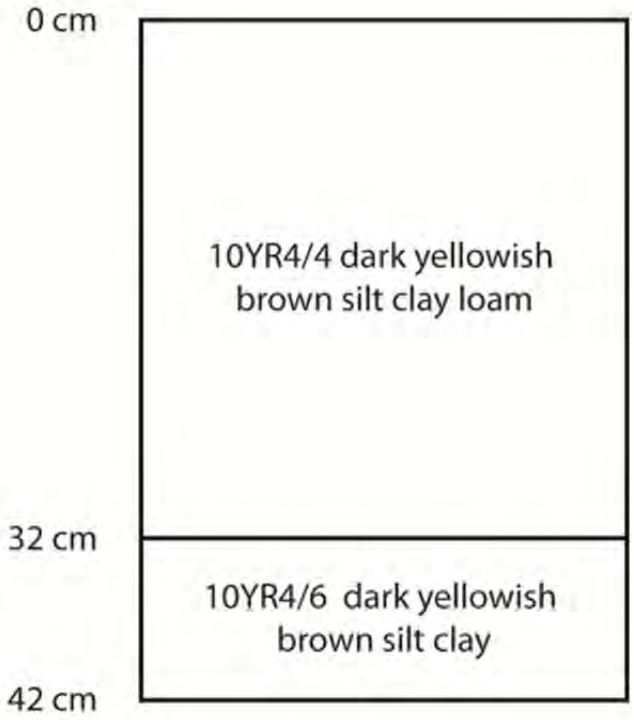


Figure 10. Overview of 4423-001, Looking West Across the Northern Site Extent

Figure 11. Overview of 4423-001, Looking Northwest Through Corn

Figure 12. Typical Soil Profile at 4423-001



Typical Soil Profile

0 10 20 centimeters

* artifact recovery restricted to 0-32 cmbs

7.2 Conclusions and Recommendations

Brockington completed the fieldwork for the project between October 28 and November 1, 2013. This work consisted of approximately 93 field hours and was completed under the supervision of principal investigator James C. Pritchard, RPA. The Phase I archaeological survey was conducted in support of EHCIF's obligations regarding their undertaking and Section 106 of the NHPA. One previously identified site (15HD997) that was not re-investigated falls in the southwestern corner of the APE. That site is not eligible for the NRHP. One newly recorded archaeological site (4423-001), and one isolate find (4423-ISO-001) were identified.

None of the 12 sites previously recorded within a 2km buffer of this undertaking have been identified as eligible for listing on the NRHP. While most studies have been limited in their scope to what can be understood as an "identification level" study; typically, historic sites found in close proximity to the current project area have been limited in their size, scope, and integrity. Similarly, the newly identified site (4423-001) is an ephemeral scatter exhibiting a lack of integrity and Brockington recommends that the research potential of this resource, as well as the isolated find (4423-ISO-001) has been exhausted at the Phase I level. None appear able to satisfy Criterion D (data potential) of the NHPA. Because further investigation at these locations is not likely to yield data significant to this period of Kentucky's history or prehistory, these sites are considered insignificant. Brockington recommends no further work in support of EHCIF's Nationwide Permit and recommends all cultural resources within the APE as *not eligible* for inclusion to the NRHP.

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