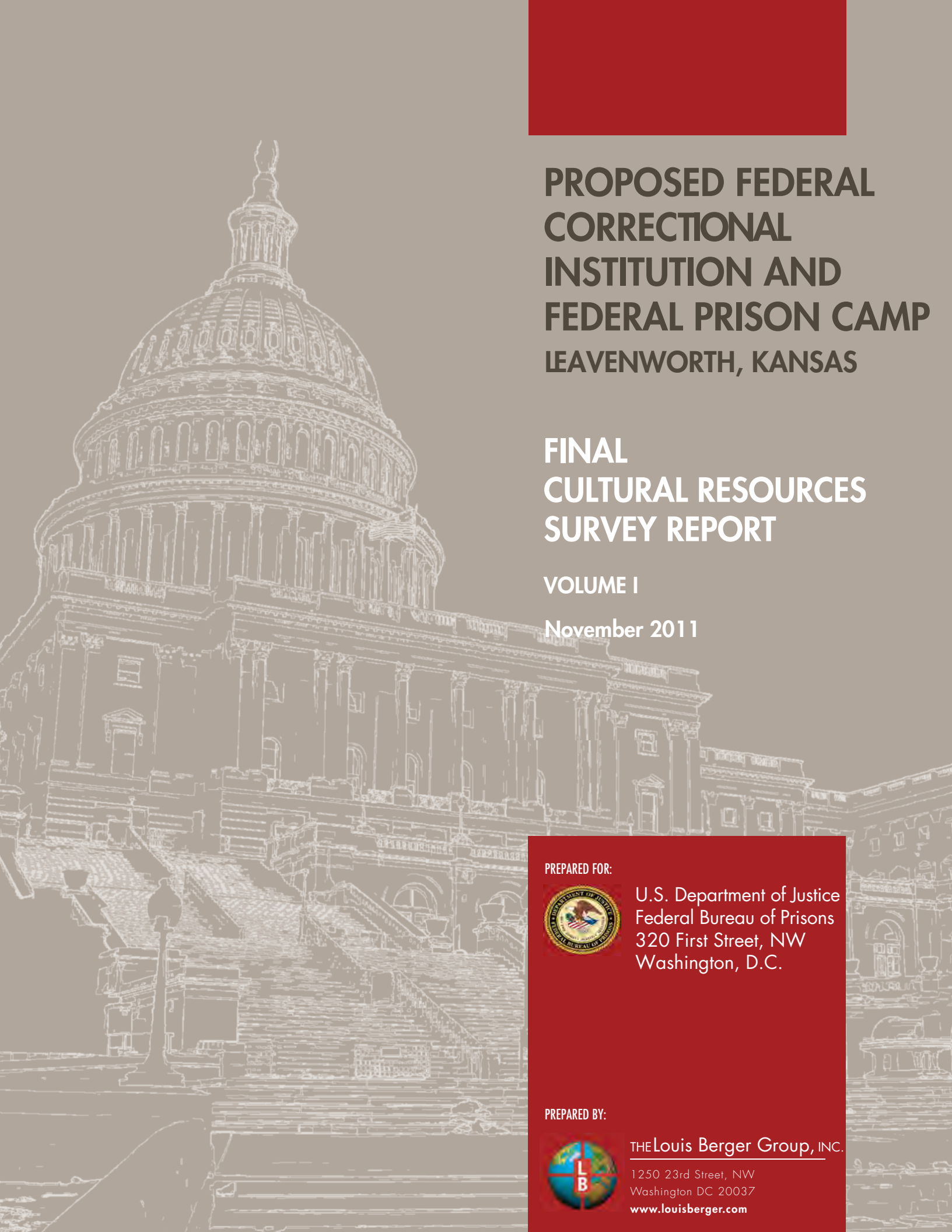

APPENDIX F
CULTURAL RESOURCE SURVEYS - 2011 AND 2015

CULTURAL RESOURCE SURVEY -- 2011



**PROPOSED FEDERAL
CORRECTIONAL
INSTITUTION AND
FEDERAL PRISON CAMP
LEAVENWORTH, KANSAS**

**FINAL
CULTURAL RESOURCES
SURVEY REPORT**

VOLUME I

November 2011

PREPARED FOR:



U.S. Department of Justice
Federal Bureau of Prisons
320 First Street, NW
Washington, D.C.

PREPARED BY:



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Proposed Federal Correctional Institution and Federal Prison Camp Leavenworth, Kansas

**Phase I Cultural Resources Survey at the
United States Penitentiary,
City of Leavenworth, Leavenworth County, Kansas**

VOLUME I

Prepared for:

**U.S. Department of Justice
Federal Bureau of Prisons
Washington, D.C.**

Prepared by:

Christopher M. Schoen, RPA and Camilla R. Deiber

**The Louis Berger Group, Inc.
Washington, D.C.**

November 2011

ABTRACT

ABSTRACT

Pursuant to Section 106 of the National Historic Preservation Act, the U.S. Department of Justice, Federal Bureau of Prisons has conducted cultural resource investigations within the area of potential effects for the development of a Federal Correctional Institution (FCI) and Federal Prison Camp (FPC) at the United States Penitentiary (USP) at Leavenworth, Leavenworth County, Kansas. The purpose of this investigation was to identify any cultural resources within the area of potential effects for the proposed undertaking, and to evaluate such resources as may be found regarding their eligibility for listing in the National Register of Historic Places. Development is proposed on two sites within the boundaries of the USP: the 238-acre (96.3-hectare) East Site and the 144-acre (58.3-hectare) West Site. The area of potential effects for the undertaking was confined to the boundaries of the parcel, within which ground-disturbing activities will take place.

Six previously recorded archaeological sites, 15 new archaeological sites, and 15 isolated finds were investigated during this survey. Three of the previously recorded sites (14LV111, 14LV364, and 14LV366) were identified as prehistoric lithic scatters, although Site 14LV111 includes only one artifact. Two other sites (14LV337, 14LV365) included prehistoric lithics and historic artifacts. One site (14LV110) was identified as a historic dump associated with the early history of USP Leavenworth (1906 to about 1930).

Of the newly recorded sites, 14 sites (14LV167 through 14LV174 and 14LV176 through 14LV181) are prehistoric lithic scatters composed primarily of chipped stone flaking debris. Site 14LV171 includes two pottery sherds. Sites 14LV168, 14LV169, and 14LV172 include arrow points that have been identified as Scallorn points, which were used from about A.D. 700 to around A.D.1500. On that basis, these sites are identified as Late Prehistoric, also known as the Middle Ceramic period. Site 14LV175 is the location of the prison farm manager's residence, which was built in 1938 and demolished about 1981.

Five of the archaeological sites investigated during the current survey appear to have potential for intact archaeological deposits that could contribute important new information about the prehistory of the region. Therefore, Sites 14LV169, 14LV171, 14LV172, 14LV176, and 14LV181 are recommended as potentially eligible for listing in the National Register of Historic Places. If any of these five sites are situated in areas that will be subjected to ground disturbing activities, then additional archaeological work is recommended at those sites that will be adversely affected by the planned construction to make definitive site evaluations as to whether any is eligible for the National Register.

Previously recorded sites 14LV110, 14LV111, 14LV337, 14LV364, 14LV365, and 14LV366, newly recorded sites 14LV167, 14LV168, 14LV170, 14LV173, 14LV174, 14LV175, 14LV177, 14LV178, 14LV179, and 14LV180, and the 15 newly recorded isolated find spots (IF-1 through IF-15) all do not appear to constitute significant resources and therefore are considered not eligible for listing in the National Register of Historic Places. No further archaeological work associated with this undertaking is recommended for these sites.

The architectural survey identified a total of 73 buildings and structures at USP Leavenworth. The survey confirmed the recommendations of BELLArchitects that USP Leavenworth is eligible for listing in the National Register under Criteria A and C at a national level of significance. LBG recommended that the period of significance be extended to 1960 to include the 1960 Camp Site, built as a farm dormitory. LBG

also recommended that the boundary of the historic district follow the USP Leavenworth property boundary on the west, north, and east; and Metropolitan Avenue/US 73 on the south to include areas historically associated with the USP. Both of the proposed alternatives for the USP expansion will have an adverse effect on contributing buildings on Metropolitan Avenue, as the houses will have to be demolished for construction of an access road.

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VOLUME II (*Confidential; not for public release*)

APPENDIX H:	Site Maps
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1.0 INTRODUCTION

1.0 INTRODUCTION

1.1 PURPOSE OF INVESTIGATIONS

On behalf of the U.S. Department of Justice, Federal Bureau of Prisons (BOP), The Louis Berger Group, Inc. (LBG), has conducted a cultural resources survey within two proposed alternative development sites located within the existing Leavenworth United States Penitentiary (USP) property in Leavenworth, Kansas. The USP property and proposed development sites are situated about one-half mile west of the Missouri River, on the north side of the City of Leavenworth in northeast Leavenworth County, Kansas (Figure 1). The entire BOP property at Leavenworth includes 754 acres (305 hectares). The southern limit of the property is Metropolitan Avenue (US Highway 73), the eastern boundary is Grant Avenue, the northern boundary is Fort Leavenworth, and the western side is a diagonal boundary that extends from a point along Mount Olivet Road, about a half mile west of the intersection of Metropolitan Avenue with Santa Fe Trail, north-northeastward to a point by Santa Fe Trail about a half mile northwest of the intersection of Santa Fe Trail and Hancock Avenue. The project area lies in portions of the south half of Sections 22 and 23 and in portions of the north half of Sections 26 and 27 in Kickapoo Township (T8S, R22E).

The BOP proposes to develop a new Federal Correctional Institution (FCI) and Federal Prison Camp (FPC) at the USP as a means of better managing the present crowding within the federal prison system and meeting anticipated growth in the federal inmate population. Two alternative locations are proposed for the new construction, the West Site includes 144 acres (58.3 hectares) situated on the west side of the extant FCI complex and includes the current FPC and a pasture for buffalo (Figure 2). This study area is generally bounded by Metropolitan Avenue on the south, Santa Fe Trail on the west, and an abandoned railroad grade on the north. The East Site includes 238 acres (96.3 hectares) located on the east side of the FCI complex north of Metropolitan Street, west of Grant Avenue, and south of Corral Creek. Together, the East Site and West Site include 382 acres (154.6 hectares).

The current cultural resources investigation was undertaken to provide information that would guide the decision of where to construct the new FCI and FPC facilities. The specific purpose of this cultural resources investigation was to identify any cultural resources within the area of potential effects (APE) for the proposed undertaking, and to evaluate such resources as may be found regarding their eligibility for listing in the National Register of Historic Places (National Register). In accordance with 36 CFR 800.3-4, the BOP initiated consultation regarding this undertaking with the Kansas State Historic Preservation Office (SHPO) and with Native American Tribes. Correspondence related to that consultation can be found in Appendix A of this report.

In 2009, TEC Inc. completed a cultural resource reconnaissance survey for the project (TEC Inc. 2009). The Louis Berger Group, Inc. performed an intensive cultural resource survey in 2011 of the two proposed alternative locations for the new construction, the West Site and the East Site. LBG is currently preparing a Draft Environmental Impact Statement (DEIS) for the proposed project. This document provides a detailed discussion of the results of the intensive cultural resource survey.

As explained in the Alternative Analysis section of the Draft Environmental Impact Statement, the BOP developed several alternative site plans to allow for the construction of the FCI and FPC. Following the initial alternative screening process which included a preliminary analysis of development potential and

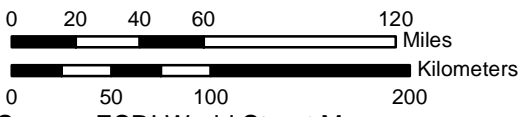
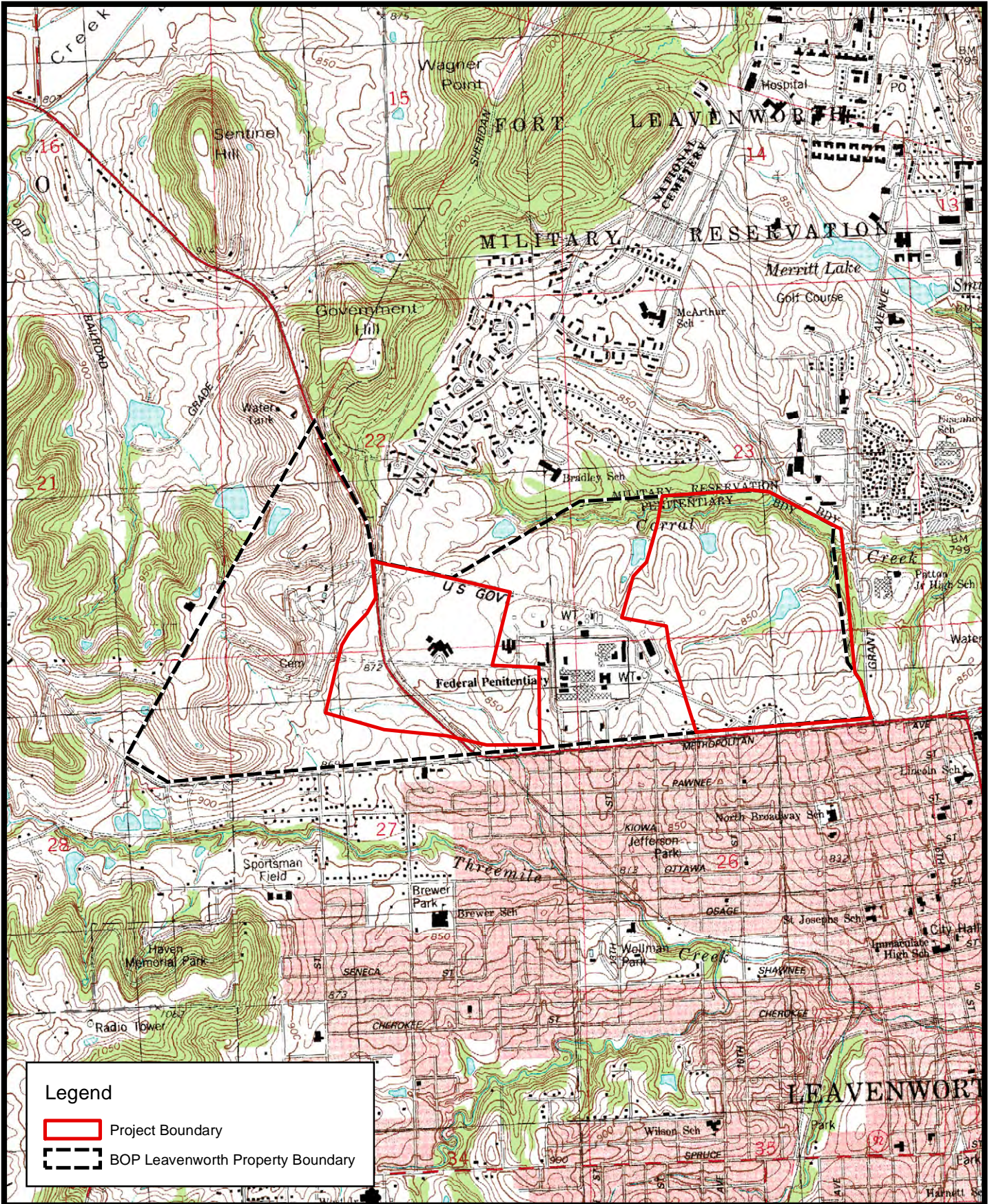




Figure 1
PROJECT LOCATION

Source: ESRI World Street Map



Legend

-  Project Boundary
-  BOP Leavenworth Property Boundary

0 1,000 2,000 4,000 Feet
0 300 600 1,200 Meters
Source: USGS 1984



Figure 2
PROJECT AREA

impacts, two alternative plans are being carried forth in the Environmental Impact Statement. One alternative includes development of both the FCI and FPC on the East site (FCI-1). The second alternative, which places the FPC on the West Site and FCI on the East site, is referred to as the East/West Composite Alternative. The cultural resources survey included all of the property on both the West and East Sites.

In all, 382 acres (154.6 hectares) were included in the archaeological investigation. The architectural investigation included a comprehensive survey of all buildings on the USP complex to reevaluate the period of significance, contributing/non-contributing status of each structure, and the boundary delineation of the district. Data collection for this survey involved the compilation of background information and review of previous architectural resource documentation.

The cultural resource investigation was undertaken pursuant to Section 106 of the National Historic Preservation Act of 1966 (as amended); the Archaeological and Historical Preservation Act of 1974; Executive Order 11593; and Title 36 of the Code of Federal Regulations, Parts 660-66 and 800 (as appropriate). The field investigations and technical report meet the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (*Federal Register* 48:190:44716-44742) (U.S. Department of the Interior 1983). The Project Manager and Project Archaeologists and Historians who performed these investigations meet or exceed the qualifications described in the Secretary of the Interior's Professional Qualifications Standards (*Federal Register* 48:190:44738-44739) (U.S. Department of the Interior 1983). The investigation followed the guidelines established by the Kansas State Historic Preservation Office (2004). The proposed methodology for the cultural resources investigation was reviewed and approved by the Kansas SHPO prior to its implementation. All cultural material collected, along with all project records, has been cared for in accordance with the requirements set forth in 36 CFR 79. At the conclusion of the project, the artifacts will be curated at the Kansas State Historical Society in Topeka.

1.2 AREA OF POTENTIAL EFFECTS

The area of potential effects (APE) for an undertaking includes the area or areas within which the undertaking may directly or indirectly cause changes to the character or use of a historic property, if such properties exist (36 CFR 800.16 [d]). Changes to a property are considered potential adverse effects and include direct effects from physical destruction of part or all of a historic property; indirect effects such as visual, atmospheric, or audible elements that diminish the integrity of a historic property's setting, and reasonably foreseeable effects that may occur later in time or at a distance from the undertaking, or that may have a cumulative effect (36 CFR 800.5 [a] [1]).

For purposes of this undertaking, the APE coincides with the boundary of the USP (see Figure 2). The APE encompasses all areas that may be directly or indirectly impacted by the proposed expansion. Within the APE there is the potential for direct impacts from ground-disturbing activities associated with construction of the proposed correctional facilities. Such ground-disturbing activities include but are not limited to stripping and scarification of surface soils, construction of foundations and footings, trenching and excavation for services such as sewer and water, installation of fencing, and creation of roadways and parking areas. While the depth of construction excavation is unknown at this time, the depth is assumed to be approximately 1.0 meter (3.28 feet), except in those areas where deeper excavations are necessary for foundations and trenching is required for constructing utilities.

1.3 PROJECT AUTHORIZATION AND PERSONNEL

Pursuant to 36 CFR 800.3 and on behalf of the BOP, LBG initiated consultation with the Kansas SHPO by electronic mail on November 30, 2010 informing that agency of the potential for a BOP project undertaking. A meeting was held with SHPO at the Kansas State Historical Society on December 2, 2010 to discuss the proposed undertaking. The meeting was attended by SHPO Archeologist Timothy Weston, SHPO Review and Compliance Coordinator Kim Norton Gant, representatives of the BOP, the Kansas Department of Wildlife and Parks (KDWP), the Kansas Department of Health and Environment (KDHE), and LBG. At this meeting, LBG's scope of work for the cultural resources investigation was approved by SHPO. Consultation with federally recognized tribes that have indicated interest in northeast Kansas was initiated by letter in January 2011. The cultural resource investigations were conducted within the project area between March 1 and April 11, 2011.

The field investigations and related information presented in this technical report are designed to meet the standards specified in the Secretary of the Interior's *Standards and Guidelines for Archaeology and Historic Preservation* (Federal Register 48:190:44716-44742) and the *Kansas SHPO Guide to Archaeological Survey, Assessment and Reports* (Epperson et al. 2004) issued by the Kansas State Historic Preservation Office.

Cultural resource investigations were performed under the direction of Project Manager Randy Withrow, RPA. Principal Investigators for the project were Archaeologists Christopher M. Schoen, RPA and Camilla R. Deiber. Resumes for these individuals can be found in Appendix C. Mr. Schoen conducted the field investigations and was the primary author of this report. He was assisted in the field by Field Supervisor Brian Cavanaugh and Field Archaeologists Nathan Barnes, Brittany Burrell, David Caccioli, Kevin Cotham, April Greenberg, Ricky Hight, Ashley Holland, Alexandra Vancko, David Wicks, and John Wilkinson. Architectural Historian Camilla Deiber conducted the architectural survey. Artifact analysis was carried out by Senior Materials Specialist Todd Hejlik under the supervision of Laboratory Supervisor Susan Butler. CADD/GIS/Graphics Specialist Jacqueline Horsford prepared the figures for this report. Editing was provided by Anne Moiseev and Alex Rosenzweig. The report was written by Ms. Deiber and Mr. Schoen, with contributions by Archaeologist Roderick Brown, RPA (Culture History section), and Mr. Hejlik (artifact discussions and associated tables). Crew Chief Francis Nix completed the shovel test summary table in Appendix D.

LBG would like to acknowledge the staff at USP Leavenworth for their assistance with the cultural resource investigation, particularly Deputy Warden Mr. Thomas Sheldrake, Groundskeeper Mr. Sargeant, and Correction Officer Mr. Kittrell, who coordinated access to the USP property and shared their knowledge about the facility. The success of our field investigations were in no small way the result of their efforts.

2.0 RESEARCH DESIGN AND METHODS

2.0 RESEARCH DESIGN AND METHODS

2.1 RESEARCH DESIGN

2.1.1 Archaeology

The goal of the present archaeological study was to determine the presence or absence of potentially significant cultural resources within the proposed project area, and if present, to provide recommendations regarding their eligibility for listing in the National Register. Appendix B contains the scope of work for this project.

Background research was conducted on the environmental setting of the project area, the prehistoric and historic period contexts of the region, and previous cultural resource investigations in the area. This was followed by field survey designed to define the spatial boundaries of archaeological sites located within or partially within the project area of potential effects for the proposed West Site and East Site. Field methods included pedestrian reconnaissance survey of the entire East Site and West Site and shovel testing across the two study areas within a 30-meter (33-foot) grid. Subsurface testing was not performed in areas that were known or determined in the field to be disturbed, near high pressure gas lines, or where the topography was unsuitable to include intact archaeological deposits. Specific information about the field methodology is discussed further in Chapter VI. During field work, the staff at USP Leavenworth provided information about the land use history of the project area.

The laboratory analysis of artifacts recovered from the project contributed information for site discussions and recommendation for National Register eligibility of the identified sites. Laboratory analysis of materials from the prehistoric sites focused on tool identification, stage of reduction, and material type. The analysis of historic materials from the prison farm manager's residence location focused on artifact type, material, and dates of manufacture and/or use.

2.1.2 Architecture

LBG Architectural Historian Camilla Deiber conducted a comprehensive survey of all buildings on the complex to reevaluate the period of significance, contributing/non-contributing status of each structure, and the boundary delineation of the district. Data collection for this survey involved the compilation of background information and review of previous architectural resource documentation.

USP Leavenworth was documented by photographing each structure with digital photographs and recording information on the physical characteristics and integrity of each of the structures. Buildings within the confines of the walled prison were not photographed due to security restrictions at the facility. However, photographs of many of these buildings were included in the Historic Structures Report (HSR) by BELLArchitects (2005). A total of 73 buildings and structures were surveyed at USP Leavenworth, including the pillbox bunker identified by TEC Inc. (2009b), which is located just outside the East Site boundary.

2.2 SOURCES CONSULTED

2.2.1 Archaeology

Prior to beginning the field survey, LBG reviewed the archaeological site files and cultural resource investigation reports on file at the Kansas State Historical Society in Topeka, Kansas for information on previous projects and recorded sites in the region. Also reviewed were the *Site Reconnaissance Report for USP Leavenworth* (2009a) and the *Cultural Resources Action Plan for USP Leavenworth* (2009b) completed by TEC Inc.

Historical maps of the Leavenworth, Kansas vicinity were reviewed, including the General Land Office (GLO) maps (1866), the George A. Ogle and Company map of Kickapoo County (1902), a 1904 to 1906 map of Fort Leavenworth that includes the USP (U.S. Army 1907), a 1913 map of Fort Leavenworth that includes the USP (U.S. Army 1913), and a 1926 topographic quadrangle map of the project area (USGS 1926).

Other sources with information pertinent to the project area include the Soil Survey of Leavenworth County (Zavesky and Boatright 1977) as well as the United States Department of Agriculture's *Web Soil Survey* (2010), an on line reference for soils that has replaced the traditional county soil survey books.

2.2.1 Architecture

In advance of the architectural survey, LBG reviewed BOP files for previously conducted surveys. The results of that research indicated that two architectural surveys had been conducted for the USP. In December 2005, BELLArchitects, PC completed a Historic Structure Report (HSR) for BOP Leavenworth. In that report, BELLArchitects concluded that the complex constituted an historic district eligible for listing in the National Register under Criterion A "for its association with the early development of the Federal Prison system, which was the result of efforts by the U.S. Government to consolidate federal inmates into one maximum-security prison" and Criterion C as "an outstanding example of a prison constructed almost exclusively by convict labor" at a national level of significance. The period of significance for the district was defined as 1897 to 1945 (BELLArchitects, PC 2005:2-1). While the HSR included recommendations for the National Register eligibility of the property, photographs for every structure in the complex were not included in the document. Additionally, the Kansas SHPO did not have any record of the survey in their files; though BELLArchitects indicated that a preliminary determination had been made by SHPO staff.

In 2009, TEC Inc. completed a reconnaissance study of the proposed project sites. Background research at the Kansas SHPO identified the National Register-eligible USP Leavenworth Historic District within and adjacent to the project area. A previously un-surveyed pillbox structure was also identified. TEC Inc. proposed a National Register evaluation of all unidentified structures; and determination, through consultation with the Kansas SHPO, of the USP Leavenworth Historic District boundaries and contributing/non-contributing status of buildings, structures, and landscapes within the district.

The HSR by BELLArchitects contained extensive historic contexts for USP Leavenworth, which were used as a framework to evaluate properties identified within the project area. Additional background research was necessary for non-contributing buildings that are now greater 50 years of age, particularly the Camp Site. Such research was conducted at the National Archives in Kansas City and Leavenworth

Library. Resources that assisted in the research included maps, photographs, county histories, local histories of USP Leavenworth, BOP maps and manuscripts, and local newspapers.

3.0 ENVIRONMENTAL SETTING

3.0 ENVIRONMENTAL SETTING

3.1 QUATERNARY GEOLOGY AND CLIMATE

Kansas lies in the center of the Continental United States in a region known as the Central Plains. Leavenworth County is situated within the Central Lowland physiographic province of the Interior Plains division of North America (Schoewe 1949). The Central Lowland is divided into five sub-provinces: the Glaciated Region, the Osage Cuestas, the Cherokee Lowlands, the Chautauqua Hills, and the Flint Hills (Fenneman 1931). The Glaciated Region is in the northeast part of Kansas. It is bordered on the south by the Kansas River and on the west by the Flint Hills. During the Pre-Illinoian glacial episodes, some two million to 600,000 years ago, this area was at the edge of a continental ice sheet known as the Laurentide ice sheet. When the ice sheet retreated around 12,000 years ago, glacial deposits of till were left behind on a broad plain. This was cut into by meltwater streams creating a hilly region, known as the Dissected Till Plain (Mandel 2006:11-12).

The underlying bedrock of the Dissected Till Plain in Leavenworth County is Pennsylvanian-age (290 to 325 million years ago) limestone, sandstone, and shale. Cherokee coals were present among the shales and sandstones of the Cherokee Group. At the end of the Pleistocene, thick deposits of till, outwash, and fine, wind-blown sand and clay (loess) covered the region. As noted above, cutting of this material by streams after about 12,000 years ago has created a hilly region, often rugged along major stream valleys with relatively steep convex slopes. Where first and second-order streams approach major streams, valleys are deep, narrow, and V-shaped. Bedrock outcrops are common (Mandel et al. 1991). As a result, this area is sometimes called "Little Switzerland".

Cherokee coals were found some 213 meters (700 feet) below the ground surface at Leavenworth in 1865 and the U.S. Army began mining the deposits by 1870. During the 1880s and 1890s, at least four other deep shaft mines operated in the coal seams near Leavenworth, including the penitentiary at Lansing (Buchanan 1984:16).

The topography of the eastern third of the USP property area, where the proposed East Site is situated, generally consists of gently rolling hill slopes, although some slopes are moderately steep. Elevations range from 251 to 271 meters (825 to 890 feet) above mean sea level (amsl). The topography of the central third of the property, where the proposed West Site is located, is more level. Elevations range from about 257 to 268 meters (845 to 880 feet) amsl across a broad area. The area around the FIC is fairly level with an elevation of about 262 meters (860 feet) amsl except in the northwestern portion which increases to about 268 meters (880 feet) amsl. The western third of the USP property, which is situated west of Santa Fe Trail, is again hilly, with steep-sided slopes rising to the uplands.

There are two main drainages through the USP property and smaller tributaries that feed into them. In the proposed East Site, Corral Creek flows eastward through the woods at the northern and northeastern sides. The bed of Corral Creek is in the top of the limestone and shale bedrock. Segments of narrow terraces are present on the north side of the creek and also on the south side of the creek near the eastern boundary of the USP property. A tributary drainage flows north near the east boundary of the proposed East Site. A second tributary drainage flows northeastward through the center of the East Site, interrupted by a small impoundment. These tributary drainages are deep and

narrow and cut into the top of the limestone and shale bedrock. A series of short, deeply incised ravines drain into Corral Creek at the northern margin of the proposed East Site.

In the proposed West Site the second main drainage is an unnamed tributary of Threemile Creek, which lies about a quarter mile south of the project area. The unnamed tributary flows eastward and then southeast ward across the southern quarter of the proposed West Site. The banks of the stream are low in the western third of the drainage, but become steep and 1.5 to 1.8 meters (5 to 6 feet) high in the middle portion of the proposed West Site. The sides of the drainage diminish somewhat in the eastern third of the proposed West Site, where the stream bends towards the southeast.

Current paleoenvironmental data suggest that as the Laurentide ice sheet retreated around 12,000 years ago. The spruce forest began to disappear from the region. Deciduous trees, dominated by oak and elm, and forbs and grasses replaced the spruce until about 10,500 years ago. Between around 10,500 and 9,000 years ago northeast Kansas was dominated by grass (Mandel 2006:22). The giant animals that inhabited the region (known as “megafauna”) began to disappear as the glaciers retreated and temperatures increased. By the beginning of the Holocene, around 10,000 years ago, approximately two-thirds of the megafauna became extinct.

Around 9,000 years ago, the Great Plains was dominated by warm, dry Pacific air that flowed down from the eastern side of the Rocky Mountains. This restricted the northward movement of moist tropical air into the region and stimulated a long period of warm, dry conditions known variously as the “Altihermal”, the “Hypsithermal”, and the “Atlantic” climactic episode (Mandel 2006:23). This period lasted into the mid-Holocene, about 5,000 years ago. Upland and riparian forests were overwhelmed by prairie grasses.

The climate changed again in the Late Holocene, beginning around 5,000 years ago. The climate became more variable and increased northerly flow of air brought warm, moist tropical air mass from the Gulf of Mexico into the Central Plains. Vegetation density increased in upland areas as mixed and tall-grass prairie species replaced short-grass prairie communities and as forest expanded across floodplains and hillslopes in the Midwest. Oak and hickory forests were present on the sides of valleys and floodplains by 4,000 years ago (Mandel 2006:25).

Since about 4,000 years ago the Central Plains has suffered frequent droughts lasting a few years to decades. Between about 3,100 and 2,700 years ago the region endured a period of increased aridity. Around 400 to 150 years ago, the climate of the Eastern Plains was characterized by a cool, moist episode known as the “Neo-boreal” or “Little Ice Age” (Mandel 2006:26).

Kuchler (1974) identifies the native vegetation of the project area as oak-hickory forest, dominated by white oak (*Quercus alba*), red oak (*Quercus borealis*), black oak (*Quercus valutina*), bitternut hickory (*Carya cordiformis*), and shagbark hickory (*Carya ovate*). Patches of prairie included tall grass prairie species dominated by big bluestem (*Andropogon gerardi*) and little bluestem (*Andropogon scoparius*) grasses.

The environmental conditions of the region from the end of the Pleistocene through the Holocene periods have implications for archaeology of the Leavenworth area. Increased precipitation and associated high magnitude floods caused erosion of the landscape, resulting in deeply incised drainages, and lateral cutting of rivers and streams that may have removed evidence of prehistoric and early historic occupation. Flooding also contributed to rapid aggradation of silts on floodplains that deeply buried archaeological deposits. The reliable availability of water affected where animals, fish, and shellfish could be found. The amount of regular rainfall affected the kinds of vegetation communities present in different locations, such as

wetlands, prairies, or forests, each which offered variable types of plants used for food, medicines, and raw material to build structures or make containers, clothing, and other useful items.

3.2 SOILS

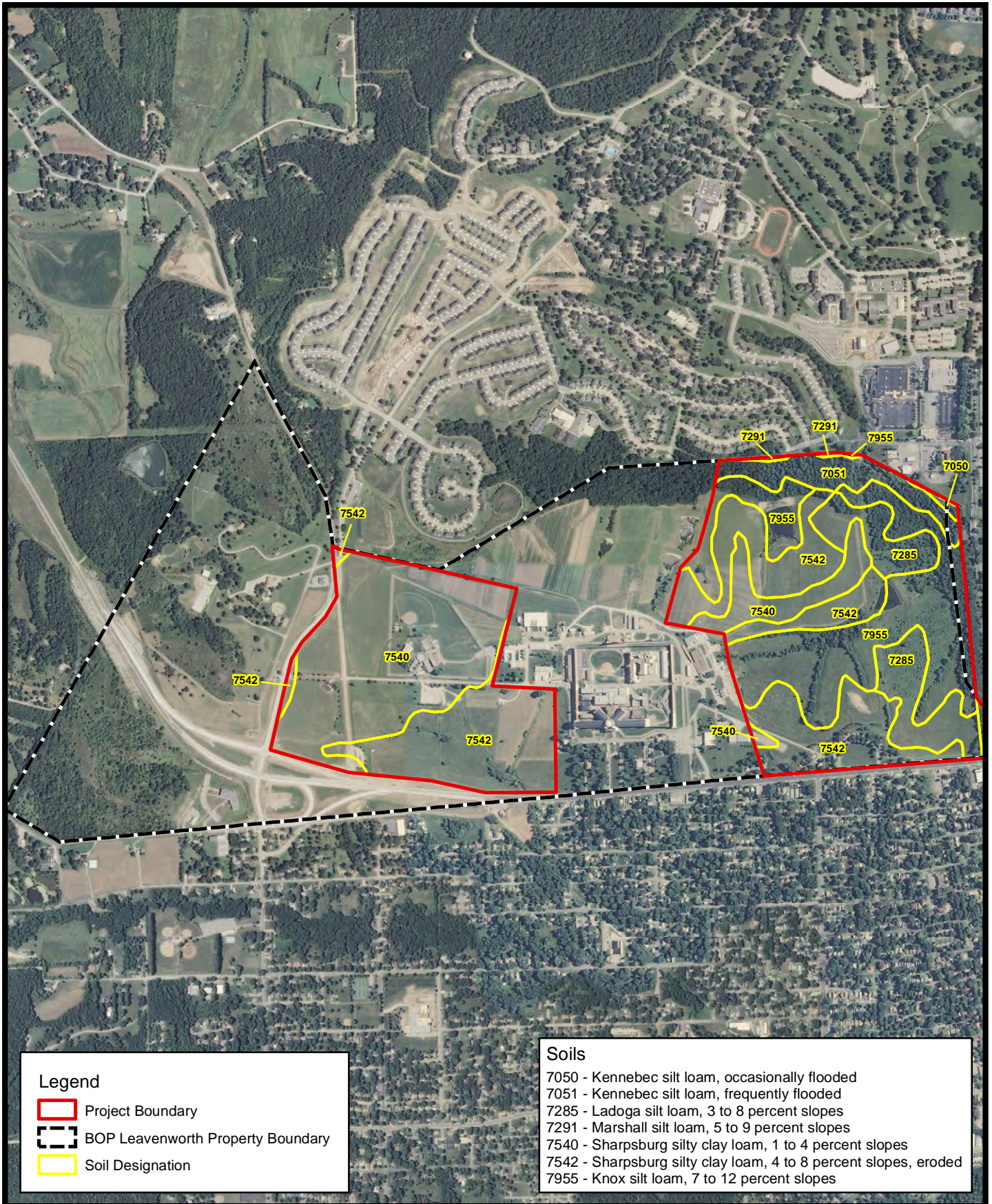
The Natural Resources Conservation Service (NRCS) *Web Soil Survey* (2010) and Zavesky and Boatright (1977) identify the soils across the northern and western portions of the proposed West Site as Sharpsburg silty clay loam, 1 to 4 percent slopes (7540) and the southeastern third of the proposed site as Sharpsburg silty clay loam, 4 to 8 percent slopes (7542). A small amount of Sharpsburg silty clay loam, 4 to 8 percent slopes (7542) also is along the very western margin of the proposed site. Figure 3 shows the soils identified in the project area and Table 1 summarizes the project area soils.

**TABLE 1
PROJECT AREA SOILS**




Soil Series (Map Symbol)	Major Soil Horizons	Geomorphic Context	Drainage Capability	Parent Material	Native Vegetation
Kennebec silt loam, occasionally flooded (7050)	Ap-A1-A2-A3- AC-C1-C2-C-3	Flood plains in river valleys and on drainageways in uplands	Moderately well drained	Alluvium	Tall grass prairie
Kennebec silt loam, frequently flooded (7051)	Ap-A1-A2-A3- AC-C1-C2-C-3	Flood plains in river valleys and on drainageways in uplands	Moderately well drained	Alluvium	Tall grass prairie
Knox silt loam, 7 to 12% slopes (7955)	A-E-Bt1-Bt2- Bt3-BC	Strongly dissected hills and bluffs bordering the Missouri River Valley and its tributaries	Well drained	Loess	Mixed hardwood trees and tall grass prairie
Ladoga silt loam, 3 to 8% slopes (7285)	A-E-BE-Bt1-Bt2-Bt3- Bt4-Bt5-C	Convex summits of interfluves, side slopes, and nose slopes on the treads and risers of stream terraces	Moderately well drained	Loess	Oak-hickory forest and tall grass prairie
Marshall silt loam, 5 to 9% slopes (7291)	Ap-A1-A2-BA-Bw1- Bw2-Bw3- Bg-BCg-Cg	Interfluves and side slopes on uplands and on the risers and treads of stream terraces	Well drained	Loess	Tall grass prairie
Sharpsburg silty clay loam, 1 to 4% slopes (7540)	Ap-A1-A2-Bt1- Bt2-Bt3-BC-C	Interfluves and side slopes on dissected till plains and on the risers and treads of stream terraces in river valleys	Moderately well drained	Loess	Tall grass prairie
Sharpsburg silty clay loam, 4 to 8 % slopes (7542)	Ap-A1-A2-Bt1- Bt2-Bt3-BC-C	Interfluves and side slopes on dissected till plains and on the risers and treads of stream terraces in river valleys	Moderately well drained	Loess	Tall grass prairie

Zavesky and Boatright 1977| NRCS 2010

The soils in the proposed East Site are more complex. The soils in the forested area along Corral Creek at the northern margin of the proposed site are Kennebec silt loam, frequently flooded (7051). Two small



Legend

-  Project Boundary
-  BOP Leavenworth Property Boundary
-  Soil Designation

Soils

- 7050 - Kennebec silt loam, occasionally flooded
- 7051 - Kennebec silt loam, frequently flooded
- 7285 - Ladoga silt loam, 3 to 8 percent slopes
- 7291 - Marshall silt loam, 5 to 9 percent slopes
- 7540 - Sharpsburg silty clay loam, 1 to 4 percent slopes
- 7542 - Sharpsburg silty clay loam, 4 to 8 percent slopes, eroded
- 7955 - Knox silt loam, 7 to 12 percent slopes

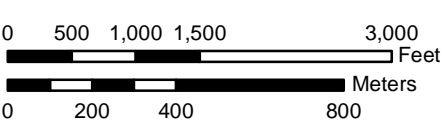


Figure 3
PROJECT AREA SOILS

areas of Marshall Silt loam, 5 to 9 percent slopes (7291) are at the very northwest corner of the proposed site. A small area of Kennebec silt loam, occasionally flooded (7050) is at the northeast border of the proposed site. Along the southern edge of the forested area, across the eastern forested area, on the lower slopes south of the forested area, and across the south central part of the proposed site are soils identified as Knox silt loam, 7 to 12 percent slopes (7955). This includes the locations of the two ponds and drainages. South and east of the Knox soils are two area of Ladoga silt loam, 3 to 8 percent slopes (7285). Sharpsburg silty clay loam, 1 to 4 percent slopes (7540) is present on the top of the hill in the north-central part of the proposed East Site. Sharpsburg silty clay loam, 4 to 8 percent slopes (7542) is on the upper slopes north and east of the hill top and at the southern portion of the proposed site.

3.3 CURRENT LAND USE AND SURVEY CONDITIONS

At the time of the current survey, the proposed West Site was dominated by grasses and forbs that generally provided about 10 percent surface visibility. Survey was done during early spring so that vegetation was low (3 to 6 inches/7.6 cm to 15.2 cm high). Scattered trees and shrubs were present along drainages. Some patchy areas were wet due to high precipitation at the end of February and much of March and poor drainage of the soils at those locations. The western and eastern thirds of garden area located north of the prison camp had about 90 percent surface visibility. The central third of the garden area was covered with clover and visibility was less than ten percent.

In the proposed East Site, most of the area was in grass with scattered saplings and brush in the eastern third of this area. Trees and brush were more common along the drainages between the hills. The northern and eastern margins of the proposed East Site had dense forest cover composed of a mixture of old and young deciduous trees, lianas, briars, and shrubs. Surface visibility was less than 10 percent in these three portions of the project area. A second garden area was situated in the southwest part of the proposed East Site. Surface visibility in the garden area was 90 to 100 percent. Two ponds were present, one south of the trees at the north part of the proposed East Site and one in the northeast part of the proposed East Site.

Except for the forested areas, nearly all of the proposed West Site and the proposed East Site had been used for agriculture. The penitentiary operated a farm from about 1903 through 1981 to feed inmates and to produce a surplus for markets.

In addition to construction of the 25-acre (10.1-hectare) FPC in 1960, other significant ground disturbance activities in the proposed West Site include (1) construction of a 152.4-centimeter (five-foot) diameter brick storm sewer line across portions of the southern part of the proposed site; (2) a former asphalt roadway in the southern part of this area; (3) a former section of Santa Fe Trail that extended north-northwest through the western quarter of the proposed site; (4) a former parking turnout for viewing about a dozen buffalo in a pasture south of the FPC in the southern portion of the proposed site; (5) a former railroad grade that extends north along the east side of the former alignment of Santa Fe Trail and then east along the north side of the FPC garden area; (6) a small asphalt parking lot at the southwest quadrant of Honor Farm Road and the former alignment of Santa Fe Trail which replaced the former parking turnout; (7) a gravel parking lot south of the FPC and north of the buffalo pasture enclosure; (8) the chain link fence around the 50-acre (20.2-hectare) buffalo pasture; (9) an electrical line that extends from the south side of Honor Farm Road at the east side of the former alignment of Santa Fe Trail northwestward to the current alignment of Santa Fe Trail; and (1) A water line extends through the western quarter of the buffalo pasture and near the western boundary of the FPC. Figure 4 shows many of the significant disturbances on the USP property.



Figure 4
PROJECT AREA DISTURBANCES

0 200 400 600 800 1,600 Feet
0 100 200 400 Meters
Source: Kansas DASC 2010



In the proposed East Site, significant ground disturbance activities include (1) six trenches and a landfill in an area estimated to be 7.5 acres (3.0 hectares) north of the staff garden area and east-southeast of the garage facility in the southwest quarter of the proposed site; (2) a 2.5-acre (1.0-hectare) paint can disposal area east of the UNICOR Warehouse near the western margin of the proposed site; (3) an apparent borrow area north of the staff housing in the southern portion of the proposed site; (4) a small used oil disposal area near the east side of the garage facility; (5) a high pressure gas line that extends west-northwestward from near Grant Avenue in the southeastern part of the proposed site to north of the FCI; (6) a second branch of the high pressure gas line that extends north-northwest from near Grant Avenue to the Fort Leavenworth Reservation in the vicinity of the intersection of Kansas Avenue and Robinson Road; and (7) a buried electrical line extends through the center of the proposed site to a point east of the northern-most pond, then westward to near the USP property boundary, and then southwestward to near the north side of the FPC.

4.0 PREHISTORIC AND HISTORIC CONTEXTS

4.0 PREHISTORIC AND HISTORIC CONTEXTS

This prehistory of the Glaciated Region of northeast Kansas, also known as the Dissected Till Region is based on review of several sources including Reynolds and Lees (2004), Wedel (1959), Hoard and Banks (2006), Logan (2010), and Bailey and Young (2001). All sources suggest that the first human presence in the Americas occurred at the end of the late Pleistocene Epoch. The present Holocene Era is a warming period or “interglacial” following the most recent of at least eight episodes of global cooling and warming during the Pleistocene Epoch. The Pleistocene in North America is characterized by the advance and retreat of continental glaciers known collectively as the Laurentide Ice Sheet east of the Rocky Mountains and the Cordilleran Ice Sheet west of the Rocky Mountains. The glacial tills in northeast Kansas are composed of the detritus picked up by south-flowing continental Laurentide Ice Sheet and deposited at its southern terminus during pre-Illinoian glacial episodes that occurred prior to about 300,000 years ago. The more recent advance episodes of the Laurentide Ice Sheet include the Illinoian glacial period (300,000 – 130,000 years ago), and the Wisconsinan glacial period (122,000 – 10,000 years ago). During these later ice ages, however, the Laurentide Ice Sheet not extend as far south as Kansas. Since their deposition, the pre-Illinoian tills have been deeply dissected by erosion. Though usually quite rocky, glacial tills are generally very fertile and suitable for horticulture small-scale agriculture.

4.1 PALEOINDIAN PERIOD (PRIOR TO 10,000 YEARS BEFORE PRESENT)

The first people arrived in North America at the end of the latest (Wisconsinan) glaciations during the Bølling/Allerød interstadial, a 2,000-year long period of warming and glacial retreat that began around 14,700 years ago. There is considerable linguistic and genetic evidence that the first Americans originated in northeastern Asia (Siberia). They traveled either by boat or by land utilizing a corridor of grassland steppe land between northeastern North America and Northwestern Asia known as “Beringia”. Beringia was an area, now covered by the Bering Sea, which was periodically exposed during the Pleistocene by retreats of the Cordilleran Ice Sheet and a dramatic lowering of sea levels caused by the capture and retention in glaciers of available global atmospheric water.

The arrival of humans in the New World was almost certainly not the result of a single long distance migration from Asia to North America across the Beringia. Instead, their appearance in the New World was the probable culmination of episodic movements or expansions of small, probably coastal, hunter-gatherer group(s) into unpopulated territories further east and south over the course of several thousands of years. Several mammals are known to have migrated from Asia to North America cross the Bering land bridge, including the woolly mammoth and the cave lion. During the same period, horses and camelids migrated from North America to Asia.

The earliest archaeological sites in North America evidence that these peoples subsisted (as did their Siberian progenitors) by hunting and gathering with an emphasis, at least as evidenced by the archaeological record, on the hunting of largest available herbivores, members of a group of animals known as Pleistocene “megafauna”. There is direct archaeological evidence that the earliest peoples in North America hunted several of the largest megafauna species including the extinct woolly mammoth (*mammuthus primigenius*) and ancient bison (*bison antiquus*) from which the much smaller existing subspecies the American plains bison (*Bison bison bison*) and the now-extinct wood bison (*Bison bison*)

athabascae) evolved. The extinction of 35 genera and more than 45 species of the Pleistocene fauna soon after the arrival of the first humans in North and South America mirrors mass faunal extinctions soon after the arrival of humans in unsettled areas elsewhere, such as in Australia (50,000 - 45,000 years before present [BP]), Europe (12,000 - 10,000 BP), and New Zealand (800 BP).

Populations of humans that coexisted with the Pleistocene megafauna are commonly termed “Paleoindians” in the archaeological literature. The surviving archaeological evidence, found throughout North America, suggests that the earliest of these people produced stone artifact assemblages well suited to the taking and processing of very large animals. Large, well-crafted “Clovis” stone spear or dart points displaying longitudinal flakes (flutes) detached from the base and stone butchering and hide-scraping implements typify sites dating until 10,500 BP. The presence of Clovis artifacts throughout North America evidences that the expansion of the Clovis people was very rapid. In Kansas, the evidence for Clovis presence is restricted to isolated surface artifact finds.

Slightly later than the Clovis assemblages are assemblages found in association with Folsom projectile points. Folsom points found in dated contexts suggest the people who made them lived between 11,000 and 10,000 BP. Though Folsom points are smaller than Clovis points, they are also fluted. The flutes on Folsom points are longer than those on Clovis points and extend almost the full length of the point. The woolly mammoth was extinct by or shortly after the beginning of the Folsom period. Folsom artifact assemblages found in Logan County in western Kansas and elsewhere in the Plains Region suggest that evidence that the people who made them hunted the largest of the remaining large herbivores, primarily *Bison antiquus*. In addition to the Clovis and Folsom artifact assemblages, other spear or dart point styles, (such as the Plainview, Scottsbluff, and Eden varieties) are associated with the late Paleoindian period. These distinctive late Paleoindians artifacts suggest that by the end of the Paleoindians Period around 8,000 BP groups were beginning to adopt a regionally based subsistence and settlement strategy.

A defining characteristic of the Paleoindian Period is expansion. When the first Paleoindian peoples entered North America, their movements did not result in opposition from other human groups, a situation typical of nomadic groups in longer-occupied, more populated areas of the world for there were no other humans in North America. The universal occurrence of very similar Clovis assemblages throughout North America demonstrates that their earliest life ways were sufficiently adaptable to allow their exploitation of the full range of environments present throughout North America. Unrestricted by the need to deal with different and/or hostile human groups and afforded with a continent-full of large game animals, Paleoindians populated, however sparsely, the entirety of North America in little more than a millennium. The archaeological evidence suggests that Paleoindians lived in small, very mobile (nomadic) hunter-gatherer groups who stopped briefly at specific locations long enough to exploit the resources available. Small campsites, butchering/kill sites, and isolated artifact finds constitute the bulk of the archaeological evidence for Paleoindian people.

The traditional archaeological literature labels the time following the Paleoindian period (8,000– 2,000 BP) as the “Archaic Period”. The assignment of this new label to archaeological assemblages postdating the Paleoindians and pre-dating the occurrence of horticulture and ceramic technology suggests that there is evidence for a distinctive and relatively abrupt change in the characteristics of the artifact assemblages dating to the beginning of the Archaic. Implied is that these changes evidence distinctive and rapid shifts in the ways in which people lived. However, such distinct and abrupt alterations are not evidenced in the archaeological record. Most of the archaeological assemblages, dating to all but the latest of the Archaic Period, show a continuation of the Paleoindian, hunter-gatherer way of life with

hunting focused on the largest of available game animals. There is no evidence suggesting substantial changes in the hunting and gathering practices focused on smaller resources.

There is, however, evidence to suggest that expansion was no longer the norm in that specific groups seem to have become relatively constrained to specific regions probably because they were, by the Archaic Period, surrounded by other people. The archaeological record dating to the early Archaic evidences regional and temporal differences in projectile point styles. Numerous Archaic campsites evidence repeated occupation suggesting that archaic peoples had adopted a seasonal round type of nomadism as opposed to the free-ranging nomadism characteristic of the Paleoindians.

4.2 ARCHAIC PERIOD (10,000 TO 2,000 YEARS BEFORE PRESENT)

By around 10,000 BP, the herbivorous Pleistocene megafauna and the large predators such as the tremarctine bears, North American lion (*Panthera atrox*), dire wolf (*Canis dirus*), and saber-toothed cat (*Smilodon fatalis*) that depended on them were extinct. In response to the disappearance of the megafauna, later hunters in Kansas focused on the largest of the remaining herbivores including elk (*Cervus canadensis*), deer (*Cervidae sp.*) and bison. Though the archaeological record seems to suggest that Paleoindian hunters focused on very large animals, it is certain that the hunting and gathering of smaller animals including reptiles, insects, fish, and shellfish and the gathering of widely available vegetal materials for food and other uses constituted a substantial portion of their subsistence and technological exploitation strategies.

Several distinct cultures are recognized in the archaeological record dating to the Archaic. They are characterized by small semi-permanent habitation sites; a few with post-supported structures. Ground stone artifacts are found in some Archaic assemblages including celts and axes, food and pigment grinding implements, and boat stones/atlatl weights. In Kansas, intentional burials are evidenced both inside and outside settlements early in the Archaic at the Lansing and Stigenwalt sites.

Distinct archaic cultures include the early Logan Creek Phase dating to approximately 8,000 BP and identified by distinctive triangular shaped side notched projectile points found throughout Kansas, Nebraska, and Iowa. Logan Creek assemblages have been interpreted as small settlements and kill/butchering sites.

The Munkers Creek Phase includes approximately 6,000-year-old sites in the Flint Hills and Western Osage Cuestas. The Munkers Creek phase is characterized by large lanceolate projectile points, long narrow chert knives, gouges, and thick ground stone axes. Many of the small settlements of the Munkers Creek phase show repeated use; strongly suggesting a subsistence pattern which facilitated the exploitation of seasonally available floral and faunal resources and chert sources for tools in different parts of a broad territory.

Similar to, and probably contemporary with, Munkers Creek deposits are Black Vermilion phase sites, which are distinguished by the presence of lanceolate and triangular shaped points with corner and basal notches. Black Vermilion Phase's sites appear to be small seasonally occupied campsites focused on seasonally available resources. Sites are distributed through the Flint Hills and Osage Cuestas.

Nebo Hill Phase sites are found in Eastern Kansas and probably date to around 4,000 BP. Nebo Hill assemblages are characterized by large lanceolate (Nebo Hill) variety projectile points, flaked stone hoes, grooved axes, and gouges. Nebo Hill people buried their dead on ridge tops outside of semi-permanent settlements.

Eldorado Phase assemblages also occupied the Western Osage Questas and the Flint Hills and date to approximately 4,000 BP. Thus, they follow Munkers Creek in age. Eldorado Phase settlement patterns include larger “base camps” and scattered smaller campsites focused on the exploitation of specific resources. Dustin, Lamoka, and Table Rock points are found in Eldorado phase assemblages as are flexed human burials within settlements.

Walnut Phase assemblages are found in the same areas as Eldorado phase though 3,000-year-old dates suggest they may be a developmental continuation of the Eldorado phase assemblages. The small triangular projectile points found in Eldorado phase assemblages suggest that Eldorado peoples may have added the bow and arrow to their inventory of hunting equipment as the probable result of diffusion through trade or contact with peoples already possessing the technology.

4.3 EARLY CERAMIC PERIOD (2,000 TO 1,000 YEARS BEFORE PRESENT)

The major technological distinction in the archaeological record separating the Archaic Period from Ceramic Period is the gradual but widespread adoption of ceramic technology in the form of cooking and storage vessels. Ceramic technology was already present as a component of the Eastern Woodland cultures and diffused into Kansas; either as a result of trade, actual migration of peoples from the eastern Woodland cultures, or a combination of diffusion and migration. The acquisition of ceramic technology indicates that other substantial changes were taking place with regard to adaptive strategies of the cultures involved. Ceramic storage vessels imply the need and/or the ability to store surplus food resources. Ceramic vessels are relatively fragile, relatively heavy, and are poorly suited to survive the rigors of pedestrian transport. Their presence suggests that abundant resources became increasingly available in relatively restricted areas. It is likely that the diffusion of ceramic technology was accompanied by the spread of food production strategies (horticulture) and the introduction or invention of additional tools necessary for the production and processing of agricultural products.

Contemporary with the development of ceramic/horticultural technology was a trend for some Early Ceramic Culture settlements to become larger and more permanent indicating a somewhat more sedentary (less nomadic) lifestyle. Climate changes and population pressures may have influenced an increased sedentism, but the gradual adoption of food production through agriculture probably played a major role. The introduction of food production tends to influence substantial changes in the ways people interact with their environment and with each other. An increase in available calories provided by the addition of cultigens to the food supply almost invariably results in increases in population density and larger, more sedentary settlements. Larger populations and settlements and the adoption of agriculture also influence modifications in cultural practices involving, for example, land use and intra- and inter-group interactions.

Though probably adopted late in the archaic, there is increasing evidence in the early ceramic archaeological assemblages for the widespread use of the bow and arrow. Though spear and atlatl dart points are commonly found in early ceramic archaeological assemblages, by the end of the period they are far outnumbered by smaller arrow points.

The archaeological record suggests the groups became increasingly localized and locally distinctive throughout the ceramic periods. A progressive proliferation of temporally and geographically distinctive artifact styles, particularly with regard to projectile points and ceramics, suggests that environmental or cultural factors somewhat inhibited free inter-cultural interchange of (non-functional) stylistic and technological practices and encouraged relatively independent intra-cultural stylistic development.

Conversely, the presence of exotic materials such as obsidian from distant sources in the archaeological record suggests an increase in either long-distance travel by individuals or small groups or complex intercultural trade relationships.

Two distinctive cultural groups occupied Eastern Kansas during the Early Ceramic period. These were the Kansas City Hopewell and the Plains Woodland cultures. Hopewell cultures included groups of indigenous peoples that shared cultural traits extending from Florida to New York as far west as Eastern Kansas. Their presence in Kansas introduced several new cultural characteristics including burying the dead in mounds on ridge tops and increased reliance on cultigens and ceramic technology. Their presence in Kansas is the result of either migration or the diffusion of Hopewellian cultural characteristics. The Plains Woodland cultures, on the other hand, probably developed in place from earlier local Archaic cultures.

4.4 MIDDLE CERAMIC PERIOD (1,000 TO 450 YEARS BEFORE PRESENT)

The Middle Ceramic period is also known as the Late Prehistoric period. Middle Ceramic assemblages shows an increase in cultural diversity and complexity, trade, settlement size, and reliance on agriculture. Current archaeological information is not sufficient to clearly identify the precise temporal and geographic boundaries of the various Middle Ceramic Period groups and the description of the characteristics of their archaeological assemblages varies in the literature.

There is agreement however that a major category of archaeological assemblages in Kansas during the Middle Ceramic is the Central Plains Tradition, commonly divided into three groups: the Smoky Hill, the Upper Republican, and the Nebraskan traditions. Common to all Central Plains Tradition sites are square or rectangular earth lodge structures with central hearths in permanent/semi-permanent habitation sites. Human burials are commonly found within structures. Of these three, the Nebraskan tradition is reported in northeastern Kansas and Northwestern Missouri dating between 1100 BP and 500 BP.

Large Nebraskan settlements are found on bluffs overlooking the Missouri River and its immediate tributaries and are characterized by rectangular, deep pit earth lodges with short entries oriented south or east. Structures are characterized by a central hearth. Large Nebraskan settlements were probably major habitation sites and were associated with smaller, outlying campsites that focused on the acquisition of seasonally available resources. Nebraskan hunters relied on bison but certainly exploited smaller available local game animals. Small, usually triangular projectile points suggest that the bow and arrow was the primary hunting weapon. Their sites contain abundant pottery vessels suggesting a substantial reliance on agricultural products - primarily corn, beans, squash, and sunflower. Their ceramic vessels include sand or grog tempered globular jars and pots with smooth or cord marked surfaces, often-decorated shoulders and strap handles. The Nebraskan tradition is considered to be an *in situ* outgrowth of earlier Plains Woodland cultures.

Steed-Kisker Phase sites dating from 1150 BP to 700 BP in Northeast Kansas are another cultural group of the Middle Ceramic period. Assemblages resemble those of groups situated further east and are interpreted as deriving from Eastern Mississippian cultures, possibly, but not necessarily, as a result of migration. Their abundant pottery vessels include grog tempered globular jars and pots with smooth and/or cord marked surfaces, commonly with decorated shoulders and strap handles. Steed-Kisker peoples were bow hunters and agriculturalists who lived in relatively large villages. They buried their dead in hilltop cemeteries near their villages. Shell-tempered globular pots often had polished surfaces

with zoomorphic (animal-shaped) heads attached to the rims. Their sites also often contain zoomorphic pipes.

Partially contemporaneous with Steed-Kisker were Pomona Complex groups. Pomona artifact assemblages evidence a Central Plains characteristics found in Eastern Kansas (including the Osage Cuestas, the Dissected Till Plains, and the Flint Hills Upland) and in extreme western Missouri. Pomona sites date from between approximately 1100 BP to 500 BP. Most Pomona ceramics include undecorated, thin-walled, globular pots with, knotted cord- marked exterior surfaces and flared, constricted “S”-shaped necks, and unthickened rims that are sometimes collared. Their structures are sapling-framed and covered with thatch, which were built on the surface on streamside terraces. They lack interior hearths suggesting that Pomona sites represent summer occupations associated with some other Central Plains group. The fact that Pomona artifact assemblages are sometimes found overlying Plains Woodland assemblages suggests that the Pomona developed from or intruded upon Plains Woodland peoples. Bison and smaller game were hunted and the Pomona peoples practice small-scale horticulture. The Zacharias Site (14LV380) in Leavenworth County includes both Pomona and Steed-Kisker pottery (Logan 2006:90).

Oneota artifact assemblages are interpreted as representing a diffusional upper Mississippian manifestation originating in Eastern Wisconsin, “linking” Plains cultures to those of the Eastern Woodlands. The Oneota tradition dates from about A.D. 1000 to the early historic period in the Midwest and Eastern Regions of the United States. In Kansas, Oneota sites are identified with the White Rock phase. Work by Logan (1995) and Ritterbush (2006) indicates that the White Rock phase represents a late intrusion of Oneota groups into the Central Plains of southern Nebraska and northern Kansas between about A.D. 300 to 1450. Their structures include winter pit houses and summer pole-supported structures built on the surface. Large Oneota sites often show evidence of long houses that increase in size through time. Large pit storage features are found at their sites both inside and outside structures. Oneota agriculture was focused on corn, beans, squash, and sunflower. Localized hunting of a wide variety of smaller game animals was important and the Oneota participated in annual long-range bison hunts to the West. That they participated in long-range trade is evidenced by the presence of Gulf Coast shell, Alibates agatized dolomite from the Texas Panhandle, and obsidian from New Mexico, Wyoming, Idaho, and Utah in many Oneota assemblages. Their ceramic wares included shell-tempered pots with constricted orifices and rounded bottoms and plain broad-mouthed bowls. Their pots were both plain and decorated with punches, finger/tool impressions, dashes and/or trailed lines. The shoulders of pots were often decorated.

4.5 LATE CERAMIC PERIOD (450 TO 250 YEARS BEFORE PRESENT)

Late Ceramic Period is also known as the protohistoric period because the cultures of this time were beginning to obtain objects of Euroamerican manufacture and early explorers, missionaries, and traders were starting to record the Native American peoples in North America. In Kansas, the earliest Euro-American influences probably originated from the Southwest as a result of the Spanish invasion and exploration of Central America and Southwestern North America and, more directly, the Coronado expedition that passed through Kansas in AD 1541. Spanish explorer, Juan de Oñate crossed portions of southern Kansas in 1601. The earliest archaeological evidence for Euro-American influence is the El Cuartelejo Pueblo in Scott County (western Kansas). This site, the only Pueblo known in Kansas, was probably settled by Puebloan refugees from the Southwest as it contains distinctive southwestern ceramic sherds dating to about 300 BP. The community became an outpost of Spanish civilization and a rendezvous for French traders before 1720.

After the Coronado expedition, numerous traders, trappers and explorers traversed Kansas and they undoubtedly had a profound influence on the technology and cultures of the indigenous Kansan peoples. The indigenous Kansas peoples included the Plains Apache, Arapaho, Cheyenne, Comanche, Kansa, Kiowa, Osage, Pawnee, and Wichita. Many other groups of Native Americans, either forcibly or as refugees from Euro-American disruptions to their cultures arrived in Kansas from the East. Those Native people forcibly moved into Kansas by the U. S. Army as a result of the Indian Removal Act of 1830 included the Cherokee, Chippewa, Delaware, Illini, Iowa, Iroquois, Kaskaskia, Kickapoo, Miami, Missouriia, New York tribes (Brothertown, Cayuga, Munsee, Oneida, Onondaga, St. Regis, Seneca, Stockbridge, and Tuscarora), Otoe, Ottawa, Peoria, Piankashaw, Potawatomi, Quapaw, Sac and Fox, Shawnee, Wea, and Wyandot.

In Leavenworth County, the Kansa were the indigenous group in the early 1700s when Euro-American explorers, fur trappers, and traders began to venture in to region where the Kansas River joined with the Missouri River (Wedel 1959:51). The Kansa had villages with adjacent corn fields and gardens primarily along the Kansas River and as far west as the Manhattan area, where they settled at the mouth the Blue River (Site 14PO24). However, for a few years, the Kansa had a village along the Missouri River in Doniphan County (Site 14DP1). The Kansa made seasonal hunting expeditions in western Kansas to hunt bison. Between 1847 and 1873, the Kansa placed their villages on reserved lands along the Neosho River in east-central Kansas. In 1873, the Kansa, greatly reduced by warfare, disease, and neglect by the U.S. government, settled on a portion of the Osage Reservation in northern Oklahoma.

Following the Indian Removal Act, Leavenworth County and the western part of Wyandotte County were assigned as the Delaware Indian Reserve in 1831. Delaware warriors, esteemed for their tracking and fighting skills, were commonly employed as scouts by the U.S. Army. In 1843, the Delaware tribe sold the Wyandot tribe of the Upper Sandusky, Ohio region 39 sections on a triangular tract near the confluence of the Kansas and Missouri rivers. Many of the Wyandot relocated to Indian Territory in Oklahoma in 1859. In 1868, the Delaware moved to a new reservation in Oklahoma.

Most of the Native American groups in Kansas also were relocated to Oklahoma; though many Native Americans and their descendants continue to reside throughout Kansas. The only remaining Federally recognized Indian tribes remaining in Kansas are the Iowa Tribe of Kansas and Nebraska, Kickapoo Tribe of Indians in Kansas, the Prairie Band Potawatomi Nation, and the Sac and Fox Nation – located in Brown, Doniphan, and Jackson counties in Northeast Kansas.

4.6 HISTORIC PERIOD

The HSR by BELLArchitects, Inc. developed extensive historic contexts in the HSR completed in 2005 for USP Leavenworth. These contexts were used as a framework to evaluate properties identified within the project area. The following sections provide a brief history of the USP and supplemental historic contexts for the farming operations at USP.

4.6.1 Brief History of USP Leavenworth

USP Leavenworth was established in 1897 as the first maximum-security federal prison in the United States. The prison was designed in the Neo-classical style by the St. Louis architectural firm of Eames & Young. The prison was an combination of the Pennsylvania Radial plan and the Auburn system of inmate reform (BELLArchitects 2005:v). Construction began in March 1897 using inmates from the adjacent Fort

Leavenworth Military Prison and continued for the next 30 years. Federal inmates were moved from Fort Leavenworth to the USP in January 1906 (LaMaster 2008:7-8).

As the prison was being constructed, support buildings outside the prison walls were also being erected on the approximately 754-acre (305 hectare) property. In 1903, a dairy barn and mule shed were constructed of brick. The mule shed housed the large number of mules used during the construction of the prison. A cemetery for inmates was also established on the west edge of the property in 1903. From 1903 to 1924, residences for the Warden, Associate Warden, Deputy Warden, and Chief Medical Officer were constructed on the lawn in front of the prison. The structures were arranged in a park-like setting on either side of the main drive to the prison.

As the agricultural and industrial activities expanded, more outbuildings were constructed through the early twentieth century including a hatchery building, heifer barn, maintenance garage, warehouses, and receiving depots. Railroad tracks were laid into the prison complex to ship goods manufactured by the prison. Staff housing was constructed along Metropolitan Avenue in the mid-1930s, funded with Public Works Administration (PWA) funds. In 1939, an officer's club was constructed in the west section of the USP. In the 1940s, the area around the club was dedicated to officer's training with construction of a rifle range, observation tower, and target storage building among other buildings. The complex continued to grow in the 1950 and 60s with construction of a new power plant, farm dormitory (FPC Camp Site), Warden's Residence, and UNICOR (prison industry) related buildings.

4.6.2 History of Farming Operations at USP Leavenworth

4.6.2.1 Farm No. 1

On July 1, 1895, Congress directed the transfer of the military prison at Fort Leavenworth from the War Department to the Department of Justice (Cope 1987:vi). Over 500 acres (202 hectares) on the southwestern side of the Fort Leavenworth military reservation was set aside by Congress on June 10, 1896 for the construction of a new prison with the provision that any open land on the reservation "shall be open for military tactical purposes" (Shindler 1911:61-63).

The architect for the new prison was William S. Eames, of Eames and Young of St. Louis. His concept of the prison was as a "city within a city" with all services provided by the prison. An important aspect of this self-sufficiency was the utilization of adjacent land for production of crops and livestock (BELLArchitects 2005:1-10). One of the earliest agricultural buildings constructed at the prison was the milk house in 1903 (#101-105). Crops were produced as early as 1903, when it was reported that the year's crops were flooded by the Missouri River (Cope 1987:13).

By 1917, the prison farm had herds of Holstein dairy cattle, swine, and chickens and was experimenting with goats, Belgian hares, and ducks. Warden Thomas W. Morgan planned on expanding the dairy herd to provide milk for the entire institution (USP Leavenworth 1916/17:8-9). Consequently, the dairy barn was greatly expanded in 1917. In his 1919/1920 annual report, Warden A. V. Anderson requested additional funds for "up-to-date cow barns, hog barns, silos, and creamery building". The total value of farm products for that fiscal year was \$48,969.42 (USP Leavenworth 1919/20:6). In the next annual report, Warden Biddle cited an "urgent need" for more farmland as only half of the 754-acre (305 hectare) penitentiary reservation contained tillable land. He requested that 400 acres (161.8 hectares) of "open common public pasture" on the Fort Leavenworth Military Reservation to the north be acquired for agricultural purposes (USP Leavenworth 1920/21:5). During the next fiscal year, an additional 350 acres (141 hectares) of land was acquired through "revocable license" from the War

Department for farming purposes adding 170 acres (68.8 hectares) of pasture, 80 acres (32.3 hectares) of cropland, and 100 acres (40.4 hectares) of timber (USP Leavenworth 1921/22:5).

By 1923, the prison farm was producing pork, vegetables, and fruits such as peaches, apples, grapes, and pears. The prison acquired some of the fruits by sharecropping orchards in the area. By this time, the large mule barn, needed to house the many mules used during the height of the prison's construction, was being converted into a dairy barn (USP Leavenworth 1922/23:4).

In May 1924, 942 acres (381 hectares) of land in Platte County, Missouri was acquired from the War Department. This property was established as a second prison farm, Farm No. 2. Farming operations adjacent to the prison continued to expand and operate as Farm No. 1. By fiscal year 1929/30, Farm No. 1 had 280 acres (113 hectares) under cultivation producing vegetables, fruits, grains, and alfalfa. The remaining acreage was used for the "production and feeding of livestock" (USP Leavenworth 1929/30:15). By 1937, 238.3 acres (96 hectares) on Farm No. 1 were used for pasture land, 293.4 acres (118 hectares) for cultivation, and 6.4 acres (2.6 hectares) for a chicken and hog "ranch", located south of the USP Leavenworth Cemetery (USP Leavenworth 1936/37:38).

During fiscal year 1937/38, the Bureau of Prisons authorized construction of a farm manager's residence at the southeastern corner of the prison, hog fattening units, a dairy herd shelter, and a vegetable storage building (#100) (USP Leavenworth 1937/38:46). Only the vegetable storage building remains extant.

4.6.2.2 Farm No. 2

As noted above, on May 31, 1924, the U.S. War Department deeded the Fort Leavenworth Timber Reservation consisting of 942 acres (381 hectares) of land in Platte County, Missouri to the Federal Bureau of Prisons by an Act of Congress (FBOP 1979:3). At the same time, Congress appropriated funds to repair the Old Fort Leavenworth Bridge, which would provide access to the newly acquired land in Missouri (Cope 1987:54). Soon thereafter, USP Leavenworth established a prison farm on the land; the initial functions of the camp being to clear land and operate a sawmill to provide lumber for construction activities at the prison (FBOP 1979:4). The sawmill operation coincided with large construction projects at USP including the Administration Building, Rotunda, and shoe factory. In 1924, construction of a two-story, H-shaped dormitory began at Farm No. 2. The center wing of the concrete and brick structure was constructed first with a kitchen, east, and west wings being completed by 1930. The walls were 17 inch (43.18 centimeter) thick at the ground level and 12 inch (30.48 centimeter) thick at the second level (FBOP 1979:3). All of the brick and labor for the structure was provided by the prison (USP Leavenworth 1924/25:6).

As the ground was cleared at Farm No. 2, crops such as potatoes, melons, and corn were planted on the bottom land adjacent to the river (USP Leavenworth 1925/26:5). By 1930, 250 acres (101 hectares) were in cultivation for corn and potatoes (USP Leavenworth 1929/30:15). By 1937, Farm No. 2 had grown to 1,063 acres (430 hectares) with 394 acres (159 hectares) under cultivation, 245 acres (99 hectares) of pasture, 409 acres (165 hectares) of timber, and 14 acres (5.6 hectares) for a hog ranch (USP Leavenworth 1936/37:38). A total of 100 men were working on Farm No. 2 by 1938 (USP Leavenworth 1937/38:49). By 1942, Farm No. 2 had ten buildings including a farm manager's residence, the H-shaped dormitory, a farrowing house, machine shop, piggery, steer shelter, pump house, and several other outbuildings.

In 1951, a major flood left water as high as six feet above the second floor of the dormitory. Farm No. 2 was closed and prisoners were transferred to the main prison. When the farm re-opened a short time later, the sawmill was abandoned and the site was used for truck farming and cattle/hog raising (FBOP 1979:4).

Warden C. H. Looney announced in July 1957 that a new farm dormitory was to be built on the USP grounds, halfway between the main prison and the officer training center. The new facility was constructed to replace the farm dormitory on the prison farm in Platte County, Missouri. Most of the prisoners staying at the Missouri prison farm were working on farm grounds at the USP in Kansas. Another reason cited for the new dormitory was the vulnerability of Farm No. 2 to flooding by the Missouri (*Leavenworth Times* 1957:4).

The new farm dormitory was designed as a central block with four wings extending out from it. The central block contained offices, dining room, kitchen, classrooms, library, and day rooms (*Leavenworth Times* 1957:4). The wings, of which only three of the four were initially built, contain dormitory style rooms and a dayroom with a television set (*Leavenworth Times* 1960:1). The steel frame of the structure was constructed by Missouri Valley Steel, Inc. However, the remainder of building was constructed using inmate labor under the direction of Ralph Pearsley, project supervisor (*Leavenworth Times* 1960:1). The \$450,000 facility had a capacity of 250 inmates (*Leavenworth Times* 1957:4). On October 1, 1960, USP Leavenworth hosted an open house for the newly completed farm dormitory. Inmates were moved from the farm dormitory in Missouri to the new facility the day after the open house (*Leavenworth Times* 1960:1).

Though the new farm dormitory was built at USP, Farm No. 2 continued to operate as did the prison farm adjacent to the main prison. During fiscal year 1962, both farms supplied the prison with 252,725 lbs. of pork, 976,380 lbs. of milk products, and 413,300 lbs. of potatoes and vegetables, and 112,000 lbs. of beef (Cope 1987:75).

On January 30, 1979, an explosion occurred on the first floor of the farm dormitory's west wing, which had been remodeled into a maintenance shop in 1962 (FBOP 1979:4). Three inmates and a guard were killed from the explosion (*Leavenworth Times* 1979:1). By 1981, cuts to the FBOP budget necessitated the closing of prison farms across the country, including both prison farms at USP Leavenworth (BELLArchitects 2005:1-21).

5.0 RESULTS OF BACKGROUND RESEARCH AND EXPECTED CULTURAL RESOURCES

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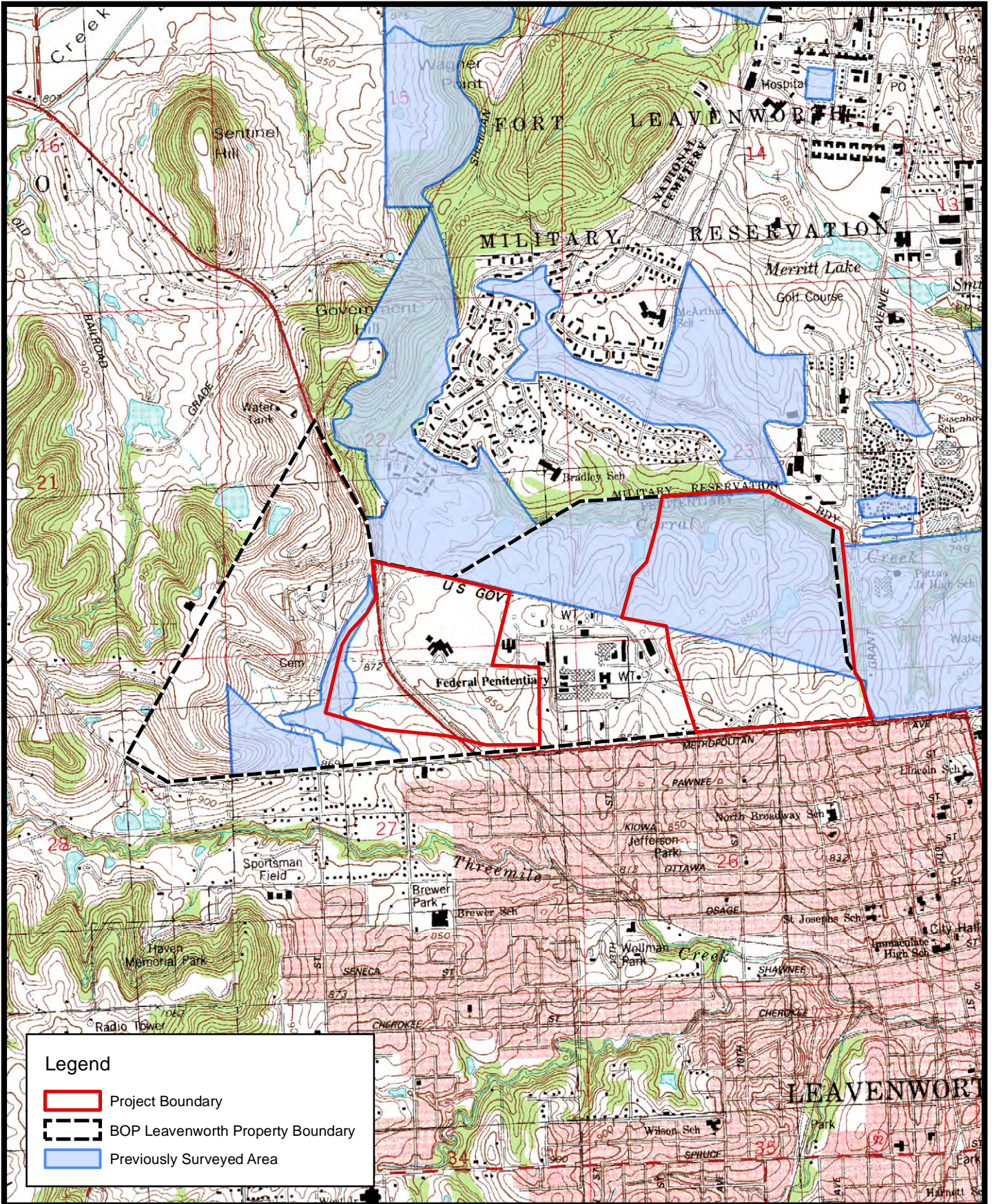
5.1 PREVIOUS INVESTIGATIONS

5.1.1 Archaeological Investigations

Six archaeological investigations have been made in the area of the two proposed construction site alternatives (Figure 5). They are summarized in Table 2. In 1974, Kansas State Historical Society archaeologists, Don Rowlison and John Reynolds performed an archaeological survey of an undetermined number of acres in Leavenworth County for proposed improvements to U.S. Highway 73 (Rowlison and Reynolds 1974). Part of that survey included the southwest portion of the proposed West Site on the USP property. They found three chert flakes, one very small possible grit-tempered pottery sherd, and one very small mollusk shell in an area of about ten acres (four hectares) situated south of Honor Farm Road and west of the former alignment of Santa Fe Trail. Also present were burned and unburned rock debris and historic brick and ceramic fragments. Subsurface testing suggested that the prehistoric material were at least partially undisturbed. The historic artifacts were thought to be associated with warehouses, wagon yards, and corrals of the Russell, Majors, and Waddell Company, which operated as freighters for the U.S. Army between 1860 and 1870 and provided hardware for civilian use. The site was assigned the number 14LV337.

In 1977, Kansas State Historical Society archaeologists, Donald Rowlison and Thomas Barr, made an archaeological inventory of the Fort Leavenworth Military Reservation for the United States Army Corps of Engineers (USACE), Kansas City District (Barr and Rowlison 1977). Three archaeological sites were identified within the boundaries of the proposed East Site: 14LV364, 14LV365, and 14LV366. Site 14LV364 is a small prehistoric camp or lithic reduction site on a ridge toe in the northwestern part of the proposed East Site area. Artifacts included a biface, a corner-notched projectile point base, a scraper section, a core remnant, two flakes, and mollusk fragments. Site 14LV365 is situated on a knoll on a ridge toe in the northern part of the proposed East Site and includes both prehistoric and historic artifacts. Prehistoric items include two biface sections, a hammerstone, two possible celts, two core fragments, and 44 flakes. Historic items include two brass cartridges, a bullet, a picket pin, a mule shoe, a metal chain segment, and bottle glass. Site 14LV366 is a prehistoric camp or lithic reduction site located on a ridge top in the western part of the proposed East Site south-south east of Site 14LV364 and southwest of Site 14LV365. Artifacts include a core remnant and four flakes. The three sites were not been evaluated with regard to National Register eligibility.

In 1984, Kansas Historical Society archaeologist, Randall Thies performed site evaluation testing at Site 14LV337 (Thies 1984). Three test pits, each 30 centimeters square (4.6 square inches), were excavated on the high ground at the west end of the site. Each test was excavated to a depth of 30 centimeters (12 inches). The excavations included scattered brick fragments and modern debris. No prehistoric or early historic materials were found and Thies recommended that the site be considered not eligible for listing in the National Register.



0 1,000 2,000 4,000 Feet
0 300 600 1,200 Meters
Source: USGS 1984



Figure 5
PREVIOUSLY SURVEYED AREAS

TABLE 2
ARCHAEOLOGICAL SURVEYS NEAR THE PROJECT AREA

Project Name	Report Author(s)	Publication Date	Results and NRHP Recommendations
U.S. Highway 73	Rowlison and Reynolds	1974	Phase II intensive survey. Recorded Site 14LV337. Site recommended eligible for the National Register
Archaeological Inventory of Fort Leavenworth Military Reservation	Barr and	1977	Phase II intensive survey. Recorded Sites 14LV364, 14LV365, 14LV366. No recommendation of National Register eligibility
US Highway 73	Thies	1984	Phase III site evaluation of Site 14LV337. Site recommended not eligible for the National Register
Site Evaluations for Fort Leavenworth Military Reservation	Wagner et al.	1989	Phase III evaluation of Sites 14LV110 and 14LV111. Site 14LV110 recommended potentially eligible for the National Register. Site 14LV111 recommended not eligible for the National Register
Site Evaluations at Sites 14LV114 and 14LV118 at Fort Leavenworth	Fox et al.	2000	Phase III evaluation of Sites 14LV114 and 14LV118. Site 14LV114 recommended eligible for the National Register. No recommendation was made for Site 14LV118
Geomorphological and archaeological survey in Fort Leavenworth	Latham and Mandel	2002	Phase II intensive archaeological and geomorphological survey of Housing Site 3 and Phase III testing at Site 14LV120. Site 14LV120 recommended not eligible for the National Register
Cultural Resources Survey for US Army Reserve Center	McLean and Rust	2004	Phase II intensive survey. Recorded Site 14LV158. Site recommended eligible for the National Register
Archaeological Survey in Fort Leavenworth	Pritchard	2005	Phase II intensive survey of proposed residential communities (Areas O through S). Sites 14LV114, 14LV117, 14LV118, and 14LV159 revisited. Three new archaeological sites. All recommended not eligible for the National Register
U.S. Highway 73	Thies	2006	Phase II intensive survey. Western end of Site 14LV3337 revisited. Site recommended not eligible for the National Register
Site Evaluation for 14LV165, Fort Sully	Walz et al.	2008	Phase III evaluation of Site 14LV165, a Civil War era fortification. Site recommended eligible for the National Register
USP Leavenworth	TEC Inc.	2009	Phase I reconnaissance survey. Recommend archaeological and historical studies of the project area

In 1988, the American Resources Group, Ltd. (Wagner et al. 1989) reported archaeological survey and site evaluations performed on the Fort Leavenworth Military Reservation for the USACE, Kansas City District. Among the 35 archaeological sites recorded were two in the southern portion of the proposed East Site: 14LV110 and 14LV111. Site 14LV110 is a historic dump strung along an intermittent drainage with butchered cow and pig bone and broken dishes, bottle glass, and other materials dating from the early twentieth century and associated with the early history of the USP. This site was recommended potentially eligible for listing in the National Register. Site 14LV111 consists of an isolated find of one chert flake in a bulldozed area by a cattle loading facility in the southeast portion of the proposed East Site. This site was recommended not eligible for listing in the National Register.

Archaeologists from the Archaeology Laboratory, University of South Dakota (Fox et al. 2000) completed site evaluations at Site 14LV114 and 14LV118 at Fort Leavenworth in 1999. Fieldwork included both pedestrian survey to inspect stream banks at Site 14LV114, as well as excavation of 34 bucket auger tests and 10 square meters (32.8 square feet) in 12 formal test units. Site 14LV114 was confirmed to be a trash dump dating between about 1900 and 1925. The site was recommended potentially eligible for listing in the National Register. Site 14LV118 was a small lithic scatter. Not enough testing was completed to make a recommendation of National Register eligibility.

In 2002, Burns & McDonnell archaeologist Mark Latham and geomorphologist Rolfe Mandel completed investigations at three proposed housing developments within Fort Leavenworth (Latham and Mandel 2000). After determining that Housing Sites 1, 2, and 3 had been previously surveyed and that only archaeological site 14LV120, situated within Housing Site 3, was likely to be impacted, archaeological investigation focused on this site. Three backhoe trenches, three 1-square-meter (3.2 square feet) test units, and 34 shovel tests were excavated at Site 14LV120, which was identified as a prehistoric lithic scatter of undetermined cultural affiliation by Wagner et al. (1989). Latham determined that the site was belonging to the Kansas City phase of the Kansas City Hopewell culture. The site was recommended not eligible for listing in the National Register.

Archaeologists Janice McLean and James Rust at 4G Consulting completed an intensive cultural resources survey of 23.8 acres (9.6 hectares) in the southwest portion of the UPS Leavenworth property for a proposed United States Army Reserve Center (USARC) in 2004 (McLean and Rust 2004). A historic trash dump associated with the early occupation of USP Leavenworth was recorded as Site 14LV158. The site was determined to have stratified deposits. The site was recommended as eligible for listing in the National Register.

In 2005, archaeologists from Brockington and Associates, Inc. performed an intensive archaeological survey of five parcels (Areas O through S) totaling 200 acres (80.9 hectares) for proposed new housing at Fort Leavenworth (Pritchard 2005). Four previously recorded sites (14LV114, 14LV117, 14LV118, and 14LV123) were revisited and three new archaeological sites were recorded (Field Site 1, Field Site 2, and 14LV159). Field Site 1 was a concrete stairway associated with the remains of a deactivated NIKE-Hercules missile site (KC-80). Field Site 2 was an abandoned exercise trail. Site 14LV159 was an abandoned section of the Atchison, Topeka & Santa Fe Railroad grade. All three sites were recommended not eligible for listing in the National Register.

In 2006, Kansas Historical Society archaeologist, Randall Thies completed archaeological survey in the southwestern portion of the proposed West Site for planned improvements to U.S. 73 and a northerly extension of 20th Street which resulted in the realignment of Santa Fe Trail (Thies 2006). Thies made a systematic pedestrian survey of about nine acres (22.2 hectares) with transects 12 to 15 meters (39.4 to 49.2 feet) apart. Surface visibility was 30 to 40 percent. Within the proposed construction APE and

across the western end of Site 14LV337, Thies used a hand auger to place a line of seven tests at 15-meter (49.2-foot) intervals. An eighth test was excavated 15 meters (49.2 feet) to the west of the center of the line. A shovel test was excavated 15 meters (49.2 feet) west of the line of seven auger tests and 15 meters (49.2 feet) to the eighth auger test. Brick fragments and coal were found in the plowzone at the upper 20 centimeters (8 inches) of the ground. No prehistoric artifacts were found. Thies again recommended that Site 14LV337 should be considered not eligible for listing in the National Register.

Archaeologists from the University of Illinois, Urbana-Champaign completed National Register eligibility evaluation investigations at Site 14LV165 in 2008 (Walz et al. 2008). The site is the location of a fortification known as “Fort Sully” on a ridge overlooking Fort Leavenworth. Constructed in 1864, the gun emplacement was intended to defend against Confederate attack. The site was recommended eligible for listing in the National Register.

In 2009, TEC Inc. completed a reconnaissance study of the proposed project. Data was collected on topography, geology, soils, surface water, groundwater, hazardous waste, natural resources, cultural resources, socioeconomic resources, and utilities to determine whether potential impacts to these resources or impacts to the project by these resources would make the site non-viable alternatives. The study was performed using desktop research on available on-line information from state and federal agencies, available reports, and site visits (TEC Inc. 2009:4).

5.1.2 Architectural Investigations

Review of BOP files indicated that two previous architectural surveys had been conducted for the USP. In December 2005, BELLArchitects, PC completed a Historic Structure Report (HSR) for USP Leavenworth. In that report, BELLArchitects concluded that the complex constituted an historic district eligible for listing in the National Register under Criterion A “for its association with the early development of the Federal Prison system, which was the result of efforts by the U.S. Government to consolidate federal inmates into one maximum-security prison” and Criterion C as “an outstanding example of a prison constructed almost exclusively by convict labor” at a national level of significance. The period of significance for the district was defined as 1897 to 1945 (BELLArchitects, PC 2005:2-1). While the HSR included recommendations for the National Register eligibility of the property, photographs for every structure in the complex were not included in the document. Additionally, the Kansas SHPO did not have any record of the property in their files; even though BELLArchitects indicated that a preliminary determination had been made by SHPO staff.

In the above mentioned report, TEC Inc. conducted background research at the Kansas SHPO and identified the National Register-eligible USP Leavenworth Historic District within the project area. A previously un-surveyed pillbox structure was also identified. TEC Inc. proposed a National Register evaluation of all un-identified structures; and determination, through consultation with the Kansas SHPO, of the USP Leavenworth Historic District boundaries and contributing/non-contributing status of buildings, structures, and landscapes within the district.

The HSR by BELLArchitects contained extensive historic contexts for USP Leavenworth, which were used as a framework to evaluate properties identified within the project area. Additional background research was necessary for non-contributing buildings that are now greater 50 years of age, particularly the Camp Site. Such research was conducted at the National Archives in Kansas City and Leavenworth Library. Resources that assisted in the research included maps, photographs, county histories, local histories of USP Leavenworth, and local newspapers.

5.2 PREVIOUSLY RECORDED SITES

There are 29 previously recorded archaeological sites and four isolated finds within a one-mile (1.6-kilometer) radius of the project area (Table 3). These include a total of eight prehistoric sites: three lithic scatters of undetermined cultural affiliation; four prehistoric camps (one Late Archaic, one Kansas City Hopewell, and two undetermined affiliation); and one artifact scatter of unknown cultural affiliation. Three of the isolated finds also are prehistoric in age. One site (14LV365) yielded both prehistoric artifacts of unknown cultural affiliation and historic artifacts that appear to be cavalry-related and date sometime between about 1854 and 1900. The site locations are plotted in Appendix H.

The 21 historic sites include four artifact scatters; eight dumps; one dugout; one cement watering trough; one segment of road grade; three segments of railroad grade; one group of railroad structures; one military earthworks (Fort Sully); and one complex of 132 concrete tent pads and plumbing for military bathhouses (Camp Lincoln). One isolated find was historic in age.

Sites 14LV110, 14LV158, 14LV337, 14LV364, 14LV365, and 14LV366 and isolated find 14LV111 are situated on the USP Leavenworth property. The remaining 23 sites and three isolated finds are located on the Fort Leavenworth Reservation.

As Table 3 indicates, only Site 14LV158 has been determined eligible for listing in the National Register. Three prehistoric sites (14LV101, 14LV118, and 14LV120) and 11 historic sites (14LV103, 14LV104, 14LV106, 14LV107, 14LV108, 14LV110, 14LV114, 14LV123, 14LV124, 14LV165, and 14LV391) have all been recommended as potentially eligible for listing in the National Register. Prehistoric sites 14LV364 and 14LV366 were not evaluated for eligibility in the National Register. Multi-component site 14LV365 and historic sites 14LV102, 14LV105, 14LV152, 14LV153, and 14LV155 were not evaluated with regard to National Register eligibility. Three prehistoric sites (14LV109, 14LV117, and 14LV337) and three prehistoric isolated finds (14LV111, 14LV115, and 14LV116) were recommended not eligible for listing in the National Register. Four historic sites (14LV119, 14LV121, 14LV122, and 14LV157) and one historic isolated find (14LV112) were recommended not eligible for listing in the National Register.

5.3 ARCHAEOLOGICAL SITE POTENTIAL

Based on the results of previous investigations, topography, and soils, it was anticipated that intact prehistoric and historic archaeological deposits may be found near the ground surface on ridge tops, gentle slopes, and terraces along Corral Creek and the unnamed drainages within the USP property. Shallowly deposited prehistoric and historic archaeological remains were expected at locations not previously disturbed by construction for the FPC, the radio tower, parking lots, underground utilities, and roadway in the proposed West Site or for construction of staff housing, roadway, ponds, underground utilities, and hazardous waste dump sites in the proposed East Site.

LBG considered the potential for deeply buried archaeological sites to be low. The deeply incised character of Corral Creek and the other drainages in the USP property suggests that there has been little lateral cutting and filling. Alluvial fans, if present, are probably bisected by the drainage ravines. Most erosion that would have created alluvial fans or colluvial aprons probably occurred in the past 100 to 150 years as a result of cultivation. Nonetheless, LBG's archaeological survey methodology included hand auger testing where soil deposits suggested a potential for buried site deposits. Subsurface testing was done into the upper portion of soils determined to be old B horizon deposits.

TABLE 3
ARCHAEOLOGICAL SITES RECORDED WITHIN ONE-MILE (1.6 KILOMETERS)
OF THE PROJECT AREA

Site Number	Site Type	Cultural Affiliation	Landform Context	NRHP Status	Original Recorder
14LV101	Lithic scatter	Unknown Prehistoric	Ridge toe	Potentially eligible	Wagner et al. 1989
14LV102	Railroad Grade	Historic (ca 1872-1893)	Ridge slope	Not evaluated	Wagner et al. 1989
14LV103	Dump	Historic (ca 1850-1900)	Stream bank	Potentially eligible	Wagner et al. 1989
14LV104	Dump	Historic (ca 1870-1910)	Ravine	Potentially Eligible	Wagner et al. 1989
14LV105	Cement trough	Historic (ca 1860-1960)	Bluff slope	Not evaluated	Wagner et al. 1989
14LV106	Dump	Historic (ca 1870-1900)	Bluff slope	Potentially eligible	Wagner et al. 1989
14LV107	Artifact scatter	Historic (ca 1870-1910)	Bluff slope	Potentially eligible	Wagner et al. 1989
14LV108	Dump	Historic (ca 1870-1910)	Ridge slope	Potentially eligible	Wagner et al. 1989
14LV109	Camp	Late Archaic (Table Rock)	Terrace	Not eligible	Wagner et al. 1989
14LV110	Dump	Historic (ca 1903-1930)	Stream bank	Potentially eligible	Wagner et al. 1989
14LV111	Isolated find	Unknown Prehistoric	Bluff slope	Not eligible	Wagner et al. 1989
14LV112	Isolated find	Historic (ca 1827-1900)	Ridge slope	Not Eligible	Wagner et al. 1989
14LV113	Artifact scatter	Historic (ca 1870-1915)	Creek bed	Not Eligible	Wagner et al. 1989
14LV114	Dump	Historic (ca 1870-1900)	Stream bank	Potentially eligible	Wagner et al. 1989
14LV115	Isolated find	Unknown Prehistoric	Ridge spur	Not eligible	Wagner et al. 1989
14LV116	Isolated find	Unknown Prehistoric	Ridge spur	Not eligible	Wagner et al. 1989

TABLE 3 (CONTINUED)
ARCHAEOLOGICAL SITES RECORDED WITHIN ONE-MILE (1.6 KILOMETERS)
OF THE PROJECT AREA

Site Number	Site Type	Cultural Affiliation	Landform Context	NRHP Status	Original Recorder
14LV117	Camp	Unknown Prehistoric	Ridge toe	Not eligible	Wagner et al. 1989
14LV118	Camp	Unknown Prehistoric	Ridge slope	Potentially eligible	Wagner et al. 1989
14LV119	Dump	Historic (ca 1870-1900)	Ridge slope	Not eligible	Wagner et al. 1989
14LV120	Camp	Kansas City Hopewell	Terrace	Potentially eligible	Wagner et al. 1989
14LV121	Railroad grade	Historic (ca 1886-1935)	Ridge slope	Not eligible	Wagner et al. 1989
14LV122	Railroad grade	Historic (ca 1870-1930)	Stream valley	Not eligible	Wagner et al. 1989
14LV123	Railroad structures	Historic (ca 1870-1930)	Ridge slope	Potentially eligible	Wagner et al. 1989
14LV124	Road grade	Historic (ca 1870-1930)	Ridge slope	Potentially eligible	Wagner et al. 1989
14LV155	Artifact scatter	Historic (ca 1872-1950)	Ridge toe	Not evaluated	Bailey 1993
14LV157	Concrete pads for tent bathhouses	Historic (1900-1954)	Slope	Not eligible	Lucido 2002
14LV158	Dump	Historic (1900-1954)	Stream bank	Eligible	McLean and Rust 2004
14LV165	Earthworks and gun emplacement	Historic (1861-1900) Fort Sully	Hill top and slope	Potentially eligible	Walz 2008
14LV337	Artifact scatter	Unknown Prehistoric	Bluff slope	Not eligible	Rowlison and Reynolds 1974
14LV364	Lithic scatter	Unknown Prehistoric	Hill top and slope	Not evaluated	Barr and Rowlison 1977
14LV365	Artifact scatter	Unknown Prehistoric and Historic (ca 1854-1900)	Hill top	Not evaluated	Barr and Rowlison 1977

TABLE 3 (CONTINUED)
ARCHAEOLOGICAL SITES RECORDED WITHIN ONE-MILE (1.6 KILOMETERS)
OF THE PROJECT AREA

Site Number	Site Type	Cultural Affiliation	Landform Context	NRHP Status	Original Recorder
14LV366	Lithic scatter	Unknown Prehistoric	Hill top	Not evaluated	Barr and Rowilson 1977
14LV391	Dugout	Historic (ca 1820-1854)	Bluff	Potentially eligible	Banks 1999

The potential for unrecorded archaeological sites in the current project area was assessed to be high in most areas. Generally the ground surface within the proposed West Site was level to gently inclining. The unnamed tributary of Threemile Creek appeared to be a reliable source of water for most of the year. Corral Creek is only a quarter mile away. Timber for firewood and construction material was present along the creek. The Missouri River Valley, which is less than a mile to the east and the Corral Creek and Threemile Creek valleys would have offered a broad spectrum of plant and animal resources that complimented the adjacent tall grass prairie ecology.

The Missouri River Valley has long been a natural corridor for travel and trade. Corral Creek and Threemile Creek would have been convenient lateral routes into the surrounding countryside. They were used in historic times by the U.S. Army, traders, and immigrants traveling west. Four military trails extended west and south from Fort Leavenworth (Scolofsky and Self 1988:20).

The topography within the proposed East Site is more rolling with steep-sided narrow drainageways. However, the hill tops and the terraces along Corral Creek would have been good places for at least seasonal occupation. The hill tops offer good vistas for observing bison herds, migrating fowl, and travelers. Like the West Site, the East site has ready access to the resources of the Missouri River Valley and the Corral Creek and Threemile Creek valleys in addition to the prairie resources.

As a result, LBG projected that approximately 10 archaeological sites and up to 10 isolated find spots would be located in the project area. Prehistoric lithic scatters and camp sites dating sometime between about 12,000 years ago to A.D. 1600 were anticipated. Similar sites associated with historic tribes, such as the Kansa, Kickapoo, Delaware, and Wyandotte, where were in the area between about A.D. 1600 and 1854, were expected.

Between 1827, when Fort Leavenworth was established, and 1895, when USP Leavenworth was created, the project area was used by the U.S. Army. Artifact scatters associated with training or bivouacs were considered possible, particularly given the cavalry-related artifacts found by Rowilson and Barr at Site 14LV365. Much of the project area was used for cultivation and cattle pasturing between about 1903 and 1981. Therefore, artifact scatters of redeposited trash placed in a manure spreader and pieces of farm machinery were anticipated. Sites 14LV110 and 14LV158 indicated that dense artifact deposits associated with USP dumping was possible.

Areas considered to have low potential for intact archaeological deposits were (1) on steeper side slopes of hills that were unsuitable for occupation and which were more subject to erosion; (2) locations which had been graded to construct roadway, parking lots, or buildings; (3) locations where trenches had been dug to install subsurface utilities, including high pressure gas lines, telecommunication lines, electrical lines, and water, storm water, and waste water lines; (4) locations where trash or hazardous waste materials had been buried; and (5) locations that appeared to have been used for borrow.

In the proposed West Site boundaries, approximately 25 percent of the area was considered low potential due to construction of the FPC in 1960, construction of the gravel staff parking lot of the FPC, construction of the asphalt parking lot to view the buffalo, construction of the roadway for the former alignment of Santa Fe Trail and subsequent removal of pavement around 2009 following realignment of the road further west, construction of a railroad grade and later abandonment, and installation of electrical lines and water lines.

In the proposed East Site boundaries, approximately 25 percent of the area was judged to have low potential because of the trenching to bury waste southeast of the garage facility, used oil disposal east of the garage facility, paint can disposal east of the UNICOR warehouse, construction of staff housing, two ponds, two high pressure gas lines, and moderately steep hill sides along drainages.

6.0 RESULTS OF ARCHAEOLOGICAL INVESTIGATIONS

6.0 RESULTS OF ARCHAEOLOGICAL INVESTIGATIONS

6.1 OVERVIEW

Approximately 382 acres (154.6 hectares) were investigated during the current archaeological survey; 144 acres (58.3 hectares) for the proposed West Site and 238 acres (96.3 hectares) for the proposed East Site. The southwestern portion of the proposed West Site south of Honor Farm Road and west of the buffalo pasture (an estimated 20 acres/8.1 hectares) was previously surveyed by Rowlison and Reynolds (1974) and by Thies (1984, 2006). The northern half of the proposed East Site was previously surveyed by Barr and Rowlison (1977) and the central portion of the proposed East Site (33 acres/13.4 hectares) had been previously surveyed by the American Resources Group, Ltd. (Wagner et al. 1989). The investigations included pedestrian reconnaissance and shovel testing. As noted above, because it was judged that there was only very low potential for deeply buried archaeological sites in the project area, no systematic deep testing was conducted. However, shovel tests were extended with hand augering to check for old ground surfaces more than a meter below the current ground surface and test. When present, these strata were sampled for evidence of buried cultural deposits.

Six previously recorded archaeological sites were revisited during the current study: Sites 14LV110, 14LV111, 14LV337, 14LV364, 14LV365, and 14LV366. With the exception of Sites 14LV337 and 14LV110, the sites had been defined by surface artifacts in plowed fields. Historic site 14LV110 was found to be significantly disturbed by episodes of rapid erosion, which has redeposited the historic artifacts along 205 meters (672.6 feet) of stream bed. As the site appears confined to the drainage, no subsurface testing was performed at this site. Sites 14LV364 and 14LV365 were investigated by systematic shovel testing at 10-meter (32.8-foot) intervals. Multi-component site 14LV365 and prehistoric sites 14LV337, 14LV364, and 14LV366 are recommended not eligible for listing in the National Register. Prehistoric site 14LV111 is an isolated find and the current investigation found no reason to amend the previous recommendation of not eligible by Wagner et al. (1989).

Fifteen new archaeological sites and 15 new isolated find spots were identified and investigated. Sites 14LV167, 14LV170, 14LV173, 14LV174, 14LV176, 14LV177, 14LV178, 14LV179, 14LV180, and 14LV181 are prehistoric lithic scatters of unknown cultural affiliation. Sites 14LV168, 14LV169, 14LV171, and 14LV172 are all Late Prehistoric/Middle Ceramic period sites, based on arrow point types. Sites 14LV169, 14LV171, 14LV172, 14LV176, and 14LV181 are recommended potentially eligible for listing in the National Register under Criterion D. The other 10 prehistoric sites and the 15 prehistoric Isolated Find Spots are all recommended not eligible for listing in the National Register. Site 14LV175 is the location of the prison farm manager's residence (1938 to about 1981). This site is recommended not eligible for listing in the National Register.

6.2 PEDESTRIAN SURVEY

Pedestrian survey involves careful inspection of the ground surface as one walks across the landform. Often this walkover inspection is done at regular intervals, so that the archaeologist walks at a moderate pace on a straight line (a "transect") scanning left and right for prehistoric or historic artifacts and features, such as building foundations or footings, wells, cisterns, stone rings or other alignments, or depressions that might indicate a cellar, trash pit, or storage pit. When surface visibility is greater than

about 70 percent, the archaeologist can reliably examine up to two meters (6.6 feet) on either side of the survey transect. When artifacts or surface features are found, the locations are usually marked with a pinflag so that the distribution of the artifacts and/or features can be recognized and recorded. Individual artifacts spaced several meters apart might be numbered sequentially, particularly if they are chronologically or culturally distinctive, such as projectile points, pottery sherds, the tops of bottles, decorated historic ceramics, coins, etc. More often, clusters of artifacts are collected as a group.

Pedestrian survey was performed across the proposed East and West sites during shovel testing activities. The ground surface was inspected along transects while laying out the 30-meter (98.4-foot) shovel test grid as work progressed, as field archaeologists walked from shovel test location to shovel test location. Random inspection of the ground surface also occurred as the Principal Investigator and Field Supervisor monitored shovel tests for information about the stratigraphic character of different portions of each of the proposed construction sites or recorded the shovel test locations using a hand-held geographic positioning system (GPS) unit.

While the ground surface visibility across most of the proposed East and West sites was commonly less than ten percent at the time of survey, two parts of the project area had surface visibility of 90 to 100 percent: (1) the western third and eastern third of the prison garden area at the northern part of the proposed West Site and (2) the staff housing garden area in the southwestern part of the proposed East Site. In the two garden areas, pedestrian survey was done with two to five meters (16.4 feet) between transects. Plates 1 and 2 provide images of field conditions within the prison garden area and the staff housing garden area, respectively.

6.3 SUBSURFACE TESTING

Review of topographic maps and aerial photographic maps of the USP property indicated that the topography of the proposed West Site was fairly level and open. This provided ideal conditions for establishing a grid over the area for systematic survey. The topography of the proposed East Site was hillier as a result of drainages which dissect this portion of the USP property. Still the majority of this part of the project area was open and amenable to use of a grid. The forested area at the northern and eastern sides of the USP property, with the dense vegetation, drainage ravines, and creeks were expected to make use of the grid more problematic. Plates 3 through 8 show the field conditions within the proposed East and West sites.

A staggered 30-meter (98.4-foot) grid was established near the northwest corner of the proposed West Site and extended across the BOP Leavenworth property to the proposed East Site. The grid was established on magnetic north to avoid adjustment for true north and thereby minimize errors in azimuth reading when compasses were used to follow transects, place close interval shovel tests to define site boundaries, and record shovel test locations and adjacent landmarks on field maps. A Pentax theodolite with digital readout and a range pole were used to establish base lines for the grid across various portions of the project area. Distances along the grid lines were measured using 100-meter (328-foot) survey ropes. Wooden stakes were placed at 30-meter (98.4-foot) intervals along the grid base lines for reference. Pinflags were placed at shovel test locations on the grid. Grid coordinates were written on the pinflags for reference.

With the exception of the wooded area along Corral Creek in the northern portion of the East Site, the grid included north-south oriented survey transects with the shovel tests of even-numbered transects (2, 4, 6, 8, etc.) off-set 15 meters (49.2 feet) to the south of the shovel tests in the odd-numbered



Plate 1. Survey Conditions at the Prison Camp Garden, Looking West.



Plate 2. Survey Conditions at the Staff Housing Garden, Looking East.



Plate 3. Survey Conditions West of the Federal Prison Camp, Looking Southwest.



Plate 4. Survey Conditions South of the Federal Prison Camp, Looking West.



Plate 5. Survey Conditions in the Southern Portion of the East Site, Looking West.



Plate 6. Survey Conditions in the Central Portion of the East Site, Looking West.



Plate 7. Survey Conditions in the Northeastern Portion of the East Site, Looking North.



Plate 8. Survey Conditions in the Forested Portion of the East Site, Looking North.

transects to optimize coverage of the surveyed areas. Shovel tests were placed every 30 meters (98.4 feet) along each transect and numbered from north to south. Thus, the first shovel test excavated near the northwest corner of the West Site was numbered TR 1-1 (“Transect 1, Shovel Test 1”) and the last shovel test along this line was numbered TR 1-23 (“Transect 1, Shovel Test 23”). Transects A through G were placed west of the former alignment of Santa Fe Road and the current alignment of Santa Fe Road. Transects A to G and 1 to 25 were located across the proposed West Site. Transects 40 to 72 were situated across the proposed East Site. Transects 26 to 39 were located between the proposed East and West Sites and no shovel testing was done along these transects. The staggered grid follows Kansas SHPO guidelines (Epperson et al. 2004) and the field methodology was reviewed and approved by SHPO prior to implementation.

In the wooded area along Corral Creek, in the northern part of the proposed East Site, shovel test transects were oriented west to east so that transects could generally parallel the creek. Because of the dense vegetation, shovel test transects were spaced 15 meters (49.2 feet) apart and shovel tests were dug every 30 meters (98.4 feet) along each transect rather than being staggered along every other transect. This made it easier to keep shovel test locations evenly spaced where visibility was limited as shrubs and trees began to leaf out. This part of the project area is bisected by steep, deeply incised ravines cutting south to north to join Corral Creek.

As previously reported, shovel tests were not excavated at locations where there was obvious disturbance due to utility installation, grading for roadway or other construction, in parking lots, ponds, in ravines and other drainages, or at known dump sites. When excavation indicated disturbances not evident on the ground surface, excavation ceased. Shovel tests were not excavated on steep slopes as these locations were not suitable for occupation and are subject to erosion, which would displace artifacts in any case.

Shovel tests measured about 40 centimeters (16 inches) in diameter. Each was excavated at least 10 centimeters (4 inches) into B horizon or C horizon subsoil deposits to be sure that any cultural material did not extend into these strata. Even in highly eroded areas, shovel tests typically were excavated to a depth of about 50 centimeters (20 inches) below ground surface, although some shovel tests were excavated to between 30 and 40 centimeters (12 and 16 inches) below ground surface where B horizon soils were at or near the current surface. On stream terraces where thicker soil horizons were sometimes identified, a Seymour bucket auger was used as needed to extend shovel tests more than 100 centimeters (39.4 inches) below ground surface to reach culturally sterile subsoil deposits.

A hand-held Global Positioning System (GPS) unit was used to record the locations of shovel tests and surface landmarks such as adjacent fence lines, roadways, parking lots, and drainages. Generally, the accuracy of the GPS unit at each location was less than 100 centimeters (39.4 inches) and often less than 50 centimeters (20 inches). A map was drawn to scale for each archaeological site. The plan map shows the location of all associated shovel tests and any adjacent pertinent land marks, such as fences, roadway, parking lots, and drainages.

When artifacts were found on the ground surface or in shovel tests during the current study, close-interval shovel testing was done to determine site boundaries and evaluate the condition of subsurface deposits. This began with a cross-shaped arrangement of shovel tests placed in the cardinal directions around the find spot. Shovel tests typically locations were pinflagged at 5 and 10-meter (16.4 and 32.8-foot) intervals. The shovel tests at 10 meters (32.8 feet) from the find spot were excavated first. If these were negative (no artifacts), then the shovel tests at 5 meters (16.4 feet) from the find spot were

excavated. If these shovel tests also were negative, then no more shovel testing was done at that location and the site was considered to be an “Isolated Find”.

For individually plotted Artifacts 1, 2, 4, 5, 6, 7, 8, and 9, which were found on the ground surface in the prison garden area (within Site 14LV168), shovel tests were placed only at five meters (16.4 feet) from the find spot in the cardinal directions. The same is true for individually plotted Artifact 16, (IF-1), which was found on the surface in a buffalo wallow near the southwest corner of the buffalo pasture.

If one of the shovel tests at 5 or 10 meters (16.4 or 32.8 feet) from the find spot was positive (yielding additional artifacts), then additional shovel test locations were placed at 5 and 10 meters (16.4 and 32.8 feet) in the cardinal directions from the new positive shovel test. The testing strategy was then applied to this location. This pattern continued until at least two negative shovel tests at 5-meter (16.4-foot) intervals were present in all four directions from the outermost positive shovel test. (Exceptions to this methodology were where steep slopes or stream banks or disturbed areas made additional shovel testing unnecessary.) Where several shovel tests along the original shovel test grid yielded artifacts, the testing methods described above were applied only to the outmost shovel tests as the site boundaries naturally include all of the positive shovel tests within the ring.

All excavated soil was sifted through 6.4-millimeter (0.25-inch) mesh hardware cloth to assist with the recovery of artifacts. All shovel test holes were excavated into culturally sterile subsoil (i.e., no artifacts or archaeological features present) or until bedrock or some other buried impasse was encountered. Test profiles were scraped clean with a hand trowel and examined to identify and record observed soil characteristics and check for evidence of artifacts or cultural features. Soil characteristics were recorded using standard texture descriptions and Munsell soil color notation (Shoeneberger et al. 2002). Information concerning soil color and texture, the degree and nature of soil disturbance, and the presence or absence of cultural artifacts or features was recorded on standardized acid-free forms. All subsurface tests were backfilled upon completion. Shovel tests from the archaeological sites and isolated find spots are described in Appendix D.

Artifacts were collected from the ground surface and from shovel tests. Artifacts discovered on the ground surface during pedestrian survey of the two garden areas and in a buffalo wallow were given artifact numbers in the field. The discrete locations of each of these items were recorded with the hand-held GPS unit. Each artifact was placed in an individual ziplock bag with a pre-printed cardstock tag on which basic provenience information was recorded (i.e. the project name, whether it was located in the proposed West Site or the proposed East Site, that it was a surface find, the date collected, the initials of the archaeologist, and identification of the object, and the isolated artifact field number).

Artifacts recovered from shovel tests were collected by natural stratigraphic layers. Artifacts from each stratum were placed in a ziplock bag with a pre-printed cardstock tag on which basic provenience information was recorded (i.e. the project name, whether it was located in the proposed West Site or the proposed East Site, the stratum number, the depth below ground surface, the date collected, the initials of the archaeologist, and identification of the object, and the isolated artifact field number).

Clearly modern materials, such as chewing gum wrappers, cigarette butts, bottle plastic, modern bottle glass, aluminum pull tabs from beverage cans, were not collected. Other items not collected were coal and cinder that were found near the former railroad grade and tiny to small brick and mortar fragments, which were virtually found at all parts of the USP property. Instead, the type of material and number were noted on shovel test forms beside the stratigraphic layer in which they were found.

A complete artifact catalog for the project and full description of the analytic methods can be found in Appendix E. A Letter of Agreement for the curation of artifact collected during the project with the Kansas State Historical Society can be found in Appendix F.

6.4 RECORDED ARCHAEOLOGICAL SITES

Descriptions of the recorded archaeological sites are presented in this section. Maps showing the locations of archaeological sites and isolated find spots are in Appendix H. Because site information is considered confidential to protect archaeological resources, Appendix H is not for public release.

6.4.1 Site 14LV110

Map Source:	Leavenworth, KS, 7.5' Series USGS Topographic Quad (1982)
Site Type:	Twentieth-century dump (1903 to about 1930)
Cultural Affiliation:	Euroamerican: US Penitentiary at Leavenworth
Site Size:	125.0 m (410.1 ft) N to S by 20.0 m (65.6 ft) E to W (1988) 2,500.0 square meters (26,902.6 square feet)
Phase I Methods:	Pedestrian survey
Area Excavated:	None
Cultural Materials Collected:	Undecorated ironstone, bottle, window, and plate glass, bone (1988) None (2011)
Landform:	Unnamed drainage through base of ridge slope
Elevation:	800 to 840 feet above mean sea level
Land Use/Surface Visibility:	Drainage (10 to 100% surface visibility)
Soil Type:	Knox silt loam (7955)
Site Disturbance:	Erosion, possible borrow activity
Relation to Project Limits:	30% within Alternative FCI East-1 10% within Alternative East/West Composite
National Register Eligibility:	Not eligible
Recommendations:	No additional archaeological work

Site 14LV110 is the location of a historic dump associated with the earlier period of the U.S. Penitentiary at Leavenworth (1903 to about 1930). When identified by archaeologist from the American Resources Group, Ltd., the site consisted of thousands of undecorated ironstone fragments from bowls, plates, saucers, and cups, as well as cow and pig bone with saw marks from butchering, metal, cinders, a small amount of thick window/plate glass and two pieces of bottle glass with early 1900s manufacture attributes. Some ironstone dish fragments were marked "Crown Hotel China". One was marked "Liberty China/ New Lexington, Ohio". The artifacts were present from immediately adjacent to the west side of a north-flowing, intermittent stream to a distance of 10 meters (32.8 feet) from the creek (Wagner et al. 1989:101).

A line of five shovel tests were excavated five meters (16.4 feet) apart in a transect placed parallel to, and five meters (16.4 feet) west of, the drainage at the north end of the artifact scatter. Three more shovel tests were excavated five meters (16.4 feet) apart in a line five meters (16.4 feet) west of the original five tests (Figure H-4). Five of the eight shovel tests yielded artifacts.

At the time of the current survey, ground surface visibility varied from about 10 percent to as much as 100 percent within the drainage bed and along the sides of the cutbank for the drainage where there

was had little vegetation. Although Wagner et al. (1989) reported that materials were eroding out of the west bank of the drainage, the scattered artifacts were observed on the cutbanks appeared to have been redeposited when the drainage was flowing high and fast. In addition to the types of artifacts identified above, brick, broken bottles, and blue enamelware were observed. Because there appeared to be almost no evidence of the densely concentrated dump and the artifacts seemed to have been redeposited by episodic flooding, no shovel tests were excavated at Site 14LV110 in 2011.

Site 14LV110 was the location of a dump site for the U.S. penitentiary that dates from after 1903, when the prison was first occupied, to about 1930. It seems more likely that the artifacts were dumped near the head of the drainage, where erosion cut a ravine about 1.4 meters (4.0 feet) deep. Many of the thick, ironstone ceramic wares were burned, suggesting the materials were dumped after a fire. Over the past 80 years, periods of significant rain have caused the tributary to rapidly fill with water draining from adjacent slopes and dislodge and carry artifacts northward downstream as far as where tributary joins another branching drainage from the west (a distance of about 205 meters/672.6 feet). The wider stream bed at the confluence slowed the velocity of the floodwaters, causing any suspended materials to settle. This correlates with the wider deposit of artifacts reported by Wagner, et al. (1989).

Because the artifacts in Site 14LV110 are redeposited rather than stratified, as found at Site 14LV158 (another historic dump attributed by McLean and Rust (2002) to the early period of the USP), LBG recommends that Site 14LV110 be considered not eligible for inclusion in the National Register under Criterion D. Criterion A (associated with the broad patterns of local, state, or national history), Criterion B (associated with an individual or group of local, state, or national significance), and Criterion C (associated with a structure or artistic work of local, state, nor national significance) do not apply to this site.

6.4.2 Site 14LV337

Map Source:	Leavenworth, KS, 7.5' Series USGS Topographic Quad (1982)
Site Type:	Artifact scatter
Cultural Affiliation:	Undetermined prehistoric Euroamerican: U.S. Penitentiary at Leavenworth
Site Size:	320 m (1,050.0 ft) NE to SW by 235 m (771.0 ft) NW to SE (1974) 75,200.0 square meters (809,550.0 square feet) 115.0 m (377.3 ft) N to S by 275.0 m (902.0 ft) E to W (2006) 31,625.0 square meters (340,324.6 square feet)
Phase I Methods:	Pedestrian survey and shovel testing
Area Excavated:	31 shovel tests (12.4 square meters/40.7 square feet)
Cultural Materials Collected:	2 Chipped stone flakes, 1 pottery sherd, 1 mollusk shell (1974) Brick, stone, and ceramic fragments (1974) None (2011)
Landform:	Upland
Elevation:	860 to 870 feet above mean sea level
Land Use/Surface Visibility:	Grass (Less than 10% surface visibility)
Soil Type:	Sharpsburg silt loam, 1 to 4% slopes (7540)
Site Disturbance:	Previous cultivation and erosion
Relation to Project Limits:	100% outside Alternative FCI East-1 and Alternative East/West Composite
National Register Eligibility:	Not eligible
Recommendations:	No additional archaeological investigation

Site 14LV337 was originally recorded in 1974 by Kansas State Historical Society archaeologists Don Rowlison and John Reynolds (1974) as a multi-component artifact scatter. They recovered three chert flakes, one small possible pottery sherd, one small mollusk shell, burned and unburned rock debris, brick fragments, and historic ceramic fragments. They interpreted the site as representing a prehistoric camp of unknown cultural association and a possible warehouse and freight yard associated with the firm of Russell, Majors and Waddell, who were suppliers to the U.S. Army and wagon trains.

KSHS archaeologist Randy Thies resurveyed the western quarter of the site in 1984 and in 2006 (Thies 1984, 2006). Three test pits, each 30 centimeters (12 inches) square, were excavated on the high ground at the western end of the site in 1984. Thies (1984:5) reported scattered brick and modern debris in the test units. The survey along the proposed northern extension of 20th Avenue through the western side of Site 14LV337 included pedestrian survey at 12 to 15 meters (39.4 to 49.2 feet) between transects, excavation of eight auger holes, and one shovel test 40 centimeters (15.7 inches) in diameter. This (2006:5-6) reported that the area had been plowed to a depth of 20 centimeters (8 inches) below ground surface. No prehistoric artifacts or features were identified. Historic brick, coal, and small sandstone fragments were observed in the plowzone. These materials were attributed to the penitentiary. Thies recommended that Site 14LV337 be considered not eligible for listing in the National Register.

At the time of the current survey in March 2011, the grass was about 10 centimeters (4 inches) high and ground surface visibility was less than ten percent across the site. Seven staggered transects (A through G) were excavated across field in which Site 14LV337 had been identified (Figure H-5). The transects were oriented north to south and 30-meter (98.4-foot) apart. Shovel tests were 30 meters (98.4 feet) apart along each transect. A total of 31 shovel tests were excavated within the 1974 and 2006 site boundaries.

The soil profiles in the shovel tests (Appendix D) generally consisted of an Ap horizon 32 to 46 centimeters (12.5 to 18 inches) thick that was composed of very dark grayish brown (10YR 3/2) silt loam to silty clay loam. Below a clear to gradual soil boundary the substratum was either dark gray (10YR 4/1) or brown (10YR 4/3) silty clay loam mottled with 10 to 30 percent yellowish brown (10YR 5/4) silty clay loam. None of the shovel tests excavated within the previously recorded site boundaries were positive for either prehistoric or historic artifacts.

Rowlison and Reynolds found only a few scattered prehistoric and historic artifacts at Site 14LV337 in 1974. Thies did not find any prehistoric materials in the western part of the site in 1984 or in 2006. LBG did not find any prehistoric or historic artifacts across the site or elsewhere in the field where the site is situated except at the northeast corner area. Here LBG identified a Late Prehistoric site, 14LV169. Site 14LV169 (which is discussed later in this section of the report) lies immediately north of the northeastern boundary of Site 14LV337. It is likely, therefore, that the prehistoric artifacts identified at Site 14LV337 were originally materials from Site 14LV169 that had been displaced by plowing of the field. Thies (2006) has shown that the historic artifacts found by Rowlison and Reynolds were associated with the USP and consist of very small items broadly distributed across the surface stratum of the USP property.

Site 14LV337 is recommended not eligible for listing in the National Register under Criterion D. The site has yielded only a small number of prehistoric artifacts which appear to have been displaced by cultivation and erosion from a discretely defined Late Prehistoric site (14LV169) that is situated northeast of the Site 14LV337 location. Thus, Site 14LV337 lacks any potential to contribute any important new information about the prehistory of the region. Historic artifacts also are few, scattered

in the plowzone, are so generic in nature that they cannot contribute significant information about the history of the penitentiary. Criteria A, B, and C do not apply to this site. No additional archaeological investigation is recommended for site 14LV337.

6.4.3 Site 14LV364

Map Source:	Leavenworth, KS, 7.5' Series USGS Topographic Quad (1982)
Site Type:	Lithic scatter
Cultural Affiliation:	Unknown prehistoric
Site Size:	120.0 m (393.7 ft) N to S by 120.0 m (393.7 ft) E to W (1977) 14,400.0 square meters (154,991.8 square feet)
Phase I Methods:	Pedestrian survey and shovel testing
Area Excavated:	61 shovel tests (24.4 square meters/80.0 square feet)
Cultural Materials Collected:	1 Chipped stone biface fragment, 2 core fragments, 1 endscraper fragment, and 2 debitage (1977) 1 Chipped stone piece of block shatter (2011)
Landform:	Upland toe
Elevation:	840 to 870 feet above mean sea level
Land Use/Surface Visibility:	Pasture (Less than 10% surface visibility)
Soil Type:	Sharpsburg 1 to 4% slopes (7540)
Site Disturbance:	Cultivation and erosion
Relation to Project Limits:	100% within Alternative FCI East-1 and Alternative East/West Composite
National Register Eligibility:	Not eligible
Recommendations:	No additional archaeological work

Site 14LV364 is the location of a lithic scatter of undetermined cultural association that was identified in 1977 by archaeologists from the Archeology Department of the Kansas State Historical Society (Rowlison and Reynolds 1977). The site is situated on an upland toe or ridge overlooking a creek. At the time of the 1977 survey, the site was under cultivation. Recovered chipped stone artifacts included a biface fragment, two core remnants, one broken endscraper, and three chert flakes. No subsurface testing was performed at the site. No recommendation regarding National Register eligibility was made.

At the time of LBG's survey in March 2011, the site was covered by prairie grass that was about 20 centimeters (8 inches) high. Ground surface visibility was less than ten percent. Five staggered transects (TR 42 to TR 46) were excavated across the reported location for the site (Figure H-6). The transects and shovel tests were 30 meters (98.4 feet) apart. No prehistoric or historic artifacts were found in 24 shovel tests in the site location. To further test the site, a block of shovel tests were excavated at 10-meter (32.8-foot) intervals over the reported site location. The block of 48 shovel tests resulted in one positive test. Shovel Test TR 45-41, N 10, E 20 yielded one piece of chipped stone block shatter of Florence Chert. Additional shovel tests were excavated at 5-meter (16.4-foot) intervals in the four cardinal directions around the positive test. All four tests were negative. Thus only one shovel test of 76 shovel tests excavated over the reported location of Site 14LV364 was positive.

The soil profiles of the shovel tests (Appendix D) showed a plowzone (Ap horizon) of 16 to 30 centimeters (6.3 to 12 inches) deep that was composed of dark brown (10YR 3/3) to brown (10YR 4/3) to dark yellowish brown (10YR 4/4) silty clay loam over a Bt horizon of dark yellowish brown (10YR 4/6) to yellowish brown (10YR 5/4 or 10YR 5/6) silty clay loam. The boundary between the two strata was usually clear, but occasionally gradual. Shovel tests were excavated between 34 and 43 centimeters below ground surface.

The soil profiles demonstrate that the native A horizon, which would have been the surface occupied by prehistoric Native Americans, the historic Kansa tribe, and early historic soldiers, explorers, and traders, has eroded away as the result of cultivation. Just one shovel test yielded one piece of block shatter from the plowzone. Thus, the site appears to have been destroyed and has no potential to contribute important new information about the prehistory of the region. LBG recommends that Site 14LV364 be considered not eligible for listing in the National Register under Criterion D. Criteria A, B, and C do not apply to this site. LBG recommends that no additional archaeological work be performed at this site.

6.4.4 Site 14LV365

Map Source:	Leavenworth, KS, 7.5' Series USGS Topographic Quad (1982)
Site Type:	Artifact scatter
Cultural Affiliation:	Unknown prehistoric
	Euroamerican: U.S. Army at Fort Leavenworth
Site Size:	160.0 m (524.9 ft) N to S by 180.0 m (590.5 ft) E to West (1977) 28,800.0 square meters (309,953.5 square feet)
Phase I Methods:	Pedestrian survey and shovel testing
Area Excavated:	67 shovel tests (26.8 square meters/89.3 square feet)
Cultural Materials Collected:	1 Chipped stone blade fragment, flaking debris, 1 .58 cal. bullet, 2 brass cartridge cases, 1 piece of chain, 1 mule shoe, 1 possible picket pin (1977) 1 Chipped stone biface fragment and 11 debitage (2011)
Landform:	Upland toe
Elevation:	850 to 870 feet above mean sea level
Land Use/Surface Visibility:	Pasture (Less than 10% surface visibility)
Soil Type:	Sharpsburg 1 to 4% slopes (7540)
Site Disturbance:	Cultivation and erosion
Relation to Project Limits:	Southern 10% within Alternative FCI East-1 and Alternative East/West Composite
National Register Eligibility:	Not eligible
Recommendations:	No additional archaeological work

Site 14LV365 is the location of a small prehistoric lithic scatter of undetermined cultural association and several historic artifacts that appear to be associated with a cavalry troop posted to Fort Leavenworth sometime between the 1860s and 1870s. The site was identified by archaeologists from the Kansas State Historical Society (Rowlison and Reynolds 1977) on an upland toe or ridge overlooking a creek. At the time of the 1977 survey, the site was under cultivation. Prehistoric artifacts recovered were one chipped stone blade fragment and numerous (no number reported) pieces of lithic debitage. No subsurface testing was done at the site. No recommendation regarding National Register eligibility was made for the site.

At the time of LBG's survey in March 2011, the site was covered by prairie grass that was about 20 centimeters (8 inches) high. Ground surface visibility was less than ten percent. Five staggered transects (TR 56 to TR 60) were excavated across the reported location for the site (Figure H-7). The transects and shovel tests were 30 (12 inches) apart. One shovel test (TR 58-40) yielded one flake fragment from the plowzone. The other 22 shovel tests in the 30-meter (98.4-foot) grid within the reported site area were all negative.

Radial shovel tests were excavated in the cardinal directions around positive Shovel Test TR 58-40 at 5-meter (16.4-foot) and 10-meter (32.8-foot) intervals. Shovel Test TR 58-40, S5 yielded one biface reduction flake. Therefore, additional shovel tests were excavated around this test. In all, 13 radial shovel tests were excavated. Only Shovel Tests TR 58-40 and TR 58-40, S5 were positive.

To further test the reported site location, a block of 45 more shovel tests were excavated at 10-meter (32.8-foot) intervals. The southern side of the block was in line with Shovel Test TR 58-40. Within the block, prehistoric artifacts were recovered from six shovel tests: TR 58-40, N20 (one flake fragment); TR 58-40, N20, W10 (one biface reduction flake and one flake fragment); TR 58-40, N30, E10 (one biface fragment); TR 58-40, N40, W10 (2 biface reduction flakes); TR 58-40, N50, E10 (2 reduction flakes); and TR 58-40, N60, W10 (one finishing flake and one flake fragment). Thus, a total of eight positive shovel tests yielding a total of 12 chipped stone artifacts were present at Site 14LV365.

The soil profiles in the shovel tests (Appendix D) showed a plowzone (Ap horizon) that was 20 to 41 centimeters (8 to 40 inches) thick. It was composed of dark brown (10YR 3/3) silt loam to brown (10YR 4/3) silty clay loam. Below this stratum was a Bt horizon of dark yellowish brown (10YR 4/4) silty clay loam, which was sometimes mottled with 20 to 50 percent yellowish brown (10YR 5/6) silty clay loam or which was entirely yellowish brown (10YR 5/4) silty clay loam. Soil boundaries were clear or abrupt. Shovel tests were excavated between 30 and 45 centimeters (12 and 17.7 inches) below ground surface.

The artifact assemblage from Site 14LV365 consists of 12 lithic artifacts, 11 from the Ap horizon and one from the Bt horizon (Table 4). One indeterminate biface fragment and 10 flakes were recovered from the Ap horizon. The material types from this stratum include seven items of Florence chert, three artifacts of silicified sediment, and one piece of unidentified chert. One small flake fragment made from Florence chert was recovered from the Bt horizon. Heat treatment was observed on four flakes and was indeterminate on one flake. Cortex was present on two flakes. The types of artifacts recovered from Site 14LV365 suggest that it was a place where stone nodules were reduced to make bifaces, which would then be shaped into various tools, such as knives, scrapers, projectile points, and drills.

TABLE 4
ARTIFACT CLASS/TYPE BY STRATUM FOR SITE 14LV365

Artifact Class/Type	Soil Stratum		
	Ap	Bt	Total
Indeterminate Biface	1	.	1
Early Reduction Flake	1	.	1
Biface Reduction Flake	5	.	5
Finishing Flake	1	.	1
Flake Fragment	3	1	4
Total	11	1	12

The soil profiles demonstrate that the native A horizon, which would have been the surface occupied by prehistoric Native Americans, the historic Kansa tribe, and early historic soldiers, explorers, and traders, has eroded away as the result of cultivation. Thus, the site appears to have been destroyed and has no potential to contribute important new information about the prehistory of the region. LBG recommends that the prehistoric component of Site 14LV365 be considered not eligible for listing in the National Register under Criterion D.

No historic artifacts were found at Site 14LV365 during the 2011 investigation. The .58 caliber bullet may have been from a carbine used by the U.S. Cavalry in the 1860s and early 1870s. The other artifacts also are consistent with a cavalry or other military unit camped on the landform. As with the prehistoric component at Site 14LV365, cultivation and erosion appear to have destroyed the historic component at the site. Therefore, LBG recommends that the historic component of Site 14LV365 be considered not eligible for listing in the National Register under Criterion D. Criteria A, B, and C do not apply to this site. LBG recommends that no additional archaeological work be performed at this site.

6.4.5 Site 14LV366

Map Source:	Leavenworth, KS, 7.5' Series USGS Topographic Quad (1982)
Site Type:	Lithic scatter
Cultural Affiliation:	Unknown prehistoric
Site Size:	150.0 m (492.1 ft) N to S by 140.0 m (459.3 ft) E to W (1977) 21,000.0 square meters (226,021.5 square feet)
Phase I Methods:	Pedestrian survey and shovel testing
Area Excavated:	11 shovel tests (4.4 square meters/14.7 square feet)
Cultural Materials Collected:	1 Possible chipped stone core and 4 debitage
Landform:	Upland
Elevation:	850 to 870 feet above mean sea level
Land Use/Surface Visibility:	Pasture (Less than 10% surface visibility)
Soil Type:	Sharpsburg silt loam, 1 to 4% slopes (7540)
Site Disturbance:	Cultivation and erosion
Relation to Project Limits:	100% within Alternative FCI East-1 and Alternative East/West Composite
National Register Eligibility:	Not eligible
Recommendations:	No additional archaeological work

Site 14LV366 is the location of a small prehistoric lithic scatter of undetermined cultural association identified by archaeologists from the Kansas State Historical Society (Rowlison and Reynolds 1977) on the uplands. At the time of the 1977 survey, the site was under cultivation. Prehistoric artifacts recovered were one possible chipped stone core remnant and four pieces of lithic debitage. No subsurface testing was done at the site. No recommendation regarding National Register eligibility was made for the site.

At the time of LBG's survey in March 2011, Site 14LV366 was covered by prairie grass that was about 20 centimeters (8 inches) high. Ground surface visibility was less than ten percent. Five staggered transects (TR 49 to TR 53) were excavated across the reported location for the site (Figure H-8). The transects and shovel tests were 30 meters (98.4 feet) apart. All of the 21 shovel tests in the 30-meter (98.4-foot) grid within the reported site area were negative. However, Shovel Test TR 47-31 (Isolated Find 8), which was located 60 meters (196.8 feet) west-southwest of the reported location for Site 14LV366, included one groundstone celt fragment in the plowzone. A block of 56 shovel tests, excavated at 10-meter (32.8-foot) intervals, was intended to test Site 14LV366. However, the group of shovel tests were placed 60 meters (196.9 feet) west of the site's location by mistake. Like the radials around Shovel Test TR 47-31 and the shovel tests across the location of Site 14LV366, all of the tests were negative.

The soil profiles in the shovel tests (Appendix D) showed a plowzone (Ap horizon) that was 20 to 45 centimeters (8 to 17.7 inches) thick. It was composed of very dark grayish brown (10YR 3/2) to dark brown (10YR 3/3) silt loam. Below this stratum was a Bt horizon of dark yellowish brown (10YR 4/4) silty

clay loam, which was sometimes mottled with 20 percent yellowish brown (10YR 5/6) silty clay loam. Soil boundaries were clear. Shovel tests were excavated between 40 and 50 centimeters (16 to 20 inches) below ground surface.

The soil profiles demonstrate that the native A horizon, which would have been the surface occupied by prehistoric Native Americans, the historic Kansa tribe, and early historic soldiers, explorers, and traders, has eroded away as the result of cultivation. No artifacts were identified in the shovel tests or on the ground surface at the site. Thus, the site appears to have been destroyed and has no potential to contribute important new information about the prehistory of the region. LBG recommends that Site 14LV366 be considered not eligible for listing in the National Register under Criterion D. Criteria A, B, and C do not apply to this site. LBG recommends that no additional archaeological work be performed at this site.

6.4.6 Site 14LV167

Map Source:	Leavenworth, KS, 7.5' Series USGS Topographic Quad (1982)
Site Type:	Lithic scatter
Cultural Affiliation:	Unknown prehistoric
Site Size:	30.0 m (98.4 ft) N to S by 20.0 m (65.6 ft) E to W 600.0 square meters (6,455.0 square feet)
Phase I Methods:	Pedestrian survey and shovel testing
Area Excavated:	27 shovel tests (10.8 square meters/36.0 square feet)
Cultural Materials Collected:	7 Chipped stone debitage
Landform:	Upland
Elevation:	870 feet above mean sea level
Land Use/Surface Visibility:	Grass (Less than 10% surface visibility)
Soil Type:	Sharpsburg silt loam, 1 to 4% slopes (7540)
Site Disturbance:	Cultivation and erosion
Relation to Project Limits:	100% outside Alternative FCI East-1 and Alternative East/West Composite
National Register Eligibility:	Not eligible
Recommendations:	No additional archaeological work

Site 14LV167 is the location of a small prehistoric lithic scatter of undetermined age or cultural association on the uplands in the proposed West Site. At the time of LBG's survey in March 2011, the area was covered by prairie grass that was about 10 centimeters (4 inches) high. Ground surface visibility was less than ten percent. Staggered transects were excavated across project area (Figure H-9). The transects and shovel tests were 30 meters (98.4 feet) apart. One shovel test on the grid, TR 2-4, yielded one flake fragment from the plowzone (Ap horizon).

Shovel tests were placed at 5 and 10-meter (32.8-foot) intervals in the cardinal directions around Shovel Test TR 2-4 to define the site boundaries (Figure H-9). In all, 26 radial shovel tests were excavated. Three shovel tests yielded artifacts from the plowzone: Shovel Test TR 2-4, N10 included three flake fragments; Shovel test TR 2-4, S5 included one flake fragment; and Shovel Test TR 2-4, E 10 included one early reduction flake and one piece of block shatter.

The soil profiles of the shovel tests (Appendix D) showed a plowzone (Ap horizon) that varied from 17 to 53 centimeters (7 to 21 inches) thick, with the thicker deposits in the northern part of the site across a trail following a former railroad grade. The Ap horizon was composed of very dark grayish brown (10YR 3/2) silt

loam. The soil layer below this stratum often was very dark grayish brown (10YR 3/2) silty clay loam, sometimes mottled with 10 percent dark yellowish brown (10YR 4/6) or yellowish brown (10YR 5/6) silty clay loam. The second stratum of some shovel tests was dark gray (10YR 3/1) silty clay loam mottled with 20 percent brown (10YR 4/3) silty clay loam. Soils boundaries varied from abrupt to clear to gradual. Where a third stratum was present, it was a Bt horizon composed of yellowish brown (10YR 5/4) silty clay loam occasionally mottled with 10 to 20 percent yellowish brown (10YR 5/6) silty clay loam. Soil boundaries between the second and third strata varied from abrupt to clear to gradual. Shovel tests were excavated to between 55 and 98 centimeters (21.6 to 38.5 inches) below ground surface.

Table 5 lists the artifacts recovered from Site 14LV167. All seven of the flakes from the four positive shovel tests at Site 14LV167 were recovered from the Ap horizon. The flakes include five made from unidentified chert and two made from Florence chert. The Florence chert flakes show reddening from heating while the unidentified chert flakes do not. No cortex was present on any of the flakes.

TABLE 5
ARTIFACT CLASS/TYPE BY STRATUM FOR SITE 14LV167

Artifact Class/Type	Ap
Early Reduction Flake	1
Flake Fragment	5
Block Shatter	1
Total	7

The soil profiles demonstrate that the surface soil has been disturbed by cultivation and, along the former railroad grade, by construction of that railroad bed. The native A horizon, which would have been the surface occupied by prehistoric Native Americans, the historic Kansa tribe, and early historic soldiers, explorers, and traders, appears to be deflated as the result of cultivation. The seven artifacts found in the plowzone are generic in character; that is they reflect the kinds of chipped stone debris created by prehistoric groups for at least the past 10,000 years. Thus, the site has no potential to contribute important new information about the prehistory of the region. LBG recommends that Site 14LV167 be considered not eligible for listing in the National Register under Criterion D. Criteria A, B, and C do not apply to this site. LBG recommends that no additional archaeological work be performed at this site.

6.4.7 Site 14LV168

Map Source:	Leavenworth, KS, 7.5' Series USGS Topographic Quad (1982)
Site Type:	Lithic scatter
Cultural Affiliation:	Late Prehistoric/Middle Ceramic
Site Size:	58.0 m (190.3 ft) N to S by 325.0 m (1,066.3 ft) E to W 18,850.0 square meters (202,916.9 square feet)
Phase I Methods:	Pedestrian survey and shovel testing
Area Excavated:	96 shovel tests (38.4 square meters/128.0 square feet)
Cultural Materials Collected:	2 Scallorn type arrow points, 1 corner-notched point, 12 bifaces, 5 utilized flakes, and 106 debitage
Landform:	Upland
Elevation:	870 feet above mean sea level
Land Use/Surface Visibility:	Cultivation (0 to 90% surface visibility)

Soil Type:	Sharpsburg silt loam 1 to 4% slopes (7540)
Site Disturbance:	Cultivation and erosion
Relation to Project Limits:	100% outside Alternative FCI East-1 and Alternative East/West Composite
National Register Eligibility:	Not eligible
Recommendations:	No additional archaeological work

Site 14LV168 is the location of a broadly distributed prehistoric lithic scatter attributed to the Late Prehistoric (Middle Ceramic) period based on projectile point types recovered from the site. The site is situated in the uplands in the proposed West Site. At the time of LBG's survey in March 2011, the western and eastern thirds of the site area was without ground cover. Ground surface visibility was about 90 percent. The central third was vegetated with clover. Here ground surface visibility was less than 10 percent.

Four staggered transects (TR 7 to TR 11) on the grid were excavated across western portion of the site area (Figure H-10). The transects and shovel tests were 30 meters (98.4 feet) apart. Shovel Test TR 8-1 yielded two flakes from the Ap horizon and Shovel Test TR 9-2 yielded one flake from the Ap horizon. The other eight shovel tests were negative for artifacts.

Because of the high surface visibility, pedestrian survey was conducted from west to east across the site area. Intervals between the pedestrian survey transects was about five meters (16.4 feet). Artifacts observed on the surface were marked with pinflags so that their locations could be recorded with a GPS. A concentration of chipped stone flaking debris was identified in the western part of the site area ("Concentration 1"). All of these artifacts were collected as a unit. Also present in the western part of the site were five objects (Isolated Artifacts 10 through 14) that were individually recorded.

Shovel tests were excavated at the locations of Isolated Artifacts 1 through 9 and as radials in the cardinal directions around these nine find spots and around positive Shovel Tests TR 8-1 and TR 8-2. No artifacts were found in the shovel tests at the find spots or in the radials around the find spots. Radials around Shovel Tests TR 8-1 and TR 9-2 covered the areas of Isolated Artifacts 10 through 14. In all, 88 more shovel tests were excavated in the area of Site 14LV168 for a total of 96 shovel tests. Eleven of the shovel tests yielded artifacts.

The soil profiles in the shovel tests (Appendix D) showed a plowzone (Ap horizon) that was variable across the site. At the western end of the site, which was lowest in elevation, the Ap horizon was very dark brown (10YR 2/2) to very dark grayish brown (10YR 3/2) silt loam. The stratum was 20 to 50 centimeters (8 to 20 inches) thick. Below the Ap, the second stratum typically was a B horizon of dark grayish brown (10YR 4/2) silty clay loam. Occasionally this soil was mottled by about 10 percent yellowish brown (10YR 5/6) silty clay loam. The soil boundary was usually gradual, but clear and vague boundaries were reported. Where a third stratum was uncovered, it was a Bt horizon of yellowish brown (10YR 5/4 to 10YR 5/6) silty clay loam. The soil boundary between the second and third stratum was clear. Shovel tests were excavated between 40 and 74 centimeters (16 to 29 inches) below ground surface.

Further east, three soils strata were identified. The Ap horizon was very dark grayish brown (10YR 3/2) silt loam about 20 to 40 centimeters (8 to 16 inches) thick. Below this layer was a deposit of dark gray (10YR 3/1) silty clay loam about 25 centimeters (10 inches) thick that is interpreted to be an organically enriched B horizon. The boundary between the two strata was abrupt to clear. The third stratum was a Bt horizon composed of yellowish brown (10YR 5/4 to 10YR 5/6) silty clay loam. Shovel tests were excavated 55 to 89 centimeters (21.6 to 35.0 inches) below ground surface.

In the eastern part of the site, which was higher in elevation, the Ap horizon was composed of very dark grayish brown (10YR 3/2) to dark brown (10YR 3/3) silt loam. This stratum was between 25 and 45 centimeters (9.8 and 17.7 inches) thick. The underlying Bt horizon was brown (10YR 4/3 to 10YR 5/3) silty clay loam to dark yellowish brown (10YR 4/4) silty clay loam to yellowish brown (10YR 5/4) silty clay loam. Mottling of yellowish brown (10YR 5/4 to 10YR 5/6) silty clay loam was common. Soil boundaries were clear. Shovel tests were excavated between 42 and 56 centimeters (16.5 and 22 inches) below ground surface.

The artifact assemblage from 14LV168 consists of 10 tools and 106 pieces of debitage (Tables 6 and 7). The dominant material type is Florence chert (N=75, 66.6% by weight), with smaller amounts of jasper (N=21, 16.3% by weight), unidentified chert (N=19, 16.6% by weight) and chalcedony (N=1, 0.5% by weight). Most of the artifacts were found on the surface (N=97, 92% by weight) with only 19 (8% by weight) recovered from the Ap horizon. Heat treatment was present on only four artifacts, indeterminate on two, and not present on 110 items. Cortex was found on 12 artifacts (six block and six cobble), and not present on 104.

The tools include two nearly whole Scallorn points dating to the Late Prehistoric/Middle Ceramic period (Perino 1985:344), one unidentified corner notched point, two late-stage bifaces (one a possible drill), and five utilized flakes. Plate 9 shows the points and possible drill. The Scallorn points are both missing the tip. One is Florence chert the other is unidentified chert. The corner notched point is also missing the tip. It is made on banded gray chert. Jasper accounts for two of the tools, one late stage biface and one utilized flake. One utilized flake is chalcedony. Heat treatment and cortex were not observed on any tool. All the tools were recovered from the surface.

TABLE 6
ARTIFACT CLASS/TYPE BY STRATUM FOR SITE 14LV168

Artifact Class/Type	Soil Stratum		Total
	Surface	Ap	
Projectile Point	3	.	3
Late-Stage Biface	2	.	2
Utilized Flake	5	.	5
Decortication Flake	.	1	1
Early Reduction Flake	9	2	11
Biface Reduction Flake	55	8	63
Flake Fragment	16	5	21
Finishing Flake	1	3	4
Other Flake Type	1	.	1
Block Shatter	5	.	5
Total	97	19	116

Site 14LV168 lies in an area that has been heavily disturbed by cultivation and erosion. The higher numbers of artifacts found in the western portion of the site appears to be a result of decades of erosion carrying materials from upslope down to mix with other artifacts. No doubt plowing also displaced artifacts. Thus, while there are several tools at the site, some of which are temporally diagnostic, the integrity of the site has been significantly compromised. The site appears to have low potential for contributing important new information about the prehistory of the region. Therefore, LBG recommends that Site 14LV168 be considered not eligible for listing in the National Register under Criterion D. Criteria A, B, and C do not apply to this site.

TABLE 7
ARTIFACT CLASS/TYPE BY MATERIAL TYPE FOR SITE 14LV168

Artifact Class/Type	Material Type				Total
	Florence Chert	Jasper	Chert	Chalcedony	
Projectile Point	1	.	2	.	3
Late-Stage Biface	1	1	.	.	2
Utilized Flake	2	1	1	1	5
Decortication Flake	1	.	.	.	1
Early Reduction Flake	6	3	2	.	11
Biface Reduction Flake	44	12	7	.	63
Finishing Flake	.	1	3	.	4
Flake Fragment	15	2	4	.	21
Other Flake Type	.	1	.	.	1
Block Shatter	5	.	.	.	5
Total	75	21	19	1	116
Total Weight	58.7	14.4	14.7	0.4	88.2
% by Weight	66.6	16.3	16.6	0.5	100



Plate 9. Chipped Stone Tools from Site 14LV168.

6.4.8 Site 14LV169

Map Source:	Leavenworth, KS, 7.5' Series USGS Topographic Quad (1982)
Site Type:	Lithic scatter
Cultural Affiliation:	Late Prehistoric/Middle Ceramic
Site Size:	67.0 m (219.8 ft) N to S by 44.0 m (144.4 ft) E to W 2,948.0 square meters (31,739.1 square feet)
Phase I Methods:	Pedestrian survey and shovel testing
Area Excavated:	81 shovel tests (32.4 square meters/108.0 square feet)
Cultural Materials Collected:	2 Scallorn type arrow points, 1 biface, 1 utilized flake, 63 debitage, and 1 fire-cracked rock
Landform:	Upland
Elevation:	870 feet above mean sea level
Land Use/Surface Visibility:	Grass (Less than 10% surface visibility)
Soil Type:	Sharpsburg silt loam 1 to 4% slopes (7540)
Site Disturbance:	Cultivation and erosion
Relation to Project Limits:	100% within Alternative East/West Composite; 100% outside Alternative FCI East-1
National Register Eligibility:	Potentially eligible
Recommendations:	Avoidance. If cannot be avoided, then site evaluation

Site 14LV169 is the location of a moderately sized prehistoric lithic scatter attributed to the Late Prehistoric (Middle Ceramic) period based on projectile point types recovered from the site. The site is situated in the uplands in the proposed West Site. At the time of LBG's survey in March 2011, the site area was covered with prairie grass about 20 centimeters (7.8 inches) in height. Ground surface visibility was less than 10 percent.

Two staggered transects (TR A to TR B) on the grid were excavated across the site area (Figure H-11). The transects and shovel tests were 30 meters (98.4 feet) apart. Shovel Test TR A-14 yielded one biface reduction flake from the Ap horizon. The other three shovel tests in the site vicinity were negative for artifacts. Radial shovel tests were excavated in the cardinal directions at 5 and 10 meters (16.4 and 32.8 feet) from Shovel Test TR A-14. Additional shovel tests included prehistoric artifacts and the site increased to 67 meters (219.8 feet) north to south by 44 meters (144.3 feet) east to west. A total of 81 shovel tests were excavated at Site 14LV169. Over one-third (N=31) of the tests were positive. The northern and eastern boundaries of the site were defined by disturbances.

The soil profiles in the shovel tests (Appendix D) included an Ap horizon of very dark grayish brown (10YR 3/2) silt loam that ranged from 18 to 50 centimeters (7 to 19.6 inches) thick, but typically was about 35 centimeters (13 inches) thick. Below the surface layer was a Bt1 horizon of dark grayish brown (10YR 4/2) to yellowish brown (10YR 5/4) silty clay loam. The yellowish brown soil often was mottled with 20 to 40 percent of very dark grayish brown (10YR 3/2) or dark grayish brown (10YR 4/2) silty clay loam. The boundary between the two strata was gradual where the Ap was thickest and clear elsewhere. Where a third stratum was encountered, this Bt2 horizon was composed of dark yellowish brown (10YR 4/4) to yellowish brown (10YR 5/4) silty clay loam. The soil boundary was clear to gradual. Shovel tests were excavated to between 46 and 78 centimeters below ground surface.

Four tools, 59 pieces of debitage, and one fire-cracked rock were recovered from Site 14LV169 (Tables 8 and 9). Most of the artifacts came from the Ap horizon (N=64, 94%) with only three flakes from the Bt1

TABLE 8
ARTIFACT CLASS/TYPE BY STRATUM FOR SITE 14LV169

Artifact Class/Type	Soil Stratum			Total
	Ap	Bt1	Bt2	
Projectile Point	2	.	.	2
Late-Stage Biface	1	.	.	1
Utilized Flake	1	.	.	1
Decortication Flake	1	.	.	1
Early Reduction Flake	5	.	.	5
Biface Reduction Flake	23	1	.	24
Finishing Flake	10	1	.	11
Flake Fragment	18	1	1	20
Other Flake Type	1	.	.	1
Block Shatter	1	.	.	1
Fire-cracked Rock	1	.	.	1
Total	64	3	1	68

TABLE 9
ARTIFACT CLASS/TYPE BY MATERIAL TYPE FOR SITE 14LV169

Artifact Class/Type	Material Type			Total
	Florence Chert	Chert	Jasper	
Projectile Point	2	.	.	2
Late-Stage Biface	.	1	.	1
Utilized Flake	1	.	.	1
Decortication Flake	.	.	1	1
Early Reduction Flake	5	.	.	5
Biface Reduction Flake	16	3	5	24
Finishing Flake	8	.	3	11
Flake Fragment	14	3	3	20
Other Flake Type	.	.	1	1
Block Shatter	1	.	.	1
Total	47	7	13	67
Total Weight	28.4	10.5	6.5	45.4
% by Weight	62.6	23.1	14.3	100

horizon and one from the Bt2 horizon. Most of the lithic material is Florence chert (N=47, 62.6% by weight), with smaller amounts of jasper (N=13, 14.3% by weight), and unidentified chert (N=7, 23.1% by weight) One quartzite fire-cracked rock also was recovered.

Heat treatment was present or indeterminate on only eight flakes and one late stage biface. Biface reduction flakes and finishing flakes accounted for 35 flakes or just over half the collection from this site. Cortex was present on 12 pieces of debitage (six block shatter and six cobbles).

The tools consist of one whole and one medial section of Scallorn points (Perino 1985:344). Both are made from Florence chert. One nearly whole late-stage biface was made with unidentified heated chert. The utilized flake was of Florence chert. These three artifacts are shown in Plate 10.



Plate 10. Chipped Stone Tools from Site 14LV169.

Site 14LV169 is the location of a relatively dense cluster of chipped stone artifacts attributed to the Late Prehistoric or Middle Ceramic cultural period based on two Scallorn variety arrow points. More than one-third of the shovel tests excavated at the site yielded artifacts. The types of artifacts recovered suggest a location where prehistoric people were reducing chert cobbles into biface performs and shaping tools such as arrow points, knives, drills, and scrapers. While the site has been disturbed to some degree by cultivation and erosion and although most were from the Ap horizon, a few were from the Bt horizons, suggesting the possibility of intact subsurface deposits. Two small pottery sherds found in nearby Site 14LV337 may have derived from Site 14LV169, further supporting the potential of the site to contribute significant new information about the late prehistory of the region. Therefore, LBG recommends that Site 14LV169 be considered potentially eligible for listing in the National Register under Criterion D. Criteria A, B, and C do not apply to this site.

LBG recommends avoidance of Site 14LV169 by any proposed construction or other ground disturbance activities. If the site cannot be avoided, then LBG recommends that Phase III site evaluation be performed to determine whether the site has sufficient integrity and potential to answer important research questions regarding the prehistory of the locality and/or region.

6.4.9 Site 14LV170

Map Source:	Leavenworth, KS, 7.5' Series USGS Topographic Quad (1982)
Site Type:	Lithic scatter
Cultural Affiliation:	Unknown prehistoric
Site Size:	10.0 m (32.8 ft) N to S by 10.0 m (32.8 ft) E to W 100.0 square meters (1,075.8 square feet)
Phase I Methods:	Pedestrian survey and shovel testing
Area Excavated:	16 shovel tests (6.4 square meters/21.3 square feet)
Cultural Materials Collected:	13 Chipped stone debitage
Landform:	Upland
Elevation:	860 feet above mean sea level
Land Use/Surface Visibility:	Pasture (Less than 10% surface visibility)
Soil Type:	Sharpsburg silt loam 1 to 4% slopes (7540)
Site Disturbance:	Cultivation and erosion
Relation to Project Limits:	100% outside Alternative FCI East-1 and Alternative East/West Composite
National Register Eligibility:	Not eligible
Recommendations:	No additional archaeological work

Site 14LV170 is the location of a small prehistoric lithic scatter of undetermined cultural association. The site is situated in the uplands in the proposed West Site. At the time of LBG's survey in March 2011, the site area included a buffalo wallow surrounded by prairie grass about 20 centimeters (7.8 inches) in height. Ground surface visibility was about 100 percent in the wallow and less than 10 percent in the grassy area. The site was identified when a handful of chipped stone debris was observed in the wallow during excavation of shovel tests within the project grid. The cluster of eight artifacts was identified as "Concentration 2".

A shovel test was excavated in the center of the artifact concentration. Three flakes were recovered from the Ap horizon in the shovel test. Radial shovel tests were excavated at 5 and 10-meter (16.4 and 32.8-foot) intervals in the cardinal direction around the positive shovel test (Figure H-12). Seven of these shovel tests were negative for artifacts, but the shovel test 10 meters (32.8 feet) west of the central shovel test yielded two flakes from the Ap horizon. Therefore, six more shovel tests were excavated at 5 and 10 meters (16.4 and 32.8-foot) north, west, and south of the test. All six of these shovel tests were negative. One shovel test on the grid near the shovel test radials also was negative. In all, 16 shovel tests were excavated around Concentration 2. Two shovel tests were positive (Concentration 2 and Concentration 2, W10).

The soil profiles in the shovel tests (Appendix D) included an Ap horizon of either very dark grayish brown (10YR 3/2) silt loam or less frequently, brown (10YR 4/3) silt loam that ranged from 15 to 44 centimeters (5.9 to 17.3 inches) thick, but averaged about 30 centimeters (11.8 inches) thick. Below the surface layer was a Bt1 horizon of brown (10YR 4/3) silty clay loam mottled with about 30 percent yellowish brown (10YR 5/4) silty clay loam where the Ap horizon was very dark grayish brown (10YR 3/2). Where the Ap horizon was brown (10YR 4/3), the Bt horizon soil was yellowish brown (10YR 5/4 to 10YR 5/6) silty clay loam. The soil boundary was clear to gradual. Shovel tests were excavated to between 40 and 64 centimeters (15.7 and 25 inches) below ground surface.

The artifact assemblage from Site 14LV170 consists of 13 pieces of chipped stone debitage, including one early reduction flake, six biface reduction flakes, one finishing flake, and five flake fragments. Eight

flakes are from the surface and five are from the Ap horizon (Table 10). Ten flakes are made from Florence chert (95.6% by weight), two from unidentified chert (3.6% by weight), and one from jasper (0.8% by weight). Heating was present on three of the Florence flakes. Block cortex was found on one specimen.

TABLE 10
ARTIFACT CLASS/TYPE BY STRATUM FOR SITE 14LV170

Artifact Class/Type	Soil Stratum		Total
	Surface	Ap	
Early Reduction Flake	1	.	1
Biface Reduction Flake	3	3	6
Finishing Flake	.	1	1
Flake Fragment	4	1	5
Total	8	5	13

Site 14LV170 is a small prehistoric lithic scatter consisting of 13 chipped stone flakes recovered from the ground surface or plowzone in a buffalo pasture. The site area has been disturbed by cultivation and erosion sufficiently that the native A horizon on which prehistoric and historic groups would have camped or performed other activities is generally lost. The dark soil may be the remnant of that A horizon or an organically enriched B horizon. The small number of chipped stone flaking debris is culturally generic; that is, it could have been produced by any Native American group who occupied that location briefly sometime in the past 10,000 or more years. Thus, the site appears to have no potential to contribute important new information about the prehistory of the Leavenworth locale or of the broader region. Therefore, LBG recommends that Site 14LV170 be considered not eligible for listing in the National Register under Criterion D. Criteria A, B, and C do not apply to this site.

6.4.10 Site 14LV171

Map Source:	Leavenworth, KS, 7.5' Series USGS Topographic Quad (1982)
Site Type:	Camp
Cultural Affiliation:	Late Prehistoric/Middle Ceramic
Site Size:	50.0 m (164.0 ft) N to S by 86.0 m (282.2 ft) E to W 4,300.0 square meters (46,280.8 square feet)
Phase I Methods:	Pedestrian survey and shovel testing
Area Excavated:	124 shovel tests (49.6 square meters/165.3 square feet)
Cultural Materials Collected:	2 Pottery sherds, 2 side-notched arrow points bases, 1 core, 1 utilized flake, and 46 debitage
Landform:	Uplands
Elevation:	860 feet above mean sea level
Land Use/Surface Visibility:	Pasture (Less than 0% surface visibility)
Soil Type:	Sharpsburg silt loam 4 to 8% slopes (7542)
Site Disturbance:	Cultivation and erosion
Relation to Project Limits:	100% within Alternative East/West Composite; 100% outside Alternative FCI East-1 and Alternative East/West Composite
National Register Eligibility:	Potentially eligible
Recommendations:	Avoidance. If cannot be avoided, then site evaluation

Site 14LV171 is the location of a large prehistoric camp attributed to the Late Prehistoric (Middle Ceramic) period based on projectile point types recovered from the site. The site is situated in the uplands in the proposed West Site. At the time of LBG's survey in March 2011, the site area was covered with prairie grass about 20 centimeters (7.8 inches) in height. Ground surface visibility was less than 10 percent.

Four staggered transects (TR 11 to TR 14) on the grid were excavated across the site area (Figure H-13). The transects and shovel tests were 30 meters (98.4 feet) apart. Shovel Test TR 11-19 yielded one utilized flake from the Ap horizon. Shovel Test 12-19 included one flake fragment in the Ap horizon. Radial shovel tests were excavated in the cardinal directions at 5 and 10 meters (16.4 and 32.8 feet) from these two positive shovel tests to define site boundaries. Additional shovel tests included prehistoric artifacts and the site increased to a maximum area measuring 50 meters (164 feet) north to south by 86 meters (152.2 feet) east to west. A total of 124 shovel tests were excavated at Site 14LV171. Approximately one-third (N=39) of the tests were positive for prehistoric artifacts.

The soil profiles in the shovel tests (Appendix D) included an Ap horizon of very dark grayish brown (10YR 3/2) to dark brown (10YR 3/3) silt loam that ranged from 20 to 45 centimeters (7.8 to 17.7 inches) thick, but typically was about 30 to 35 centimeters (11.8 to 13.7 inches) thick. Below the surface layer was an A horizon of black (10YR 2/1) to dark gray (10YR 3/1) silty clay loam that was 12 to 20 centimeters (4.7 to 7.8 inches) thick. The soil boundary was clear. The third stratum was a Bt horizon of yellowish brown (10YR 5/4 to 10YR 5/6) silty clay loam. This soil was sometimes mottled with about 20 percent dark grayish brown (10YR 4/2) or brown (10YR 5/3) silty clay loam. The boundary between the A and Bt horizons was usually gradual. Shovel tests were excavated to between 40 and 90 centimeters (15.7 to 35.4 inches) below ground surface with the average depth being 60 centimeters (23.6 inches).

The artifact assemblage from Site 14LV171 consists of 46 pieces of chipped stone debitage, two projectile points, one flake core, one utilized flake, and two prehistoric ceramics (Tables 11 and 12). The points are both weakly shouldered, side-notched base fragments made from Florence chert (Plate 11). The flake core and utilized flake are both made from Florence chert. The majority of the chert found at this site is Florence (N=35, 89.0% by weight) with smaller amounts of jasper (N=13, 10.8% by weight), and unidentified chert (N=2, 0.2% by weight). Most of the chert was not heat treated (N=41, 45.5% by weight). Cobble cortex was observed on 11 of the debitage (21.3% by weight) and block cortex was observed on five (16.4% by weight). The two sherds refit and are plain or smoothed with quartz temper. As with the other sites identified during this project, nearly all of the artifacts are from the Ap horizon (N=50). One piece of block shatter was found on the ground surface and one biface reduction flake was recovered from the Bt horizon.

Site 14LV171 is the location of a large prehistoric camp tentatively attributed to the Late Prehistoric or Middle Ceramic cultural period based on the base of a side-notched arrow point, two small pottery sherds, and the presence of three Late Prehistoric sites in the vicinity of 14LV171. Approximately one-third of the shovel tests excavated at the site yielded artifacts. The types of artifacts recovered suggest a location where prehistoric people were reducing chert cobbles into biface performs and shaping tools such as arrow points, knives, drills, and scrapers. While the site has been disturbed to some degree by bison wallowing, cultivation, and erosion and although most were from the Ap horizon, the thickness of the Ap horizon and presence of an A horizon suggests the possibility of intact subsurface deposits. The two small pottery sherds are not very distinctive. It would be interesting to see how they compare with the possible pottery sherds found at Site 14LV337. The kinds of artifacts found at Site 14LV171, the strong possibility of intact archaeological deposits, and the relationship of this site with other similar

sites in the vicinity indicate that Site 14LV171 has good potential for contributing significant new information about the late prehistory of the Leavenworth locale and the broader region. Therefore, LBG recommends that Site 14LV171 be considered potentially eligible for listing in the National Register under Criterion D. Criteria A, B, and C do not apply to this site.

TABLE 11
ARTIFACT CLASS/TYPE BY STRATUM FOR SITE 14LV171

Artifact Class/Type	Soil Stratum			Total
	Surface	Ap	A	
Lithics	1	48	1	50
Projectile Point	.	2	.	2
Flake Core	.	1	.	1
Utilized Flake	.	1	.	1
Decortication Flake	.	3	.	3
Early Reduction Flake	.	6	.	6
Biface Reduction Flake	.	12	1	13
Finishing Flake	.	4	.	4
Flake Fragment	.	17	.	17
Block Shatter	1	2	.	3
Prehistoric Ceramic	.	2	.	2
Body Sherd	.	2	.	2
Total	1	50	1	52

TABLE 12
ARTIFACT CLASS/TYPE BY MATERIAL TYPE FOR SITE 14LV171

ArtifactClass/Type	Material Type			Total
	Florence Chert	Jasper	Chert	
Projectile Point	2	.	.	2
Flake Core	1	.	.	1
Utilized Flake	1	.	.	1
Decortication Flake	2	1	.	3
Early Reduction Flake	5	1	.	6
Biface Reduction Flake	9	4	.	13
Finishing Flake	3	.	1	4
Flake Fragment	10	6	1	17
Block Shatter	2	1	.	3
Total	35	13	2	50
Total Weight	74.0	9.0	0.2	83.2
% by Weight	89.0	10.8	0.2	100

LBG recommends avoidance of Site 14LV171 by any proposed construction or other ground disturbance activities. If the site cannot be avoided, then LBG recommends that Phase III site evaluation be performed to determine whether the site has sufficient integrity and potential to answer important research questions regarding the prehistory of the locality and/or region.



Plate 11. Chipped Stone Points and Pottery Sherds from Site 14LV171.

6.4.11 Site 14LV172

Map Source:	Leavenworth, KS, 7.5' Series USGS Topographic Quad (1982)
Site Type:	Lithic scatter
Cultural Affiliation:	Late Prehistoric/Middle Ceramic
Site Size:	106.0 m (347.8 ft) NW to SE by 46.0 m (150.9 ft) NE to SW 4,876.0 square meters (52,483.0 square feet)
Phase I Methods:	Pedestrian survey and shovel testing
Area Excavated:	143 shovel tests (57.2 square meters/190.7 square feet)
Cultural Materials Collected:	2 Scallorn type arrow points, 4 bifaces, 2 cores, 4 utilized flakes, and 108 debitage
Landform:	Uplands
Elevation:	850 to 870 feet above mean sea level
Land Use/Surface Visibility:	Pasture (Less than 10% surface visibility)
Soil Type:	Sharpsburg silt loam 4 to 8% slopes (7542)
Site Disturbance:	Cultivation and erosion
Relation to Project Limits:	100% outside Alternative FCI East-1 and Alternative East/West Composite
National Register Eligibility:	Potentially eligible
Recommendations:	Avoidance. If cannot be avoided, then site evaluation

Site 14LV172 is the location of a large prehistoric camp attributed to the Late Prehistoric (Middle Ceramic) period based on projectile point types recovered from the site. The site is situated in the

uplands in the proposed West Site. At the time of LBG's survey in March 2011, the site area was covered with prairie grass about 20 centimeters (7.8 inches) in height. Ground surface visibility was less than 10 percent.

Five staggered transects (TR 15 to TR 19) on the grid were excavated across the site area (Figure H-14). The transects and shovel tests were 30 meters (98.4 inches) apart. Shovel Test TR 16-24 yielded three flakes from the Ap horizon. Shovel Test 18-25 included one flake fragment in the Ap horizon. Radial shovel tests were excavated in the cardinal directions at 5 and 10 meters (16.4 and 32.8 feet) from these two positive shovel tests to define site boundaries. Additional shovel tests included prehistoric artifacts and the two individual sites merged into a single elongated site with a maximum area measuring 106 meters (347.7 feet) northwest to southeast by 46 meters (150.9 feet) northeast to southwest. A total of 143 shovel tests were excavated at Site 14LV172. More than one-third (N=57) of the tests were positive for prehistoric artifacts.

The soil profiles in the shovel tests (Appendix D) included an Ap horizon of very dark grayish brown (10YR 3/2) to dark brown (10YR 3/3) silt loam. In a few shovel tests, the Ap horizon was recorded as black (10YR 2/1) or very dark gray (10YR 3/1) silt loam. The Ap horizon ranged in thickness from 15 to 50 centimeters (19.6 inches) thick, but typically was about 30 and 35 centimeters (11.8 and 13.7 inches) thick. The thickness of the Ap horizon was thinner at the base of the slope in the northern portion of the site and represents colluvium. Below the surface layer was an A horizon of black (10YR 2/1) to dark gray (10YR 3/1) silty clay loam that was 14 to 40 centimeters (5.5 to 15.7 inches) thick. The soil boundary was clear to gradual. The third stratum was a Bt horizon either of brown (10YR 4/3) silty clay loam or of dark grayish brown (10YR 4/2) silty clay loam mottled with about 25 percent dark yellowish brown (10YR 4/4 to 10YR 5/4) silty clay loam. The boundary between the A and Bt horizons was clear to gradual. Shovel tests were excavated to between 45 and 80 centimeters (17.7 to 31.4 inches) below ground surface with the average depth being 60 centimeters (23.6 inches).

A total of 121 artifacts were recovered from Site 14LV172, including 108 pieces of debitage, 12 tools, and one unmodified pebble. Of these artifacts, 111 items (93.6% by weight) came from the Ap horizon and 10 objects (6.4% by weight) came from the A horizon (Table 13). Florence chert accounts for 107 artifacts (96.7% by weight). Small amounts of jasper (N=7, 2.5% by weight), unidentified chert (N=5, 0.7% by weight) and chalcedony (N=1, 0.1% by weight) also were represented (Table 14). Heat treatment was not observed on a majority of the artifacts (N=91, 86.6% by weight). Twenty-nine artifacts were heated and heating was indeterminate (15.4% by weight) for one object. Most of the artifacts (N=104, 62.6% by weight) did not exhibit cortex. However, block cortex was present on 10 artifacts (33.8% by weight) and cobble cortex was present on seven (3.6% by weight). The unmodified pebble is a naturally occurring coal clinker.

The 12 tools include two Scallorn points (Perino 1985:344), two late-stage bifaces, one middle-stage biface, one indeterminate biface, two cores, and four utilized flakes. Plate 12 shows the points and bifaces. One point is extensively resharpened and made from heat treated Florence chert. The other point is a base fragment made from jasper. The remaining tools are all identified as Florence chert.

Site 14LV172 is the location of a large prehistoric camp tentatively attributed to the Late Prehistoric or Middle Ceramic cultural period based on the presence of two Scallorn variety arrow points. More than one-third of the shovel tests excavated at the site yielded artifacts. The types of artifacts recovered suggest a location where prehistoric people were reducing chert cobbles into biface performs and shaping tools such as arrow points, knives, drills, and scrapers. While the site has been disturbed to some degree by bison wallowing, cultivation, and erosion and although most were from the Ap horizon,

the thickness of the Ap horizon and presence of an A horizon suggests the possibility of intact subsurface deposits. The kinds of artifacts found at Site 14LV172, the strong possibility of intact archaeological deposits, and the relationship of this site with other similar sites in the vicinity indicate that Site 14LV172 has good potential for contributing significant new information about the late prehistory of the Leavenworth locale and the broader region. Therefore, LBG recommends that Site 14LV171 be considered potentially eligible for listing in the National Register under Criterion D. Criteria A, B, and C do not apply to this site.

TABLE 13
ARTIFACT CLASS/TYPE BY STRATUM FOR SITE 14LV172

Artifact Class/Type	Soil Stratum		
	Ap	A	Total
Projectile Point	2	.	2
Late-Stage Biface	2	.	2
Middle-Stage Biface	1	.	1
Indeterminate Biface	1	.	1
Freehand Core	2	.	2
Utilized Flake	4	.	4
Decortication Flake	1	.	1
Early Reduction Flake	8	.	8
Biface Reduction Flake	38	5	43
Finishing Flake	15	3	18
Flake Fragment	29	1	30
Block Shatter	8	.	8
Unmodified Pebble	.	1	1
Total	111	10	121

TABLE 14
ARTIFACT CLASS/TYPE BY MATERIAL TYPE FOR SITE 14LV172

Artifact Class/Type	Material Type				Total
	Florence Chert	Jasper	Chert	Chalcedony	
Projectile Point	1	1	.	.	2
Late-Stage Biface	2	.	.	.	2
Middle-Stage Biface	1	.	.	.	1
Indeterminate Biface	1	.	.	.	1
Freehand Core	2	.	.	.	2
Utilized Flake	4	.	.	.	4
Decortication Flake	1	.	.	.	1
Early Reduction Flake	8	.	.	.	8
Biface Reduction Flake	37	4	2	.	43
Finishing Flake	17	.	.	1	18
Flake Fragment	26	1	3	.	30
Block Shatter	7	1	.	.	8
Total	107	7	5	1	120
Total Weight	134.8	3.5	1.0	0.1	139.4
% by Weight	96.7	2.5	0.7	<0.1	100



Plate 12. Chipped Stone Tools from Site 14LV172.

LBG recommends avoidance of Site 14LV172 by any proposed construction or other ground disturbance activities. If the site cannot be avoided, then LBG recommends that Phase III site evaluation be performed to determine whether the site has sufficient integrity and potential to answer important research questions regarding the prehistory of the locality and/or region.

6.4.12 Site 14LV173

Map Source:	Leavenworth, KS, 7.5' Series USGS Topographic Quad (1982)
Site Type:	Lithic scatter
Cultural Affiliation:	Unknown prehistoric
Site Size:	20.0 m (65.6 ft) N to S by 21.0 m (68.9 ft) E to W 420.0 square meters (4,519.9 square feet)
Phase I Methods:	Pedestrian survey and shovel testing
Area Excavated:	22 shovel tests (8.8 square meters/29.3 square feet)
Cultural Materials Collected:	1 Chipped stone biface fragment and 12 debitage

Landform:	Upland
Elevation:	842 to 845 feet above mean sea level
Land Use/Surface Visibility:	Grass (Less than 10% surface visibility)
Soil Type:	Sharpsburg silt loam 4 to 8% slopes (7542)
Site Disturbance:	Cultivation and erosion
Relation to Project Limits:	100% outside Alternative FCI East-1 and Alternative East/West Composite
National Register Eligibility:	Not eligible
Recommendations:	No additional archaeological work

Site 14LV173 is the location of a small prehistoric lithic scatter of unknown age or cultural association. The site is situated on a gentle slope in the uplands in the proposed West Site. At the time of LBG's survey in March 2011, the site area vegetated by prairie grass about 20 centimeters (7.8 inches) in height. Ground surface visibility was less than 10 percent.

Three staggered transects (TR 16 to TR 18) on the grid were excavated across the site area (Figure H-15). The transects and shovel tests were 30 meters (98.4 feet) apart. Shovel Test TR 17-20 yielded three flakes from the Ap horizon. Radial shovel tests were excavated in the cardinal directions at 5 and 10 meters (16.4 and 32.8 feet) from this positive shovel test to define site boundaries. Additional shovel tests included prehistoric artifacts and the site was expanded southward. The site was determined to measure 20 meters (65.6 feet) north to south and 21 meters (68.8 feet) east to west. A total of 22 shovel tests were excavated at Site 14LV173. Five shovel tests were positive for prehistoric artifacts: Shovel Test TR 17-20 (three flakes); TR 17-20, S10 (three flakes); TR 17-20, S15 (a biface and a flake fragment); TR 17-20, S10, E5 (four flakes); and TR 17-20 S10, E15 (one flake fragment).

The soil profiles in the shovel tests (Appendix D) included an Ap horizon of very dark grayish brown (10YR 3/2) silt loam that ranged from 15 to 56 centimeters (5.9 to 22 inches) thick, but was typically about 30 centimeters (11.8 inches) thick. Below the Ap horizon was a Bt1 horizon of dark grayish brown (10YR 4/2) silty clay loam mottled with 15 to 20 percent dark yellowish brown (10YR 4/6) or yellowish brown (10YR 5/5) silty clay loam. The soil boundary was clear to gradual. Shovel tests were excavated to between 40 and 68 centimeters (15.7 and 26.7 inches) below ground surface.

Site 14LV173 yielded 13 artifacts, all from the Ap horizon (Table 15). These include one medial fragment of a late-stage biface, two early reduction flakes, three bifaces reduction flakes, two finishing flakes, and five flake fragments. Florence chert was the only type identified from this site. Two flakes showed signs of heat treatment. The early reduction flake has block cortex.

TABLE 15
ARTIFACT CLASS/TYPE BY STRATUM FOR SITE 14LV173

Artifact Class/Type	Ap
Late-Stage Biface	1
Early Reduction Flake	2
Biface Reduction Flake	3
Finishing Flake	2
Flake Fragment	5
Total	13

Site 14LV173 is a small prehistoric lithic scatter consisting of 13 chipped stone flakes recovered from the plowzone in a buffalo pasture. The site area has been disturbed by cultivation and erosion sufficiently that much of the native A horizon on which prehistoric and historic groups would have camped or performed other activities is generally lost. The dark soil is probably the remnant of that A horizon. The small number of chipped stone flaking debris is culturally generic; that is, it could have been produced by any Native American group who occupied that location briefly sometime in the past 10,000 or more years. Thus, the site appears to have no potential to contribute important new information about the prehistory of the Leavenworth locale or of the broader region. Therefore, LBG recommends that Site 14LV173 be considered not eligible for listing in the National Register under Criterion D. Criteria A, B, and C do not apply to this site.

6.4.13 Site 14LV174

Map Source:	Leavenworth, KS, 7.5' Series USGS Topographic Quad (1982)
Site Type:	Lithic scatter
Cultural Affiliation:	Unknown prehistoric
Site Size:	27.0 m (88.6 ft) N to S by 100.0 m (328.1 ft) E to W 2,000.0 square meters (6561.6 square feet)
Phase I Methods:	Pedestrian survey and shovel testing
Area Excavated:	49 shovel tests (19.6 square meters/65.3 square feet)
Cultural Materials Collected:	1 Chipped stone biface fragment, 1 core, and 6 debitage
Landform:	Uplands
Elevation:	900 feet above mean sea level
Land Use/Surface Visibility:	Cultivation (0 to 90% surface visibility)
Soil Type:	Sharpsburg silt loam 1 to 4% slopes (7540)
Site Disturbance:	Cultivation and erosion
Relation to Project Limits:	100% outside Alternative FCI East-1 and Alternative East/West Composite
National Register Eligibility:	Not eligible
Recommendations:	No additional archaeological work

Site 14LV174 is the location of a prehistoric lithic scatter of undetermined cultural association situated in the uplands in the proposed East Site. At the time of LBG's survey in March 2011, the site area was without ground cover and the ground surface visibility was about 100 percent.

Because of the high surface visibility, pedestrian survey was conducted from west to east across the rectangular cultivated area. Intervals between the pedestrian survey transects was about two meters (6.6 feet). Prehistoric artifacts observed on the surface were marked with pinflags so that their locations could be recorded with a GPS. (The few historic objects observed on the ground surface were modern in age and redeposited materials, so they were ignored.) Six objects (Isolated Artifacts 17 through 22) found on the ground surface were individually recorded (Figure H-16). Isolated Artifact 17 was situated in the central part of the cultivated area. Isolated Artifact 18 was located towards the west end of the cultivated area. Isolated Artifacts 19 through 22 were clustered in the eastern part of the cultivated area.

Shovel tests were excavated at the locations of Isolated Artifacts 17 and 18 and as radials at 5 and 10 meters (16.4 and 32.8 feet) in the cardinal directions around these two find spots. All 18 of the shovel tests were negative for prehistoric artifacts.

Two shovel tests on the 30 meter (98.4-foot) shovel test grid were excavated in the cultivated area. Shovel Test TR 50-16 was negative. However, Shovel Test TR 51-16 yielded one biface reduction flake. Shovel tests at 5 and 10-meter (16.4 and 32.8-foot) intervals in the cardinal directions around Shovel Test TR 51-16 resulted in additional artifacts being recovered from Shovel Test TR 51-16, E10 (one finishing flake) and Shovel Test TR 50-16, N5, E20 (one flake fragment). A total of 31 shovel tests were excavated in the eastern portion of the cultivated area. A total of 49 shovel tests were excavated across Site 14LV174. Three of the shovel tests were positive for prehistoric artifacts.

The soil profiles in the shovel tests (Appendix D) showed a plowzone (Ap horizon) that was very dark grayish brown (10YR e/2) to very dark brown (10YR 3/3) silt loam. The thickness of the stratum ranged from 24 to 43 centimeters (9.4 to 16.9 inches), but typically was 30 centimeters (11.8 inches) thick. Below the Ap, was a Bt horizon of dark yellowish brown (10YR 4/4) to yellowish brown (10YR 5/4) silty clay loam. Often the dark yellowish brown matrix was mottled with 15 to 30 percent yellowish brown (10YR 5/4 or 10YR 5/6) silty clay loam. The soil boundary was clear to gradual. Shovel tests were excavated between 35 and 61 centimeters (13.8 and 24 inches) below ground surface, with most being excavated to about 50 centimeters (19.6 inches) deep.

The artifact assemblage from Site 14LV174 consists of two chipped stone tools and six flakes (Table 16). One tool is an indeterminate biface fragment made from heat-treated Florence chert with cobble cortex. The second tool is a core made of Florence chert with block cortex. Both were collected from the ground surface. The flakes are all Florence chert; two with heat treatment and two with cortex.

TABLE 16
ARTIFACT CLASS/TYPE BY STRATUM FOR SITE 14LV174

Artifact Class/Type	Soil Stratum		
	Surface	Ap	Total
Indeterminate Biface	1	.	1
Freehand Core	1	.	1
Early Reduction Flake	1	.	1
Biface Reduction Flake	.	1	1
Finishing Flake	.	1	1
Flake Fragment	2	1	3
Total	5	3	8

Site 14LV174 is a small prehistoric lithic scatter of undetermined cultural association that lies in an area that has been heavily disturbed by cultivation and no doubt plowing has displaced artifacts. Given the higher numbers of artifacts at the eastern end of the site, it seems reasonable to interpret that the core of the site is in that part of the cultivated area. Because of the intense cultivation and erosion, the native A horizon is largely gone and the integrity of the site has been significantly compromised. The small number of generic chipped stone items offers little data about lithic technology used by the individuals producing the artifacts. As a result, the site appears to have low potential for contributing important new information about the prehistory of the Leavenworth area or the broader region. Therefore, LBG recommends that Site 14LV174 be considered not eligible for listing in the National Register under Criterion D. Criteria A, B, and C do not apply to this site.

6.4.14 Site 14LV175

Map Source:	Leavenworth, KS, 7.5' Series USGS Topographic Quad (1982)
Site Type:	Foundation and artifact scatter
Cultural Affiliation:	Euroamerican: US Penitentiary (1938 to about 1980)
Site Size:	60.0 m (196.9 ft) N to S by 50.0 m (164.0 ft) E to W 3,000.0 square meters (32,291.6 square feet)
Phase I Methods:	Pedestrian survey and shovel testing
Area Excavated:	35 shovel tests (14.0 square meters/46.7 square feet)
Cultural Materials Collected:	9 Whiteware and porcelain dish fragments, 13 bottle/jar glass fragments, window glass, nails, brick, stoneware tile, bone
Landform:	Upland
Elevation:	873 to 878 feet above mean sea level
Land Use/Surface Visibility:	Grass (Less than 10% surface visibility)
Soil Type:	Sharpsburg silt loam 4 to 8% slopes (7542)
Site Disturbance:	Demolition and cultivation
Relation to Project Limits:	100% outside Alternative FCI East-1 and Alternative East/West Composite
National Register Eligibility:	Not eligible
Recommendations:	No additional archaeological work

Site 14LV175 is the location of a foundation and artifact scatter in the proposed East Site that is associated with the former location of the penitentiary's farm manager's residence. The two-story brick residence was constructed in 1938. It was demolished sometime after 1981 when the prison farming program ended due to budget cuts. Prior to construction of the dwelling, the land was used for cultivation or pasture. At the time of LBG's survey in March 2011, the site area was grass-covered, with a few trees east and west of the foundation. A woven wire fence topped with barbed wire was at the northern side of the house yard. The top of the foundation could be discerned by close examination of the ground surface. The ground surface visibility of the mown area was less than 10 percent.

A block of 35 shovel tests were excavated over the house yard and into the grass-covered field to the north (Figure H-17). Shovel tests were placed ten meters (32.8 feet) apart. The block was 70 meters (229.6 feet) long north to south. It was 40 meters (131.2 feet) wide east to west in the southern 20 meters (65.6 feet) and 30 meters (98.4 feet) wide in the northern 50 meters (164 feet) to avoid disturbed areas. Thirteen of the 35 shovel tests yielded small amounts of historic artifacts. Many of the materials appeared charred, suggesting the structure or the demolition pile had been burned. Shovel Test TR 63-15, N5, E10 was excavated at the interior of the northwest corner of the house foundation. The test determined that the concrete foundation was 56 centimeters (22 inches high). It was 20 centimeters (8 inches) wide.

The soil profiles in the shovel tests (Appendix D) showed an Ap horizon of very dark grayish brown (10YR 3/2) to dark brown (10YR 3/3) silt loam that usually was 14 to 20 centimeters (5.5 to 7.8 inches) thick. Below this stratum was a Bt horizon of yellowish brown (10YR 5/4) silty clay loam. A few shovel tests included a transitional deposit between about 16 and 20 centimeters (6.3 and 7.8 inches) below ground surface formed of dark grayish brown (210YR 4/4) silt loam mottled with about 20 percent dark yellowish brown (10YR 5/3) silty clay loam.

The historic artifact assemblage from Site 14LV175 includes nine dish fragments, 13 bottle glass fragments, one foot bone from an unidentified mammal, and 50 small finds/architectural items, such as brick, window glass, wire nails, tile, and a piece of asphalt roofing shingle. These items are detailed in Table 17 below.

TABLE 17
ARTIFACT CLASS/TYPE BY STRATUM FOR SITE 14LV175

Artifact Class/Type	Soil Stratum		
	Ap	Bt	Total
Historic Ceramics	9	.	9
Whiteware - Transfer Printed – Blue	1	.	1
Whiteware - Colored Glaze	7	.	7
Hard Paste Porcelain	1	.	1
Glass	10	3	13
Patent/Proprietary Medicine/Drug Bottle	1	.	1
Soda/Mineral Water Bottle	1	.	1
Unidentified Bottle/Jar-Body	6	3	9
Unidentified Bottle/Jar-Base	2	.	2
Small Finds/Architectural	19	31	50
Asphalt Roofing Shingle	.	1	1
Brick	.	1	1
Machine Cut Nail - Unknown Head	1	.	1
Wire Nail	6	4	10
Spike	.	1	1
Window Glass	6	17	23
Salt-Glazed Stoneware Drain Pipe	1	.	1
Tile	4	3	7
Screw	.	1	1
Washer	1	.	1
Unidentified Glass	.	2	2
Unidentified Metal	.	1	1
Faunal	1	.	1
Unidentified Mammal	1	.	1
Total	39	34	73

The ceramics include seven whiteware with turquoise colored glaze, one blue transfer printed whiteware sherd with Chinoiserie motif, and one plain porcelain sherd. The bottle glass consists of mostly unidentified body or base fragments (N=11). Several bottles were solarized (N=4), indicating a date from 1880 to 1915 (Jones and Sullivan 1985:13). One machine-made valve mark was identified with a general use date of 1915 to 1950 (Baugher-Perlin 1982:266).

The small finds/architectural items are nearly all architectural (N=45), including window glass (N=23), wire nails (N=10), floor tile (N=7), and one each of machine-cut nail, brick, asphalt shingle, stoneware pipe, and a spike. Non-architectural items include a screw, washer, unidentified glass and metal.

Site 14LV175 is the location of the former USP's farm manager's residence (1938 to about 1981). The site area north of the yard fence has been disturbed by cultivation and erosion. Within the yard, the

artifacts observed in the shovel tests are typical of a 20th century domestic structure and household. The residence would have had modern plumbing so temporally discrete deposits, such as a latrine pit, cistern, or well shaft are not present. It is unlikely that trash would have been buried on site. Thus, Site 14LV175 offers no important new information about the farm manager's residence or household that probably cannot be obtained from archival sources. Therefore, LBG recommends that Site 14LV175 be considered not eligible for listing in the National Register under Criterion D. Current information does not indicate that the house was associated with events that have made an important contribution to the broad patterns of our history (Criterion A), or that the persons residing at this dwelling were significant in history (Criterion B). Therefore, Criteria A and B do not apply to this site. As no structure remains, Criterion C does not apply to this site. LBG recommends no additional archaeological investigation at Site 14LV175.

6.4.15 Site 14LV176

Map Source:	Leavenworth, KS, 7.5' Series USGS Topographic Quad (1982)
Site Type:	Lithic scatter
Cultural Affiliation:	Unknown prehistoric
Site Size:	102.0 m (334.6 ft) NE to SW by 20.0 m (65.6 ft) NW to SE 1,836.0 square meters (19,759.6 square feet)
Phase I Methods:	Pedestrian survey and shovel testing
Area Excavated:	72 shovel tests (28.8 square meters/96.0 square feet)
Cultural Materials Collected:	2 Chipped stone utilized flakes and 37 debitage
Landform:	Ridge toe
Elevation:	830 to 850 feet above mean sea level
Land Use/Surface Visibility:	Grass (Less than 10% surface visibility)
Soil Type:	Ladoga silt loam 3 to 8% slopes (7285)
Site Disturbance:	Cultivation and erosion
Relation to Project Limits:	30% within Alternative FCI East-1 and Alternative East/West Composite
National Register Eligibility:	Potentially eligible
Recommendations:	Avoidance. If cannot be avoided, then site evaluation

Site 14LV176 is the location of a large prehistoric lithic scatter of undetermined cultural association. The site is situated on an upland ridge toe in the proposed East Site. At the time of survey in March 2011, the site area was vegetated by prairie grass about 20 centimeters (7.8 inches) in height with a few scattered trees and shrubs. Ground surface visibility was less than 10 percent.

Five transects (TR 61, TR 62, TR 63, TR 64, and TR 65) with the staggered 30 meter (98.4-foot) grid were excavated in the area of Site 14LV176. Shovel Test 62-38 yielded one biface reduction flake from the top of the Bt horizon and Shovel Test 64-39 yielded two flake fragments from the Ap horizon. Radial shovel tests were excavated in the cardinal directions at 5 and 10 meters (16.4 and 32.8 feet) from these two positive shovel tests to define site boundaries. Additional shovel tests also included prehistoric artifacts, expanding the site area. A total of 72 shovel tests were excavated of which one quarter (N=18) were positive for artifacts (Figure H-18). The positive tests were primarily found in the southwestern half of the site area, but three positive tests were situated at the northeastern part of the site, suggesting two loci of activity.

The soil profiles in the shovel tests (Appendix D) showed an Ap horizon of very dark grayish brown (10YR 3/2) to dark brown (10YR 3/3) silt loam ranging in thickness from 17 to 44 centimeters (6.7 to 17.3

inches), but usually between 25 and 30 centimeters (9.8 to 11.8 inches) thick. Below the Ap horizon was a Bt horizon of dark yellowish brown (10YR 4/6) or yellowish brown (10YR 5/4 or 10YR 5/6) silty clay loam. The soil boundary between the two strata was clear to gradual. Shovel tests were excavated to between 32 and 60 centimeters (12.6 and 23.6 inches) below ground surface.

A total of 39 chipped stone artifacts were recovered from 14LV176, including 37 from the Ap horizon and two from the Bt horizon (Table 18). The collection includes two utilized flakes of silicified sediment, one

TABLE 18
ARTIFACT CLASS/TYPE BY STRATUM FOR SITE 14LV176

Artifact Class/Type	Soil Stratum		
	Ap	Bt	Total
Utilized Flake	2	.	2
Decortication Flake	1	.	1
Early Reduction Flake	2	1	3
Biface Reduction Flake	13	.	13
Finishing Flake	6	.	6
Flake Fragment	13	1	14
Total	37	2	39

which is heated. The remaining artifacts are debitage. The material types include Florence chert (N=21, 50.0% by weight), silicified sediment (N=13, 37.8% by weight), jasper (N=3, 10.7% by weight), and unidentified chert (N=2, 1.5% by weight). Heat treatment is present on eight of the 13 pieces of silicified sediment (24% by weight) but is present on only two of the 21 pieces of Florence chert (1.9% by weight), and on one of the two chert artifacts (0.7% by weight). The jasper flakes were not heat treated. Cortex was identified on two flakes of Florence chert and on one jasper flake.

Site 14LV176 is the location of a large prehistoric lithic scatter of undetermined cultural association situated on a ridge toe. The types of artifacts recovered suggest a location where prehistoric people were reducing chert cobbles into biface performs and shaping formal tools such as arrow points, knives, drills, and scrapers. One quarter of the shovel tests excavated at the site yielded chipped stone artifacts, though no formal tools were recovered. However, there is a dense cluster of positive shovel tests in the southwestern portion of the site that suggests that the site has good potential to contain such tools. The site has been disturbed to some degree by cultivation and erosion and archaeological integrity could be an issue. However, Sites 14LV169, 14LV171, 14LV172, and 14LV181 of similar size and artifact density and appear to have potential for National Register eligibility. Site 14LV176 may be another site of Late Prehistoric age that represents, with the other four sites, recurring occupation of the locale. For these reasons, LBG concludes that Site 14LV176 has good potential for contributing significant new information about the late prehistory of the Leavenworth locale and the broader region. Therefore, LBG recommends that Site 14LV176 be considered potentially eligible for listing in the National Register under Criterion D. Criteria A, B, and C do not apply to this site.

LBG recommends avoidance of Site 14LV176 by any proposed construction or other ground disturbance activities. If the site cannot be avoided, then LBG recommends that Phase III site evaluation be performed to determine whether the site has sufficient integrity and potential to answer important research questions regarding the prehistory of the locality and/or region.

6.4.16 Site 14LV177

Map Source:	Leavenworth, KS, 7.5' Series USGS Topographic Quad (1982)
Site Type:	Lithic scatter
Cultural Affiliation:	Unknown prehistoric
Site Size:	20.0 m (65.6 ft) NE to SW by 12.0 m (39.4 ft) NW to SE 240.0 square meters (2,584.6 square feet)
Phase I Methods:	Pedestrian survey and shovel testing
Area Excavated:	16 shovel tests (6.4 square meters/21.3 square feet)
Cultural Materials Collected:	15 Chipped stone debitage
Landform:	Terrace
Elevation:	805 to 809 feet above mean sea level
Land Use/Surface Visibility:	Forest (Less than 10% surface visibility)
Soil Type:	Kennebec silt loam, frequently flooded (7051)
Site Disturbance:	Erosion
Relation to Project Limits:	100% outside Alternative FCI East-1 and Alternative East/West Composite
National Register Eligibility:	Not eligible
Recommendations:	No additional archaeological work

Site 14LV177 is the location of a small prehistoric lithic scatter of undetermined cultural association identified on a terrace along Corral Creek in the proposed East Site. At the time of LBG's survey in April 2011, the site area was vegetated by dense forest. Ground surface visibility was less than 10 percent.

Two transects of staggered shovel tests (TR 78 and TR 79) on the grid were excavated west to east across the site area (Figure H-19). The transects were approximately 15 meters (49.2 feet) apart and the shovel tests were about 30 meters (98.4 feet) apart. Shovel Test TR 78-6 yielded twelve pieces of chipped stone debitage from the B horizon of mixed soils. Shovel tests were excavated at 5 and 10 meter (16.4 and 32.8 feet) intervals in the cardinal directions around the positive shovel test. Shovel Test TR 78-6, S10 yielded two flakes from the Ap horizon and Shovel Test TR 78-6, W 10 yielded one flake from the Ap horizon. Additional shovel tests were excavated to define the site boundaries. In all, 16 shovel tests were excavated over Site 14LV177. Of these, only three shovel tests were positive.

The soil profiles in the shovel tests (Appendix D) showed an Ap horizon that was very dark grayish brown (10YR 3/2) silt loam. The horizon varied from 18 to 50 centimeters (7 to 19.6 inches) deep, but was typically about 30 centimeters (11.8 inches) thick. In three shovel tests (TR 78-6; TR 78-6, S5, W10; and TR 78-6, W 10), a mixed soil was identified under the Ap horizon that consisted of brown (10YR 4/3) silty clay loam mixed with very dark gray (10YR 3/1) or very dark grayish brown (10YR 3/2) silty clay loam. Nearly all of the artifact were recovered from two of these shovel tests. Three other shovel tests (TR 78-6, W20, TR78-6, S10, W5; and TR 78-6, S10, W10) included a 15 to 25-centimeter-(5.9 to 9.8 inch) thick deposit of very dark gray (10YR 3/1) silt loam under the Ap horizon. In the other 10 shovel tests, brown (10YR 4/3) to yellowish brown (10YR 5/4) silty clay loam were below the Ap horizon. Shovel tests were excavated to between 40 and 70 centimeters (15.7 and 27.5 inches) below ground surface with most shovel tests being excavated to about 50 centimeters (19.6 inches) below ground surface.

The chipped stone assemblage recovered from Site 14LV177 consists of 15 flakes (Table 19). It is the only site from this study to have more flakes from the B horizon (N=12, 51.4% by weight) than the Ap horizon (N=3, 48.6% by weight), but they are all from a single shovel test (TR 78-6). Material types include Florence chert (N=11, 84.3% by weight) and unidentified chert (N=4, 15.7% by weight). Heat

treatment is present on two of the unidentified chert flakes and four of the Florence chert flakes. Heat treatment is indeterminate on two additional Florence flakes. Cortex was present on two of the Florence chert flakes.

TABLE 19
ARTIFACT CLASS/TYPE BY STRATUM FOR SITE 14LV177

Artifact Class/Type	Soil Stratum		
	Ap	B	Total
Decortication Flake	.	1	1
Early Reduction Flake	1	.	1
Biface Reduction Flake	.	4	4
Finishing Flake	.	3	3
Flake Fragment	2	4	6
Total	3	12	15

Site 14LV177 is the location of a small prehistoric lithic scatter of unknown cultural association on a terrace that is frequently flooded. Although 80 percent of the chipped stone flaking debris was recovered from the B horizon, that stratum was mixed and all of the artifacts from that layer were from a single shovel test. Thus, the integrity of the archaeological deposit is suspect. The artifacts are generic debitage, characteristic of stone reduction activities practiced by Native American groups for at least the past 12,000 years in North America. The information that can be obtained from the assemblage contributes no important new information about lithic technology, sources of raw material to make tools, or where prehistoric sites are likely to be found in the region. Therefore, LBG recommends that Site 14LV177 be considered not eligible for listing in the National Register under Criterion D. Criteria A, B, and C do not apply to this site. LBG recommends that no additional archaeological investigations be made at this site.

6.4.17 Site 14LV178

Map Source:	Leavenworth, KS, 7.5' Series USGS Topographic Quad (1982)
Site Type:	Lithic scatter
Cultural Affiliation:	Unknown prehistoric
Site Size:	10.0 m (32.8 ft) N to S by 30.0 m (98.4 ft) E to W 300.0 square meters (3,227.5 square feet)
Phase I Methods:	Pedestrian survey and shovel testing
Area Excavated:	15 shovel tests (6.0 square meters/20.0 square feet)
Cultural Materials Collected:	2 Chipped stone debitage
Landform:	Uplands
Elevation:	854 to 857 feet above mean sea level
Land Use/Surface Visibility:	Pasture (Less than 10% surface visibility)
Soil Type:	Sharpsburg silt loam 1 to 4% slopes (7540)
Site Disturbance:	Cultivation and erosion
Relation to Project Limits:	100% within Alternative East/West Composite; 100% outside Alternative FCI-1 East
National Register Eligibility:	Not eligible
Recommendations:	No additional archaeological work

Site 14LV178 is the location of a small prehistoric lithic scatter of undetermined cultural association identified on a gentle slope in the proposed West Site. At the time of LBG's survey in March 2011, the site area was vegetated by prairie grass about 20 centimeters (7.8 inches) in height. Ground surface visibility was less than 10 percent.

Three transects (TR 5, TR 6 and TR 7) in the grid of staggered shovel tests were excavated across the vicinity of the site area (Figure H-20). The transects were approximately 15 meters (49.2 feet) and the shovel tests were about 15 meters (49.2 feet) apart. Shovel Test TR 6-18 yielded one chipped stone flake from the Ap horizon. Shovel tests were excavated at 5 and 10-meter (16.4 and 32.8-foot) intervals in the cardinal directions around the positive shovel test. Shovel Test TR 6-18, E10 yielded one flakes from the Ap horizon. Additional shovel tests were excavated to define the site boundaries. In all, 16 shovel tests were excavated over Site 14LV178. Of these, only two shovel tests were positive.

The soil profiles in the shovel tests (Appendix D) showed an Ap horizon that was very dark grayish brown (10YR 3/2) to very dark gray (10YR 3/1) silt loam. The horizon varied from 30 to 69 centimeters (11.8 to 27.2 inches) deep, but was typically about 50 centimeters (19.6 inches) thick. Below the Ap horizon of most of the shovel tests was a Bt horizon of dark grayish brown (10YR 4/2) to grayish brown (10YR 5/2) silty clay loam mottled with about 20 percent yellowish brown (10YR 5/4 or 10YR 5/6) silty clay loam. In four shovel tests, the Bt horizon was very dark grayish brown (10YR 3/2) silty clay loam mottled with about 20 percent brown (10YR 4/3) silty clay loam. The Bt horizon in two shovel tests was very dark gray (10YR 3/1) silty clay loam mottled with about 20 percent light yellowish brown (2.5Y 6/3) or dark gray (10YR 4/1) silty clay loam. The soil boundary between the Ap and Bt horizons was gradual. Shovel tests were excavated to between 50 and 80 centimeters (19.6 and 31.4 inches) below ground surface with an average depth of about 60 centimeters (23.6 inches) below ground surface.

The artifact assemblage from Site 14LV178 includes one Florence chert early reduction flake and one unidentified chert biface reduction flake recovered from the Ap horizon (Table 20). Neither flake is heated or has cortex.

TABLE 20
ARTIFACT CLASS/TYPE BY STRATUM FOR SITE 14LV178

Artifact Class/Type	Ap
Early Reduction Flake	1
Biface Reduction Flake	1
Total	2

Site 14LV178 is the location of a small prehistoric lithic scatter of unknown age or cultural group situated on a gentle slope in the uplands. Two flakes were recovered from two separate shovel tests situated 10 meters (32.8 feet) apart. In addition to being very few in number, the artifacts are generic debitage, characteristic of stone reduction activities practiced by Native American groups for at least the past 12,000 years in North America. The information that can be obtained from the assemblage and the site contributes no important new information about lithic technology, sources of raw material to make tools, or where prehistoric sites are likely to be found in the region. Therefore, LBG recommends that Site 14LV178 be considered not eligible for listing in the National Register under Criterion D. Criteria A,

B, and C do not apply to this site. LBG recommends that no additional archaeological investigations be made at this site.

6.4.18 Site 14LV179

Map Source:	Leavenworth, KS, 7.5' Series USGS Topographic Quad (1982)
Site Type:	Lithic scatter
Cultural Affiliation:	Unknown prehistoric
Site Size:	10.0 m (32.8 ft) N to S by 10.0 m (32.8 ft) E to W 100.0 square meters (1,075.8 square feet)
Phase I Methods:	Pedestrian survey and shovel testing
Area Excavated:	8 shovel tests (3.2 square meters/10.7 square feet)
Cultural Materials Collected:	5 Chipped stone debitage
Landform:	Upland
Elevation:	860 feet above mean sea level
Land Use/Surface Visibility:	Grass (Less than 10% surface visibility)
Soil Type:	Sharpsburg silt loam 4 to 8% slopes (7542)
Site Disturbance:	Cultivation and erosion
Relation to Project Limits:	100% outside Alternative FCI East-1 and Alternative East/West Composite
National Register Eligibility:	Not eligible
Recommendations:	No additional archaeological work

Site 14LV179 is the location of a small prehistoric lithic scatter of undetermined cultural association identified on a somewhat steep slope in the proposed West Site. At the time of LBG's survey in March 2011, the site area was vegetated by prairie grass about 20 centimeters (7.8 inches) in height. Ground surface visibility was less than 10 percent.

Two transects (TR 24 and TR 25) in the grid of staggered shovel tests were excavated across the vicinity of the site area (Figure H-21). The transects and shovel tests were approximately 15 meters (49.2 feet) apart. Shovel Test TR 25-16 yielded five chipped stone flakes from the Ap horizon. Shovel tests were excavated at 5 and 10-meter (16.4 and 32.8-foot) intervals in the cardinal directions around the positive shovel test. None of the seven radial shovel tests was positive for prehistoric artifacts.

The soil profiles in the shovel tests were very different from test to test due to the disturbed character of the deposits in the site area (Appendix D). The Ap horizon that was very dark grayish brown (10YR 3/2) to very dark gray (10YR 3/1) silt loam. The thickness of this surface soil was highly variable, ranging from 13 to 30 centimeters (5.1 to 11.8 inches) below ground surface, but usually about 16 centimeters (6.3 inches) thick. Brick and mortar fragments, glass, iron objects were common in the matrix. Below the Ap were a series of fill deposits with historic debris such as brick fragments, mortar, iron fragments, screws, fence staples, and charcoal. The tests did not suggest a midden deposit, but rather episodes of cutting and filling probably associated with construction activities to the north and east of the site. Shovel tests were excavated to between 56 and 89 centimeters (22 and 35 inches) below ground surface with an average depth of about 70 centimeters (27.5 inches) below ground surface.

The artifact assemblage from Site 14LV179 consists of five flakes: two biface reduction and three flake fragments. The five artifacts were recovered from the Ap horizon (Table 21). All are unheated Florence chert with no cortex.

TABLE 21
ARTIFACT CLASS/TYPE BY STRATUM FOR SITE 14LV179

Artifact Class/Type	Ap
Biface Reduction Flake	2
Flake Fragment	3
Total	5

Site 14LV179 is the location of a prehistoric lithic scatter of undetermined cultural association in a disturbed area on a somewhat steep slope. The five flakes found at the site were from the Ap horizon of a single shovel test. If not for the number of items found, this site would be categorized as an isolated find spot. The prehistoric artifacts were discovered in a disturbed context. The flaking debris is generic in character and could have been produced by Native Americans at any time over the past 12,000 years. The information that can be obtained from the assemblage and the site contributes no important new information about lithic technology, sources of raw material to make tools, or where prehistoric sites are likely to be found in the region. Therefore, LBG recommends that Site 14LV178 be considered not eligible for listing in the National Register under Criterion D. Criteria A, B, and C do not apply to this site. LBG recommends that no additional archaeological investigations be made at this site.

6.4.19 Site 14LV180

Map Source:	Leavenworth, KS, 7.5' Series USGS Topographic Quad (1982)
Site Type:	Lithic scatter
Cultural Affiliation:	Unknown prehistoric
Site Size:	10.0 m (32.8 ft) N to S by 10.0 m (32.8 ft) E to W 100.0 square meters (1,075.8 square feet)
Phase I Methods:	Pedestrian survey and shovel testing
Area Excavated:	8 shovel tests (3.2 square meters/10.7 square feet)
Cultural Materials Collected:	3 Chipped stone debitage
Landform:	Upland bench
Elevation:	820 feet above mean sea level
Land Use/Surface Visibility:	Grass (Less than 10% surface visibility)
Soil Type:	Knox silt loam 7 to 12% slopes (7955)
Site Disturbance:	Cultivation and erosion
Relation to Project Limits:	100% outside Alternative FCI East-1 and Alternative East/West Composite
National Register Eligibility:	Not eligible
Recommendations:	No additional archaeological work

Site 14LV180 is the location of a small prehistoric lithic scatter of undetermined cultural association identified on a narrow bench in the proposed East Site. At the time of LBG's survey in April 2011, the site area was vegetated by prairie grass about 20 centimeters (7.8 inches) in height. Ground surface visibility was less than 10 percent.

Two transects (TR 69 and TR 70) in the grid of staggered shovel tests were excavated across the vicinity of the site area (Figure H-22). The transects and shovel tests were approximately 15 meters (49.2 feet) apart. None of these shovel tests were positive for prehistoric artifacts, but the landform looked suitable for prehistoric occupation. Therefore, six shovel tests were placed at 5-meter (16.4-foot)

intervals to further test the landform. Shovel Test TR 69-34, E10 yielded three chipped stone flakes from the Ap horizon. None of the other tests were positive. In all, 8 shovel tests were dug in the Site 14LV178 area.

The soil profiles in the shovel tests (Appendix D) showed an Ap horizon that was very dark grayish brown (10YR 3/2) silt loam. The horizon was from 30 to 45 centimeters (11.8 to 17.7 inches) deep. Below the Ap horizon of was a Bt horizon of brown (10YR 4/3) or yellowish brown (10YR 5/4) silty clay loam. The soil boundary between the Ap and Bt horizons was clear to gradual. Shovel tests were excavated to between 45 and 58 centimeters (17.7 to 22.8 inches) below ground surface.

A total of three chipped stone artifacts were found in the Ap horizon of Shovel Test TR 69-34 E10 at Site 14LV180 (Table 22). The assemblage consists of two finishing flakes and one flake fragment. All are unheated Florence chert with no cortex.

TABLE 22
ARTIFACT CLASS/TYPE BY STRATUM FOR 14LV180

Artifact Class/Type	Ap
Finishing Flake	2
Flake Fragment	1
Total	3

Site 14LV180 is the location of a prehistoric lithic scatter of undetermined cultural association on an upland bench. The three flakes found at the site were from the Ap horizon of a single shovel test. Cultivation and erosion have disturbed the site to some degree. If not for the number of items found, this site would be categorized as an isolated find spot. The flaking debris is generic in character and could have been produced by Native Americans at any time over the past 12,000 years. The information that can be obtained from the assemblage and the site contributes no important new information about lithic technology, sources of raw material to make tools, or where prehistoric sites are likely to be found in the region. Therefore, LBG recommends that Site 14LV180 be considered not eligible for listing in the National Register under Criterion D. Criteria A, B, and C do not apply to this site. LBG recommends that no additional archaeological investigations be made at this site.

6.4.20 Site 14LV181

Map Source:	Leavenworth, KS, 7.5' Series USGS Topographic Quad (1982)
Site Type:	Camp
Cultural Affiliation:	Undetermined prehistoric
Site Size:	100 m (328.1 ft) NE to SW by 30 m (98.4 ft) NW to SE 3,000.0 square meters (9,842.4 square feet)
Phase I Methods:	Pedestrian survey and shovel testing
Area Excavated:	93 shovel tests (37.2 square meters/122.1 square feet)
Cultural Materials Collected:	Lithic debitage and fire-cracked rock
Landform:	Ridge top
Elevation:	860 to 870 feet above mean sea level
Land Use/Surface Visibility:	Pasture (0-10% surface visibility)
Soil Type:	Ladoga silt loam, 3 to 8% slopes (7285)

Site Disturbance:	Previous cultivation and erosion
Relation to Project Limits:	100% within Alternative FCI East-1 and Alternative East/West Composite
National Register Eligibility:	Potentially eligible
Recommendations:	Avoidance. If cannot be avoided, then site evaluation

Site 14LV181 is the location of a large prehistoric camp site of unknown age or cultural group situated on a ridge top in the proposed East Site. At the time of the current survey in March 2011, the grass was about 20 centimeters (7.8 inches) high and ground surface visibility was less than ten percent. A two-track trail was at the western side of the ridge top on which the site is located.

Three transects (TR 63, TR64, and TR 65) on the staggered grid were excavated across the site area (Figure H-23). The transects and shovel tests were 30 meters (98.4 feet) apart. Shovel Tests TR 63-26, TR 64-26, and TR 64-27 each yielded chipped stone flaking debris from the Ap horizon. As a result, shovel tests were excavated in the cardinal directions at 5 and 10 meters (16.4 and 32.8 feet) around Shovel Test TR 63-26. All eight radial shovel tests were negative for artifacts.

Next, a grid of shovel tests at 10-meter (32.8-foot) intervals was created over the area to investigate the landform. The grid was centered on Shovel Test TR 64-27. As additional positive shovel tests were identified at 10-meter (32.8-foot) intervals, more shovel tests were excavated at 5-meter (16.4-foot) intervals to define the boundaries of the site. The site expanded northward along the ridge and southward to encompass Shovel Test TR 63-26. In all, 93 shovel tests were excavated at Site 14LV181, including the eight radial tests around Shovel Test TR 63-26 and the six radial tests around Shovel Test TR 64-26. Twenty of the 93 shovel tests (21.5 percent) yielded chipped stone flaking debris from the Ap horizon.

The soil profiles in the shovel tests (Appendix D) showed an Ap horizon of silt loam that was usually very dark grayish brown (10YR 3/2), but varied sometimes to dark grayish brown (10YR 4/2) to dark brown (10YR 3/3) to brown (10YR 4/3) to dark yellowish brown (10YR 4/4). Below the surface soil was a Bt horizon of dark yellowish brown (10YR 4/4 or 10YR 4/6) to yellowish brown (10YR 5/4 or 10YR 5/6) silty clay loam. In 12 shovel tests, the yellowish brown subsoil was mottled with 10 to 25 percent dark yellowish brown (10YR 4/4 or 10YR 4/6) silty clay loam. The soil boundary was clear to gradual. Shovel tests were excavated to between 28 and 60 centimeters (11 and 23.6 inches) below ground surface, with the usual depth being about 40 centimeters (15.7 inches) below ground surface.

The collection from Site 14LV181 consisted of 46 debitage and two fire-cracked rocks all from the Ap horizon (Tables 23 and 24). The material types include a majority of silicified sediment (N=25, 53.4% by weight), with lesser amounts of Florence chert (N=9, 28.3% by weight), jasper (N=6, 10.4% by weight), and unidentified chert (N=6, 7.9% by weight). Also present is one silicified sediment and one sandstone fire-cracked rock. Heat treatment is present on 18 flakes, including 11 silicified sediment flakes (N=42%). The high percentage of heated silicified sediment flakes is likely due to the difficulty in knapping the material (Butler 1997:46). Cortex was present on one Florence chert flake and one silicified sediment flake.

Site 14LV181 is the location of a large prehistoric camp of undetermined cultural association situated on a ridge. The types of artifacts recovered suggest a location where prehistoric people were reducing chert cobbles into biface performs and shaping formal tools such as arrow points, knives, drills, and scrapers. Over 20 percent of the shovel tests excavated at the site yielded chipped stone artifacts, though no formal tools were recovered. However, the cluster of positive shovel tests around Shovel Test TR 64-27 in the center of the site that suggests that the site has good potential to contain such tools. Fire-cracked

TABLE 23
ARTIFACT CLASS/TYPE BY STRATUM FOR SITE 14LV181

Artifact Class/Type	Ap
Early Reduction Flake	2
Biface Reduction Flake	12
Finishing Flake	7
Flake Fragment	25
Fire-cracked Rock	2
Total	48

TABLE 24
ARTIFACT CLASS/TYPE BY MATERIAL TYPE FOR SITE 14LV181

Artifact Class/Type	Material Type				Total
	Silicified Sediment	Florence Chert	Jasper	Chert	
Early Reduction Flake	1	1	.	.	2
Biface Reduction Flake	9	2	1	.	12
Finishing Flake	2	2	2	1	7
Flake Fragment	13	4	3	5	25
Total	25	9	6	6	46
Total Weight	8.7	4.6	1.7	1.3	16.3
% by Weight	53.4	28.3	10.4	7.9	100

rock suggests the presence of hearths that might yield charred material suitable for radiocarbon dating. The site has been disturbed to some degree by cultivation and erosion and archaeological integrity could be an issue. However, Sites 14LV169, 14LV171, 14LV172, and 14LV176 are of similar size and artifact density and appear to have potential for National Register eligibility. Site 14LV181 may be another site of Late Prehistoric age that represents, with the other four sites, recurring occupation of the locale. For these reasons, LBG concludes that Site 14LV181 has good potential for contributing significant new information about the late prehistory of the Leavenworth locale and the broader region. Therefore, LBG recommends that Site 14LV181 be considered potentially eligible for listing in the National Register under Criterion D. Criteria A, B, and C do not apply to this site.

LBG recommends avoidance of Site 14LV181 by any proposed construction or other ground disturbance activities. If the site cannot be avoided, then LBG recommends that Phase III site evaluation be performed to determine whether the site has sufficient integrity and potential to answer important research questions regarding the prehistory of the locality and/or region.

6.5 ISOLATED FINDS

One previously recorded isolated find spot, Site 14LV111, was situated within the proposed East Site. Seven new isolated find spots (IF-1 through IF-7) were identified in the proposed West Site and eight

new isolated find spots (IF-8 through IF-15) were found in the proposed East Site (see Table 25). None of the 15 new archaeological find spots are considered to be archaeological sites and have not been assigned archaeological site numbers. This procedure is consistent with the Kansas State Historic Preservation Office guidelines (Epperson et al. 2004). The artifacts recovered from the isolated find spots are listed in the artifact inventory in Appendix E.

TABLE 25
ARTIFACT CLASS/TYPE BY STRATUM FOR ISOLATED FINDS

Artifact Type	Soil Stratum					Total
	Surface	Ap	Ap/Bt1	Bt1	Bt2	
IF-1: Early Reduction Flake	1	1
IF-2: Flake Fragment	.	.	.	1	.	1
IF-3: Flake Fragment	.	1	.	.	.	1
IF-4: Early Reduction Flake	.	1	.	.	.	1
IF-5: Biface Reduction Flake	.	.	1	.	.	1
IF-6: Early Reduction Flake	.	1	.	.	.	1
IF-7: Biface Reduction Flake	.	1	.	.	.	1
IF-8: Celt	.	1	.	.	.	1
IF-9: Flake Fragment	.	1	.	.	.	1
IF-10: Early Reduction Flake	.	1	.	.	.	1
IF-11: Late-Stage Biface	.	1	.	.	.	1
IF-12: Decortication Flake	.	.	.	1	.	1
IF-13: Flake Fragment	.	1	.	.	.	1
IF-14: Biface Reduction Flake	1	1
IF-15: Biface Reduction Flake	.	1	.	.	.	1
Total	1	10	1	2	1	15

7.0 RESULTS OF ARCHITECTURAL INVESTIGATIONS

7.0 RESULTS OF ARCHITECTURAL INVESTIGATIONS

7.1 OVERVIEW

The architectural survey identified a total of 73 buildings and structures at USP Leavenworth (Table 26; Figure 6). Most of these properties had been identified by BELLArchitects in 2005 as part of the historic district; but had not been formally included in the Kansas Historic Resource Inventory. Three buildings had not been previously surveyed and/or evaluated with respect to National Register Criteria: 1960 Warden's Residence, FPC Camp Site, and a pillbox bunker in the north central part of the property. Four buildings have been removed since 2005: the disc throw tower, firing range cabin, FPC Weight Pavilion and oil tanks.

Most of the buildings have a moderate to high degree of integrity with only minor modifications to windows. Brick is a predominant building material for buildings constructed up into the mid twentieth century. All four residences on the south lawn of the USP are constructed of brick. Five of the fourteen staff houses, constructed with Public Works Administration (PWA) funds, are frame construction; the remainder constructed of brick. There are several movable wood frame sheds in various locations around the USP. Many of the farm buildings constructed in the mid twentieth century are also frame construction. As noted above, buildings within the main prison were not surveyed due to security restraints at the facility. Photographs of these structures can be found in the HSR completed by BELLArchitects. Photographs of surveyed buildings are located in Appendix G of this document.

Background research and examination of property maps and available aerial photographs indicate that the surrounding open areas at USP were historically used for cultivation and pasturage to supply vegetables, dairy, and meat to the inmates from its construction in the late 1890s until 1980, when prison farm operations were halted nationwide. The rolling hills in the eastern section of the USP were used for pasturage; while the west and north sides were used for cultivation (Plate 13).

**TABLE 26
PROPERTIES SURVEYED AT USP LEAVENWORTH**

Bldg. No.	HSR Bldg. No.	Name	Historic Use/Name	DATE
6		Superintendent of Farm's Residence/ Associate Warden's Residence	Assoc. Warden's Residence	1912
7		Deputy Warden's Residence	Assoc. Warden's Residence	1906
1		Physician's Residence/ Chief Medical Officer's Residence	CMO Residence	1924
47		Cemetery, including walls, grave markers, U.S.P. markers, and entrance features		ca. 1903
12			2 Bedroom Staff Residence	ca. 1937
13			4 Bedroom Staff Residence	ca. 1937
14			5 Bedroom Staff Residence	ca. 1937
15			2 Bedroom Staff Residence	ca. 1937
16			2 Bedroom Staff Residence	ca. 1937
16			2 Bedroom Staff Residence	ca. 1937
17			2 Bedroom Staff Residence	ca. 1937
17			2 Bedroom Staff Residence	ca. 1937
18			2 Bedroom Staff Residence	ca. 1937
18			2 Bedroom Staff Residence	ca. 1937
20			2 Bedroom Staff Residence	ca. 1937
21			3 Bedroom Staff Residence	ca. 1937
22			2 Bedroom Staff Residence	ca. 1937
23			3 Bedroom Staff Residence	ca. 1937
24			2 Bedroom Staff Residence	ca. 1937
25			3 Bedroom Staff Residence	ca. 1937
26			4 Bedroom Staff Residence	ca. 1937
3	C-1	Armory		1982
2	C-2	Physical Fitness Center/ Warden's Residence	Bachelor Quarters	1906
9	C-3	Receiving Depot		1991
11	C-4	Disturbance Control/Command Center	Hatchery Building	1920
46	C-5b	FPC Inmate Housing	Farm Dormitory	1960
46	C-5c	FPC Inmate Services	Farm Dormitory	1960
	C-5d	FPC Weight Pavilion		Non-Extant
46	C-6	FPC Entrance		1961
27	C-7	Garage		1962
28	C-8	Plumbing Shop/ Industrial Warehouse	Receiving Depot	1937

TABLE 26 (CONTINUED)
PROPERTIES SURVEYED AT USP LEAVENWORTH

Bldg. No.	HSR Bldg. No.	Name	Historic Use/Name	DATE
29	C-9	UNICOR Warehouse/ Receiving Depot	Industries Warehouse	1956
30	C-10	UNICOR Raw Material Storage		1982
31	C-11	Salvage Depot	Salvage Warehouse	1943
32	C-12	UNICOR Warehouse	Warehouse (F.P.I)	Pre-1938
33	C-13	UNICOR Old Cement Storage Shed	Cement Storage	Pre-1938
	C-14	Oil Tanks		Non-Extant
73	C-15	Chemical Storage		ca. 1952
34	C-16	Power Plant/ Generator Room		1952
74	C-16a	Electrical Equipment Shed		ca. 1970
35	C-17	HVAC Shop	Vegetable Storage	1943
36	C-18	Landscape Storage Building	Heifer Barn	1921
75	C-18a	Landscape Storage Shed		ca. 1960
37	C-19	Dry Storage	Slaughter House	1961
38	C-20	UNICOR Industries Office/ Depot		1981
39	C-21	UNICOR Storage Shed		1950
41	C-22	Regional Emergency Preparedness Warehouse	Cow Shelter	1961
40	C-23	Maintenance Building/ Dairy Barn	Dairy Barn/Milk House	1903/17
75	C-23a	Maintenance Store 1		ca. 2000
76	C-23b	Maintenance Store 2		ca. 2000
42	C-24	Project Office/Dairy Barn/Mule Shed	Old Mule Shed/Dairy Barn	1903
43	C-25	Fire House/Landscape Maintenance	Old Garage	1931
44	C-26	Radio Tower		ca. 1990
48	C-28	Staff Training Center	Officer Training Center	1939
49	C-28A	Pool House		ca. 1960
54	C-28B	Pavilion 1		ca. 1970
54	C-28C	Pavilion 2		ca. 1970
50	C-28D	Weapons Cleaning Center	Indoor Target Range	1948
77	C-28E	Target Store		1948
	C-28-F	Disc Throw Tower		Non-Extant
51	C-28G	Practice Tower		ca. 1970
52	C-28H	Firing Range Shed	Target House	ca. 1970

TABLE 26 (CONTINUED)
PROPERTIES SURVEYED AT USP LEAVENWORTH

Bldg. No.	HSR Bldg. No.	Name	Historic Use/Name	DATE
	C-28-J	Firing Range Cabin		Non-Extant
53	C-28K	Firing Range Observation Tower		1948
45	C-29	FCP Lift Station	Pump House	1961
8	C-30	Lift Station # 1		1995
72		Concrete Pillbox Bunker		ca. 1920
55		Captain's Residence	Warden's Residence	1960
9		Outside Food Service Warehouse		ca. 2008
5		Shelter (Along Main Drive)		ca. 2006
71		Sheds and Tank (East of Power Plant)		ca. 2006
78		Outdoor Grill Structures		ca. 1935
79		Storm Sewer		ca. 1900



Plate 13. Aerial Photograph of USP Leavenworth, 1966

(USDA 1966)



Figure 6
RESULTS OF THE ARCHITECTURAL SURVEY

8.0 SUMMARY AND RECOMMENDATIONS

8.0 SUMMARY AND RECOMMENDATIONS

On behalf of the U.S. Department of Justice, Federal Bureau of Prisons (BOP), The Louis Berger Group, Inc. (LBG), has conducted cultural resource investigations for the proposed expansion at the Leavenworth United States Penitentiary (USP). The purpose of this investigation was to identify any cultural resources within the APE for the proposed undertaking, and to evaluate such resources as may be found regarding their eligibility for listing in the National Register. The entire 754 acres (305 hectares) of the USP property were investigated for this project.

8.1 SUMMARY

Of the entire 754 acres (305 hectares), approximately 382 acres (154.6 hectares) were investigated during the current archaeological survey; 144 acres (58.3 hectares) for the proposed West Site and 238 acres (96.3 hectares) for the proposed East Site. The archaeological investigations included pedestrian reconnaissance and shovel testing. As noted above, because it was judged that there was only very low potential for deeply buried archaeological sites in the project area, no systematic deep testing was conducted. However, shovel tests were extended with hand augering to check for old ground surfaces more than a meter below the current ground surface and test. In the rare instances that such buried surfaces were present, these strata were sampled for evidence of buried cultural deposits.

Shovel testing was performed over most of the proposed West and East Sites. A grid of shovel test transects set 30 meters (98.4 feet) apart with shovel tests staggered 15 meters (49.2 feet) south on every other transect allowed for optimal systematic sampling of the project area. Shovel tests were not excavated in areas determined to be disturbed by activities such as grading for roadways, parking lots, and building construction; installation of subsurface utilities; removal of borrow; or burying trash. Shovel testing was not done in area identified as containing hazardous materials, such as a paint can disposal area and an oil disposal area. Shovel testing was not performed on slopes that were too steep to have been occupied by prehistoric or historic group or which were too steep to include intact archaeological deposits. Shovel testing was not done in ponds, creeks, drainages, or ravines. Figures H-2 and H-3 show the locations of shovel tests across the project area. An estimated 75 percent of the proposed West Site and about 70 percent of the proposed East Site were examined by systematic subsurface testing. All portions of the two areas were examined by pedestrian survey.

Six previously recorded archaeological sites (14LV110, 14LV111, 14LV337, 14LV364, 14LV365, and 14LV366) were revisited during the current study. With the exception of Site 14LV337, the sites had been defined by surface artifacts in plowed fields. Historic site 14LV110 was found to be significantly disturbed by erosion, which has redeposited the historic artifacts along 205 meters (672.6 feet) of steam bed. As the site appears confined to the drainage, no subsurface testing was performed at this site. Sites 14LV364 and 14LV365 were investigated by systematic shovel testing at 10-meter (32.8-foot) intervals. Multi-component site 14LV365 and prehistoric sites 14LV337, 14LV364, and 14LV366 are recommended not eligible for listing in the National Register. Prehistoric site 14LV111 is an isolated find and the current investigation found no reason to amend the previous recommendation of not eligible by Wagner et al. (1989).

Fifteen new archaeological sites and 15 new isolated find spots were identified and investigated. Sites 14LV167, 14LV170, 14LV173, 14LV174, 14LV176, 14LV177, 14LV178, 14LV179, 14LV180, and 14LV181 are prehistoric lithic scatters of unknown cultural affiliation. Sites 14LV168, 14LV169, 14LV171, and 14LV172 are all Late Prehistoric/Middle Ceramic period sites, based on arrow point types. Sites 14LV169, 14LV171, 14LV172, 14LV176, and 14LV181 are recommended potentially eligible for listing in the National Register under Criterion D. The other ten prehistoric sites and the 15 prehistoric Isolated Find Spots are all recommended not eligible for listing in the National Register. Site 14LV175 is the location of the prison farm manager's residence (1938 to about 1981). This site is recommended not eligible for listing in the National Register. Table 27 summarizes the findings and recommendations for each site.

The architectural study included a comprehensive survey of all buildings on the USP. LBG confirms the recommendations of BELLArchitects that USP Leavenworth is eligible for listing in the National Register under Criteria A and C at a national level of significance. However, results of the background research and survey indicate that the Camp Site, built in 1960 as a farm dormitory, is a significant structure within the history of USP Leavenworth and should be considered as a contributing structure. The Camp Site was constructed in 1960 with mostly prison labor as a replacement for the farm dormitory located on the prison farm in Platte County, Missouri. Prisoners resided in the new farm dormitory and continued their farming operations at USP Leavenworth and the prison farm in Missouri until 1980 when prison farm operations nationwide were eliminated.

Thus, LBG recommends that the period of significance be extended to 1960 to include this structure. Table 28 below lists the proposed contributing/non-contributing status of buildings and structures within the district.

The boundary of the historic district was defined by BELLArchitects as Metropolitan Avenue on the south, the "topography" behind the USP Cemetery on the west, the U.S. government road within USP with a 15.2-meter (50-foot) buffer on the north and east. LBG recommends that the boundary of the historic district follow the USP Leavenworth property boundary on the west, north, and east; and Metropolitan Avenue/US 73 on the south. This would provide a more clearly defined historic district boundary that would include areas historically associated with the USP.

8.2 RECOMMENDATIONS

Site 14LV110 is the location of a long, narrow distribution of historic ironstone dish fragments, flat glass, enamelware, brick, and bottle fragments strewn along most of the length of an erosional drainage. The thick wares were designed for institutional use and appear to be associated with a dumping episode sometime between about 1906 when the penitentiary was completed and 1930. Many of the ceramics appear charred as if from a fire. The fact that the artifacts are scattered along 205 meters (672.6 feet) of the drainage and that no evidence of a dense deposit of materials at the upper part of the drainage is present to mark the original disposal site of the artifacts, LBG concludes that the materials have been redeposited by episodic flooding of the drainage. Therefore, the site deposits lack archaeological integrity. The artifacts themselves are not likely to contribute any new information about the penitentiary that could not be obtained from archival sources, such as the USP records. Site 14LV110 is considered to not constitute a significant cultural resource and is not recommended for listing in the National Register under any criteria. No additional archaeological investigation is recommended for this site.

TABLE 27
RESULTS OF ARCHAEOLOGICAL SURVEY AND RECOMMENDATIONS

Site Number	Cultural Components	Site Type	National Register Eligibility	Recommendations
14LV110	Historic (ca 1903-1930)	USP dump	Not Eligible	No further work
14LV111	Undetermined prehistoric	Lithic scatter	Not Eligible	No further work
14LV337	Undetermined prehistoric	Camp	Not Eligible	No further work
	Historic (ca 1903-1930)	Artifact scatter		
14LV364	Undetermined prehistoric	Lithic scatter	Not Eligible	No further work
14LV365	Undetermined prehistoric	Lithic scatter	Not Eligible	No further work
14LV366	Undetermined prehistoric	Lithic scatter	Not Eligible	No further work
14LV167	Undetermined prehistoric	Lithic Scatter	Not Eligible	No further work
14LV168	Late Prehistoric	Lithic Scatter	Not Eligible	No further work
14LV169	Late Prehistoric	Lithic Scatter	Potentially Eligible	Avoidance
14LV170	Undetermined prehistoric	Lithic Scatter	Not Eligible	No further work
14LV171	Late Prehistoric	Camp	Potentially Eligible	Avoidance
14LV172	Late Prehistoric	Lithic Scatter	Potentially Eligible	Avoidance
14LV173	Undetermined prehistoric	Lithic Scatter	Not Eligible	No further work
14LV174	Undetermined prehistoric	Lithic Scatter	Not Eligible	No further work
14LV175	Historic (ca 1938-1981)	Foundation and Artifact Scatter	Not Eligible	No further work
14LV176	Undetermined prehistoric	Lithic Scatter	Potentially Eligible	Avoidance
14LV177	Undetermined prehistoric	Lithic Scatter	Not Eligible	No further work
14LV178	Undetermined prehistoric	Lithic Scatter	Not Eligible	No further work
14LV179	Undetermined prehistoric	Lithic Scatter	Not Eligible	No further work
14LV180	Undetermined prehistoric	Lithic Scatter	Not Eligible	No further work
14LV181	Undetermined prehistoric	Lithic Scatter	Potentially Eligible	Avoidance
IF-1	Undetermined prehistoric	Isolated Find	Not Eligible	No further work
IF-2	Undetermined prehistoric	Isolated Find	Not Eligible	No further work
IF-3	Undetermined prehistoric	Isolated Find	Not Eligible	No further work
IF-4	Undetermined prehistoric	Isolated Find	Not Eligible	No further work
IF-5	Undetermined prehistoric	Isolated Find	Not Eligible	No further work
IF-6	Undetermined prehistoric	Isolated Find	Not Eligible	No further work
IF-7	Undetermined prehistoric	Isolated Find	Not Eligible	No further work
IF-8	Undetermined prehistoric	Isolated Find	Not Eligible	No further work
IF-9	Undetermined prehistoric	Isolated Find	Not Eligible	No further work
IF-10	Undetermined prehistoric	Isolated Find	Not Eligible	No further work
IF-11	Undetermined prehistoric	Isolated Find	Not Eligible	No further work
IF-12	Undetermined prehistoric	Isolated Find	Not Eligible	No further work
IF-13	Undetermined prehistoric	Isolated Find	Not Eligible	No further work
IF-14	Undetermined prehistoric	Isolated Find	Not Eligible	No further work
IF-15	Undetermined prehistoric	Isolated Find	Not Eligible	No further work

TABLE 28
USP LEAVENWORTH HISTORIC DISTRICT

Bldg. No.	HSR Bldg. No.	Name	Date	Status
	A-10	Roadways	ca.1905	Contributing Structures
70	A-14	Perimeter Wall	1904, 1911-17, 1971	Contributing Structure
56	B-01	Administration/Visitation	1929	Contributing Building
56	B-02	Rotunda	1929	Contributing Building
56	B-03	Intermediate Building	1929	Contributing Building
56	B-04	Inmate Housing, Unit A	1924	Contributing Building
56	B-05	Inmate Housing, Unit B	1920	Contributing Building
69	B-06	Gymnasium and Passageway	1976	Noncontributing Building
56	B-07	Inmate Housing, Unit D	1904/1905	Contributing Building
56	B-08	Inmate Housing, Unit C	1904	Contributing Building
68	B-09	Education	1963	Noncontributing Building
57	B-10	Laundry/ Safety	1904	Contributing Building
58	B-11	Isolation	1905	Contributing Building
59	B-12	West Store Room/ Food Service Store	1939	Contributing Building
60	B-13	Food Service	1906	Contributing Building
60	B-14	Dining Hall	1906	Contributing Building
60	B-15	Auditorium/ Chapel	1909	Contributing Building
60	B-16	Refrigeration Building	1971	Noncontributing Building
61	B-17	Hospital	1941	Contributing Building
81	B-17a	Electrical Substation	Unknown	Noncontributing Building
82	B-17b	Storage Shed	Unknown	Noncontributing Building
62	B-18	Special Housing Unit	1988	Noncontributing Building
63	B-19	Maintenance Shop/ CMS	1938	Contributing Building
64	B-20	UNICOR Lumber Storage	1955	Noncontributing Building
65	B-21	UNICOR Industries Complex	1926/ca.1936	Contributing Building
66	B-22	UNICOR Paint Shop/Chemical Storage	1933	Contributing Building
83	B-23a	West Yard Shack	1955	Noncontributing Building
84	B-23b	New East Yard Shack	1983	Noncontributing Building
67	B-25	Recreation Pavilion	1939/ca.1965	Noncontributing Building
70	B-26a	Rear Sallyport	1916/1937	Contributing Structure
70	B-26b	Rope House	1952	Noncontributing Building
	B-26c	Garden Tool Shed	Pre-1938	Non-Extant
	B-27	Tunnels	1922/1929	Noncontributing Structure
6	N/A	Superintendent of Farm's Residence/ Warden's Residence	1912	Contributing Building
7	N/A	Deputy Warden's Residence	1906	Contributing Building
1	N/A	Physician's Residence/ Chief Medical Officer's Residence	1924	Contributing Building

TABLE 28 (CONTINUED)
USP LEAVENWORTH HISTORIC DISTRICT

Bldg. No.	HSR Bldg. No.	Name	Date	Status
47	N/A	Cemetery, including walls, grave markers, U.S.P. markers, and entrance features	ca. 1903	Contributing Building
12	N/A	2 Bedroom Staff Residence	ca. 1937	Contributing Building
13		4 Bedroom Staff Residence	ca. 1937	Contributing Building
14		5 Bedroom Staff Residence	ca. 1937	Contributing Building
15		2 Bedroom Staff Residence	ca. 1937	Contributing Building
16		2 Bedroom Staff Residence	ca. 1937	Contributing Building
16		2 Bedroom Staff Residence	ca. 1937	Contributing Building
17		2 Bedroom Staff Residence	ca. 1937	Contributing Building
17		2 Bedroom Staff Residence	ca. 1937	Contributing Building
18		2 Bedroom Staff Residence	ca. 1937	Contributing Building
18		2 Bedroom Staff Residence	ca. 1937	Contributing Building
20		2 Bedroom Staff Residence	ca. 1937	Contributing Building
21		3 Bedroom Staff Residence	ca. 1937	Contributing Building
22		2 Bedroom Staff Residence	ca. 1937	Contributing Building
23		3 Bedroom Staff Residence	ca. 1937	Contributing Building
24		2 Bedroom Staff Residence	ca. 1937	Contributing Building
25		3 Bedroom Staff Residence	ca. 1937	Contributing Building
26		4 Bedroom Staff Residence	ca. 1937	Contributing Building
	N/A	Railroad Tracks	1915	Contributing Structure
3	C-1	Armory	1982	Noncontributing Building
2	C-2	Physical Fitness Center/ Warden's Residence	1906	Contributing Building
9	C-3	Receiving Depot	1991	Noncontributing Building
11	C-4	Disturbance Control/Command Center	1920	Contributing Building
46	C-5a	FPC Gymnasium	1980	Noncontributing Building
46	C-5b	FPC Inmate Housing	1960	Contributing Building
46	C-5c	FPC Inmate Services	1960	Contributing Building
	C-5d	FPC Weight Pavilion	Unknown	Non-Extant
46	C-6	FPC Entrance	1961	Non-contributing Building
27	C-7	Garage	1962	Contributing Building
28	C-8	Plumbing Shop/ Industrial Warehouse	1937	Contributing Building
29	C-9	UNICOR Warehouse/ Receiving Depot	1956	Contributing Building
30	C-10	UNICOR Raw Material Storage	1982	Noncontributing Building
31	C-11	Salvage Depot	1943	Contributing Building
32	C-12	UNICOR Warehouse	Pre-1938	Contributing Building
33	C-13	UNICOR Old Cement Storage Shed	Pre-1938	Contributing Building
	C-14	Oil Tanks	Unknown	Non-Extant
73	C-15	Chemical Storage	ca. 1952	Contributing Building
34	C-16	Power Plant/ Generator Room	1952	Contributing Building

TABLE 28 (CONTINUED)
USP LEAVENWORTH HISTORIC DISTRICT

Bldg. No.	HSR Bldg. No.	Name	Date	Status
74	C-16a	Electrical Equipment Shed	ca. 1970	Noncontributing Building
35	C-17	HVAC Shop	1943	Contributing Building
36	C-18	Landscape Storage Building	1921	Contributing Building
75	C-18a	Landscape Storage Shed	ca. 1960	Contributing Building
37	C-19	Dry Storage	1961	Non-contributing Building
38	C-20	UNICOR Industries Office/ Depot	1981	Noncontributing Building
39	C-21	UNICOR Storage Shed	1950	Contributing Building
41	C-22	Regional Emergency Preparedness Warehouse	1961	Non-contributing Building
40	C-23	Maintenance Building/ Dairy Barn	1903/1917	Contributing Building
75	C-23a	Maintenance Store 1	ca. 2000	Non-contributing Building
76	C-23b	Maintenance Store 2	ca. 2000	Non-contributing Building
42	C-24	Project Office/Dairy Barn/Mule Shed	1903	Contributing Building
43	C-25	Fire House/Landscape Maintenance	1931	Contributing Building
44	C-26	Radio Tower	ca. 1990	Noncontributing Building
4	C-27-1	Guard Tower #1	1940	Contributing Building
85	C-27-2	Guard Tower #2	1971	Noncontributing Building
86	C-27-3	Guard Tower #3	1938	Contributing Building
87	C-27-4	Guard Tower #4 (not including wall)	Pre-1916	Contributing Building
88	C-27-5	Guard Tower #5 (not including wall)	1904/1938	Contributing Building
89	C-27-6	Guard Tower #6	1994	Noncontributing Building
90	C-27-7	Guard Tower #7	1971	Noncontributing Building
48	C-28	Staff Training Center	1939	Contributing Building
49	C-28A	Pool House	ca. 1960	Contributing Building
54	C-28B	Pavilion 1	ca. 1970	Noncontributing Building
54	C-28C	Pavilion 2	ca. 1970	Noncontributing Building
50	C-28D	Weapons Cleaning Center	1948	Contributing Building
77	C-28-E	Target Store	1948	Contributing Building
51	C-28G	Practice Tower	ca. 1970	Noncontributing Building
52	C-28H	Firing Range Shed	ca. 1970	Noncontributing Building
53	C-28K	Firing Range Observation Tower	1948	Contributing Building
45	C-29	FCP Lift Station	1961	Non-contributing Building
8	C-30	Lift Station # 1	1995	Noncontributing Building
72		Concrete Pillbox Bunker	ca. 1920	Contributing Building
55		Captain's Residence	1960	Contributing Building
9		Outside Food Service Warehouse	ca. 2008	Noncontributing Building
5		Shelter (Along Main Drive)	ca. 2006	Noncontributing Building
71		Sheds and Tank (East of Power Plant)	ca. 2006	Noncontributing Building
78		Outdoor Grill Structures	ca. 1935	Contributing Structures
79		Storm Sewer Line	ca. 1900	Contributing Structure

Site 14LV337 was recorded as a multi-component site that included a broadly distributed scatter of prehistoric and historic artifacts (Rowlison and Reynolds 1974). Subsequent testing by Thies (1984 and 2006) and the current survey has determined that the prehistoric component of the site was ephemeral and that the historic component consists of insignificant debris associated with the USP. The prehistoric artifacts found at the site may be associated with nearby Site 14LV169. Site 14LV337 is considered not a significant cultural resource and is not recommended for listing in the National Register under any criteria. No additional archaeological investigation is recommended for this site.

Site 14LV364 was recorded by Barr and Rowlison (1977) as a prehistoric lithic scatter of unknown age or cultural association. The current investigation has found that the ground surface that would have been occupied by prehistoric and historic Native Americans or by explorers, traders, or soldiers during the historic period has eroded away as the result of cultivation. Just one shovel test yielded one piece of block shatter from the plowzone. Thus, the site appears to have been destroyed and has no potential to contribute important new information about the prehistory of the region. Site 14LV364 is considered not a significant cultural resource and is not recommended for listing in the National Register under any criteria. No additional archaeological work is recommended for this site.

Site 14LV365 was recorded by Barr and Rowlison (1977) as a multi-component site that included a prehistoric lithic scatter of undetermined age and cultural association and a scatter of historic artifacts believed to be associated with a U.S. Cavalry troop encampment in the mid to late 1800s. The current investigation has found that the ground surface that would have been occupied by prehistoric and historic Native Americans or by explorers, traders, or soldiers during the historic period has eroded away as the result of cultivation. A small number of prehistoric artifacts were present in the plowzone. No historic artifacts were found at all. As with the prehistoric component at Site 14LV365, cultivation and erosion appear to have destroyed the historic component at the site. Thus, the site appears to have been destroyed and has no potential to contribute important new information about the prehistory or history of the Leavenworth locale or of the broader region. Site 14LV365 is considered not a significant cultural resource and is not recommended for listing in the National Register under any criteria. No additional archaeological work is recommended for this site.

Site 14LV366 was recorded by Rowlison and Barr (1977) as a prehistoric lithic scatter of unknown cultural association. As at Sites 14LV364 and 14LV365, the current investigation has found that the ground surface that would have been occupied by prehistoric and historic Native Americans or by explorers, traders, or soldiers during the historic period has eroded away as the result of cultivation. No artifacts were identified in the shovel tests or on the ground surface at the site. Thus, the site appears to have been destroyed and has no potential to contribute important new information about the prehistory of the region. Site 14LV366 is considered not a significant cultural resource and is not recommended for listing in the National Register under any criteria. No additional archaeological work is recommended for this site.

Site 14LV167 is the location of a small prehistoric lithic scatter of undetermined cultural affiliation. The soil profiles demonstrate that the surface soil has been disturbed by cultivation and, along the former railroad grade, by construction of that railroad bed. The native A horizon, which would have been the surface occupied by prehistoric Native Americans, the historic Kansa tribe, and early historic soldiers, explorers, and traders, appears to be deflated as the result of cultivation. The seven artifacts found in the plowzone are generic in character; that is they reflect the kinds of chipped stone debris created by prehistoric groups for at least the past 10,000 years. Thus, the site has no potential to contribute important new information about the prehistory of the Leavenworth locality or the broader region. Site

14LV167 is considered not a significant cultural resource and is not recommended for listing in the National Register under any criteria. No additional archaeological work is recommended for this site.

Site LBG-2 is the location of a large prehistoric lithic scatter attributed to the Late Prehistoric or Middle Ceramic cultural period based on two Scallorn variety arrow points. The site lies in an area that has been heavily disturbed by cultivation and erosion. The higher numbers of artifacts found in the western portion of the site appears to be a result of decades of erosion carrying materials from upslope down to mix with other artifacts. No doubt plowing also displaced artifacts. Thus, while there are several tools at the site, some of which are temporally diagnostic, the integrity of the site has been significantly compromised. The site appears to have low potential for contributing important new information about the prehistory of the Leavenworth locality or of the region. Site LBG-2 is considered not a significant cultural resource and is not recommended for listing in the National Register under any criteria. No additional archaeological work is recommended for this site.

Site 14LV169 is the location of a relatively dense cluster of chipped stone artifacts attributed to the Late Prehistoric or Middle Ceramic cultural period based on two Scallorn variety arrow points. More than one-third of the shovel tests excavated at the site yielded artifacts. The types of artifacts recovered suggest a location where prehistoric people were reducing chert cobbles into biface performs and shaping tools such as arrow points, knives, drills, and scrapers. While the site has been disturbed to some degree by cultivation and erosion and although most were from the Ap horizon, a few were from the Bt horizons, suggesting the possibility of intact subsurface deposits. Two small pottery sherds found in nearby Site 14LV337 may have derived from Site 14LV169, further supporting the potential of the site to contribute significant new information about the late prehistory of the region. Therefore, Site 14LV169 is considered to be a potentially significant cultural resource and is recommended eligible for listing in the National Register under Criterion D. Criteria A, B, and C do not apply to this site.

LBG recommends avoidance of Site 14LV169 by any proposed construction or other ground disturbance activities. If the site cannot be avoided, then LBG recommends that Phase III site evaluation be performed to determine whether the site has sufficient integrity and potential to answer important research questions regarding the prehistory of the locality and/or region.

Site 14LV170 is a small prehistoric lithic scatter of unknown age or cultural association. The artifact assemblage consists of 13 chipped stone flakes recovered from the ground surface or plowzone in a buffalo pasture. The site area has been disturbed by cultivation and erosion sufficiently that the native A horizon on which prehistoric and historic groups would have camped or performed other activities is generally lost. The small number of chipped stone flaking debris is culturally generic; that is, it could have been produced by any Native American group who occupied that location briefly sometime in the past 10,000 or more years. Thus, the site appears to have no potential to contribute important new information about the prehistory of the Leavenworth locale or of the broader region. Site 14LV170 is considered not a significant cultural resource and is not recommended for listing in the National Register under any criteria. No additional archaeological work is recommended for this site.

Site 14LV171 is the location of a large prehistoric camp tentatively attributed to the Late Prehistoric or Middle Ceramic cultural period based on the base of a side-notched arrow point, two small pottery sherds, and the presence of three Late Prehistoric sites in the vicinity of 14LV171. Approximately one-third of the shovel tests excavated at the site yielded artifacts. The types of artifacts recovered suggest a location where prehistoric people were reducing chert cobbles into biface performs and shaping tools such as arrow points, knives, drills, and scrapers. While the site has been disturbed to some degree by bison wallowing, cultivation, and erosion and although most were from the Ap horizon, the thickness of the Ap horizon and presence of an A horizon suggests the possibility of intact subsurface deposits. The

two small pottery sherds are not very distinctive. The kinds of artifacts found at Site 14LV171, the strong possibility of intact archaeological deposits, and the relationship of this site with other similar sites in the vicinity indicate that Site 14LV171 has good potential for contributing significant new information about the late prehistory of the Leavenworth locale and the broader region. Therefore, Site 14LV171 is considered to be a potentially significant cultural resource and is recommended eligible for listing in the National Register under Criterion D. Criteria A, B, and C do not apply to this site.

Site 14LV171 is situated within the area of proposed construction for Alternative East/West Composite. LBG recommends avoidance of Site 14LV171 by any proposed construction or other ground disturbance activities. If the site cannot be avoided, then LBG recommends that Phase III site evaluation be performed to determine whether the site has sufficient integrity and potential to answer important research questions regarding the prehistory of the locality and/or region.

Site 14LV172 is the location of a large prehistoric camp tentatively attributed to the Late Prehistoric or Middle Ceramic cultural period based on the presence of two Scallorn variety arrow points. More than one-third of the shovel tests excavated at the site yielded artifacts. As at Site 14LV171, the types of artifacts recovered suggest a location where prehistoric people were reducing chert cobbles into biface performs and shaping tools such as arrow points, knives, drills, and scrapers. While the site has been disturbed to some degree by bison wallowing, cultivation, and erosion and although most were from the Ap horizon, the thickness of the Ap horizon and presence of an A horizon suggests the possibility of intact subsurface deposits. The kinds of artifacts found at Site 14LV172, the strong possibility of intact archaeological deposits, and the relationship of this site with other similar sites in the vicinity indicate that Site 14LV172 has good potential for contributing significant new information about the late prehistory of the Leavenworth locale and the broader region. Therefore, Site 14LV172 is considered to be a potentially significant cultural resource and is recommended eligible for listing in the National Register under Criterion D. Criteria A, B, and C do not apply to this site.

LBG recommends avoidance of Site 14LV172 by any proposed construction or other ground disturbance activities. If the site cannot be avoided, then LBG recommends that Phase III site evaluation be performed to determine whether the site has sufficient integrity and potential to answer important research questions regarding the prehistory of the locality and/or region.

Site 14LV173 is a small prehistoric lithic scatter of undetermined age or cultural association. The artifact assemblage consists of 13 chipped stone flakes recovered from the plowzone in a buffalo pasture. The site area has been disturbed by cultivation and erosion sufficiently that much of the native A horizon on which prehistoric and historic groups would have camped or performed other activities is generally lost. The small number of chipped stone flaking debris is culturally generic; that is, it could have been produced by any Native American group who occupied that location briefly sometime in the past 10,000 or more years. Thus, the site appears to have no potential to contribute important new information about the prehistory of the Leavenworth locality or of the broader region. Site 14LV173 is considered not a significant cultural resource and is not recommended for listing in the National Register under any criteria. No additional archaeological work is recommended for this site.

Site 14LV174 is a small prehistoric lithic scatter of undetermined cultural association that lies in an area that has been heavily disturbed by cultivation and no doubt plowing has displaced artifacts. The core of the site appears to lie in the eastern part of the cultivated area. Because of the intense cultivation and erosion, the native A horizon is largely gone and the integrity of the site has been significantly compromised. The small number of generic chipped stone items offers little data about lithic technology used by the individuals producing the artifacts. As a result, the site appears to have low potential for

contributing important new information about the prehistory of the Leavenworth area or the broader region. Site 14LV174 is considered not a significant cultural resource and is not recommended for listing in the National Register under any criteria. No additional archaeological work is recommended for this site.

Site 14LV175 is the location of the former USP's farm manager's residence (1938 to about 1981). The site area north of the yard fence has been disturbed by cultivation and erosion. Within the yard, the artifacts observed in the shovel tests are typical of a 20th century domestic structure and household. The residence would have had modern plumbing so temporally discrete deposits, such as a latrine pit, cistern, or well shaft are not present. It is unlikely that trash would have been buried on site. Thus, Site 14LV175 offers no important new information about the farm manager's residence or household that probably cannot be obtained from archival sources. Site 14LV175 is considered not a significant cultural resource and is not recommended for listing in the National Register under any criteria. No additional archaeological work is recommended for this site.

Site 14LV176 is the location of a large prehistoric lithic scatter of undetermined cultural association situated on a ridge toe. The types of artifacts recovered suggest a location where prehistoric people were reducing chert cobbles into biface performs and shaping formal tools such as arrow points, knives, drills, and scrapers. One quarter of the shovel tests excavated at the site yielded chipped stone artifacts, though no formal tools were recovered. However, there is a dense cluster of positive shovel tests in the southwestern portion of the site that suggests that the site has good potential to contain such tools. The site has been disturbed to some degree by cultivation and erosion and archaeological integrity could be an issue. However, Sites 14LV169, 14LV171, 14LV172, and 14LV181 of similar size and artifact density and appear to have potential for National Register eligibility. Site 14LV176 may be another site of Late Prehistoric age that represents, with the other four sites, recurring occupation of the locale. For these reasons, LBG concludes that Site 14LV176 has good potential for contributing significant new information about the late prehistory of the Leavenworth area and the broader region. Therefore, Site 14LV176 is considered to be a potentially significant cultural resource and is recommended eligible for listing in the National Register under Criterion D. Criteria A, B, and C do not apply to this site.

Site 14LV176 is situated within the area of proposed construction for Alternative FCI East-1 and Alternative East/West Composite. LBG recommends avoidance of Site 14LV176 by any proposed construction or other ground disturbance activities. If the site cannot be avoided, then LBG recommends that Phase III site evaluation be performed to determine whether the site has sufficient integrity and potential to answer important research questions regarding the prehistory of the locality and/or region.

Site 14LV177 is the location of a small prehistoric lithic scatter of unknown age or cultural association on a terrace that is frequently flooded. Artifacts were found in mixed or soils that make the the integrity of the archaeological deposit uncertain. The 15 chipped stone artifacts are generic debitage, characteristic of stone reduction activities practiced by Native American groups for at least the past 12,000 years in North America. The information that can be obtained from the assemblage contributes no important new information about lithic technology, sources of raw material to make tools, or where prehistoric sites are likely to be found in the region. Site 14LV177 is considered not a significant cultural resource and is not recommended for listing in the National Register under any criteria. No additional archaeological work is recommended for this site.

Site 14LV178 is the location of a small prehistoric lithic scatter of unknown age or cultural group situated on a gentle slope in the uplands. Two flakes were recovered from two separate shovel tests situated 10 meters (32.8 feet) apart. In addition to being very few in number, the artifacts are generic debitage,

characteristic of stone reduction activities practiced by Native American groups for at least the past 12,000 years in North America. The information that can be obtained from the assemblage and the site contributes no important new information about lithic technology, sources of raw material to make tools, or where prehistoric sites are likely to be found in the region. Site 14LV178 is considered not a significant cultural resource and is not recommended for listing in the National Register under any criteria. No additional archaeological work is recommended for this site.

Site 14LV179 is the location of a prehistoric lithic scatter of undetermined cultural association in a disturbed area on a somewhat steep slope. The five flakes found at the site were from the Ap horizon of a single shovel test. If not for the number of items found, this site would be categorized as an isolated find spot. The prehistoric artifacts were discovered in a disturbed context. The flaking debris is generic in character and could have been produced by Native Americans at any time over the past 12,000 years. The information that can be obtained from the assemblage and the site contributes no important new information about lithic technology, sources of raw material to make tools, or where prehistoric sites are likely to be found in the region. Site 14LV179 is considered not a significant cultural resource and is not recommended for listing in the National Register under any criteria. No additional archaeological work is recommended for this site.

Site 14LV180 is the location of a prehistoric lithic scatter of unknown age or cultural association on an upland bench. The three flakes found at the site were from the Ap horizon of a single shovel test. Cultivation and erosion have disturbed the site to some degree. If not for the number of items found, this site would be categorized as an isolated find spot. The flaking debris is generic in character and could have been produced by Native Americans at any time over the past 12,000 years. The information that can be obtained from the assemblage and the site contributes no important new information about lithic technology, sources of raw material to make tools, or where prehistoric sites are likely to be found in the region. Site 14LV180 is considered not a significant cultural resource and is not recommended for listing in the National Register under any criteria. No additional archaeological work is recommended for this site.

Site 14LV181 is the location of a large prehistoric camp of undetermined cultural association situated on a ridge. The types of artifacts recovered suggest a location where prehistoric people were reducing chert cobbles into biface performs and shaping formal tools such as arrow points, knives, drills, and scrapers. Over 20 percent of the shovel tests excavated at the site yielded chipped stone artifacts, though no formal tools were recovered. However, the cluster of positive shovel tests in the center of the site that suggests that the site has good potential to contain such tools. Fire-cracked rock suggests the presence of hearths that might yield charred material suitable for radiocarbon dating. The site has been disturbed to some degree by cultivation and erosion and archaeological integrity could be an issue. However, Sites 14LV169, 14LV171, 14LV172, and 14LV176 are of similar size and artifact density and appear to have potential for National Register eligibility. Site 14LV181 may be another site of Late Prehistoric age that represents, with the other four sites, recurring occupation of the locale. For these reasons, LBG concludes that Site 14LV181 has good potential for contributing significant new information about the late prehistory of the Leavenworth locale and the broader region. Therefore, Site 14LV171 is considered to be a potentially significant cultural resource and is recommended eligible for listing in the National Register under Criterion D. Criteria A, B, and C do not apply to this site.

Site 14LV181 is situated within the proposed construction area for Alternative FCI East-1 and for Alternative East/West Composite. LBG recommends avoidance of Site 14LV181 by any proposed construction or other ground disturbance activities. If the site cannot be avoided, then LBG recommends

that Phase III site evaluation be performed to determine whether the site has sufficient integrity and potential to answer important research questions regarding the prehistory of the locality and/or region.

Pending concurrence with these findings and recommendations by the BOP and the Kansas State Historic Preservation Office, LBG concludes that there are five archaeological sites considered potentially eligible for listing in the National Register within the APE affected by the proposed undertaking as examined by this survey. Two of these sites, 14LV176 and 14LV181, would be adversely impacted by the proposed construction in Alternative FCI East-1 and in Alternative East/West Composite. A third site, 14LV171, would be adversely impacted by the proposed construction in Alternative East/West Composite. Sites 14LV169 and 14LV172 lie outside of the proposed construction in both alternative sites. If Sites 14LV171, 14LV176, or 14LV181 cannot be avoided, then LBG recommends that Phase III site evaluation be performed to determine whether the site has sufficient integrity and potential to answer important research questions regarding the prehistory of the locality and/or region.

Fifteen archeological sites (14LV110, 14LV337, 14LV364, 14LV365, 14LV366, 14LV167, LBG-2, KBG-4, 14LV173, 14LV174, 14LV175, 14LV177, 14LV178, 14LV179, and 14LV180) and 16 isolated find spots (Site 14LV111 and IF-1 through IF-15) also were identified within the APE affected by the proposed undertaking. These 31 archaeological resources are recommended to be considered not significant and therefore not eligible for listing in the National Register. No additional archaeological investigation is recommended for any of these sites or isolated find spots.

Comparison of the two alternatives with the USP Leavenworth Historic District reveals that both alternatives will adversely affect contributing staff housing along Metropolitan Avenue, as the houses will have to be demolished for construction of an access road. The proposed access road for Alternative East/West Composite will only directly impact two staff duplexes (#17 and #18). Construction of the FPC in Alternative FCI East-1 will directly impact the same two duplexes and four additional staff residences. The FPC in the Alternative East/West Composite will directly impact a non-contributing lift station (#45). The access road in Alternative East/West Composite causes the least impact to the historic district, necessitating the removal of only two staff duplexes. Removal of these structures will diminish the integrity of the historic district's design, workmanship, and feeling. Construction of the FCI in open areas will diminish the district's integrity of design, setting, and feeling.

It should be noted that because archaeological surveys are designed to sample subsurface deposits, no survey technique is adequate to identify every potential archaeological resource that may be located within a given project area. Therefore, should artifacts or other evidence of unrecorded cultural resources be discovered during the course of project construction, the Kansas SHPO must be notified so that the potential significance and National Register eligibility of such resources can be adequately evaluated.

9.0 REFERENCES CITED

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Bailey, Berkley B.

1993 *Archaeological Mitigation of the US Army Signal Corps Stable, Guard House, Crematory & Water Purification Plant (Bldg 268) and Associated Garbage Dumps and Burn Piles Uncovered during Construction of Eisenhower Hall at Fort Leavenworth, Kansas*. Contract No. DACA 41-93-P-0175. Prepared for the U.S. Army Corps of Engineers, Kansas City District, Kansas City, Missouri, by the Department of Anthropology, University of Oklahoma, Norman, Oklahoma.

Bailey, Garrick A., and Gloria B. Young

2001 Kansa. In *Handbook of North American Indians*, Vol. 13(1), edited by Raymond J. DeMallie and William C. Sturtevant, pp: 462-475. Smithsonian Institution, Washington, D.C.

Banks, William E.

1999 *Kansas Historical Society Inventory Form, 14LV391*. Prepared by William E. Banks, Kansas State Historical Society, Topeka, Kansas.

Barr, Thomas P., and Donald D. Rowilson

1977 *Archeological Inventory of the Fort Leavenworth Military Reservation, Leavenworth County*. Prepared for the United States Corps of Engineers, Kansas City District, Contract No. DACA41-76-C-0030, by the Archeology Department, Kansas State Historical Society, Topeka, Kansas.

BELLArchitects, Robinson and Associates Inc., Conservation Solutions, Inc., Project Cost, Inc.

2005 *USP Leavenworth: Final Historic Structures Report*. Prepared for J.C. Chang and Associates in association with the Federal Bureau of Prisons.

Baugher-Perlin, Sherene

1982 *Analyzing Glass Bottles for Chronology, Function, and Trade Networks*. In *Archaeology of Urban America: The Search for Pattern and Process*. edited by Roy S. Dickens, pp. 259-290. *Studies in Historical Archaeology*. Academic Press, New York, NY.

Buchanan, Rex

1984 *Kansas Geology*. University of Kansas Press, Lawrence, Kansas.

Butler, Todd L.

1997 *Lithic Material Availability, Quality and Selection in the Protohistoric High Plains as Seen from the Scott Pueblo*. Unpublished Master's Thesis, University of Kansas, Lawrence.

Cope, Jack

1987 *1300 Metropolitan Avenue, A History of the United States Penitentiary*. Manuscript on file at the Leavenworth Public Library, Leavenworth, Kansas.

Epperson, Jennifer, William Banks, and Martin Stein

2004 *Kansas SHPO Guide to Archeological Survey, Assessment and Reports*. Kansas State Historical Society, State Historic Preservation Office, Topeka, Kansas.

Federal Bureau of Prisons (FBOP)

- 1942a *Grounds West of Institution*. Dated November 16. Department of Justice, Federal Bureau of Prisons, Maps on file at National Archives, Kansas City, Missouri.
- 1942b *Grounds Institution and Vicinity*. Dated November 21. Department of Justice, Federal Bureau of Prisons, Maps on file at National Archives, Kansas City, Missouri.
- 1942c *Grounds East of Institution*. Dated November 29. Department of Justice, Federal Bureau of Prisons, Maps on file at National Archives, Kansas City, Missouri.
- 1942d *Property Map of Institution and Farm No. 1*. Dated December 4. Department of Justice, Federal Bureau of Prisons, Maps on file at National Archives, Kansas City, Missouri.
- 1956 *Area West of Institution*. Dated January 30. Department of Justice, Federal Bureau of Prisons, Maps on file at National Archives, Kansas City, Missouri.
- 1961 *New Farm Dormitory Under Ground Utility Installations*. Dated March 1. Department of Justice, Federal Bureau of Prisons, Maps on file at National Archives, Kansas City, Missouri.
- 1979 General Description of Farm No. 2 at the United States Penitentiary at Leavenworth, Kansas. Section II from Incident Report for Honor Farm Explosion. Manuscript on file at the National Archives, Kansas City, Missouri.

Fennemman, Nevin M.

- 1931 *Physiography of Western United States*. McGraw-Hill, New York, New York.

Fox, Richard A., Brian L. Mpolyneaux, and Todd Kapler

- 2000 *Phase III (Kansas) Archaeological Investigations and National Register Testing at 14LV114 and 14LV118, Fort Leavenworth, Kansas*. Contract No. DACW 41-99-P-0319. Prepared for the U.S. Army Corps of Engineers, Kansas City District, Kansas City, Missouri, by the Archaeology Laboratory, University of South Dakota, Vermillion, South Dakota.

General Land Office

- 2010 Map Showing the Progress of the Public Surveys in Kansas and Nebraska, October 2, 1866. General Land Office, Washington, D.C. Bowen & Company, Philadelphia. Electronic document accessed online in June 2010 at <http://www.davidrumsey.com/luna/servlet/detail/RUMSEY>.

GeoSystems Engineering, Inc.

- 1995 U.S. Penitentiary Sites Location Map, Bureau of Prisons, U.S.P. Leavenworth, Kansas. Prepared for George Butler Associates, Inc. by GeoSystems Engineering, Inc.

Hoard, Robert J., and William E. Banks

- 2006 *Kansas Archaeology*. University Press of Kansas, Lawrence, Kansas.

Jones, Olive R., and Catherine Sullivan

- 1985 *The Parks Canada Glass Glossary for the Description of Containers, Tableware, Flat Glass, and Closures*. National Historic Parks and Sites Branch, Parks Canada, Ottawa, Ontario.

Kuchler, A.W.

1974 A New Vegetation Map of Kansas. *Ecology* 55(3):586-604.

LaMaster, Kenneth M.

2008 *Images of America: U.S. Penitentiary Leavenworth*. Arcadia Publishing, Chicago, IL.

Latham, Mark A., and Rolfe D. Mandel

2002 *Archaeological Investigation of Phase I Housing Sites 1, 2, and 3: Including Evaluation and Geomorphological Investigation of a Kansas City Hopewell Site (14LV120) at Fort Leavenworth, Kansas*. Contract No. DACA 41-02-F-0004. Prepared for the U.S. Army Corps of Engineers, Kansas City District, Kansas City, Missouri, by Burns & McDonnell, Kansas City, Missouri.

Leavenworth Times

1957 New Dormitory Building for Prison Farm. July 5:1.

1960 New Farm Dormitory Open House Saturday. September 29:1.

1979 Honor Farm Blast Traps Men; 4 Dead. January 30:1.

Logan, Brad

1995 *Phasing in White Rock: Archaeological Investigation of the Warne and White Rock Sites, Lowell Reservoir, Kansas – 1994-1995*. Prepared for the Bureau of Reclamation, Nebraska-Kansas Area Office by the University of Kansas, Museum of Anthropology, Project Report Series No. 90, Lawrence, Kansas

2006 *Archaeological Investigations at the Johns Creek and Warne Sites, Lowell Reservoir, Jewell County, Kansas – 2003*. Prepared for the Bureau of Reclamation, Nebraska-Kansas Area Office by the Department of Sociology, Anthropology, and Social Work, Kansas State University, Manhattan, Kansas.

2010 A Matter of Time: The Temporal Relationship of Oneota and Central Plains Traditions. *Plains Anthropology*, Vol. 55(216), pp: 277-292.

Lucido, Mary

2002 *Kansas Historical Society Archeological Inventory, Site 14LV167*. Prepared by the U.S. Army Corps of Engineers, Kansas City District, Kansas City, Missouri.

McLean, Janice A., and James Rust

2004 *An Intensive Cultural Resources Survey of the Proposed Leavenworth United States Army Reserve Center (USARC), Leavenworth County, Kansas*. Prepared for the 89th Regional Readiness Command by 4G Consulting, LLG, St. Paul, Minnesota.

Mandel, Rolfe D.

2006 Late Quaternary and Modern Environments in Kansas. In *Kansas Archeology*, edited by Robert J. Hoard and William E. Banks, pp. 28-45. University of Kansas Press, Lawrence, Kansas.

Mandel, Rolfe D., John D. Reynolds, Barry G. Williams, and Virginia A. Wulfkuhle

1991 *Upper Delaware River and Tributaries Watershed: Results of Geomorphological and Archeological Studies in Atchison, Brown, Jackson, and Nemaha Counties, Kansas*. Kansas State Historical Society Contract Publication No. 9, Kansas State Historical Society, Topeka, Kansas.

Natural Resources Conservation Service

2010 *Web Soil Survey*. Accessed on line at <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm> on May 24, 2010.

Perino, Gregory

1985 *Selected Preforms, Points, and Knives of the North American Indians, Vol. 1*. Points and Barbs Press, Idabel, Oklahoma.

Pipkin, Phillip

n.d. *Historical Map of Leavenworth County, Kansas*. Prepared for Leavenworth County Historical Society. On file at the Leavenworth Public Library, Leavenworth, Kansas.

Pritchard, James C,

2005 *Final Report of Findings: Intensive Archaeological Survey in Support of Proposed Residential Communities Initiative Developments (Areas O through S) at Fort Leavenworth, Leavenworth County, Kansas*. Prepared for Tetra Tech, Inc., by Brockington and Associates, Inc., Norcross, Georgia.

Reynolds, John D., and William B. Lees

2004 *The Archeological Heritage of Kansas: A Synopsis of the Kansas Preservation Plan*. Edited by Marilyn Holt, Robert J. Hoard, and Virginia Wulfkuhle. Cultural Resources Division, Kansas State Historical Society, Topeka, Kansas.

Ritterbush

2006 *Late Prehistoric Oneota in the Central Plains*. In *Kansas Archaeology*, edited by Robert J. Hoard and William E. Banks, pp. 151-164. University Press of Kansas, Lawrence, Kansas.

Rowlison, Donald D., and John D. Reynolds

1974 *Report of Phase II Archeological Survey on Projects: 73-3 F 081-2(25), Atichison County and 73-52 F 081-2(24), Leavenworth County*. Prepared for the Kansas Department of Transportation, Topeka, Kansas by the Archeology Office, Kansas State Historical Society, Topeka, Kansas.

Schoeneberger, P.J., Wysocki, D.A., Benham, E.C., and Broderson, W.D. (editors)

2002 *Field Book for Describing and Sampling Soils*. Version 2.0. Natural Resources Conservation Service, National Soil Survey Center, Lincoln, Nebraska.

Schindler, Henry

1911 *History of the United States Military Prison*, The Army Service Schools Press.

Schoewe, W.E.

1949 *The Geography of Kansas, Part II, Physical Geography*. *Transactions of the Kansas Academy of Science* 52(3):261-333.

Socolofsky, Homer E., and Huber Self

1988 *Historical Atlas of Kansas*, Second Edition. University of Oklahoma Press, Norman, Oklahoma.

TEC Inc.

2009a *Site Reconnaissance Report for USP Leavenworth, North Site, South Site, and Camp Site*. Prepared for the Federal Bureau of Prisons, Washington, D.C. by TEC Inc., York, Pennsylvania.

2009b *The Cultural Resources Action Plan for USP Leavenworth*. Prepared for Federal Bureau of Prisons, Washington, D.C. by TEC Inc., York, Pennsylvania.

Thies, Randall M.

1984 *Four Sites Along the New US-73 Highway Alignment: Results of a Phase III Investigation of Highway Project K-1875, Leavenworth County, Kansas*. Prepared for the Kansas Department of Transportation, Topeka, Kansas by the Archeology Office, Kansas State Historical Society, Topeka, Kansas.

2006 *Archeological Survey of KDOT Project K-8003-01, Leavenworth County, Kansas*. Prepared for the Kansas Department of Transportation, Topeka, Kansas by the Archeology Office, Kansas State Historical Society, Topeka, Kansas.

United States Department of Agriculture (USDA)

1966 Aerial Photograph, Leavenworth ZI-1GG-106. Agricultural Stabilization and Conservation Service, Kansas City, Missouri. Downloaded from KAPI, Kansas State University, Manhattan, Kansas.

United States Department of Defense (DOD)

1907 *1904-5 and 1905-6 Map of Fort Leavenworth*. Staff Class of 1904-5 and 1905-6, U. S. Army, Fort Leavenworth, Kansas

1913 *1913 Map of Fort Leavenworth Reservation*. Engineer Department, U.S. Army Service Schools, Fort Leavenworth, Kansas.

United States Department of the Interior

1983 *Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines*. Federal Register, Part IV, 48(2):44716-44742. National Park Service, Washington, D.C.

United States Geological Survey (USGS)

1926 *Leavenworth, Kansas*. 7.5-Minute Topographic Quadrangle. United States Geological Survey, Washington, D.C.

1982 *Leavenworth, Kansas*. 7.5-Minute Topographic Quadrangle. United States Geological Survey, Washington, D.C.

United States Penitentiary (USP Leavenworth)

1916/17 *Annual report, U.S. Penitentiary, Leavenworth, Kansas*. U.S. Penitentiary Press, Leavenworth, Kansas. On file at the National Archives, Kansas City, Missouri.

1919/20 *Annual report, U.S. Penitentiary, Leavenworth, Kansas*. U.S. Penitentiary Press, Leavenworth, Kansas. On file at the National Archives, Kansas City, Missouri.

1920/21 *Annual report, U.S. Penitentiary, Leavenworth, Kansas*. U.S. Penitentiary Press, Leavenworth, Kansas. On file at the National Archives, Kansas City, Missouri.

1921/22 *Annual report, U.S. Penitentiary, Leavenworth, Kansas*. U.S. Penitentiary Press, Leavenworth, Kansas. On file at the National Archives, Kansas City, Missouri.

- 1922/23 *Annual report, U.S. Penitentiary, Leavenworth, Kansas.* U.S. Penitentiary Press, Leavenworth, Kansas. On file at the National Archives, Kansas City, Missouri.
- 1924/25 *Annual report, U.S. Penitentiary, Leavenworth, Kansas.* U.S. Penitentiary Press, Leavenworth, Kansas. On file at the National Archives, Kansas City, Missouri.
- 1925/26 *Annual report, U.S. Penitentiary, Leavenworth, Kansas.* U.S. Penitentiary Press, Leavenworth, Kansas. On file at the National Archives, Kansas City, Missouri.
- 1929/30 *Annual report, U.S. Penitentiary, Leavenworth, Kansas.* U.S. Penitentiary Press, Leavenworth, Kansas. On file at the National Archives, Kansas City, Missouri.
- 1936/37 *Annual report, U.S. Penitentiary, Leavenworth, Kansas.* U.S. Penitentiary Press, Leavenworth, Kansas. On file at the National Archives, Kansas City, Missouri.
- 1937/38 *Annual report, U.S. Penitentiary, Leavenworth, Kansas.* U.S. Penitentiary Press, Leavenworth, Kansas. On file at the National Archives, Kansas City, Missouri.

Wagner, Mark J., Mary R. McCorvie, Terrance J. Martin and Kathryn E. Parker

- 1989 *Phase I, II, and III Archaeological Investigations at Fort Leavenworth, Kansas.* Prepared for the United States Corps of Engineers, Kansas City District, Contract No. DACA41-86-D-0064, by the American Resources Group, Ltd., Carbondale, Illinois.

Walz, Gregory R., Christopher Flynn, and Michael E. Smith

- 2009 *National Register of Historic Places (NRHP) Eligibility Assessment of Fort Sully (14LV165): A United States Army Civil War Era Fortification Constructed at Fort Leavenworth, Leavenworth County, Kansas.* Research Report No. 143. Prepared for the Engineer Research and Development Center.

Wedel, Waldo R.

- 1959 *An Introduction to Kansas Archeology.* Smithsonian Institution, Bureau of American Ethnology, Bulletin 174, Washington, D.C.

Zavesky, L.D. and W.C. Boatright

- 1977 *Soil Survey of Leavenworth County, Kansas.* United States Department of Agriculture in Cooperation with Kansas Agricultural Experiment Station. U.S. Government Printing Office, Washington, D.C.

APPENDICES

APPENDIX A
PROJECT CORRESPONDENCE

Magron, Jean Philippe

From: Magron, Jean Philippe
Sent: Tuesday, November 23, 2010 10:47 AM
To: 'tweston@ksks.org'; 'kgant@ksks.org'; 'kringler@ksks.org'; 'John Mitchell'; 'Donna Fisher'; 'Steve.Adams@ksoutdoors.com'
Cc: Boyd, Cristy; Magron, Jean Philippe; Bridgette Lyles
Subject: RE: US Penitentiary Leavenworth - KS Agencies Meeting on 12/01
Attachments: State 12-1-2010 meeting agenda.pdf

To all,

Please find herein attached the agenda for our scheduled meeting on 12/1 (2:30PM) at the offices of the Kansas State Historical Society in Topeka, KS.

Please pass this agenda onto your respective staff who will be in attendance.

Meeting handouts will also be distributed at the meeting.

Best regards and happy Thanksgiving.

JP

Jean-Philippe Magron

The Louis Berger Group, Inc.

From: Magron, Jean Philippe
Sent: Thursday, November 18, 2010 4:04 PM
To: tweston@ksks.org; kgant@ksks.org; kringler@ksks.org; John Mitchell; Donna Fisher; 'Steve.Adams@ksoutdoors.com'
Cc: Magron, Jean Philippe; Boyd, Cristy
Subject: US Penitentiary Leavenworth - KS Agencies Meeting on 12/01

To all,

First and foremost, I'd like to thank all of you for your time these last few days and your agreement in having a combined meeting on **December 1st** at the offices of the Kansas State Historical Society (**Executive Conference Room, 6425 SW 6th Avenue, Topeka, KS**). Also, thanks to Mr. Weston for offering his facilities.

To that effect, I'd like to propose a meeting time for **2:30PM** on 12/01. Please confirm if okay with your schedule. We hoped to arrange for an earlier meeting in the afternoon, but we will be meeting with City/County officials in the morning at Leavenworth, and I'd like to give ourselves enough time for the one-hour or so drive between Leavenworth and Topeka. At the meeting we will distribute handouts about the project (site, description, proposed new facilities at USP Leavenworth) and we anticipate sending you an agenda ahead of time.

To KDHE/KDWP,

I understand you're still working towards the identification of a specific representative(s) to attend such meeting, but I ought to let you know as soon as possible about proposed time. Once you'll have such person(s) identified, please let us know.

Thanks – JP Magron.

Jean-Philippe Magron

Principal Environmental Planner

The Louis Berger Group, Inc.

412 Mount Kemble Avenue

PO Box 1946

Morristown, NJ 07960-6654

(v) (973) 407-1000 Ext.1504 -- (f) (973) 267-6468

jmagron@louisberger.com www.louisberger.com

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 **THINK GREEN: Please do not print this email unless it's absolutely necessary.**



STATE AGENCY MEETING AGENDA

Date: December 1, 2010
Time: 2:30 PM
Location: Kansas State Historical Society
6425 SW 6th Avenue
Executive Room
Topeka, KS 66615

**FEDERAL BUREAU OF PRISONS / THE LOUIS BERGER GROUP, INC.
PROPOSED FEDERAL CORRECTIONAL INSTITUTION (FCI) AT USP LEAVENWORTH, KANSAS**

I. INTRODUCTIONS

- Kansas State Historical Society, State Historic Preservation Office (SHPO)
- Kansas Department of Wildlife and Parks (KDWP)
- Kansas Department of Health and Environment (KDHE) - Division of Environment
- Federal Bureau of Prisons
- The Louis Berger Group, Inc.

II. PURPOSE AND OBJECTIVES OF MEETING

- Background
 - Growth of the Federal Inmate Population
 - Need for Additional Federal Correctional Facilities
 - Community Support
- Alternative Sites
 - North Site
 - Central Site
 - Camp Site
- Compliance with the National Environmental Policy Act
 - Public Scoping Meeting/Process
 - Draft Environmental Impact Statement
 - Final Environmental Impact Statement/Record of Decision
- Compliance with the National Historic Preservation Act
- Compliance with the Clean Water Act
- Compliance with the Endangered Species Act
- Compliance with Kansas State Regulations

III. COMMUNICATION AND COORDINATION

- Points of Contact
- Roles and Responsibilities
- Next Steps/Meetings



TRIBAL HISTORIC PRESERVATION OFFICE

Date: January 25, 2011

File: 1011-733KS-1

RE: Federal Bureau of Prisons Construction of a Federal Correctional Institution and Federal Prison Camp in Leavenworth, Leavenworth County, Kansas

Richard A. Cohn
Federal Bureau of Prisons
320 First Street, NW
Washington, D.C. 20534

Dear Mr. Cohn,

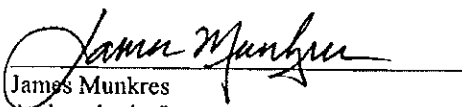
The Osage Nation Historic Preservation Office has received notification of the proposed project listed as Federal Bureau of Prisons Construction of a Federal Correctional Institution and Federal Prison Camp in Leavenworth, Leavenworth County, Kansas.

In accordance with the National Historic Preservation Act, (NHPA) [16 U.S.C. 470 §§ 470-470w-6] 1966, undertakings subject to the review process are referred to in S101 (d)(6)(A), which clarifies that historic properties may have religious and cultural significance to Indian tribes. Additionally, Section 106 of NHPA requires Federal agencies to consider the effects of their actions on historic properties (36 CFR Part 800) as does the National Environmental Policy Act (43 U.S.C. 4321 and 4331-35 and 40 CFR 1501.7(a) of 1969).

The Osage Nation has a vital interest in protecting its historic and ancestral cultural resources. **The Osage Nation requests that a cultural reconnaissance survey be conducted for the proposed Federal Bureau of Prisons Construction of a Federal Correctional Institution and Federal Prison Camp in Leavenworth, Leavenworth County, Kansas.**

Please contact the Osage Nation Historic Preservation Office with your response to this request. The Osage Nation looks forward to receiving and reviewing the cultural resource survey report for the Federal Bureau of Prisons Construction of a Federal Correctional Institution and Federal Prison Camp in Leavenworth, Leavenworth County, Kansas. The Osage Nation requires that cultural resource survey personnel and reports follow the Secretary of Interior's standards and guidelines.

Should you have any questions or need any additional information please feel free to contact me at the number listed below. Thank you for consulting with the Osage Nation on this matter.


James Munkres
Archaeologist I



The Pawnee Nation of Oklahoma
Tribal Historic Preservation Office
657 Harrison Street
Post Office Box 470
Pawnee, Oklahoma 74058
(918) 762-3654 Ext. 24
(918) 762-3662



January 31, 2011

Bridgette Lyles, Site Selection Specialist
Capacity Planning and Site Selection Branch
Federal Bureau of Prisons
320 First Street NW
Washington, D.C. 20534

RE: Requests for comment on proposal to construct a federal correctional institution and federal prison camp in Leavenworth, Kansas.

Dear Bridgette:

Thank you for submitting the referenced project proposal for our review and comment. Our comment on this project and its potential to affect historic properties is required by Section 106 of the National Historic Preservation Act of 1966, as amended, and implementing regulations 36 CFR Part 800.

Given the information provided, the Pawnee Nation has no known historic properties that would be affected by the project as proposed. Therefore, in accordance with 36 CFR 800.4(d) (1), you may proceed with the project(s) as planned.

Please retain this correspondence and your documented finding in order to show compliance with Section 106 of the National Historic Preservation Act, as amended. If you have any questions please do not hesitate to contact our office at (918) 762-3654 Ext. 24.

Sincerely,

A handwritten signature in cursive script that reads "Alice A. Alexander".

Alice A. Alexander, THPO
Tribal Historic Preservation Office

Xc: THPO



TECHNICAL MEMORANDUM

*The Louis Berger Group, Inc.
1250 23rd Street N.W. Washington D.C. 20037
Tel: (202) 331.7775 Fax: (202) 293.0787*

To: Dr. Timothy Weston
State Historic Preservation Office Archeologist
Kansas Historical Society
6425 SW 6th Avenue
Topeka, Kansas 66616-1099

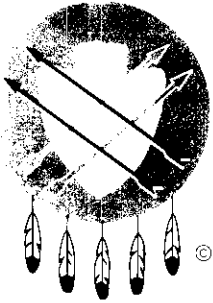
From: Christopher Schoen
The Louis Berger Group, Inc.
950 50th Street
Marion, Iowa 52302

Date: February 3, 2011

Re: Expanded Study Areas for FCI Leavenworth

The U.S. Department of Justice, Federal Bureau of Prisons (BOP) has recently expanded the EIS and Cultural Resource Survey study areas for the proposed Federal Correctional Institution (FCI) and Federal Prison Camp (FPC) at USP Leavenworth. To summarize, the North Site and the South Site study boundaries have been extended primarily to the north and east have been combined into what is now called the East Site. The Buffalo Pasture Site and the Camp Site have also been extended (primarily to the west) and combined into what is now called the West Site (See attached map). Bunkers have been reported in the wooded area in the north part of the East Site. A historic cavalry dump site also has been reported along Corral Creek in the wooded portion of the East Site. Since the study areas have changed, we are asking for confirmation from SHPO that the methods reviewed and approved by your office for the original Work Plan on December 1, 2010 can be applied to the expanded areas. Please let me know if there are any questions or you need additional information.





PEORIA TRIBE OF INDIANS OF OKLAHOMA

118 S. Eight Tribes Trail (918) 540-2535 FAX (918) 540-2538

P.O. Box 1527

MIAMI, OKLAHOMA 74355

CHIEF

John P. Froman

SECOND CHIEF

Jason Dollarhide

February 14, 2011

Richard A. Cohn, Chief
Capacity Planning and Site Selection Branch
Federal Bureau of Prisons
320 Frist Street, NW
Washington, DC 20534

RE: Notice of Public meeting to initiate the Environmental Impact Statement Process -
Proposal to construct a Federal correctional institution and Federal Prison Camp

Thank you for notice of the referenced project. Please note that the contact person has changed, Frank Hecksher is the new Section 106/NAGPRA representative. The Peoria Tribe of Indians of Oklahoma is currently unaware of any documentation directly linking Indian Religious Sites to the proposed construction. In the event any items falling under the Native American Graves Protection and Repatriation Act (NAGPRA) are discovered during construction, the Peoria Tribe request notification and further consultation.

The Peoria Tribe has no objection to the proposed construction. However, if any human skeletal remains and/or any objects falling under NAGPRA are uncovered during construction, the construction should stop immediately, and the appropriate persons, including state and tribal NAGPRA representatives contacted.

John P. Froman
Chief

xc: Bud Ellis, Repatriation/NAGPRA Committee Chairman

TREASURER
John Sharp

SECRETARY
Hank Downum

FIRST COUNCILMAN
Carolyn Ritchey

SECOND COUNCILMAN
Jenny Rampey

THIRD COUNCILMAN
Alan Goforth

6425 SW 6th Avenue
Topeka, KS 66615



phone: 785-272-8681
fax: 785-272-8682
email@kshs.org

Kansas Historical Society

Sam Brownback, Governor
Jennie Chinn, Executive Director

February 17, 2011

Christopher M. Schoen
Senior Archaeologist
The Louis Berger Group, Inc.
950 50th Street
Marion, Iowa 52302

RE: Federal Prison Expansion
U.S. Penitentiary Facility
Leavenworth County

Dear Mr. Schoen:

The Kansas State Historic Preservation Office has received your notice (dated February 7, 2011) of an expansion of the study areas for the upcoming Federal Prison Expansion project at the U.S. Penitentiary in Leavenworth. Our office believes that the field methods discussed and approved during the planning meeting held here at the Kansas State Historical Society on December 1, 2010 continue to be acceptable and can be applied to the expanded study areas.

This information is provided at your request to assist you in identifying historic properties, as specified in 36 CFR 800 for Section 106 consultation procedures. If you have questions or need additional information regarding these comments, please contact Tim Weston at 785-272-8681 (ext. 214) or Kim Gant at 785-272-8681 ext. 225. Please refer to the Kansas Review & Compliance number (KSR&C#) above on all future correspondence relating to this project.

Sincerely,

Jennie Chinn
Executive Director and
State Historic Preservation Officer


Patrick Zollner
Deputy State Historic Preservation Officer

APPENDIX B
SCOPE OF WORK

Schoen, Chris

From: Schoen, Chris
Sent: Tuesday, November 30, 2010 4:52 PM
To: Tim Weston
Subject: Cultural Resources Plan for Leavenworth
Attachments: Technical Memorandum for Work Plan.docx; Cultural Resources Plan Nov 29 2010.docx

Tim,

Attached is our cultural resources plan for the EIS work at Leavenworth.

See you tomorrow afternoon.

Chris

Christopher M. Schoen
Senior Archaeologist
The Louis Berger Group, Inc.
950 50th Street
Marion, Iowa 52302
(319) 373-3043 (tel) extension 3034
(319) 373-3045 (fax)
(515) 441-1226 (BlackBerry)
cschoen@louisberger.com

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TECHNICAL MEMORANDUM

2445 M Street N.W. 4th Floor Washington D.C. 20037

Tel: (202) 331.7775 Fax: (202) 293.0787

To: Dr. Timothy Weston,
State Historic Preservation Office Archeologist
Kansas Historical Society
6425 SW 6th Avenue
Topeka, Kansas 66615-1099

From: Christopher Schoen
The Louis Berger Group
950 50th Street
Marion, Iowa 52302

Date: November 29, 2010

Re: Cultural Resources Study Proposed Work Plan for FCI Leavenworth

cc: Cristy Boyd, Berger

Dr. Weston:

On behalf of the U.S. Department of Justice, Federal Bureau of Prisons (BOP), The Louis Berger Group, Inc. (Berger) is pleased to submit its proposed Cultural Resources Study work plan for the FCI Leavenworth project. The work plan was created using the approved scope of work prepared for our 2010 proposal to the BOP. Please review the attached and let me know if our proposed plan is acceptable. We look forward to seeing you this Wednesday afternoon in your office in Topeka. Sincerely, CS

CULTURAL RESOURCES PLAN FCI LEAVENWORTH, KANSAS

Introduction

The Louis Berger Group, Inc. (Berger) has been selected by the United States Department of Justice, Federal Bureau of Prisons (BOP) to prepare an Environmental Impact Statement and conduct associated cultural resources studies for the proposed development of a new Federal Correctional Institution (FCI) and Federal Prison Camp (FPC) at the United States Penitentiary (USP) in Leavenworth, Kansas. The following plan is drawn from the approved scope of services outlined in Berger's 2010 proposal to the BOP and is offered for review by the Kansas SHPO.

The BOP has identified three potential development sites within its Leavenworth property: the North Site, the South Site, and the Camp Site. The North Site includes 66 acres and is situated northeast of the USP. The South Site, located south of the North Site and east of the USP, encompasses 101 acres. These two alternative construction locations are currently undeveloped. The Camp Site is situated about 600 feet west of the USP and includes both the current prison camp area and the Buffalo Pasture south of the camp. Together these two tracts total approximately 102 acres.

As part of the EIS preparation, a cultural resource investigation survey report will be prepared for the alternative Kansas sites. The purpose of the cultural resource study will be to:

- Evaluate the nature and degree of prior disturbances within the proposed project areas that may affect the discovery and condition of extant archaeological deposits;
- Identify previously unrecorded prehistoric, proto-historic, and historic archaeological deposits; and standing structures;
- Evaluate all archaeological sites and architectural resources within the project area with respect to National Register of Historic Places (NRHP) criteria;
- Consult with the Kansas SHPO on the United States Penitentiary (USP) Leavenworth Historic District to define its boundaries and the contributing/non-contributing status of buildings within the district; and
- Conduct an Assessment of Effect for all of the alternatives with respect to any NRHP eligible archaeological sites and the NRHP-eligible USP Leavenworth Historic District.

The study will be performed to comply with relevant federal and state laws, regulation, and requirements including, the National Historic Preservation Act (NHPA) of 1966 (as amended through 1992); 36 CFR 800 (as revised in 1999); the Secretary of the Interior's Standards and Guidelines (Federal Register 48:190 44716 through 44742); Executive Order 11593; 32 CFR 66; 36 CFR 660-666, as appropriate; the Archaeological and Historical Preservation Act of 1974; the Native American Graves Protection and Repatriation Act (NAGPRA) of 1990; the National Environmental Policy Act (NEPA) of 1969; the State Historic Preservation Act of 1977 (K.S.A. 75-2715 through 75-2725); the Unmarked Burial Sites Preservation Act of 1989 (K.S.A. 75-2741 through 75-2754); and the Kansas SHPO Guidelines for Archeological Surveys and Reports (1999 as amended in 2003).

Environmental Setting

The topography of the undeveloped construction alternatives (the North Site and South Site) consists of gently rolling hill slopes. Elevations range from 825 to 890 feet above mean sea level (amsl). A drainage crossing east-northeastward from the northwest part of the South Site empties into a wetland at the north-central part of the South Site and a large pond in the southeastern part of the North Site. A second large pond is at the north side of the North Site.

The topography of the undeveloped Buffalo Pasture consists of a small valley formed by a tributary of Threemile Creek with elevations ranging from 830 to 860 feet amsl. The area within the Camp Site tract is fairly level with an elevation of about 860 feet except in the northwestern portion which increases to about 880 feet.

The Natural Resources Conservation Service (NRCS) Web Soil Survey identifies the soils in the North Site as Sharpsburg silty clay loam, 1 to 4 percent slopes on the highest elevations and Sharpsburg silty clay loam, 4 to 8 percent slopes on the adjacent hill sides. Ladoga silt loam, 3 to 8 percent slopes is present on the lower hill sides and Knox silt loam, 7 to 12 percent in the areas of the ponds. Sharpsburg soils are moderately well drained and formed from loess. Ladoga soils also are moderately well drained and formed from loess. Knox silt loam is well drained and formed of fine-silty loess.

The soil identified by the NRCS at the location of the extant prison camp is Sharpsburg silty clay loam, 1 to 4 percent slopes. The soil is present in the northwest part of the Buffalo Pasture, but the rest of the rectangular tract is composed of Sharpsburg silty clay, 4 to 8 percent slopes.

The native vegetation of the project area was historically composed of tall grass prairies species. Currently, the vegetation consists of primarily exotic grass species which are regularly maintained by mowing. Black willow, golden rod, wild grape, and sycamore are present along drainage swales and ponds.

Some disturbances to the proposed project sites have occurred. The east-flowing drainage between the North Site and South Site has been dammed to create a large pond. A short drainage at the north side of the North Site also has been dammed to create a pond. According to a report prepared by TEC INC in 2009, water mains have been installed along the north, west and south sides of the FPC buildings in the Camp Site and two structures situated along the south margin of the South Site 2 (TEC INC 2009a). A water easement extends through the western quarter of the Buffalo Pasture and near the western boundary of the Camp Site. An electrical easement extends through the center of the South Site, through the center and northwestern portions of the North Site, and along the northern margin of the Camp Site. A line of utility poles runs northward through the South Site and North Site. In 1995, GeoSystems Engineering, Inc. reported a paint can disposal area encompassing about 2.5 acres in the northwest portion of the South Site and disposal trenches in the hill at the southwest part of the South Site that encompass about 5.3 acres. An oil dumping site intrudes into the western side of the South Site. Construction of the FPC has resulted in disturbance from grading, construction of facilities, and utility installation in the approximately 25-acre compound.

Previous Investigations

Two archaeological investigations have been made in the area of the three proposed construction site alternatives. In 1977, Kansas State Historical Society archaeologists, Donald Rowilson and Thomas Barr

made an archaeological inventory of the Fort Leavenworth Military Reservation for the United States Corps of Engineers (USACE), Kansas City District. The survey consisted of a pedestrian reconnaissance. No subsurface testing was performed. Three archaeological sites were identified within the boundaries of the proposed North Site: 14LV364, 14LV365, and 14LV366. Site 14LV364 is a small prehistoric camp or lithic reduction site on a ridge toe in the northwestern part of the North Site area. Artifacts included a biface, a corner-notched projectile point base, a scraper section, a core remnant, two flakes, and mollusk fragments. Site 14LV365 is situated on a knoll on a ridge toe in the northeast part of the North Site and includes both prehistoric and historic artifacts. Prehistoric items include two biface sections, a hammerstone, two possible celts, two core fragments, and 44 flakes. Historic items include two brass cartridges, a bullet, a picket pin, a mule shoe, a metal chain segment, and bottle glass. Site 14LV366 is a prehistoric camp or lithic reduction site located on a ridgetop in the southwest part of the North Site. Artifacts include a core remnant and four flakes. The three sites have not been evaluated with regard to National Register eligibility.

In 1988, the American Resources Group, Ltd. (McNerney et al. 1988) reported archaeological survey and site evaluations performed on the Fort Leavenworth Military Reservation for the USACE, Kansas City District. A portion of this survey included approximately 26 acres in the northeastern portion of the South Site and about 7.0 acres in the southeastern part of the North Site. Among the 35 archaeological sites recorded were two in the central portion of the proposed South Site: 14LV110 and 14LV111. Site 14LV110 is a historic dump strung along an intermittent drainage with butchered cow and pig bone and broken dishes, bottle glass, and other materials dating from the early twentieth century and associated with the early history of the USP. It was investigated by pedestrian survey and excavation of eight shovel tests at five-meter intervals. This site was recommended potentially eligible for listing in the NRHP. Site 14LV111 consists of an isolated find of one chert flake in a bulldozed area by a cattle loading facility. The site was investigated by pedestrian survey. This site was recommended not eligible for listing in the NRHP. Although Sites 14LV110 and 14LV111 were recorded by McNerney et al., the official boundaries of this survey on the Kansas SHPO global information systems (GIS) database lies only in the northern third of Site 14LV110 and north of Site 14LV111.

In 2009, TEC, Inc. completed a reconnaissance study of the proposed three alternatives. Data was collected on topography, geology, soils, surface water, groundwater, hazardous waste, natural resources, cultural resources, socioeconomic resources, and utilities to determine whether potential impacts to these resources or impacts to the project by these resources would make the site non-viable alternatives. The study was performed using desktop research on available on-line information from state and federal agencies, available reports, and site visits (TEC INC 2009a:4).

In the above-mentioned report, TEC INC conducted background research at the Kansas SHPO and identified the NRHP-eligible USP Leavenworth Historic District within and adjacent to the three proposed construction areas. A previously un-surveyed pillbox structure was also identified. TEC INC proposed an NRHP evaluation of all un-identified structures; and determination, through consultation with the Kansas State Historical Preservation Office (SHPO), of the USP Leavenworth Historic District boundaries and contributing/noncontributing status of buildings, structures, and landscapes within the district.

TEC INC prepared a cultural resources action plan (2009b) based on the results of the reconnaissance study. TEC INC recommended that the five archaeological sites be evaluated for National Register eligibility if any of the sites fall within the area of potential effect (APE) for the proposed project (TEC INC 2009b:7, 10). TEC INC acknowledged that the three project areas each have potential for subsurface

archaeological resources (though the potential may be more limited in the South and Camp Sites) as the soils are ideal for archaeological preservation. They observe that disturbance has occurred as a result of cultivation and construction of ponds and structures, but state that the presence of subsurface archaeological resources should not be dismissed (TEC INC 2009b:7, 11, 13).

Based on the results of previous investigations, topography, and soils, it is anticipated that intact prehistoric, proto-historic, and historic archaeological deposits may be found near the ground surface on ridge tops and gentle slopes and historic materials associated with the USP along drainages in the North Site and South Site areas. Shallowly deposited prehistoric, proto-historic and historic archaeological remains are expected at locations not previously disturbed by construction for the FPC in the Camp Site areas (including the Buffalo Pasture). Berger considers the potential for deeply buried archaeological sites to be low and is not recommending trenching as part of these archaeological investigations. Pedestrian survey combined with shovel testing are recommended to determine the presence or absence of archaeological resources in the three proposed alternative construction sites.

Berger will perform a cultural resource survey for the three alternative site locations to provide a 100% inventory of all archaeological sites within the project areas and an initial evaluation of discovered sites and of the architectural merit of any standing structures or historic foundations within the project boundaries that address NRHP evaluations.

Background Research and Consultation

Berger will conduct background research to obtain complete site information for the five previously identified archaeological sites in the North Site and South Site areas (14LV110, 14LV111, 14LV364, 14LV365, and 14LV366), including site maps showing the locations of subsurface testing. This information will be used to plan any additional testing at these sites. Additional background research also will be performed for structures in the three alternative c sites to evaluate their National Register eligibility. This information will be largely obtained from the State Historic Preservation Office at the Kansas State Historical Society in Topeka and from the USP at Fort Leavenworth. The results of the new and previous research will be incorporated into the current Cultural Resource Study Report.

Berger will consult with the Kansas SHPO and USP officials regarding cultural properties and to coordinate activities on the USP grounds. Berger Architectural Historians will consult with SHPO regarding the USP Leavenworth Historic District boundary and contributing/non-contributing resources within the district. If warranted, additional fieldwork within the historic district will be conducted. Upon invitation by the Bureau of Prisons and/or Kansas SHPO, Berger will participate in consultation with Native American tribes who have interests in the project or the project location because of prehistoric or historic residency.

Background research for the architectural history survey will include previous surveys and nominations completed for USP Leavenworth such as the Historic Structures Report completed in 2005 (BELL Architects et al, December 2005); The Cultural Resources Action Plan for USP Leavenworth prepared in 2009 by TEC INC; and the NRHP nomination form for Fort Leavenworth. The Berger assumes that development of significant additional historic contexts will not be necessary for the project. Berger will consult with on-site facility staff to locate building records and inventories. If necessary, Berger will conduct background research at the Combined Arms Research Library at Fort Leavenworth and the Kansas SHPO.

Archaeological Fieldwork

The purpose of the fieldwork is to determine the presence or absence of prehistoric, proto-historic, and historic archaeological resources within the project area. The survey is intended to provide an inventory of all archaeological sites within the project area, and an evaluation of those sites in terms of National Register criteria.

Previous survey in the proposed project area consists almost entirely of pedestrian reconnaissance (Barr and Rowison 1977; McNerney et al. 1988), although eight shovel tests were excavated at close intervals at Site 14LV111. Except where significant subsurface disturbance has been previously documented (e.g. the penitentiary camp complex, the pillbox, the water ponds, a water line, electrical lines, utility poles, a paint can disposal area, disposal trenches, and oil dumping), ground disturbances across the project area appears to consist primarily of erosion and plowing. While these factors can mix or somewhat move materials in archaeological deposits located within 30 centimeters of the ground surface, the degree of disturbance can vary greatly and deeper deposits will be unaffected.

1. Pedestrian Survey

A visual inspection of the entire study area will be conducted. Those areas where overall ground surface visibility is greater than 30 percent will be subjected to systematic pedestrian survey at intervals not to exceed 10 meters. Oakfield soil probes may be used to confirm the nature of the soil, the depth of the plowzone, and potential for buried archaeological resources. Bank exposures of drainages will be inspected for evidence of buried archaeological deposits.

2. Subsurface Survey

In areas of less than 30 percent surface visibility and in areas judged to have a high potential for subsurface archaeological deposits regardless of the surface visibility, subsurface survey will take place through shovel testing. It is anticipated that the approximately 63 percent of the total project area (about 169 of 269 acres) will need subsurface shovel testing. Although the terrain in the North Site and South Site areas has been characterized as "gently rolling" (TEC INC 2009a:5) the topographic map of the area indicates some areas with slopes too steep to include intact archaeological deposits, in particular in upper reaches of the drainage the northern part of the South Site. The ponds in the North Site and South Site areas and the railroad grade through the Buffalo Pasture need not be subjected to subsurface testing. As noted above, GeoSystems Engineering, Inc. (1995) reported a paint can disposal area encompassing about 2.5 acres in the northwest portion of the South Site and disposal trenches in the hill at the southwest part of the South Site that encompass about 5.3 acres. Houses and other structures are present along the southern margin of the South Site. The extant structures for the FPC encompass about 2.0 acres. These disturbed areas also will not require subsurface testing.

Generally, both prehistoric and historic archaeological sites are situated on landforms which are usually dry and level, near reliable sources of water, and often near timber for fuel and construction material. Sites are commonly located on terraces, hill tops, bluff tops, and ridge tops to take advantage of vista that allow game animals or enemies to be observed at a distance. Sites currently known in the vicinity of the project follow this pattern. Therefore, shovel testing will target these landforms.

Shovel test pits will be excavated along transects at 30-meter intervals. Transects will be placed 30 meters apart and oriented in cardinal directions to create an overall gridwork. While a grid will be

maintained across each of the three areas, shovel tests will not be excavated at locations with slopes too steep to include intact archaeological deposits or which have been disturbed by modern construction, utility installation, or waste disposal. If a site is identified, shovel tests will be excavated at 5-meter intervals outward from the outer-most positive shovel tests until two consecutive negative shovel tests are encountered to define site boundaries. This method follows the guidelines recommended by the Kansas SHPO (2003). In all, it is anticipated that 1,900 shovel tests will be excavated to complete the archaeological survey fieldwork.

In addition to defining the boundaries of each new or previously recorded site, the results of the subsurface testing will be used to make preliminary recommendations for each site with regard to the site's eligibility for listing in the National Register of Historic Places. Currently no National Register evaluations have been made for Sites 14LV110, 14LV111, 14LV364, 14LV365, and 14LV366 and sufficient shovel testing is planned to permit preliminary recommendations concerning National Register eligibility.

Shovel test pits will be a minimum of 30 centimeters in diameter and will be stratigraphically excavated in cultural and natural levels to a depth between 35 and 90 centimeters below the surface. Each test will be excavated at least 10 centimeters into culturally sterile subsoil. Notes on each shovel test will be maintained on standardized forms developed by Berger. Information recorded will include the profile, soil color, soil texture and type, and material recovered from the test. All soil from these excavations will be screened using 1/4 inch mesh hardware cloth. The locations of all shovel test pits will be recorded on project maps and a representative photographic record of the study area will be made to document survey conditions.

Investigations will include the preparation of site maps depicting artifact distribution and disturbance areas. These maps will illustrate a site's boundaries in relation to prominent topographic and natural landmarks in the vicinity. Shovel tests will also be depicted on these maps. Based on the size and scale of the project and pattern of site location within a one-mile radius of the project area, it is projected that approximately 10 archaeological sites and up to 10 isolated finds will be located within the combined three proposed alternative sites.

Architectural Survey

Berger will conduct architectural survey of any un-evaluated properties within the USP Leavenworth Historic District. According to the reconnaissance report completed by TEC INC in 2009, a small pillbox type structure was the only un-evaluated property in the project area (TEC INC 2009b). Depending on the results of the background research and SHPO consultation, it might also be necessary to re-evaluate the district boundary and contributing/non-contributing status of the buildings within the district by way of a full reconnaissance survey of the historic district and surrounding properties. This survey would assess alterations and additions to or removal of buildings that may change their contributing status and/or the district boundary.

Laboratory Processing and Analysis

All artifacts recovered through the proposed survey will be washed, cataloged, and sorted by general category for analysis. For diagnostic prehistoric artifacts, analysis will include functional, typological, and morphological descriptions. Historic artifact analysis will include functional and temporal definitions. For

both diagnostic and nondiagnostic artifacts, analysis will consist of tabulation of items by artifact class. Spatial analysis for each site will be conducted to better define potential activity areas and features.

All cultural materials collected and curated, along with all records of this contract, shall be cared for in accordance with the requirements set forth in 36 CFR Part 79, and cataloging procedures will be consistent with the guidelines provided by the Kansas State Historical Society. All artifacts and pertinent data (i.e. field notes, photographs, etc.) generated during the study will be submitted to Laboratory for curation, with concurrence with the Bureau of Prisons. Materials will be transported to the Laboratory by Berger. Official state archaeological numbers will be established for each site identified during the study and site specific information will be submitted to the Kansas State Historic Preservation Office.

Report Preparation

The cultural resource investigation will culminate in a technical report. The report will provide the Bureau and the State Historic Preservation Officer (SHPO) the information necessary to assess (1) the significance of any cultural resources identified within the study area; and (2) the effect of the proposed alternatives on the USP Leavenworth Historic District and any cultural resources that are individually eligible for listing in the NRHP. The technical report will include a full justification of the field methods, a detailed description of the results, and the analysis of the materials. Graphics will be used to support the text and present geographic information including, but not limited to: the location of the study area within the region and on a USGS 7.5-minute quadrangle map; the location of all subsurface tests; the location and dimensions of any archaeological sites and isolated finds that may be identified; map of the USP Leavenworth Historic District boundary and contributing/non-contributing resources; and maps of individual sites that may be identified.

A series of site-specific and area-specific recommendations will be presented. These discussions will include aspects that may require immediate attention as well as others that may be more long-range issues. Berger will also give complete descriptions of the reason(s) for this recommendation. Appended to the body of the report will be a completed Kansas State Historical Society Archeological Site Form for each new site and updated site forms for each previously recorded site that is investigated.

Kansas Historic Resources Inventory (KHRI) forms will be completed for all newly surveyed architectural properties within the project area. In addition, a KHRI form will be completed for the USP Leavenworth Historic District should the existing boundary and/or contributing/non-contributing status of resources within the district change as a result of the survey.

The planned cultural resource activities in this scope of work are designed to satisfy the minimum requirements for archaeological survey, architectural survey of any un-evaluated properties within the USP Leavenworth Historic District, and any needed re-evaluation of the district boundary and contributing/non-contributing status of buildings in the district in accordance with the guidelines of the Kansas SHPO.

References

Barr, Thomas P., and Don D. Rowlison

1977 Archeological Inventory of the Fort Leavenworth Military Reservation, Leavenworth County. Prepared for the U.S. Army Corps of Engineers, Kansas City District, Contract No. DACA41-76-C-0030 by the Archeology Department, Kansas State Historical Society, Topeka, Kansas.

BELLArchitects, Robinson and Associates Inc., Conservation Solutions, Inc., Project Cost, Inc.

2005 *USP Leavenworth: Final Historic Structures Report*. Prepared for J.C. Chang and Associates in association with the Federal Bureau of Prisons, Washington, D.C.

McNerney, Michael J., Mark J. Wagner, Marie R. McCorvie, Terrance J. Martin, and Kathryn E. Parker

1988 *Phase I, II, and III Archaeological Investigations at Fort Leavenworth, Kansas*. Cultural Resources Management Report No. 132. Prepared for the U.S. Army Corps of Engineers, Kansas City District by American Resources Group, Ltd., Carbondale, Illinois.

TEC INC

2009a *Cultural Resources Action Plan for USP Leavenworth, North Site, South Site, and Camp Site*. Prepared for the Federal Bureau of Prisons, Washington, D.C. by TEC INC, York, Pennsylvania.

2009b *Site Reconnaissance Report for USP Leavenworth, North Site, South Site, and Camp Site*. Prepared for the Federal Bureau of Prisons, Washington, D.C. by TEC INC, York, Pennsylvania.

APPENDIX C
RESUMES OF KEY PERSONNEL



THE Louis Berger Group, INC.

Cultural Resources

CAMILLA DEIBER
Architectural Historian

EDUCATION

MS, Historic Preservation, Ball State University, 1994
BFA, Interior Design, Iowa State University, 1991

PROFESSIONAL TRAINING

Advisory Council on Historic Preservation, Introduction to Federal Projects and Historic Preservation Law, Chicago, 1999
SRI Foundation, Inc, Section 106 in the New Regulatory Environment, Lynne Sebastian, PhD, Marion, Iowa, 1999

PROFESSIONAL AFFILIATIONS

National Trust for Historic Preservation
Historic Landmarks Foundation of Indiana

PROFESSIONAL EXPERIENCE

Years with The Louis Berger Group, Inc.: 10
Total Years of Experience: 15

Camilla Deiber is an architectural historian with 15 years of experience in historic preservation and cultural resource consulting. She serves as principal investigator for projects involving architectural resources and has conducted historical research and surveys for projects in fulfillment of Sections 106 and 110 of the National Historic Preservation Act of 1966 and the National Environmental Policy Act. Ms. Deiber has extensive experience in completing architectural surveys; historical research; National Register nominations, multiple property documents, and eligibility assessments; historic property documentations; and large-scale historic context studies in numerous states, including Arizona, Iowa, Minnesota, Nebraska, North Carolina, Oregon, and South Dakota. Ms. Deiber has conducted surveys and documentations for the Iowa and Minnesota Departments of Transportation. She has also conducted several statewide thematic surveys, including a combined reconnaissance and intensive-level survey of more than 800 public schools in Iowa, an intensive-level survey of armory facilities in Oregon and North Carolina, and a combined reconnaissance- and intensive-level survey of 200 barns in northeastern South Dakota.

SELECTED PROJECTS

ENERGY

Natural Resource Group, Inc, REX-East Pipeline, Morgan, Decatur, Johnson, Franklin Counties, Indiana. Database creator and coordinator. Responsible for designing and coordinating data population for over 500 archaeological sites identified during Phase I and Phase II cultural resource investigations over a five-county region in Indiana. 2007-2008

FEDERAL: MILITARY

North Carolina Army National Guard, Integrated Cultural Resource Management Plan (ICRMP) Update. Principal investigator. Completed statewide ICRMP using the National Guard Bureau ICRMP template and Microsoft Access database. Project involved synthesizing data from the previous ICRMP and from cultural resource projects conducted within the past five years. 2007-2009



Arizona Department of Emergency & Military Affairs, Documentation of Navajo Ordnance Depot, Bellemont, Coconino County, Arizona. Principal investigator. Completed recordation of World War II ordnance depot located just south of Bellemont. The 28,347-acre depot was recommended as eligible for listing in the National Register as a historic district. 2007-2008

Arizona Department of Emergency and Military Affairs, Historic Building Survey of National Guard Armories and Papago Park Military Reservation, Statewide, Arizona. Principal investigator. Conducted architectural survey and National Register evaluation of National Guard armories and of the Headquarters of the Arizona Army National Guard, located in Phoenix. 2005-2006

Iowa Army National Guard, History of African-Americans at 13th Cantonment of World War I Camp Dodge, Polk County, Iowa. Principal investigator. Developed historic context of African-Americans in the World War I Cantonment at Camp Dodge in support of archaeological investigations and future historical programs at Camp Dodge. Conducted research to trace burial records of 182 Camp Dodge influenza victims who were believed to be buried in a mass grave on the cantonment. 2005

Iowa Army National Guard, Archaeological Investigation of Components of the 13th Cantonment of World War I Camp Dodge, Polk County, Iowa. Principal investigator. Conducted background research on World War I cantonment in support of archaeological investigations. 2005

Iowa Army National Guard, Iowa Historic Property Study: Camp Dodge Swimming Pool Complex, Camp Dodge, Polk County, Iowa. Principal investigator. Conducted a recordation of the Camp Dodge Swimming Pool Historic District that includes a football-field size swimming pool, bathing pavilion, and concession stand. 2004-2005

North Carolina Army National Guard, North Carolina National Guard Armory Inventory and National Register Evaluation. Principal investigator. Conducted architectural survey of 27 National Guard properties and developed statewide historic context. 2004-2005

Iowa Army National Guard, Intensive Architectural Survey and National Register Evaluation of Iowa National Guard Armories, Various Counties, Iowa. Principal investigator. Conducted expanded historical research and architectural survey of National Guard armories in Mapleton, Clarinda, and Iowa City, Iowa. 2004-2005

For Oregon Army National Guard, Oregon National Guard Armory Inventory and National Register Evaluation. Principal investigator. Conducted architectural survey of 18 National Guard properties and developed statewide historic context and National Register Multiple Property Document. 2003-2004

FEDERAL: NATIONAL PARK SERVICE (NPS)

State Historical Society of Iowa and National Park Service, Multiple Property Document, Public Schools for Iowa: 1848-1966, Statewide. Co- principal investigator. Conducted statewide reconnaissance and intensive architectural survey, historical context research, National Register nominations, and Multiple Property Documentation form for town and city schools in Iowa. 2001-2002

State Historical Society of Iowa, Amana Society, and National Park Service, Multiple Property Document, Agricultural Buildings and Structures of the Amana Colonies, Iowa County, Iowa. Co-principal investigator. Conducted architectural survey, historical context research, and National Historic Landmark Criteria evaluation of agricultural buildings and structures. 2000-2001



LOCAL, COUNTY, AND STATE GOVERNMENTS

South Dakota State Historical Society, Architectural Re-survey of Historic Districts in Yankton and Vermillion, Yankton and Clay Counties, South Dakota. Principal investigator. Conducted re-survey of four historic districts listed in the National Register. The districts were nominated in the 1970s and 1980s. Each property was recorded with digital photographs and information in the South Dakota State Historic Preservation Office inventory database was updated. 2008

South Dakota State Historical Society, Reconnaissance-Level Architectural Survey of Beadle County, South Dakota. Principal investigator. Surveyed 1,500 properties in the Beadle County seat of Huron. Supervised teams of architectural historians conducting surveys of Huron and the remainder of the county. Organized survey data and wrote technical report. Survey identified 242 properties that were potentially eligible for listing in the National Register either individually or as contributing properties in historic districts. 2007-2008

Fayette County Road Department, Historic Brochure/Pictorial Display for the Historic Bridges of Fayette County, Iowa. Principal investigator. Completed research and photographic documentation for the production of display boards and accompanying brochure illustrating the history and significance of the county's historic bridges in lieu of a Historic Property Study of the bridge. The project was conducted to mitigate the adverse affect of the replacement of the Stoe Creek Bridge in Fayette County. 2007

South Dakota State Historical Society, Reconnaissance-Level Architectural Survey of Dewey and Ziebach Counties, South Dakota. Principal investigator. Surveyed 541 properties on the Cheyenne River Sioux Reservation, which comprises Dewey and Ziebach counties. Organized survey data and wrote technical report. Survey identified 25 properties that were potentially eligible for listing in the National Register. 2006-2007

City of Atlantic, Iowa, Iowa Historic Property Study of the Dawson Farmhouse, Atlantic, Cass County, Iowa. Principal investigator. Completed architectural documentation of circa 1882 vernacular farmhouse slated for demolition in preparation for an expansion of the Atlantic airport. 2006

South Dakota State Historical Society, Reconnaissance and Intensive-Level Architectural Survey of Marshall County, South Dakota. Principal investigator. Conducted reconnaissance-level survey of 575 properties in Marshall County, located in the extreme northeast corner of the state. The survey identified 25 properties that were potentially eligible for inclusion in the National Register. 2005-2006

City of Atlantic, Iowa, Intensive Structural Investigation of the Comes Farmhouse, Atlantic, Cass County, Iowa. Principal investigator. Conducted structural investigation of the late nineteenth-century vernacular farmhouse for evidence of a log structure. House was slated for demolition for a runway extension at the Atlantic airport. LBG removed small sections of wall within the circa 1882 house and circa 1900 addition and concluded that no log structure was present. 2005

Nebraska State Historical Society, Reconnaissance-Level Architectural Survey of Sioux and Dawes Counties, Nebraska. Principal investigator. Conducted county-wide architectural surveys of Sioux and Dawes Counties in the Nebraska Panhandle. Project involved completion of a general contextual narrative on each county and on the history of ranching in both counties. 2004-2005

South Dakota State Historical Society, Reconnaissance and Intensive-Level Architectural Survey of the Barns of Northeastern South Dakota. Principal investigator. Conducted combined reconnaissance- and intensive-level survey of 201 barns in a 22-county region. 2004



City of Maquoketa, Cultural Resource Investigations for Proposed Water System Improvements in the City of Maquoketa, Iowa. Principal investigator. Conducted architectural survey and assessment of effect for proposed water improvements. 2003-2004

City of Keokuk, Architectural Resource Survey for Proposed Improvements to Main Street between 7th and 14th Streets, Keokuk, Lee County, Iowa. Principal investigator. Conducted architectural survey and historical context research along a seven-block corridor in downtown Keokuk. 2002

City of Mason City, Cultural Resource Investigations, Mason City Radium Removal Project, Cerro Gordo County, Iowa. Principal investigator. Conducted architectural survey for proposed improvements to city water and treatment facilities. 2002

Allamakee County Engineer, Cultural Resource Investigations of the Bridge Over the Yellow River at Ion, Allamakee County, Iowa. Principal investigator. Conducted architectural survey and historical research for bridge replacement project. 2000

Office of the Wapello County Engineer, Cultural Resource Investigations, Blakesburg, Wapello County, Iowa. Principal investigator. Conducted architectural survey for bridge replacement project in Blakesburg. 1999-2000

PRIVATE SECTOR

United States Postal Service, Historic Structure Reports: St. Paul Post Office and Customs House and St. Paul Union Depot, St. Paul, Minnesota. Principal investigator. Completed Historic Structure Reports for the potential sale of the St. Paul PD&C. 2007-2008

United States Postal Service, National Register Evaluation of the St. Paul PD&C, St. Paul, Ramsey County, Minnesota. Principal investigator. Completed National Register evaluation of the St. Paul PD&C, which includes the St. Paul Post Office and Customs House and Walkway, Concourse, and Train Deck of the National Register-listed Union Depot. 2007

French-Reneker-Associates, Inc., Cultural Resource Investigations, Route 2, Appanoose and Davis Counties, Iowa. Principal investigator. Conducted architectural survey and historical context research along 17-mile corridor slated for improvement. 2001

Alliant Energy, MidAmerican Energy, The SI Group, Rescom Environmental Corporation, Terracon, and Tri-Leaf, Cellular Tower Reconnaissance and Intensive Surveys, Iowa. Principal investigator. Conducted architectural field investigations for over 120 cellular and communication towers in Iowa. 2000-2001

MMS Consultants, Inc., Cultural Resource Investigations, Proposed Southgate Subdivision, Johnson County, Iowa. Principal investigator. Conducted assessment of effects of proposed subdivision development on the National Register-listed McCollister Farmstead. 2000

TRANSPORTATION

Iowa Department of Transportation, Iowa Historic Property Study: Iowa Highway 3 Bridge over the West Branch of the Des Moines River, Humboldt, Humboldt County, Iowa. Principal investigator. Completed recordation of steel deck plate girder bridge slated for replacement. 2008-2009

Iowa Department of Transportation, Evaluation of Stone Retaining Walls and Steps of the National Register Listed St. Matthews's By the Bridge Episcopal Church Property, Iowa Falls, Hardin County,



Iowa. Principal investigator. Completed evaluation of stone retaining walls and other landscape features on church property under National Register Criteria. Planned improvements to the adjacent Oak Street Bridge had the potential to have direct effects on the National Register property, particularly the retaining wall and steps. 2008

Iowa Department of Transportation, Iowa Historic Property Study: Manthei Ford Garage, Maynard, Iowa. Principal investigator. Completed recordation of a tile block automobile garage with an extensive history of automobile garages in Iowa's smaller towns. 2006

Minnesota Department of Transportation, Phase I/II Architecture/History Investigation for Five Proposed Alternative Route Corridors for Trunk Highway 41, Carver and Scott Counties, Minnesota. Principal investigator. Conducted Phase I architectural survey of 619 properties in the Chaska and Carver area and Phase II evaluations for 26 properties. 2005

Iowa Department of Transportation, Architectural Resource Survey For Proposed Replacement of Oak Street Bridge, Iowa Falls, Iowa. Principal investigator. Conducted architectural survey and historical context research for bridge replacement in Iowa Falls. 2005

Iowa Department of Transportation, Iowa Historic Property Study: Des Moines River Bridge, Keosauqua, Iowa. Principal investigator. Conducted recordation of a camelback Warren through truss bridge. 2005

Iowa Department of Transportation, Intensive Architectural Survey and National Register Evaluation of the Iowa 370 Bellevue Bridge, Mills County, Iowa. Principal investigator. Conducted architectural survey and historical research for proposed replacement of the Bellevue Bridge. 2005

Iowa Department of Transportation, Iowa Historic Property Study: Des Moines Double House, Des Moines, Iowa. Principal investigator. Conducted recordation of a brick double house at 900 Lyon Street in Des Moines. Completed a reconnaissance survey of other double houses in the metropolitan area, conducted background research on the history of the house type in the city, and completed a booklet entitled, "Leading Double Lives: The History of the Double House in Des Moines." 2005

Iowa Department of Transportation, Cultural Resource Investigations for Proposed Improvements to the Iowa Highway 1 Bridge Over the Des Moines River at Keosauqua, Van Buren County, Iowa. Principal investigator. Conducted architectural survey and historical context research for bridge replacement in Iowa Falls. 2004

Iowa Department of Transportation, Cultural Resource Investigations, Iowa Highway 60, Bigelow Bypass, Osceola County, Iowa. Principal investigator. Conducted architectural survey and historical context research along a 1.4-mile bypass corridor. 2004

Iowa Department of Transportation, Iowa Historic Property Study, Werner House, Jefferson County, Iowa. Principal investigator. Conducted historical research and prepared statement of significance for recordation of late nineteenth-century vernacular Queen Anne-style house located on proposed four-lane U.S. Highway 34. 2002

Cultural Resource Investigations, Trunk Highway 53, St. Louis County, Minnesota. Principal investigator. Conducted architectural survey and historic context research along a 2-mile corridor and bridge slated for improvement. For the Minnesota Department of Transportation, St. Paul. 2001



Minnesota Department of Transportation, Phase II Historical Evaluation of the Wilder Creamery, Jackson County, Minnesota. Principal investigator. Conducted architectural survey and historical context research on the Wilder Creamery to determine its eligibility for listing in the National Register. 2000

Iowa Department of Transportation, Iowa Historic Property Study, Maasdam Farmstead, Jefferson County, Iowa. Principal investigator. Conducted historical research and prepared statement of significance for recordation of early twentieth-century stock-raising farm located at an interchange of proposed four-lane U.S. Highway 34. 2002

Iowa Department of Transportation, Cultural Resource Investigations, U.S. Highway 30, Tama and Benton Counties, Iowa. Principal investigator. Conducted architectural survey and historical context research along 27-mile corridor slated for improvement. 2002

Iowa Department of Transportation, Cultural Resource Investigations, U.S. Highway 20, Woodbury, Ida, and Sac Counties, Iowa. Principal investigator. Conducting architectural survey and historical context research along 44-mile corridor slated for improvement. 2001-2002

Iowa Department of Transportation, Iowa Historic Property Study, Ross/McCabe Barn, Henry County, Iowa. Principal investigator. Conducted historical research and photographic documentation and prepared statement of significance of turn-of-the-century barn located at the intersection of U.S. 218 and U.S. 34 that was slated for improvement. 2001-2002

Minnesota Department of Transportation, Cultural Resource Investigations, Trunk Highway 27, Douglas County, Minnesota. Principal investigator. Conducted architectural survey and historical context research along 7-mile corridor slated for improvement. 2001

Minnesota Department of Transportation, Cultural Resource Investigations, Trunk Highway 53, St. Louis County, Minnesota. Principal investigator. Conducted architectural survey and historical context research along 2-mile corridor and bridge slated for improvement. 2001

PAST PROFESSIONAL EXPERIENCE

Historical Society of Iowa, Amana Society, and National Park Service, Co-author of Multiple Property Documentation Form: Agricultural Buildings and Structures of the Amana Colonies, Iowa County, Iowa. 2001.

Historic Landmarks Foundation of Indiana. Program Coordinator, Southeast Field Representative, Program assistant. Historic Landmarks Foundation of Indiana. Provided technical assistance to property owners, preservation organizations, historic preservation commissions, city/county governments, and museums. 1995-1999. Major projects included the following.

West Baden Historic Preservation Commission, Design Guidelines for the Rehabilitation of the West Baden Springs Hotel Historic District, West Baden, Indiana. 1996.

West Baden Historic Preservation Commission, Rehabilitation Guidelines for the Homestead Hotel Historic District, West Baden, Indiana. 1996.

Jeffersonville Historic Preservation Commission, Illustration and publication of Old Jeffersonville Historic District Design Guidelines, Jeffersonville, Indiana. 1995.



West Baden Springs Hotel, West Baden, Indiana. Tour Guide. 1997.

Town of West Baden, National Register Nomination for the Homestead Hotel, West Baden, Indiana. 1997.

Owners- Mr. and Mrs. Stewart, National Register Nomination for Sweet Gum Stables, New Albany, Indiana. 1995.

Summer Internship, South Dakota Historic Preservation Center, Vermillion, South Dakota. Assisted SHPO staff in creating database of office library and in researching for National Register nominations. 1994. Major projects included the following.

Architectural Style Guide. For Emergency Flood Response Team Workshop, Sioux Falls, South Dakota. 1994.

GRANTS

- Acquisition and Development Grant for the Rehabilitation of the First Baptist Colored Church, West Baden, Indiana. 1998.
- GIFT II Community Foundation Grant, Orange County Community Foundation, Indiana. Rehabilitation of the First Baptist Colored Church, West Baden, Indiana. 1997.



THE Louis Berger Group, INC.

Cultural Resources

CHRISTOPHER SCHOEN, RPA
Senior Archaeologist

EDUCATION

MA, Anthropology, University of Nebraska-Lincoln
BA, Sociology, University of Wisconsin-LaCrosse

PROFESSIONAL REGISTRATION

Accredited by the Register of Professional Archaeologists (RPA)

PROFESSIONAL TRAINING

National Environmental Policy Act (NEPA) and Historic Properties. Kansas City, Missouri, University of Nevada, Reno Heritage Resources Management Program, 2002.

40 Hour HAZWOPER. Bloomington, Minnesota, Compliance Solutions Occupational Trainers, Inc., 2001.
Introduction to Section 106 Review. Chicago, Illinois, University of Nevada, Reno Heritage Resources Management Program, 2000.

Section 106 in the New Regulatory Environment. Marion, Iowa, Dr. Lynne Sebastian, PhD, 1999.

Hazardous Wastesite Work Refresher. Cedar Rapids, Iowa, Hazardous Materials Training and Research Institute, Kirkwood College, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010.

Trenching and Excavation. Cedar Rapids, Iowa, Hazardous Materials Training and Research Institute, Kirkwood College, 2002.

PROFESSIONAL AFFILIATIONS

Society for Historical Archaeology
Plains Anthropological Society
Iowa Archeological Society

PROFESSIONAL EXPERIENCE

Years with The Louis Berger Group, Inc.: 12

Total Years of Experience: 33

Mr. Schoen, based in LBG's Marion, Iowa, office, serves as a principal investigator, conducting cultural resource investigations in accordance with the Section 106 process. He is responsible for designing and implementing research proposals for all phases of cultural resource investigations, including analysis of collected materials and completion of associated technical reports, professional papers, articles, and presentations. Mr. Schoen has extensive experience investigating historic sites relating to military forts, farmsteads, urban residences, railroad depots, schools, CCC camps, logging camps, and light industry, as well as prehistoric sites from Early Archaic through Late Woodland periods. Currently, Mr. Schoen is assisting the Surface Transportation Board, as a third party consultant, with Section 106 review of cultural resource investigations associated with the DM&E RR Corporation's Powder River Expansion Project. Since joining LBG, Mr. Schoen has directed projects in Minnesota, Iowa, Indiana, Illinois, Kansas, Nebraska, and Wisconsin. Between 1985 and 1998, Mr. Schoen was responsible for projects in Kansas, Nebraska, and Wyoming. He has also participated in National Park Service (NPS) projects in Iowa, Michigan, Minnesota, Missouri, and Wisconsin. Mr. Schoen additionally participated in archaeological survey in the Nile Valley in Egypt in 1978.

SELECTED PROJECTS

ENERGY

Natural Resources Group, Minneapolis, Phase II Archaeological Investigations, Rockies Express East Pipeline Project, Spreads 5 and 6, Indiana, Fifth Mobilization, Franklin County, Indiana. Co-author of the report. Evaluation of five prehistoric sites (Middle and Late Archaic; Early Middle, and Late Woodland; and Late Mississippi cultural periods) to determine eligibility for listing in the National Register of Historic Places. The sites were located in proposed construction corridor for natural gas pipeline. 2008.

Natural Resources Group, Phase II Archaeological Investigations, Rockies Express East Pipeline Project, Spreads 5 and 6, Indiana, Fourth Mobilization, Franklin and Johnson Counties, Indiana. Co-author of the report. Evaluation of one possible Paleoindian site and two early nineteenth-century farmstead sites to determine eligibility for listing in the National Register of Historic Places. The sites were located in proposed construction corridor for natural gas pipeline. 2008.

Alliant Energy, Inc., Phase IA Archival Review of Site 47FD352/47FD355 for the Proposed Fond du Lac Emergency Feed Project (MARS #1400-034), Fond du Lac County, Wisconsin. Principal investigator. Author of letter report, archival research to determine whether Site 47FD352/47FD355 had been determined eligible for listing in the National Register of Historic Places and to assess whether archaeological testing or monitoring would be required for construction of a subsurface utility line in the site vicinity. 2008.

Madison, Wisconsin, Alliant Energy, Inc., Archaeological Monitoring for Proposed Directional Drilling to Indian Isle, Crawford County, Wisconsin. Principal investigator. Author of letter report, monitoring directional drilling under a channel of the Mississippi River from waste water station at Prairie du Chien to Indian Isle. 2008.

Natural Resources Group, Phase II Archaeological Investigations, Rockies Express East Pipeline Project, Spreads 5 and 6, Indiana, Third Mobilization, Decatur and Franklin Counties, Indiana. Co-principal investigator. Phase II testing at prehistoric Site 12De701; co-author of report, evaluation of 15 prehistoric sites, two farmsteads, and a brick works to determine eligibility for listing in the National Register of Historic Places. The sites were located in proposed construction corridor for natural gas pipeline. Sites included materials from Early, Middle, and Late Archaic, Early, Middle, and, Late Woodland, early nineteenth-century and late nineteenth- to early twentieth-century periods. 2008.

Natural Resources Group, Phase II Archaeological Investigations, Rockies Express East Pipeline Project, Spreads 5 and 6, Indiana, Second Mobilization, Morgan, Shelby, Decatur, and Franklin Counties, Indiana. Co-principal investigator. Phase II testing at prehistoric Sites 12De772, 12De773, and 12Fr336; co-author of the report including 15 prehistoric sites and two farmsteads, all located in proposed construction corridor for natural gas pipeline. Sites included materials from Late Archaic, Middle Woodland, Late Woodland, and Mississippian periods. 2008.

Natural Resources Group, Phase I Archaeological Investigations, Rockies Express East Pipeline Project, Spreads 5 and 6, Indiana, Seventh Mobilization, Hendricks, Morgan, Johnson, Shelby, Decatur, and Franklin Counties, Indiana. Co-author of report. Phase I archaeological survey for proposed natural gas pipeline corridor. 2008.

Natural Resources Group, Phase I Archaeological Investigations, Rockies Express East Pipeline Project, Spreads 5 and 6, Indiana, Sixth Mobilization, Hendricks, Morgan, Johnson, Shelby, Decatur, and Franklin Counties, Indiana. Co-author of report. Phase I archaeological survey for proposed natural gas pipeline corridor. 2008.

Natural Resources Group, Phase I Archaeological Investigations, Rockies Express East Pipeline Project, Spreads 5 and 6, Indiana, Fourth and Fifth Mobilization, Hendricks, Morgan, Johnson, Shelby, Decatur, and Franklin Counties, Indiana. Co-author of report. Phase I archaeological survey for proposed natural gas pipeline corridor. 2008.

Natural Resources Group, Phase II Archaeological Investigations, Rockies Express East Pipeline Project, Spreads 5 and 6, Decatur and Franklin Counties, Indiana. Principal investigator and senior author of report. Phase II testing at prehistoric sites 12De701, 12De713, 12Fr307, and 12Fr310 in proposed construction corridor for natural gas pipeline. Sites included materials from Early Archaic, Late Archaic, late Middle Woodland, and Late Woodland periods. 2007.

Natural Resources Group, Minneapolis, Phase I Archaeological Investigations, Rockies Express East Pipeline Project, Spreads 5 and 6, Indiana, Third Mobilization, Hendricks, Morgan, Johnson, Shelby, Decatur, and Franklin Counties, Indiana. Co-author of report. Phase I archaeological survey for proposed natural gas pipeline corridor. 2007.

Natural Resources Group, Phase I Archaeological Investigations, Rockies Express East Pipeline Project, Spreads 5 and 6, Indiana, Second Mobilization, Hendricks, Morgan, Johnson, Shelby, Decatur, and Franklin Counties, Indiana. Co-author of report. Phase I archaeological survey for proposed natural gas pipeline corridor. 2007.

Clarke Electric Cooperative, Inc., Phase I Archaeological Investigation of a Proposed Electrical Power Distribution Line, RUS-371, Clarke and Union Counties, Iowa. Principal investigator. Archaeological survey of 2.4-mile construction corridor for three-phase overhead electrical lines. 2005.

FEDERAL: GENERAL SERVICES ADMINISTRATION

General Services Administration, Sunflower Army Ammunition Plant, DeSoto, Kansas. Principal investigator. Services concerning preparation of Environmental Assessment for disposal of the Sunflower facility. Author of the cultural resource sections of the EA report. 1999.

LOCAL, COUNTY, AND STATE GOVERNMENT

Unified Government of Wyandotte County and Kansas City, Kansas, Phase II Geophysical and Archaeological Investigations of the Wyandotte County Cemetery, Kansas City, Wyandotte County, Kansas. Principal investigator. Electrical resistance and magnetic field gradient survey (by Archaeo-Physics, LLC.) and archaeological sampling of segments of the cemetery associated with the county poor farm (circa 1870-1973) in western Kansas City. 2006.

For the City of Des Moines, Iowa, Phase III Data Recovery Investigations for the Martin Luther King, Jr. Parkway Project, Des Moines, Polk County, Iowa. Principal investigator. Archaeological data recovery investigations in Construction Stages I, V, and VII of the Martin Luther King, Jr. Parkway Project between SW 2nd and SW 7th streets and Elm to Cherry streets in downtown Des Moines between 1998 and 2002. Fieldwork was conducted concurrently with construction of municipal storm sewer lines, water mains, and electrical and communications conduit. Project area included two sites: Site 13PK61, a complex site including Archaic and Oneota components; Fort Des Moines No. 2 and the original Town of Fort Des Moines; and Site 13PK760, a residential neighborhood that evolved into industrial and commercial district between 1846 and 1920. Author of three technical reports (1998, 2000, 2003). 1998-2003.

City of Des Moines, Iowa. Phase I and II Investigations of Parking Lot Areas for the Court Avenue Entertainment Project, Des Moines, Polk County, Iowa. Principal investigator. Survey and site testing for



two storm water detention basins as well as storm water, water main, and communications and electrical utility trenches for parking facilities. Work was done within Site 13PK61, which includes an Oneota component, Fort Des Moines No. 2, and the original Town of Fort Des Moines. Fieldwork was conducted concurrently with construction of municipal storm sewer lines, water mains, and electrical and communications conduit at the parking lot areas, adjacent to the Martin Luther King, Jr. Parkway Project. 2003.

City of Cedar Rapids, Phase I Archaeological Survey and Monitoring at the Iowa Steel Brownfields Site (13LN803), Cedar Rapids, Linn County, Iowa. Principal investigator. Recording archaeological features uncovered during removal of concrete foundations of the Iowa Steel Works (1946-1994) in southeast Cedar Rapids. Features included limestone foundations of the Star Wagon Company (1871-1895) and the Cedar Rapids Canning Company (1898-1926). Also conducted Phase I survey of the southern half of the property. 2003.

City of Davenport, Archaeological Monitoring at Site 13ST184, The Antoine LeClaire House in Davenport, Scott County, Iowa. Principal investigator. Recording archaeological features associated with the Antoine LeClaire occupation (1853-1876) of historic property prior to reconstruction of historic porches. 2003.

City of Dubuque, Phase I Archaeological Investigation of the Proposed Bell Street Extension for the City of Dubuque, Dubuque, Iowa. Principal investigator. Survey for proposed extension of Bell Street on the Fourth Street Peninsula north of the Ice Harbor. 2003.

PRIVATE SECTOR

Guttenberg Municipal Hospital, Phase I Archaeological Investigations for the Guttenberg Municipal Hospital Expansion Project, Clayton County, Iowa. Principal investigator. Archaeological survey to identify unreported archaeological deposits and machine stripping to determine whether additional human burials were present following discovery of a grave during construction work. Two new grave shafts were identified. LBG assisted staff from the Office of the State Archaeologist with disinterment of the remains. 2010.

BHC Rhodes, Phase I Cultural Resource Assessment for the Proposed Holliday Sand and Gravel Quarry, Wyandotte County, Kansas. Principal investigator. Cultural resource assessment for proposed sand and gravel quarry in Kansas City, Kansas, which includes the location of the hull of the sunken steamboat *Arabia* (1856). Included field reconnaissance and an interview with Harland Hawley, who helped to excavate and salvage cargo from the *Arabia* in 1988-1989. 2009.

Stanley Consultants, Inc., Phase I Archaeological Testing and Monitoring for the Clinton Sewer Separation Project, Clinton County, Iowa. Lead principal investigator. Archaeological testing and monitoring of approximately 15 city blocks for installation of storm and sanitary sewer pipelines in areas of moderate to high potential for undisturbed archaeological deposits. 2009.

United States Postal Service, Phase I Archaeological Boring Study for the Loading Dock and Parking Facility, St. Paul Processing & Distribution Center, 108 Kellogg Boulevard East, St. Paul, Minnesota. Principal investigator. Phase I archaeological assessment and geomorphological coring (by Strata Morph Geoexploration, Inc.) to evaluate the potential for significant intact archaeological deposits under the Loading Dock and Parking Facility prior to transfer of the property to Ramsey County, Minnesota. 2008.

Environmental Resources Management, Solon, Ohio. A Records Search Summary and Ethnographic History for Hall County, Nebraska. Principal investigator. Preparation of summary of the cultural resources identified for proposed communications tower in Doniphan Township and an ethnographic and



ethnohistoric contexts regarding the Native American tribes in the state with an emphasis on the Pawnee and Teton Sioux Nations, but also including the Omaha, Ponca, and Otoe Nations. 2008.

Alltel, Little Rock, Arkansas and Environmental Resources Management, Solon, Ohio, A Brief Ethnographic History of Indian Nations with Historic or Cultural Ties to Nebraska. Principal investigator. Conducting of records search and archaeological assessment for eight proposed cell tower locations in Nebraska. Assessment included a summary of ethnographic and ethnohistoric contexts regarding the Native American Nations known to have significant historic and/or cultural ties to Nebraska. 2007.

Schaus-Vorhies Contracting, Inc., Phase I Archaeological Investigation of the Jefferson County Civic Center Site 13JF434, Fairfield, Jefferson County, Iowa. Principal investigator. Archaeological survey of Block 4 of the original plat of Fairfield for a proposed civic center. 2006.

Berger Devine Yaeger, Phase II Cultural Resource Investigation of the Proposed Schlitterbahn Vacation Village Development, Kansas City, Wyandotte County, Kansas. Principal investigator and co-author of report. (With Camilla Deiber, for architectural inventory of former KDOT maintenance building), archaeological survey of 312 acres for proposed water park. 2006.

Western University Association, Phase IV Archaeological Excavations at the Quindaro Brewery (Feature 34) and Quindaro Ruins Archaeological Site (14WY314), Kansas City, Wyandotte County, Kansas. Principal investigator. Mitigation excavations at the Quindaro Brewery to remove fill and record remains prior to stabilization and reconstruction of 1857 stone storage cellar and tavern. 2005.

Leo A. Daly, Phase I Archaeological Investigation of the Lake Ohana Housing Development, Mills County, Iowa. Principal investigator. Archaeological survey of 170 acres for proposed housing development. 2005.

Nebraska State Historical Society, Warbonnet Historic Landscape National Register Nomination. Co-principal investigator. Preparation of National Register Nomination for the Warbonnet Historic Landscape in Sioux County, Nebraska. Archaeological tasks included survey of the property, mapping of the topography, recording historic features, assisting with ground penetrating radar and magnetic resistivity surveys of selected features. Co-author of National Register Nomination submitted to the National Park Service for the Plains Indians Wars and Ghost Dance historical periods. 2005.

Nebraska State Historical Society, Fort Robinson to Camp Sheridan Trail, Dawes and Sheridan Counties, Nebraska. Principal investigator. Recording segments of the trail. Photographed setting and recorded trail locations using Global Positioning System (GPS) datalogger. Mapped segments on aerial photo maps and USGS topographic quad maps. 2005.

Signature Development Company, Phase I Archaeological Survey at St. Katherine's Living Center, Davenport, Scott County, Iowa. Principal investigator. Archaeological survey of a portion of Site 13ST183, the former location of the John L. Davies residence (1872-1883) and St. Katherine's Hall Episcopal School (1884-post 1991) in Davenport. 2001.

Howard R. Green Company, Phase II Archaeological Investigation of Site 13LN142, Linn County, Iowa. Principal investigator, Phase II testing at Site 13LN142 in right-of-way for wastewater pipeline in southeastern Cedar Rapids. Site included Late Archaic, late Middle Woodland, and Late Woodland components. 1999.



TRANSPORTATION

Iowa Department of Transportation, Phase I Archaeological Survey for New Alignment of Iowa Highway 31, Woodbury County, Iowa. Principal investigator. Archaeological survey of 0.7-mile-long, 600-foot-wide construction corridor at Correctionville. 2010.

Iowa Department of Transportation, Phase II Evaluation of Six Archaeological Sites for Proposed Improvements to US Highway 20 Between County Highway K42 at Lawton and US Highway 71 at Early, Woodbury and Ida Counties, Iowa. Co-principal investigator. Evaluation of two historic and four prehistoric archaeological sites. 2008.

Iowa Department of Transportation, Phase I Archaeological Survey for Proposed Improvements to US Highway 20 Between County Highway K42 at Lawton and US Highway 71 at Early, Woodbury, Ida, and Sac Counties, Iowa. Principal investigator. Archaeological survey and geomorphological assessment of 52-mile, 500-foot-wide construction corridor and 52 associated borrow areas. 2007.

Minnesota Department of Transportation, Phase I and II Archaeological Investigations of Alternative Route Corridors for Trunk Highway 41 Near Chaska, Carver and Scott Counties, Minnesota. Principal investigator. Phase I geomorphological assessment (by Strata Morph Geoexploration, Inc.) and Phase I and II archaeological investigations of 11 proposed alternative corridors for TH 41. 2006.

Minnesota Department of Transportation, Phase I Archaeological Investigation of the Proposed Field Street Corridor in St. Joseph, Stearns County, Minnesota. Principal investigator. archaeological survey of proposed new east-west collector. 2006.

Iowa Department of Transportation, Phase I Archaeological Investigation of the Deer Creek Stream Mitigation, Tama County, Iowa. Principal investigator and co-author of report. archaeological survey of 27.4 acres for proposed stream mitigation 1 mile west of Toledo, Iowa. 2006.

Iowa Department of Transportation, Phase III Archaeological Data Recovery at the La Hoyt Site (13HN206), Henry County, Iowa. Co-principal investigator. Senior author of technical report, archaeological mitigation of whistle stop on the Chicago, Burlington & Quincy Railroad. Site was established as a 9-acre farm in 1866 along a branch of the C.B. & Q. R.R. that had been constructed to load railroad ties and bridge timbers onto flat cars. A general store and post office were operated at the stop, known as La Hoyt, between 1870 and 1901. Operated as a farmstead between 1903 and 1965. Site included three cellars, five rubble footings, 14 pier supports, two cisterns, four wells, and a section of the railroad bed. 2005.

Iowa Department of Transportation, Phase III Archaeological Data Recovery at the Brown/McNeeley Farmstead Site (13HN194), Henry County, Iowa. Principal investigator. Archaeological data recovery investigations of small farmstead occupied by the Hiram Brown family between 1857 and 1861 and the George McNeeley family between about 1865 and 1872. Site located along proposed route of the Mount Pleasant Bypass. Geophysical survey prior to excavation identified anomalies determined to be the limestone cellar foundation and brick cistern as well as a survey bench mark and Phase II trenches. Mechanical stripping revealed lines of postmolds that represent historic fence lines north and east of the house yard. 2004.

Minnesota Department of Transportation, Phase I Archaeological Investigation of the Phase 2 and 3 Segments of the Proposed Memorial Park Bicycle Trail at Granite Falls, Yellow Medicine County, Minnesota. Principal investigator. Archaeological survey of three segments (1,825 meters) of proposed paved bicycle trail. 2004.

Minnesota Department of Transportation, Phase II Archaeological Evaluation of the St. Croix Lumber Company Dam (21LA0g) and the Dunnigan Lake Civilian Conservation Corps Camp (21LA526) Along Trunk Highway 1, Lake County, Minnesota. Principal investigator. Archaeological testing and recordation of logging dam across the Stony River, which was operated between 1899 and 1923, and 26 features associated with ECW/CCC Camp F-16, which was occupied between 1933 and about 1937. 2004.

Minnesota Department of Transportation, Phase III Archaeological Data Recovery at the Backes/Geers Farmstead (Site 21SN123) Along Trunk Highway 23, Stearns County, Minnesota. Principal investigator. Data recovery excavations at the location of log cabin occupied by the Nicholas Backes family between 1860 and 1895 and the Bernhard Geers family between 1895 and 1906. Archival research of the German Catholic enclave in Stearns County, of which the Backes and Geers families were members. 2003.

Minnesota Department of Transportation, Archaeological Monitoring for Construction of Trunk Highway 55, Hennepin County, Minnesota. Principal investigator. Archaeological monitoring of highway construction activities between 54th Street and C.S.A.H. 62. The investigations included discovery and evaluation of Site 21HE309, an 1821-1839 artifact concentration associated with Camp Coldwater, an early military and trader's settlement near Fort Snelling National Historic Landmark. 2002.

Minnesota Department of Transportation, Phase II and Phase III Archaeological Investigations at the Duck Lake 1 Site (21JK12), Jackson County, Minnesota. Principal investigator. Archaeological testing and data recovery excavations at Site 21JK12, a Middle and Late Woodland prehistoric site. 2000 and 2002.

Minnesota Department of Transportation, Phase I Archaeological Investigation of a Segment of the Proposed Memorial Park Bicycle Trail at Granite Falls, Yellow Medicine County, Minnesota. Principal investigator. Archaeological survey of 0.75-mile segment of proposed paved bicycle trail. 2002.

Kansas Department of Transportation, Phase III Archaeological Evaluation of Site 14DO333 Along Proposed Alternative Route 5 of US Highway 59, Douglas County, Kansas. Principal investigator. Test excavation of historic archaeological site believed to be the John C. Davidson farmstead (1854-1863). Site determined to be a cabin occupied between 1930 and 1970. 2002.

Iowa Department of Transportation, US Highway 30 Corridor Survey: Harrison County, Iowa. Principal investigator. Phase I investigations of proposed improvements for 14 miles of U.S. Highway 30 between Missouri Valley and Logan. 2001.

Iowa Department of Transportation, Phase II Cultural Resource Investigations for US Highway 34 Improvements, Jefferson and Henry Counties, Iowa. Co-principal investigator. Phase II evaluation of 15 historic and prehistoric archaeological sites. 2001.

Minnesota Department of Transportation, Phase I Archaeological and Architectural Investigation of Trunk Highway 53 in New Independence Township, St. Louis County, Minnesota. Principal investigator. Archaeological survey of 2-mile segment of Trunk Highway 53 at its junction with Trunk Highway 33. 2000.

PAST PROFESSIONAL EXPERIENCE

Kansas State Historical Society, Topeka, Kansas. Special projects archaeologist. Principal Investigator for Phase I reconnaissance, Phase II survey, Phase III site testing, and Phase IV data recovery activities at a number of prehistoric and historic sites throughout the state. Prepared technical report for each investigation.

Prepared popular reports for the general public for two farmstead mitigations (Sites 14GR332 and 14RP322). Presented papers at professional and public venues regarding various projects. 1990-1998.

Kansas Department of Transportation, Martin Farmstead, Republic County, Kansas. Principal investigator. Author of technical report and a popularized version of the investigation, test excavations and subsequent mitigation of late nineteenth-century farmstead (Site 14RP322). .

Kansas Department of Transportation, Phase III Archeological Investigation of 14PH330: The LaBelle Schoolhouse, Phillips County, Kansas. Principal investigator. Test excavations at a rural one-room school (1887-circa 1954) near Phillipsburg in north-central Kansas. 1994.

Kansas Department of Transportation, U.S. 166 Corridor Project, Cowley and Chautauqua Counties, Kansas. Co- principal investigator and co-author of report. Documentation and testing of multiple historic sites along 50 miles of right-of-way. Eight late nineteenth-century farmsteads (Sites 14CO369, 14CO373, 14CT367, 14CT368, 14CT374, 14CT379, 14CT380, and 14CT382) and one early twentieth-century school (Site 14CO374) were tested. 1993.

Kansas Department of Transportation, Southeast Corridor Project, Greenwood and Wilson Counties, Kansas. Co- principal investigator. Documentation and testing of numerous historic sites. Ten farmsteads (Sites 14GR341, 14GR344, 14GR347, 14GR349, 14GR351, 14GR363, 14WN360, and 14WN362) were tested and two (14GR246 and 14GR354) were mitigated. 1993.

Kansas Department of Transportation, Phase III Archeological Investigations of 14MY2336 Near Independence, Kansas. Principal investigator. Test excavations at Site 14MY2336, a Pomona focus (Middle Ceramic Period) habitation site, dated by radiocarbon assay to AD 1040 to 1160. 1993.

Kansas Department of Transportation, Martindale Cabin Site, Greenwood County, Kansas. Principal investigator and author of technical report and co-author of a popularized version, testing and subsequent mitigation of a mid-nineteenth-century stone cabin (Site 14GR332), the first farmstead to be mitigated in Kansas. 1992.

Kansas Department of Transportation, Phase III Investigations at the Saxman Site (14RC301). Principal investigator, test excavations at the Saxman Site (14RC301), a Great Bend aspect village near Lyon, Rice County, Kansas. Site is listed in the National Register of Historic Places. 1992.

Kansas Department of Transportation, Phase III Archeological Investigation of 14AN337, The Santa Fe Railroad Depot at Iola, Kansas. Principal investigator. Test excavations at site of a railroad freight depot (1870-1891) and passenger depot (1906-1970). 1992.

Kansas Department of Transportation, Phase III Archeological Investigation of 14SH342: A Rural School House in Shawnee County, Kansas. Principal investigator. Test excavations at rural one-room school (1887-1961) known as “North Highland School” near Topeka. 1991.

University of Nebraska, Lincoln, Nebraska. Research Archaeologist. Principal investigator. For Phase I, Phase II, and Phase III investigations of historic sites in Nebraska. Prepared technical report for each investigation. Presented papers at professional and public venues regarding various projects. Supervised cataloging of National Park Service collections in the Automated National Catalog System (ANCS) and developed standardized procedures for recording archaeological collections at the Midwest Archeological Center (MWAC) for ANCS. 1985-1990.



Railroad Transportation and Safety District, The Archeology of the Lincoln Pottery Works, 25LC42, Lincoln, Nebraska. Principal investigator. Co-author of technical report, supervising the mitigation of late nineteenth-century pottery site (25LC42). The pottery manufactured stonewares, terra cotta, drain pipe, and statuary and included the remains of four down-draft kilns, chimney, waster areas, building foundations, a storage pit, kiln furniture, plaster molds, and complete and broken utilitarian wares of all types. 1989.

Midwest Archeological Center, National Park Service, An Archeological Survey of the Homestead National Monument of America, Gage County, Nebraska. Principal investigator. Co-author of technical report, archaeological survey of the Homestead National Monument. For the Lincoln, Nebraska. 1986.

Midwest Archeological Center, National Park Service, National Park Service, Excavations at the Freeman School (25GA90), Homestead National Monument of America, Gage County, Nebraska. Principal investigator. Archaeological testing at the Freeman School (Site 25GA90), Homestead National Monument. 1986.

Midwest Archeological Center, Lincoln, Nebraska. Museum Aide, Archaeologist. Co-authored technical report. Crew member for several Phase I and Phase II investigations at Apostle Islands National Lakeshore, Wisconsin; St. Croix Scenic Riverway, Wisconsin and Minnesota (also co-author of report); Voyageur's National Park, Minnesota; Pictured Rocks National Lakeshore, Michigan; Ozarks National Scenic Riverway, Missouri; and Herbert Hoover Boyhood Home, Iowa. 1980-1985.

Archeological Investigations of the 1874 Cavalry Barracks, Fort Laramie National Historic Site, Wyoming. Principal investigator. Co-author of technical report, test (Phase III) excavations in and around the 1874 Cavalry Barracks. For the Midwest Archeological Center, National Park Service, Lincoln, Nebraska. 1982.

Midwest Archeological Center, National Park Service, Wilson's Creek National Battlefield, Missouri. Midwest Archeological Center, National Park Service. Supervising test excavations at the 1852 Ray House to document original construction prior to stabilization and restoration. Co-author of report. 1982.

University of Wisconsin-LaCrosse Archaeological Field School. Student. Participating in the 1978 Archaeological Field School in the Nile Valley, Egypt. Performed archaeological survey searching for Neolithic sites along the west side of the Nile Valley 30 kilometers north of Luxor. Excavation of 3,000-year-old Bedarian burial.

PUBLICATIONS

- Fort Des Moines No. 2, 1843-1846. In *Frontier Forts of Iowa, Indians, Traders, and Soldiers 1682-1862*, edited by William E. Whittaker, University of Iowa Press, Iowa City, pp. 161-177. Co-author with William E. Whittaker and Kathryn E.M. Gourley. 2009.
- *The Martin Farmstead: A Family Farm in Republic County, Kansas*. Kansas State Historical Society Highway Salvage Archeology Popular Report Number 2, Topeka. 1994.
- *Phase IV Salvage Investigations at the Martin Farmstead (14RP322) in Republic County, Kansas*. Kansas State Historical Society Contract Archeology Publication Number 12, Topeka. 1994.
- *The Martindale Cabin: An 1857 Stone Structure in Greenwood County, Kansas*. Co-authored with Virginia A. Wulfkuhle. Kansas State Historical Society Highway Salvage Archeology Popular Report Number 1, Topeka. 1993.



- Archeologists Investigate Site of Old Santa Fe Depot at Iola. *Kansas Preservation* XV(3):12-16. 1993.
- The Archaeology of the Lincoln Pottery Works. Co-authored with Peter Bleed. *Central Plains Archaeology* 3(1). 1993.
- Excavations at 14GR332, A Limestone Cabin in Greenwood County, Kansas. *Kansas Anthropological Association Newsletter* 4 (1-2):6-10. 1992.
- Window Glass on the Plains: An Analysis of Flat Glass from Ten Nineteenth Century Plains Historic Sites. *Central Plains Archaeology* 2(1):57-90. 1990.

PAPERS AND PRESENTATIONS

- Fort Des Moines No. 2 (1843-1846), Polk County, Iowa. Presented at the 37th Annual Conference on Historical and Underwater Archaeology, St. Louis, Missouri. January 2004.
- Archaeological Data Recovery at Site 13PK61, Des Moines, Iowa. Presented at the 47th Annual Midwest Archaeology Conference, LaCrosse, Wisconsin. October 2001.
- The Star Wagon Company and the Cedar Rapids Canning Company: Two Early Industrial Sites in Southeast Cedar Rapids, Iowa. Presented at the National Czech and Slovak Museum, Cedar Rapids, Iowa. October 2001.
- Recent Discoveries at Fort Des Moines II (13PK61) for the Martin Luther King, Jr. Parkway, Des Moines, Polk County, Iowa. Presented at the State of Iowa Historical Building, Des Moines, Iowa. September 2001.
- Archaeological Investigations for the Martin Luther King, Jr. Parkway, 1998-2000. Presented at the Iowa History Forum, State Historical Society of Iowa, Des Moines, Iowa. April 2001.
- Archaeological Investigations at 13PK61, 1998-2000. Presented at the State Historical Society of Iowa, Des Moines, Iowa. September 2000.
- An Overview of the Arkansas City Project. Presented at the 55th Annual Plains Anthropological Conference, Boulder, Colorado. November 1997.
- Kansas Farmsteads and Popular Report Series. Annual Meeting of the Kansas History Teachers Association, Topeka, Kansas. April 1996.
- Historical Issues from an Archeological Perspective. Session Chair, 54th Annual Meeting of the American Association for State and Local History, Omaha, Nebraska. September 1994.
- Salvage Archeological Investigations at an 1857 Stone Cabin in Greenwood County, Kansas. Presented at the 50th Annual Plains Anthropological Conference, Lincoln, Nebraska. November 1992.
- Historical Archeology. Round Table Discussion Chair, 49th Annual Plains Anthropological Conference, Lawrence, Kansas. November 1991.



- Sales Out the Front Door, Rejects Out the Back: Production and Debris at the Lincoln Pottery Works. Co-authored with Peter Bleed. Presented at the 1989 Annual Meeting of the Society for American Archeology in Atlanta, Georgia. April 1989.
- The Jig is Up! Technological Changes in Pottery Production as Seen in a Late Nineteenth Century Plains Ceramic Industry. Presented at the 45th Annual Plains Anthropological Conference, Columbia, Missouri. November 1987.
- Archeological Excavations at the Lincoln Pottery Works (25LC42). Presented at the 44th Annual Plains Anthropological Conference in Denver, Colorado. November 1986.
- Windows on the Plains. Presented at the 8th Annual Flint Hills Conference in Lincoln, Nebraska. March 1986.
- Modified Bone and Chronology: An Experimental Study. Co-authored with Joan T. Richtsmeier. Presented at the 38th Annual Plains Anthropological Conference in Iowa City, Iowa. November 1980.
- Metal Arrow Points on the Central Plains. Museum display prepared with Karolyn K. Kinsey and Michael Irvin. Temporary display, Kansas Museum of History, Topeka. March 15 - April 20, 1996.
- A Place to Call Home. Museum display prepared with Virginia A. Wulfkuhle, Michael Irvin, and Ramona J. Willits. Temporary display, Kansas Museum of History, Topeka. March 15-April 20, 1996.
- Master's Thesis. Windows on the Plains: Flat Glass from the Nineteenth Century Plains Frontier. Department of Anthropology, University of Nebraska-Lincoln. 1985.

APPENDIX D
RESULTS OF THE SHOVEL TESTING

RESULTS OF SHOVEL TESTING

Shovel Test #	Depth (cm bgs)	Soil Horizon	Soil Description	Soil Boundary	Results
Site 14LV364					
TR 45-41	0 to 22	Ap	10YR 4/3 Silt loam	Gradual	1 Block shatter
N10 E20	22 to 34	Bt	10YR 5/4 Silty clay loam		No cultural material
TR 45-41	0 to 21	Ap	10YR 4/3 Silt loam	Clear	No cultural material
N10	21 to 40	Bt	10YR 5/4 Silty clay loam		No cultural material
TR 45-41	0 to 20	Ap	10YR 4/3 Silt loam	Clear	No cultural material
N20	20 to 32	Bt	10YR 5/4 Silty clay loam		No cultural material
TR 45-41	0 to 21	Ap	10YR 4/3 Silt loam	Clear	No cultural material
N40	21 to 35	Bt	10YR 5/4 Silty clay loam		No cultural material
TR 45-41	0 to 29	Ap	10YR 4/3 Silt loam	Clear	No cultural material
N50	29 to 42	Bt	10YR 5/4 Silty clay loam		No cultural material
TR 45-41	0 to 17	Ap	10YR 4/4 Silt loam	Clear	No cultural material
N30 E10	17 to 36	Bt	10YR 5/4 Silty clay loam mottled with 10% 2.5YR 7/2 Silty clay loam and 15% 10YR 4/4 Silty clay loam		No cultural material
TR 45-41	0 to 23	Ap	10YR 4/3 Silt loam	Clear	No cultural material
N30 E20	23 to 36	Bt	10YR 5/4 Silty clay loam		No cultural material
TR 45-41	0 to 25	Ap	10YR 3/3 Silt loam	Clear	No cultural material
N30 E 30	25 to 35	Bt	10YR 5/4 Silty clay loam		No cultural material
TR 45-41	0 to 23	Ap	10YR 4/3 Silt loam	Clear	No cultural material
N30 W10	23 to 40	Bt	10YR 5/4 Silty clay loam mottled with 20% 2.5Y 6/3 Silty clay loam		No cultural material
TR 45-41	0 to 9	Ap	10YR 4/3 Silt loam	Clear	No cultural material
N30 W20	9 to 30	Bt	10YR 5/4 Silty clay loam		No cultural material
TR 45-41	0 to 19	Ap	10YR 4/3 Silt loam	Clear	No cultural material
S10	19 to 33	Bt	10YR 5/4 Silty clay loam		No cultural material
Site 14LV365					
TR 58-40	0 to 20	Ap	10YR 4/3 Silt loam	Gradual	1 Flake
	20 to 50	B	10YR 4/3 Silty clay loam mottled with 20% 10YR 4/1 and 20% 7.5YR 5/6 Silty clay loam		No cultural material
	50 to 60	Bt	10YR 5/6 Silty clay loam		No cultural material
TR 58-40	0 to 40	Ap	10YR 4/3 Silt loam	Gradual	No cultural material
N10	40 to 50	B	10YR 4/4 Silty clay loam mottled with 20% 10YR 5/4 Silty clay loam		No cultural material

Shovel Test #	Depth (cm bgs)	Soil Horizon	Soil Description	Soil Boundary	Results
	50 to 60	Bt	10YR 5/4 Silt loam mottled with 25% 10YR 4/2 and 25% 10YR 5/6 Silty clay loam		No cultural material
TR 58-40 N20	0 to 24 24 to 30 30 to 40	Ap1 B Bt	10YR 3/3 Silt loam 10YR 3/3 Silty clay loam mottled with 30% 10YR 5/6 Silty clay loam 10YR 5/6 Silty clay loam	Gradual Clear	1Flake 1Flake No cultural material
TR 58-41	0 to 28 28 to 40	Ap Bt	10YR 3/3 Silt loam 10YR 5/6 Silty clay loam mottled with 30% 10YR 3/3 Silty clay loam	Clear	No cultural material No cultural material
TR 58-40 N40	0 to 38 38 to 51	Ap Bt	10YR 3/3 Silt loam 10YR 4/6 Silty clay loam	Clear	No cultural material No cultural material
TR 58-40 N50	0 to 29 29 to 40	Ap Bt	10YR 3/3 Silt loam 10YR 4/6 Silty clay loam	Clear	No cultural material No cultural material
TR58-42	0 to 27 27 to 45	Ap Bt	10YR 3/3 Silt loam 10YR 5/6 Silty clay loam mottled with 50% 10YR 3/3 Silty clay loam	Clear	No cultural material No cultural material
TR 58-40 N20 W10	0 to 30 30 to 45	Ap B	10YR 3/3 Silt loam 10YR 4/4 Silty clay loam mottled with 30% 10YR 5/4 and 20% 10YR 4/1 Silty Clay	Clear	2 Flakes No cultural material
TR 58-40 N30 E10	0 to 30 30 to 42	Ap B	10YR 3/3 Silt loam 10YR 4/6 Silty clay	Clear	1 Flake No cultural material
TR 58-40 N30 E20	0 to 24 24 to 30 30 to 41	Ap B B	10YR 4/3 Silt loam 10YR 4/3 mottled with 40% 10YR 5/6 Silty clay loam 10YR 5/6 mottled with 20% 10YR 4/3 Silty clay loam	Gradual Clear	No cultural material No cultural material No cultural material
TR58-40 N30 E30	0 to 26 26 to 40	Ap B	10YR 3/2 Silty clay loam 10YR 4/4 mottled with 30% 10YR 5/4 Silty clay loam	Gradual	No cultural material
TR 58-40 N30 W10	0 to 20 20 to 35	Ap B	10YR 3/3 Silt loam 10YR 4/4 Silty clay loam mottled with 40% 10YR4/1 and 20% 10YR 5/4 Silty clay loam	Gradual	No cultural material No cultural material
TR58-40 N30 W20	0 to 29 29 to 43	Ap Bt	10YR 4/3 Silt loam 10YR 5/6 Silty clay loam mottled with 25% 10YR 5/4 Silty clay loam	Gradual	No cultural material No cultural material
TR 58-40 N40 W10	0 to 24 24 to 36	Ap B	10YR 3/3 Silt loam 10YR 4/4 Silty clay loam mottled with 40% 10YR 5/4 Silty clay loam	Gradual	2 Flakes No cultural material

Shovel Test #	Depth (cm bgs)	Soil Horizon	Soil Description	Soil Boundary	Results
TR 58-40 N50 E10	0 to 29 29 to 40	Ap B	10YR 3/3 Silt loam 10YR 4/6 Silty clay loam	Clear	2 Flakes No cultural material
TR 58-40 N60 W10	0 to 23 23 to 33	Ap B	10YR 3/3 Silt loam 10YR 4/4 Silty clay loam mottled with 50% 10YR 5/4 Silty clay loam	Gradual	2 Flakes No cultural material
TR 58-40 S5	0 to 35 35 to 50	Ap B	10YR 4/3 Silt loam 10YR 4/6 Silty clay loam mottled with 20% 10YR 5/4 and 10% 10YR 4/1 Silty clay loam	Gradual	1 Flake No cultural material
TR 58-40 S15	0 to 40 40 to 45	Ap B	10YR 3/4 Silt loam 10YR 3/4 Silty clay loam mottled with 25% 10YR 5/6 Silty clay loam	Gradual	No cultural material No cultural material
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TR 45-33	0 to 25 25 to 36	Ap Bt	10YR 3/3 Silt loam 10YR 5/4 Silty clay loam mottled with 40% 10YR 5/3 Silty clay	Clear	No cultural material No cultural material
TR 45-33 N10	0 to 28 28 to 40	Ap B	10YR 3/3 Silt loam 10YR 4/4 Silty clay loam mottled with 30% 10YR 4/6 Silty clay loam	Clear	No cultural material No cultural material
TR 45-33 N20	0 to 33 33 to 45	Ap B	10YR 3/3 Silt loam 10YR 4/4 Silty clay loam mottled with 30% 10YR 4/6 Silty clay loam	Clear	No cultural material No cultural material
TR 45-34	0 to 25 25 to 40	Ap Bt	10YR 3/3 Silt loam 10YR 5/4 Silty clay loam mottled with 40% 10YR 5/3 Silty clay loam	Clear	No cultural material No cultural material
TR 45-33 N40	0 to 37 37 to 52	Ap B	10YR 3/3 Silt loam 10YR 4/4 Silty clay loam mottled with 20% 10YR 5/6 Silty clay loam	Gradual	No cultural material No cultural material
TR 45-33 N50	0 to 34 34 to 47	Ap B	10YR 3/3 Silt loam 10YR 4/4 Silty clay loam mottled with 20% 10YR 5/6 Silty clay loam	Gradual	No cultural material No cultural material
TR 45-33 S10	0 to 29 29 to 40	Ap B	10YR 3/3 Silt loam 10YR 4/4 Silty clay loam mottled with 30% 10YR 4/6 Silty clay loam	Clear	No cultural material No cultural material
TR 45-33 N30 E10	0 to 24 24 to 44	Ap B	10YR 3/3 Silt loam 10YR 5/3 Silty clay loam	Clear	No cultural material No cultural material
TR 45-33 N30 E20	0 to 23 23 to 36	Ap B	10YR 3/3 Silt loam 10YR 4/4 Silty clay loam mottled with 40% 10YR 5/4 Silty clay loam	Clear	No cultural material No cultural material

Shovel Test #	Depth (cm bgs)	Soil Horizon	Soil Description	Soil Boundary	Results
TR 45-33	0 to 20	Ap	10YR 3/3 Silt loam	Clear	No cultural material
N30 E30	20 to 33	Bt	10YR 5/4 Silty clay loam mottled with 30% 10YR 4/4 Silty clay loam		No cultural material
TR45-33	0 to 22	Ap	10YR 3/2 Silt loam	Gradual	No cultural material
N30 E40	22 to 35	Bt	10YR 5/4 Silty clay loam		No cultural material
TR 45-30	0 to 25	Ap	10YR 3/2 Silt loam	Gradual	No cultural material
N30 E50	25 to 40	Bt	10YR 5/4 Silty clay loam		No cultural material
TR 45-30	0 to 22	Ap	10YR 4/3 Silt loam	Clear	No cultural material
N30 W10	22 to 27	B	10YR 4/3 Silty clay loam mottled with 30% 10YR 4/6 Silty clay loam		No cultural material
	27 to 37	Bt	10YR 5/6 Silty clay loam mottled with 30% 10YR 4/2 Silty clay loam		No cultural material
Site LBG-1					
TR 2-4	0 to 64	Ap	10YR 3/1 Silt loam	Gradual	1 Flake
	64 to 75	B	10YR 4/2 Silty clay loam		
TR 2-4	0 to 28	Ap	10YR 3/2 Silty clay loam	Gradual Vague	1 Flake
S5	28 to 57	B	10YR 4/2 Silty clay loam mottled with 40% 10YR 5/6 Silty clay loam		No cultural material
	57 to 70	Bt	10YR5/6 Silty clay loam mottled with 30% 10YR 5/2 Silty clay loam		No cultural material
TR 2-4	0 to 23	Ap	10YR 3/2 Silt loam	Clear Gradual	2 Flakes
E10	23 to 48	B	10YR 3/2 Silty clay loam mottled with 10% 10YR 5/6 Silty clay loam		No cultural material
	48 to 59	B	10YR 3/2 Silty clay mixed with 50% 10YR 5/6 Silty clay loam		No cultural material
TR 2-4	0 to 56	Ap	10YR 3/2 Silt loam	Abrupt Abrupt	5 Flakes
N10	56 to 84	B	10YR 4/3 Silt loam		No cultural material
	84 to 98	Bt	10YR 6/1 Silty clay loam mottled with 15% 10YR 5/6 Silty clay loam		No cultural material
Site LBG-2					
TR 8-1	0 to 38	Ap	10YR 2/2 Silt loam	Gradual Abrupt	3 Flakes
	38 to 59	B	10YR 3/3 Silt loam		No cultural material
	59 to 74	Bt	10YR 5/4 Silty clay loam		No cultural material
TR 8-1	0 to 32	Ap	10YR 3/2 Silt loam	Gradual	1 Flake
N10	32 to 45	Bt	10YR 4/2 Silty clay loam		No cultural material
TR 8-1	0 to 41	Ap	10YR 4/2 Silty clay loam	Clear	1 Flake
E5	41 to 52	Bt	10YR 4/3 Silty clay loam		No cultural material
TR 8-1	0 to 41	Ap	10YR 3/1 Silt loam	Gradual Clear	1 Flake
S5	41 to 58	B	10YR 3/2 Silt loam		No cultural material

Shovel Test #	Depth (cm bgs)	Soil Horizon	Soil Description	Soil Boundary	Results
	58 to 71	Bt	10YR 4/4 Silty clay loam mottled with 10% 10YR 5/2 Silty clay loam		No cultural material
TR 8-1	0 to 36	Ap	10YR 3/2 Silt loam	Vague	3 Flakes
W5	36 to 54	B	10YR 4/3 Silty clay loam mottled with 30% 10YR 5/4 Silty clay loam		No cultural material
TR 8-1	0 to 35	Ap	10YR 3/2 Silt Loam	Gradual	5 Flakes
W5 N10	35 to 46	B	10YR 4/3 Silty clay loam mottled with 30% 10YR 3/3 Silty clay loam		No cultural material
TR 9-2	0 to 22	Ap	10YR 3/2 Silt loam	Clear	1 Flake
	22 to 46	B	10YR 3/2 Silty clay loam mottled with 30% 10YR 4/3 Silty clay loam	Clear	No cultural material
	46 to 56	Bt	10YR 5/4 Silty clay loam		No cultural material
TR 9-2	0 to 43	Ap	10YR 2/1 Silty clay loam	Gradual	1 Flake
W20	43 to 58	B	10YR 4/1 Silty clay loam mottled with 40% 10YR 4/4 Silty clay loam		No cultural material
TR 9-2	0 to 20	Ap	10YR 3/2 Silt loam	Clear	1 Flake
W10	20 to 49	B	10YR 3/1 Silty clay loam mottled with 10YR 4/3 Silty clay loam	Clear	No cultural material
	49 to 60	Bt	10YR 5/4 Silty clay loam		No cultural material
TR 9-2	0 to 25	Ap	10YR 3/2 Silt loam	Clear	1 Flake
W25	25 to 58	B	10YR 3/1 Silty clay loam mottled with 30% 10YR 4/3 Silty clay loam	Clear	No cultural material
	58 to 68	Bt	10YR 5/4 Silty clay		No cultural material
Isolate Artifact 1	0 to 51	Ap	10YR 3/2 Silt loam	Clear	No cultural material
	51 to 71	Bt	10YR 4/2 Silty clay loam		No cultural material
Isolate Artifact 2	0 to 19	Ap	10YR 3/2 Silt loam	Vague	No cultural material
	19 to 60	B	10YR 3/1 Silt loam	Vague	No cultural material
	60 to 71	Bt	10YR 4/3 Silty clay loam		No cultural material
Isolate Artifact 3	0 to 24	Ap	10YR 3/2 Silt loam	Clear	No cultural material
	24 to 53	B	10YR 4/4 Silty clay loam mottled with 35% 10YR 5/4 Silty clay loam		No cultural material
Isolate Artifact 4	0 to 36	Ap	10YR 4/2 Silt loam	Clear	No cultural material
	36 to 49	Bt	10YR 5/6 Silty clay loam		No cultural material
Isolate Artifact 5	0 to 32	Ap	10YR 3/3 Silt loam	Gradual	No cultural material
	32 to 56	B	10YR 3/2 Silty clay loam	Clear	No cultural material
	56 to 71	Bt	10YR 5/8 Silty clay loam		No cultural material
Isolate Artifact 6	0 to 39	Ap	10YR 3/2 Silt loam	Clear	No cultural material
	39 to 52	Bt	10YR 4/4 Silty clay loam mixed with 50% 10YR 5/4 Silty clay loam		No cultural material

Shovel Test #	Depth (cm bgs)	Soil Horizon	Soil Description	Soil Boundary	Results
Isolate Artifact 7	0 to 27	Ap	10YR 2/2 Silt loam	Clear	No cultural material
	27 to 43	Bt	10YR 5/3 Silty clay loam		No cultural material
Isolate 7 S5	0 to 32	Ap	10YR 3/2 Silt loam	Clear	1 Flake
	32 to 49	Bt	10YR 5/3 Silty clay loam		No cultural material
Isolate Artifact 7	0 to 26	Ap	10YR 3/3 Silt loam	Gradual Clear	No cultural material
	26 to 44	B	10YR 3/2 Silty clay loam mottled with 20% 10YR 4/4 Silty clay loam		No cultural material
	44 to 54	Bt	10YR 5/4 Silty clay loam	No cultural material	
Isolate Artifact 9	0 to 44	Ap	10YR 3/3 Silt loam	Gradual	No cultural material
	44 to 55	Bt	10YR 4/3 Silty clay loam mixed with 50% 10YR 5/6 Silty clay loam		No cultural material
Site LBG-3					
TR A-14	0 to 32	Ap	10YR 3/2 Silt loam	Clear	1 Flake
	32 to 50	B	10YR 4/3 Silty clay loam mottled with 15% 10YR 5/3 Silty clay loam		No cultural material
TR A-14 N10	0 to 12	Ap	10YR 3/3 Silt loam	Gradual Clear	2 Flakes
	12 to 36	A1	10YR 3/2 Silt loam		1 Flake
	36 to 56	B	10YR 5/3 Silty clay loam mottled with 15% 10YR 5/4 Silty clay loam	No cultural material	
TR A-14 N10 E5	0 to 18	Ap	10YR 3/2 Silt loam	Gradual Clear	3 Flakes
	18 to 32	B	10YR 3/2 Silty clay loam mottled with 30% 10YR 4/4 Silty clay loam		No cultural material
	32 to 42	Bt	10YR 5/4 Silty clay loam mottled with 30% 10YR 5/3 Silty clay loam	No cultural material	
TR A-14 N10 W10	0 to 28	Ap	10YR 3/2 Silt loam	Clear	8 Flakes
	28 to 46	B	10YR 4/3 Silty clay loam mottled with 10% 10YR 4/4 Silty clay loam		No cultural material
TR A-14 N10 W20	0 to 28	Ap	10YR 3/2 Silt loam	Clear	4 Flakes
	28 to 44	B	10YR 4/3 Silty clay loam mottled with 10% 10YR 4/4 Silty clay loam		No cultural material
	0 to 10	Fill	10YR 5/4 Silty clay loam mottled with 15% 10YR 5/6 Silty clay loam		Abrupt
TR A-14 N10 W25	10 to 23	Fill	10YR 3/2 Silty clay loam mixed with 20% 10YR 5/4 silty clay loam	Clear	No cultural material
	23 to 56	Ap	10YR 2/2 Silt loam	Clear	1 Flake
	56 to 70	B	10YR 4/2 Silty clay loam		No cultural material
TR A-14 N15 E5	0 to 21	Ap	10YR 3/2 Silt loam	Gradual Clear	2 Flakes
	21 to 32	B	10YR 3/2 Silty clay loam mottled with 30% 10YR 4/4 Silty clay loam		No cultural material
	32 to 45	Bt	10YR 5/4 Silty clay loam mottled with 30% 10YR 5/3 Silty clay loam	No cultural material	

Shovel Test #	Depth (cm bgs)	Soil Horizon	Soil Description	Soil Boundary	Results
TR A-14 N15 W5	0 to 24	Ap	10YR 3/2 Silt loam	Gradual Clear	3 Flakes
	24 to 41	B	10YR 3/2 Silty clay loam mottled with 30% 10YR 4/4 Silty clay loam		No cultural material
	41 to 51	Bt	10YR 5/4 Silty clay loam mottled with 30% 10YR 5/3 Silty clay loam	No cultural material	
TR A-14 N20 W5	0 to 23	Ap	10YR 3/2 Silt loam	Gradual Clear	1 Flake
	23 to 35	B	10YR 3/2 Silty clay loam mottled with 30% 10YR 4/4 Silty clay loam		No cultural material
	35 to 46	Bt	10YR 5/4 Silty clay loam mottled with 30% 10YR 5/3 Silty clay loam	No cultural material	
TR A-14 N20 W15	0 to 25	Ap	10YR 3/2 Silt loam	Clear Clear	5 Flakes
	25 to 40	B	10YR 3/2 Silty clay loam mottled with 30% 10YR 4/4 Silty clay loam		No cultural material
	40 to 50	Bt	10YR 5/4 Silty clay loam mottled with 30% 10YR 5/3 Silty clay loam	No cultural material	
TR A-14 N25 W10	0 to 28	Ap	10YR 3/2 Silt loam	Gradual Clear	1 Flake
	28 to 45	B	10YR 3/2 Silty clay loam mottled with 30% 10YR 4/4 Silty clay loam		No cultural material
	45 to 55	Bt	10YR 5/4 Silty clay loam mottled with 30% 10YR 5/3 Silty clay loam	No cultural material	
TR A-14 N25 W15	0 to 24	Ap	10YR 3/2 Silt loam	Clear Clear	5 Flakes
	24 to 36	B	10YR 3/2 Silty clay loam mottled with 30% 10YR 4/4 Silty clay loam		No cultural material
	36 to 48	Bt	10YR 5/4 Silty clay loam mottled with 30% 10YR 5/3 Silty clay loam	No cultural material	
TR A-14 S5	0 to 40	Ap	10YR 3/3 Silt loam	Clear	1 Flake
	40 to 50	B	10YR 5/4 Silty clay loam mottled with 40% 10YR 3/3 Silty clay loam		No cultural material
TR A 14 S5 E5	0 to 26	Ap	10YR 3/2 Silt loam	Gradual Clear	3 Flakes, 1 Point
	26 to 40	B	10YR 3/2 Silty clay loam mottled with 30% 10YR 4/4 Silty clay loam		No cultural material
	40 to 50	Bt	10YR 5/4 Silty clay loam mottled with 30% 10YR 5/3 Silty clay loam	No cultural material	
TR A-14 S5 W15	0 to 36	Ap	10YR 3/2 Silty clay loam	Clear	1 Flake
	36 to 50	B	10YR 5/4 Silty clay loam mottled with 20% 10YR 3/2 Silty clay loam		No cultural material
TR A-14 S5 W20	0 to 29	Ap	10YR 3/2 Silt loam	Clear	3 Flakes
	29 to 47	Bt	10YR 4/3 Silty clay loam mottled with 15% 10YR 6/4 Silty clay loam		No cultural material
TR A-14 S5 W25	0 to 20	Ap	Disturbed; asphalt and gravel	Gradual	No cultural material
	20 to 50	B	10YR 3/1 Silty clay loam		1 Flake
	50 to 70	Bt	10YR 4/3 Silty clay loam mottled with 10% 10YR 3/6 Silty clay loam		No cultural material

Shovel Test #	Depth (cm bgs)	Soil Horizon	Soil Description	Soil Boundary	Results
TR A-14 S10 E5	0 to 33 33 to 45	Ap Bt	10YR 3/2 Silt loam 10YR 5/4 Silt loam	Gradual	2 Flakes No cultural material
TR A-14 S10 E10	0 to 36 36 to 47	Ap Bt	10YR 3/2 Silt loam 10YR 5/4 Silt loam	Gradual	1 Flake No cultural material
TR A-14 S10 W5	0 to 40 40 to 60	Ap Bt	10YR 3/2 Silt loam 10YR 4/6 Silty clay loam	Gradual	1 Flake
TR A-14 S10 W15	0 to 30 30 to 39 39 to 49	Ap B Bt	10YR 3/2 Silty clay loam 10YR 3/2 Silty clay loam mottled with 40% 10YR 4/4 Silty clay loam 10YR 5/4 Silty clay loam	Clear Clear	1 Flake No cultural material No cultural material
TR A-14 S15 E10	0 to 40 40 to 52	Ap Bt	10YR 3/2 Silt loam 10YR 5/4 Silt loam	Gradual	2 Flakes No cultural material
TR A-14 S20	0 to 30 30 to 40 40 to 51	Ap B Bt	10YR 3/2 Silty clay loam 10YR 3/2 Silty clay loam mottled with 40% 10YR 4/4 Silty clay loam 10YR 4/4 Silty clay loam	Clear Gradual	1 Flake No cultural material No cultural material
TR A-14 S20 E10	0 to 41 41 to 52	Ap Bt	10YR 3/2 Silt loam 10YR 5/4 Silt loam	Gradual	1 Projectile Point No cultural material
TR A-14 S20 E15	0 to 52 52 to 66	Ap Bt	10YR 3/2 Silt loam 10YR 4/3 Silty clay loam mixed with 50% 10YR 5/6 Silty clay loam	Clear	2 Flakes No cultural material
TR A-14 S35	0 to 41 41 to 50 50 to 60	Ap B Bt	10YR 3/2 Silty clay loam 10YR 3/2 Silty clay loam mottled with 30% 10YR 4/4 Silty clay loam 10YR 4/4 Silty clay loam	Gradual Gradual	2 Flakes, 1 Biface No cultural material No cultural material
TR A-14 S35 E10	0 to 42 42 to 54	Ap Bt	10YR 3/2 Silt loam 10YR 5/4 Silt loam	Gradual	1 Flake No cultural material
TR A-14 S35 W20	0 to 40 40 to 60	Ap B	10YR 3/2 Silt loam 10YR 3/2 Silty clay loam mottled with 10% 10YR4/6 Silty clay loam	Gradual	2 Flakes No cultural material
Site LBG-4					
Conc.2 Center	0 to 35 35 to 48	Ap B	10YR 3/2 Silt loam 10YR 4/3 Silty clay loam mottled with 30% 10YR 5/4 Silty clay loam	Vague	3 Flakes No cultural material
Conc. 2 N5	0 to 43 43 to 60	Ap Bt	10YR 3/2 Silt loam 10YR 4/3 Silty clay loam mottled with 30% 10YR 5/4 Silty clay loam	Vague	No cultural material No cultural material

Shovel Test #	Depth (cm bgs)	Soil Horizon	Soil Description	Soil Boundary	Results
Conc. 2 N5 W10	0 to 28 28 to 43	Ap Bt	10YR 3/2 Silt loam 10YR 4/4 Silty clay loam mottled with 15% 10YR 5/4 Silty clay loam	Abrupt	No cultural material No cultural material
Conc. 2 N10	0 to 30 30 to 41	Ap Bt	10YR 3/2 Silt loam 10YR 4/4 Silty clay loam	Gradual	No cultural material No cultural material
Conc. 2 N10 W10	0 to 41 41 to 53	Ap Bt	10YR 4/3 Silt loam 10YR 5/4 Silty clay loam	Clear	No cultural material No cultural material
Conc. 2 E5	0 to 35 35 to 55	Ap Bt	10YR 4/3 Silt loam 10YR 5/6 Silty clay loam	Clear	No cultural material No cultural material
Conc. 2 E5	0 to 39 39 to 51	Ap Bt	10YR 4/3 Silt loam 10YR 4/3 Silty clay loam mottled with 30% 10YR 5/6 Silty clay loam	Clear	No cultural material No cultural material
Conc. 2 E10	0 to 15 15 to 27 27 to 37	Ap B Bt	10YR 3/2 Silt loam 10YR 3/2 Silty clay loam mottled with 30% 10YR 5/4 Silty clay loam 10YR 5/4 Silty clay loam	Clear Gradual	No cultural material No cultural material No cultural material
Conc. 2 S5 W10	0 to 28 28 to 40	Ap Bt	10YR 4/3 Silt loam 10YR 4/3 Silty clay loam mixed with 50% 10YR 5/4 Silty clay loam	Vague	No cultural material No cultural material
Conc. 2 S10	0 to 28 28 to 43	Ap Bt	10YR 4/3 Silt loam 10YR 4/3 Silty clay loam mottled with 30% 10YR 5/6 Silty clay loam	Vague	No cultural material No cultural material
Conc. 2 S10 W10	0 to 36 36 to 50	Ap Bt	10YR 4/3 Silt loam 10YR 5/4 Silty clay loam mottled with 10% 10YR 5/3 Silty clay loam	Clear	No cultural material No cultural material
Conc. 2 W5	0 to 40 40 to 56	Ap Bt	10YR 3/2 Silt loam 10YR 4/4 Silty clay loam mottled with 15% 10YR 5/3 Silty clay loam	Clear	No cultural material No cultural material
Conc.2 W10	0 to 44 44 to 64	Ap Bt	10YR 3/2 Silt loam 10YR 4/3 Silty clay loam mottled with 15% 10YR 5/4 Silty clay loam	Clear	2 Flakes No cultural material
Conc. 2 W15	0 to 29 29 to 40	Ap Bt	10YR 3/3 Silt loam 10YR 5/4 Silty clay loam	Clear	No cultural material No cultural material
Conc. 2 W20	0 to 25 25 to 40	Ap Bt	10YR 3/3 Silt loam 10YR 4/4 Silty clay loam	Gradual	No cultural material No cultural material

Shovel Test #	Depth (cm bgs)	Soil Horizon	Soil Description	Soil Boundary	Results
<i>Site LBG-5</i>					
TR 11-19	0 to 39	Ap	10YR 3/3 Silty clay loam	Clear	1 Flake
	39 to 60	A	10YR 2/1 Silty clay	Clear	No cultural material
	60 to 71	Bt	10YR 5/6 Silty clay loam mottled with 10% 10YR 5/1 Silty clay loam		No cultural material
TR 11-19	0 to 26	Ap	10YR 3/2 Silt loam	Clear	1 Flake
S5 W5	26 to 45	A1	10YR 2/1 Silty clay loam	Gradual	No cultural material
	45 to 58	A2	10YR3/1 Silty clay loam mottled with 20% 10YR 4/4 Silty clay loam	Clear	No cultural material
	58 to 68	Bt	10YR 5/4 Silty clay loam mottled with 30% 10YR 6/2 Silty clay loam		No cultural material
TR 11-19	0 to 30	Ap	10YR 3/2 Silt loam	Clear	1 Flake
S5 W10	30 to 48	A1	10YR 2/1 Silty clay loam	Gradual	No cultural material
	48 to 65	A2	10YR3/1 Silty clay loam mottled with 20% 10YR 4/4 Silty clay loam	Clear	No cultural material
	65 to 75	Bt	10YR 5/4 Silty clay loam mottled with 30% 10YR 6/2 Silty clay loam		No cultural material
TR 11-19	0 to 42	Ap	10YR 3/3 Silty Clay Loam	Gradual	1 Flake, 1 Point, 2 Prehistoric Ceramic
N5 E10	42 to 54	Bt	10YR 4/6 Silty clay loam mottled with 10% 10YR 5/2 Silty clay loam		No cultural material
TR 11-19	0 to 40	Ap	10YR 3/3 Silty clay loam	Clear	1 Flake
N5 E15	40 to 58	Bt	10YR 5/6 Silty clay		No cultural material
TR 11-19	0 to 29	Ap	10YR 3/2 Silty clay loam	Gradual	1 Flake
S10 E5	29 to 46	A	10YR 2/1 Silty clay loam	Vague	No cultural material
	46 to 60	B	10YR 4/1 Silty clay loam mottled with 20% 10YR 4/4 Silty clay loam		No cultural material
TR 11-19	0 to 32	Ap	10YR 3/2 Silt loam mottled with 10% 10YR 4/2 Silt loam	Vague	1 Flake
S10 E20	32 to 45	B	10YR 4/1 Silty clay loam mottled with 30% 10YR 4/4 Silty clay loam		No cultural material
TR 11-19	0 to 28	Ap	10YR 3/2 Silt loam	Abrupt	2 Flakes
S10 E10	28 to 46	B	10YR 2/1 Silty clay loam mottled with 30% 10YR 4/3 Silty clay loam		No cultural material
TR 11-19	0 to 30	Ap	10YR 3/2 Silt loam	Clear	1 Flake
S5	30 to 47	A	10YR 2/1 Silty clay loam	Gradual	No cultural material
	47 to 58	B	10YR 3/1 Silty clay loam mottled with 20% 10YR 4/4 Silty clay loam	Gradual	No cultural material
	58 to 68	Bt	10YR 5/4 Silty clay loam mottled with 40% 10YR 6/2 Silty clay loam		No cultural material
TR 11-19	0 to 26	Ap	10YR 3/2 Silt loam	Clear	1 Flake
S5 E5	26 to 42	A	10YR 2/1 Silty clay loam	Gradual	No cultural material

Shovel Test #	Depth (cm bgs)	Soil Horizon	Soil Description	Soil Boundary	Results
	42 to 56	B	10YR 3/1 Silty clay loam mottled with 20% 10YR 4/4 Silty clay loam	Gradual	No cultural material
	56 to 66	Bt	10YR 5/4 Silty clay loam mottled with 40% 10YR 6/2 Silty clay loam		No cultural material
TR 11-19 S5 E10	0 to 24	Ap	10YR 3/2 Silt loam	Clear	1 Flake
	24 to 41	A	10YR 2/1 Silty clay loam	Gradual	No cultural material
	41 to 52	B	10YR 3/1 Silty clay loam mottled with 20% 10YR 4/4 Silty clay loam	Gradual	No cultural material
	52 to 63	Bt	10YR 5/4 Silty clay loam mottled with 40% 10YR 6/2 Silty clay loam		No cultural material
TR 11-19 E5	0 to 36	Ap	10YR 3/2 Silt loam	Clear	2 Flakes
	36 to 64	A	10YR 2/1 Silty clay loam	Gradual	No cultural material
	64 to 75	Bt	10YR 5/6 Silty clay loam mottled with 15% 10YR 5/1 Silty clay loam		No cultural material
TR 12-19	0 to 22	Ap	10YR 2/2 Silt loam	Clear	1 Flake
	22 to 37	A	10YR 2/1 Silt loam	Clear	No cultural material
	37 to 50	B	10YR 4/1 Silty clay loam mottled with 10% 10YR 4/6 Silty clay loam		No cultural material
TR 12-19 E45	0 to 24	Ap	10YR 2/2 Silt loam	Clear	2 Flakes
	24 to 34	A	10YR 3/2 Silt loam	Clear	No cultural material
	34 to 49	B	10YR 4/1 Silty clay loam		No cultural material
TR 12-19 N5	0 to 39	Ap	10YR 3/2 Silt loam	Clear	2 Flakes
	39 to 50	Bt	10YR 5/6 Silty clay loam		No cultural material
TR 11-19 E25 N5	0 to 12	Ap	10YR 3/2 Silt loam	Clear	No cultural material
	12 to 27	B	10YR 4/3 Silty clay loam	Gradual	1 Flake
	27 to 44	Bt	10YR 5/6 Silty clay loam		No cultural material
TR 11-19 E20 N5	0 to 25	Ap	10YR 3/3 Silt loam	Gradual	2 Flakes
	25 to 36	B	10YR 3/2 Silty clay loam mottled with 40% 10YR 4/4 Silty clay loam	Clear	No cultural material
	36 to 46	Bt	10YR 5/4 Silty clay loam mottled with 30% 10YR 5/3 Silty clay loam		
TR 12-19 N15 E20	0 to 32	Ap	10YR 3/2 Silt loam	Clear	2 Flakes
	32 to 49	Bt	10YR 5/4 Silty clay loam mottled with 20% 10YR 5/6 Silty clay loam		No cultural material
TR 12-19 N5 E25	0 to 26	Ap	10YR 3/3 Silt loam	Clear	2 Flakes
	26 to 40	Bt	10YR 5/4 Silty clay loam mottled with 30% 10YR 5/3 Silty clay loam		No cultural material
TR 12-19 N5 E45	0 to 18	Ap	10YR 3/2 Silt loam	Clear	1 Flake
	18 to 35	B1	10YR 3/1 Silty clay loam mottled with 30% 10YR 5/3 Silty clay	Clear	No cultural material
	35 to 45	B2	10YR 4/2 Silty clay loam mottled with 30% 10YR 5/3 Silty clay loam		

Shovel Test #	Depth (cm bgs)	Soil Horizon	Soil Description	Soil Boundary	Results
TR 12-19 N35 E25	0 to 13 13 to 34 34 to 42	Ap A Bt	10YR 3/2 Silt loam 10YR 3/3 Silt loam 10YR 5/4 Silty clay loam mottled with 30% 10YR 5/3 Silty clay loam	Clear Clear	1 Flake No cultural material No cultural material
TR 12-19 N25 E25	0 to 31 31 to 40	Ap B	10YR 3/2 Silt loam 10YR 4/3 Silty clay loam mottled with 25% 10YR 5/4 Silty clay loam	Gradual	1 Flake No cultural material
TR 12-19 N25 E15	0 to 21 21 to 33	Ap Bt	10YR 3/2 Silt loam 10YR 5/4 Silty clay loam	Clear	1 Flake No cultural material
TR 12-19 N25 E10	0 to 10 10 to 18 18 to 28	Ap B1 B2	10YR 3/2 Silt loam 10YR 4/2 Silty clay loam 10YR 4/3 Silty clay loam	Clear Clear	1 Flake No cultural material No cultural material
TR 12-19 S10 E20	0 to 27 27 to 42 42 to 58 58 to 68	Ap A B1 B2	10YR 3/2 Silt loam 10YR 2/1 Silty clay loam 10YR 3/1 Silty clay loam mottled with 20% 10YR 5/3 Silty clay loam 10YR 4/2 Silty clay loam mottled with 30% 10YR 6/2 Silty clay loam	Clear Gradual Gradual	1 Flake No cultural material No cultural material No cultural material
TR 12-19 N5 E15	0 to 30 30 to 42	Ap Bt	10YR 3/3 Silt loam 10YR 5/4 Silky clay loam mottled with 30% 10YR 5/2 Silty clay loam	Clear	4 Flakes No cultural material
TR 12-19 N5 E10	0 to 39 39 to 52	Ap Bt	10YR 3/3 Silt loam 10YR 5/6 Silty clay loam mottled with 10% 10YR 5/1 Silty clay loam	Clear	3 Flake No cultural material
TR 12-19 N15 E10	0 to 31 31 to 44	Ap B	10YR 3/3 Silt loam 10YR 4/6 Silty clay loam mottled with 15% 10YR 5/4 Silty clay loam	Clear	1 Flake No cultural material
TR 12-19 S5 E25	0 to 28 28 to 53 53 to 60	Ap B B	10YR 3/2 Silt loam 10YR 3/1 Silty clay loam 10YR 3/1 Silty clay loam mottled with 30% 10YR 4/4 Silty clay loam	Clear Gradual	1 Flake No cultural material No cultural material
TR 12-19 S10	0 to 27 27 to 82 82 to 92	Ap A B	10YR 3/3 Silt loam 10YR 2/1 Silty clay loam 10YR 4/2 Silty clay loam mottled with 20% 10YR 7/2 Silty clay loam	Clear Gradual	1 Flake No cultural material No cultural material
TR 12-19 S25	0 to 28 28 to 45 45 to 59	Ap A B	10YR 3/2 Silt loam 10YR 2/1 Silt loam 10YR 4/1 Silty clay loam	Clear Clear	1 Flake No cultural material No cultural material
TR 12-19 S15	0 to 30 30 to 80	Ap A	10YR 2/2 Silt loam 10YR 2/1 Silty clay loam	Clear Gradual	1 Flake No cultural material

Shovel Test #	Depth (cm bgs)	Soil Horizon	Soil Description	Soil Boundary	Results
	80 to 90	B	10YR 4/2 Silty clay loam mottled with 20% 10YR 7/2 Silty clay loam		No cultural material
TR 12-19	0 to 28	Ap	10YR 2/2 Silt loam	Clear	1 Point
S10 E10	28 to 68	A	10YR 2/1 Silty clay loam	Gradual	No cultural material
	68 to 78	B	10YR 4/2 Silty clay loam mottled with 20% 10YR 7/2 Silty clay loam		No cultural material
TR 12-19	0 to 25	Ap	10YR 3/2 Silt loam	Gradual	1 Flake
S5 E35	25 to 45	A	10YR 3/2 Silty clay loam	Gradual	No cultural material
	45 to 60	B	10YR 4/2 Silty clay loam		No cultural material
TR 12-19	0 to 20	Ap	10YR 3/1 Silt loam	Gradual	1 Flake
S10 E35	20 to 55	A	10YR 3/1 Silty clay loam	Gradual	No cultural material
	55 to 70	B	10YR 4/1 Silty clay loam		No cultural material
TR 12-19	0 to 25	Ap	10YR 3/1 Silt loam	Gradual	1 Flake
S20 E35	25 to 50	A	10YR 3/1 Silty clay loam	Gradual	No cultural material
	50 to 65	B	10YR 4/1 Silty clay loam mottled with 20% 10YR 3/6 Silty clay loam		No cultural material
TR 12-19	0 to 28	Ap	10YR 3/3 Silt loam	Clear	1 Flake
S20 E10	28 to 40	A	10YR 2/1 Silty clay loam	Clear	No cultural material
	40 to 50	B	10YR 3/1 Silty clay loam mottled with 30% 10YR 4/3 Silty clay loam		No cultural material
Site LBG-6					
TR 16-24	0 to 60	Ap	10YR 3/2 Silty clay loam	Gradual	9 Flakes
E5	60 to 70	B	10YR 3/1 Silty clay loam mottled with 10% 10YR 5/4 Silty clay loam		No cultural material
TR 16-24	0 to 18	Ap	10YR 3/2 Silt loam	Clear	No cultural material
S5 E35	18 to 45	A	10YR 3/2 Silty clay loam	Gradual	1 Flake
	45 to 56	B	10YR 3/2 Silty clay loam mixed with 50% 10YR 5/6 Silty clay loam		No cultural material
TR 16-24	0 to 36	Ap	10YR 3/2 Silt loam	Gradual	1 Flake
S20 E10	36 to 50	A	10YR 2/2 Silt loam	Clear	No cultural material
	50 to 61	B	10YR 4/3 Silty clay loam		No cultural material
TR 16-24	0 to 49	Ap	10YR 4/2 Silt loam	Clear	2 Flakes
S15 E20	49 to 67	Bt	10YR 5/4 Silty clay loam mottled with 15% 10YR 5/1 Silty clay loam		No cultural material
TR 16-24	0 to 30	Ap	10YR 2/1 Silty clay loam	Gradual	1 Flake
S5 E 30	30 to 60	A	10YR 3/1 Silty clay loam		No cultural material
TR 16-24	0 to 40	A	10YR 2/1 Silty clay loam	Vague	1 Flake
N15 E20	40 to 55	B	10YR 3/1 Silty clay loam mottled with 15% 10YR 4/2 Silty clay loam		No cultural material

Shovel Test #	Depth (cm bgs)	Soil Horizon	Soil Description	Soil Boundary	Results
TR 16-24 N15 E15	0 to 46 46 to 60	Ap B	10YR 3/1 Silty clay loam 10YR 3/1 Silty clay loam mixed with 50% 10YR 5/4 Silty clay loam	Gradual	1 Biface No cultural material
TR 16-24 N10 E15	0 to 18 18 to 52 52 to 64	Ap A B	10YR 3/2 Silt loam 10YR 3/2 Silty clay loam 10YR 5/4 Silty clay loam mottled with 30% 10YR 3/2 Silty clay loam	Clear Gradual	3 Flakes No cultural material No cultural material
TR 16-24 E 15	0 to 52 52 to 60	Ap B	10YR 3/2 Silty clay loam 10YR 2/1 Silty clay loam mottled with 10% 10YR 5/4 Silty clay loam	Gradual	2 Flakes, 1 Point No cultural material
TR 16-24 S15	0 to 30 30 to 60 60 to 80	Ap B1 B2	10YR 3/2 Silt loam 10YR 4/1 Silty clay loam 10YR 4/1 Silty clay loam mottled with 25% 10YR 4/4 Silty clay loam	Gradual Gradual	No cultural material 1 Biface, 1 Flake, 1 Shatter, 1 Core No cultural material
TR 16-24 N15	0 to 34 34 to 47	Ap B	10YR 3/2 Silt loam 10YR 4/1 Silty clay loam mottled with 35% 10YR 4/4 Silty clay loam	Clear	8 Flakes No cultural material
TR 16-24 N25 W5	0 to 19 19 to 39 39 to 53	Ap A B	10YR 2/2 Silt loam 10YR 3/1 Silt loam 10YR 4/1 Silty clay loam mottled with 5% 10YR 4/4 Silty clay loam	Gradual Clear	3 Flakes 2 Flakes No cultural material
TR 16-24 W15 N10	0 to 48 48 to 52	Ap B	10YR 4/2 Silt loam 10YR 4/2 Silty clay loam mottled with 10% 10YR 5/8 Silty clay loam		1 Flake No cultural material
TR 16-24 S5	0 to 33 33 to 46 46 to 60	Ap B1 B2	10YR 3/2 Silt loam 10YR 4/2 Silty clay loam 10YR 4/2 Silty clay loam mottled with 30% 10YR 4/4 Silty clay loam	Gradual Gradual	5 Flakes 1 Flakes No cultural material
TR 16-24 W5	0 to 49 49 to 60	Ap B	10YR 3/1 Silt loam 10YR 4/2 Silty clay loam mottled with 35% 10YR 5/6 Silty clay loam	Gradual	3 Flakes No cultural material
TR 18-25 S10 E25	0 to 30 30 to 68 68 to 83	Ap A Bt	10YR 3/2 Silt loam 10YR 3/3 Silt loam 10YR 5/4 Silty clay loam mottled with 15% 10YR 5/6 Silty clay loam	Clear Abrupt	No cultural material 1 Flake, 1 Bone No Cultural material
TR 18-25 N10 W20	0 to 36 36 to 50	Ap B	10YR 3/2 Silty clay loam 10YR 4/2 Silty clay loam mottled with 15% 10YR 5/4 Silty clay loam	Clear	2 Flakes No cultural material
TR 18-25 S5 E25	0 to 25 25 to 57	Ap A	10YR 3/2 Silt loam 10YR 3/3 Silt loam	Clear Clear	1 Flake 1 Flake

Shovel Test #	Depth (cm bgs)	Soil Horizon	Soil Description	Soil Boundary	Results
	57 to 77	B	10YR 4/1 Silty clay loam		No cultural material
TR 18-25	0 to 28	Ap	10YR 3/2 Silty clay loam	Gradual	2 Flakes
N10 W5	28 to 40	B	10YR 4/2 Silty clay loam mottled with 30% 10YR 4/6 Silty clay loam		No cultural material
TR 18-25	0 to 52	Ap	10YR 3/2 Silty clay loam	Gradual	5 Flakes
N5 E10	52 to 64	B	10 YR 4/4 Silty clay loam mottled with 20% 10YR 4/1 Silty clay loam and 20% 10YR 4/6 Silty clay loam		No cultural material
TR 18-25	0 to 56	Ap	10YR 3/2 Silty clay loam	Gradual	2 Flakes, 1 Core
S5 W40	56 to 68	B	10 YR 4/4 Silty clay loam mottled with 10% 10YR 4/1 Silty clay loam and 30% 10YR 4/6 Silty clay loam		No cultural material
TR 18-25	0 to 45	Ap	10YR 3/3 Silt loam	Gradual	2 Flakes
N10 W40	45 to 58	Bt	10YR 5/4 Silty clay loam		No cultural material
TR 18-25	0 to 35	Ap	10YR 3/3 Silt loam	Gradual	1 Flake
W30	35 to 50	Bt	10YR 5/4 Silty clay loam		No cultural material
TR 18-25	0 to 38	Ap	10YR 3/3 Silt loam	Gradual	1 Flake
W40	38 to 51	Bt	10YR 5/4 Silty clay loam		No cultural material
TR 18-25	0 to 35	Ap	10YR 3/3 Silt loam	Gradual	3 Flake
S10 W30	35 to 50	Bt	10YR 5/4 Silty clay loam		No cultural material
TR 18-25	0 to 26	Ap	10YR 3/2 Silt loam	Clear	5 Flakes
N5 W10	26 to 40	Bt	10YR 6/2 Silty clay loam mottled with 10% 10YR 5/4 Silty clay loam		No cultural material
TR 18-25	0 to 25	Ap	10YR 3/3 Silt loam	Gradual	1 Flake
S20 E5	25 to 56	A	10YR 3/1 Silt loam	Gradual	1Flake
	56 to 79	B	10YR 4/1 Silty clay loam		No cultural material
TR 18-25	0 to 24	Ap	10YR 3/2 Silt loam	Gradual	1 Point, 1Biface,
E15	24 to 60	B	10YR 4/1 Silt loam	Abrupt	3 Flakes
	60-76	Bt	10 YR 5/1 Silty clay loam mottled with 10% 10YR 7/1 Silty clay loam		1 Flake No cultural material
TR 18-25	0 to 35	Ap	10YR 3/2 Silty clay loam	Clear	4 Flakes
W10	35 to 47	B	10YR 4/4 Silty clay loam mottled with 20% 10YR 4/1 Silty clay loam and 10% 10YR 4/6 Silty clay		No cultural material
TR 18-25	0 to 18	Ap	10YR 3/2 Silt loam	Clear	1 Flake
S5 E15	18 to 37	B	10YR 4/1 Silt loam	Clear	1 Flake
	37 to 55	Bt	10YR 5/1 Silty clay loam mottled with 15% 10YR 6/1 Silty clay loam and 10% 10YR 5/6 Silty clay loam		No cultural material

Shovel Test #	Depth (cm bgs)	Soil Horizon	Soil Description	Soil Boundary	Results
Site LBG-7					
TR 17-18	0 to 9	Ap	10YR 3/3 Silt loam	Clear	1Flake
	9 to 28	A	10YR 3/2 Silt loam	Clear	No cultural material
	28 to 45	Bt	10YR 5/4 Silty clay loam		No cultural material
TR 17-20	0 to 15	Ap	10YR 3/2 Silt loam	Clear	2 Flakes
	15 to 32	A	10YR 3/3 Silt loam	Clear	No cultural material
	32 to 48	B	10YR 4/2 Silty clay loam mottled with 15% 10YR 4/6 Silty clay loam		No cultural material
TR 17-20 S10 E15	0 to 26	Ap	10YR 3/2 Silt loam	Clear	1Flake
	26 to 40	B	10YR 4/2 Silty clay loam mottled with 20% 10YR 4/6 Silty clay loam		No cultural material
TR 17-20 S10 E5	0 to 26	Ap	10YR 3/2 Silt loam	Clear	4Flake
	26 to 42	B	10YR 4/1 Silty clay loam mottled with 10% 10YR 4/6 Silty clay loam		No cultural material
TR 17-20 S10	0 to 24	Ap	10YR 3/2 Silt loam	Clear	3Flake
	24 to 40	B	10YR 4/2 Silty clay loam mottled with 15% 10YR 4/6 Silty clay loam		No cultural material
TR 17-20 S20	0 to 24	Ap	10YR 3/2 Silt loam	Clear	2Flake
	24 to 44	B	10YR 4/1 Silty clay loam mottled with 20% 10YR 4/6 Silty clay loam		No cultural material
Site LBG-8					
TR 50-16 N5 E20	0 to 35	Ap	10YR 3/3 Silt loam	Gradual	1 Flake
	35 to 55	B	10YR 4/3 Silty clay loam mottled with 10% 10YR 5/6 Silty clay loam		No cultural material
TR 51-16 E 10	0 to 13	Ap	10YR 3/2 Silt loam	Clear	1 Flake
	13 to 43	A	10YR 3/3 Silt loam	Clear	No cultural material
	43 to 56	Bt	10YR 5/4 Silty clay loam		No cultural material
TR 51-16	0 to 40	Ap	10YR 3/2 Silt loam	Clear	1Flake
	40 to 52	Bt	10YR 5/6 Silty clay loam mottled with 15% 10YR 4/1 Silty clay loam		No cultural material
Isolate Artifact 17	0 to 36	Ap	10YR 3/4 Silt loam	Gradual	No cultural material
	36 to 53	B	10YR 3/4 Silty clay loam mottled with 20% 10YR 5/6 Silty clay loam		No cultural material
TR 49-16 N5	0 to 35	Ap	10YR 3/3 Silt loam	Gradual	No cultural material
	35 to 54	B	10YR 4/3 Silty clay loam mottled with 20% 10YR 5/6 Silty clay loam		No cultural material
TR 49-16 N5 E5	0 to 11	Ap	10YR 4/3 Silt loam	Clear	No cultural material
	11 to 24	B	10YR 3/2 Silty clay loam	Clear	No cultural material
	24 to 35	Bt	10YR 5/6 Silty clay loam		No cultural material

Shovel Test #	Depth (cm bgs)	Soil Horizon	Soil Description	Soil Boundary	Results
TR 49-16	0 to 43	Ap	10YR 3/4 Silt loam	Gradual	No cultural material
N5 E15	43 to 60	B	10YR 3/4 Silty clay loam mottled with 20% 10YR5/6 Silty clay loam		No cultural material
TR 49-16	0 to 35	Ap	10YR 3/2 Silt loam	Gradual	No cultural material
N5 E20	35 to 47	B	10YR 4/3 Silty clay loam mottled with 20% 10YR 4/1 Silty clay loam		No cultural material
TR 49-16	0 to 38	Ap	10YR 3/3 Silt loam	Gradual	No cultural material
N10 E 10	38 to 55	B	10YR 3/6 Silty clay loam		No cultural material
TR 49-16	0 to 24	Ap	10YR 3/3 Silt loam	Clear	No cultural material
N15 E10	24 to 40	B	10YR 3/4 Silt loam	Clear	No cultural material
	40 to 56	Bt	10YR 5/4 Silty clay loam		No cultural material
TR 49-16	0 to 30	Ap	10YR 3/2 Silt loam	Clear	No cultural material
E10	30 to 45	B	10YR 4/4 Silty clay loam mottled with 20% 10YR 5/4 Silty clay loam		No cultural material
TR 49-16	0 to 34	Ap	10YR 4/4 Silt loam	Clear	No cultural material
S5 E10	34 to 44	Bt	10YR 5/6 Silty clay loam		No cultural material
Isolate Artifact 18	0 to 35	Ap	10YR 3/2 Silt loam	Gradual	No cultural material
	35 to 55	B	10YR 4/6 Silty clay loam		No cultural material
TR 48-16	0 to 38	Ap	10YR 4/3 Silt loam	Clear	No cultural material
N5 E5	38 to 49	Bt	10YR 5/4 Silty clay loam		No cultural material
TR 48-16	0 to 30	Ap	10YR 3/2 Silt loam	Gradual	No cultural material
N5 E10	30 to 45	B	10YR 4/4 Silty clay loam mottled with 25% 10YR 5/4 Silty clay loam		No cultural material
TR 48-16	0 to 42	Ap	10YR 3/2 Silt loam	Clear	No cultural material
N10 E10	42 to 53	Bt	10YR 5/4 Silty clay loam		No cultural material
TR 48-16	0 to 30	Ap	10YR 4/3 Silty clay loam	Gradual	No cultural material
N15	30 to 36	B	10YR 4/3 Silty clay loam mottled with 20% 10YR 5/6 Silty clay loam		No cultural material
	36 to 46	Bt	10YR 5/6 Silty clay loam	No cultural material	
TR 48-16	0 to 36	Ap	10YR 3/3 Silt loam	Gradual	No cultural material
N15 E15	36 to 50	B	10YR 4/3 Silty clay loam mottled with 20% 10YR 5/6 Silty clay loam		No cultural material
TR 48-16	0 to 31	Ap	10YR 3/2 Silty clay loam	Clear	No cultural material
N15 E20	31 to 43	B	10YR 4/4 Silty clay loam mottled with 25% 10YR 5/6 Silty clay loam		No cultural material
TR 48-16	0 to 33	Ap	10YR 4/3 Silty clay loam	Clear	No cultural material
N20 E10	33 to 45	Bt	10YR 5/6 Silty clay loam		No cultural material

Shovel Test #	Depth (cm bgs)	Soil Horizon	Soil Description	Soil Boundary	Results
TR 48-16	0 to 17	Ap	10YR 3/2 Silt loam	Clear	No cultural material
N25 E10	17 to 33	B	10YR 3/3 Silt loam	Clear	No cultural material
	33 to 52	Bt	10YR 5/4 Silty clay loam		No cultural material
Site LBG-9					
TR 63-15	0 to 16	Ap	10YR 3/2 Silty clay loam	Clear	6 Nails, 3 Glass
N25 E20	16 to 30	Bt	10YR 5/4 Silty clay loam mottled with 10% 10YR 6/3 Silty clay loam		No cultural material
TR 63-15	0 to 17	Ap	10YR 3/2 Silty clay loam	Clear	1 Glass, 1 Washer
N35 E20	17 to 30	Bt	10YR 5/4 Silty clay loam mottled with 10% 10YR 6/3 Silty clay loam		No cultural material
TR 64-15	0 to 25	Ap	10YR 3/3 Silt loam	Clear	1 Glass, 1 Ceramic, 1 Animal Bone
N10	25 to 41	Bt	10YR 5/6 Silty clay loam mottled with 40% 10YR 6/2 Silty clay loam		No cultural material
TR 64-15	0 to 21	Ap	10YR 3/3 Silt loam mixed with 70% gravels (driveway)	Clear	3 Glass
N20	21 to 38	Bt	10YR 5/6 Silty clay loam mottled with 10% 10YR 6/2 Silty clay loam		No cultural material
TR 63-15	0 to 9	Ap	10YR 3/2 Silty clay loam	Clear	2 Glass, 1 Tile
S5 E20	9 to 43	Bt	10YR 5/4 with a 30% mottle of 10YR 5/6 Silty clay loam		No cultural material
TR 63-15	0 to 21	Ap	10YR 3/2 Silty clay loam	Abrupt	11 Glass, 1 Ceramic, 4 Wire Nails, 1 Tile 1 Brick, 1 Shingle
N5 E20	21 to 60	B	10YR 3/3 Silty clay loam mottled with 10% 10YR 5/4 Silty clay loam and 10% 10YR 4/1 Silty clay loam		4 Glass, 1 Spike
TR 63-15	0 to 32	Ap	10YR 3/2 Silty clay loam	Clear	1 Glass, 1 Ceramic
N15 E20	32 to 45	Bt	10YR 6/3 Silty clay loam mottled with 30% 10YR 4/6 Silty clay loam		No cultural material
TR 63-15	0 to 10	Ap	10YR 3/2 Silt loam	Clear	No cultural material
N15 E10	10 to 21	B	10YR 3/2 Silt loam mixed with 20% 10YR 5/4 Silty clay loam	Clear	4 Glass, 1 Spike
	21 to 38	Bt	10YR 5/4 Silty clay loam mottled with 10YR 6/2 Silty clay loam		No cultural material
TR 63-15	0 to 25	Ap	10YR 3/2 Silt loam	Clear	1 Glass
N45	25 to 46	B	2.5YR 5/4 Silty clay loam		No cultural material
TR 63-15	0 to 15	Ap	10YR 3/2 Silt loam	Clear	2 Glass, 1 Ceramic, 1 Nail
N25 E10	15 to 30	B	10YR 3/2 Silt loam mixed with 15% 10YR 5/3 Silty clay loam	Clear	4 Glass, 1 Nail

Shovel Test #	Depth (cm bgs)	Soil Horizon	Soil Description	Soil Boundary	Results
	30 to 48	Bt	10YR 5/4 Silty clay loam mottled with 20% 10YR 4/4 Silty clay loam		No cultural material
TR 63-15 S5	0 to 12	Ap	10YR 3/2 Silty clay loam mottled with 20% 10YR 5/4 Silty clay loam	Clear	No cultural material
	12 to 26	B	10YR 5/4 Silty clay loam mottled with 10% 10YR 5/8 Silty clay loam	Gradual	1 Iron Cone
	26 to 60	B	10YR 5/4 Silty clay loam mottled with 40% 10YR 5/6 silty clay loam and 10% 10YR 6/1 Silty clay loam		No cultural material
TR 64-15	0 to 30	Ap	10YR 3/3 Silty clay loam	Gradual	1 Tile
	30 to 50	Bt	10YR 5/4 Silty clay loam		No cultural material
TR 63-15 N15 W10	0 to 13	Ap	10YR 3/3 Silty clay loam	Gradual	7 Ceramic
	13 to 20	B	10YR 4/4 Silty clay loam mottled with 20% 10YR 5/4 Silty clay loam	Gradual	No cultural material
	20 to 30	Bt	10YR 5/4 Silty clay loam mottled with 20% 2.5Y 6/3 Silty clay loam		No cultural material
Site LBG-10					
TR 62-38	0 to 25	Ap	10YR 4/3 Silty clay loam	Clear	No cultural material
	25 to 45	Bt	10YR 5/4 Silty clay loam		1 Flake
TR 62-38 E25	0 to 28	Ap	10YR 3/2 Silty clay loam	Clear	6 Flakes
	28 to 44	Bt	10YR 5/4 Silty clay loam		No cultural material
TR 62-38 N10 E25	0 to 26	Ap	10YR 3/2 Silty clay loam mixed with 10YR 5/4 Silty clay loam	Clear	1 Flake
	26 to 38	Bt	10YR 5/4 Silty clay loam		No cultural material
TR 62-38 E10	0 to 25	Ap	10YR 3/2 Silty clay loam	Clear	6 Flakes
	25 to 38	Bt	10YR 5/4 Silty clay loam		No cultural material
TR 62-38 E20	0 to 20	Ap	10YR 3/2 Silty clay loam	Clear	4 Flakes
	20 to 32	Bt	10YR 5/4 Silty clay loam		No cultural material
TR 62-38 N10 E15	0 to 21	Ap	10YR 3/2 Silty clay loam	Clear	1 Flake
	21 to 37	B	10YR 4/4 Silty clay loam mottled with 25% 10YR 5/6 Silty clay loam		No cultural material
TR 62-38 W15	0 to 39	Ap	10YR 3/3 Silty clay loam mottled with 10% 10YR 5/4 Silty clay loam	Clear	1 Flake
	39 to 44	Bt	10YR 5/4 Silty clay loam		No cultural material
TR 62-38 W5	0 to 20	Ap	10YR 3/2 Silty clay loam	Gradual	1 Flake
	20 to 39	B	10YR 5/4 Silty clay loam mottled with 20% 10YR 3/2 Silty clay loam		No cultural material
TR 62-38 N10 E10	0 to 29	Ap	10YR 3/2 Silty clay loam	Gradual	3 Flakes
	29 to 39	Bt	10YR 5/4 Silty clay loam		No cultural material

Shovel Test #	Depth (cm bgs)	Soil Horizon	Soil Description	Soil Boundary	Results
TR 62-38 N5 E20	0 to 27 27 to 40	Ap Bt	10YR 3/3 Silt loam 10YR 5/4 Silty clay loam	Clear	1 Flake No cultural material
TR 62-38 S5 E20	0 to 28 28 to 45	Ap Bt	10YR 3/3 Silt loam 10YR 5/3 Silty clay loam	Clear	1 Flake No cultural material
TR 62-38 N5	0 to 23 23 to 40	Ap Bt	10YR 3/2 Silt loam 10YR 5/4 Silty clay loam	Clear	1 Flake No cultural material
TR 62-38 E15	0 to 28 28 to 45	Ap Bt	10YR 3/3 Silt loam 10YR 5/4 Silty clay loam	Clear	2Flakes No cultural material
TR 62-38 N5 E30	0 to 34 34 to 47 47 to 52	Ap B B	10YR 3/3 Silt loam mottled with with 10% 10YR 5/4 Silty clay loam 10YR 4/3 Silty clay loam mottled with 10% 10YR 5/4 Silty clay loam 10YR 5/4 Silty clay loam mottled with 15% 10YR 4/2 Silty clay loam	Clear Clear	No cultural material 1 Flake No cultural material
TR 62-38 N15 E30	0 to 24 24 to 40	Ap B	10YR 3/3 Silty clay loam 10YR 5/4 Silty clay loam mottled with 25% 10YR 3/3 Silty clay loam	Clear	1 Flake No cultural material
TR 64-39	0 to 30 30 to 58	Ap B	10YR 3/3 Silt loam 10YR 4/6 Silty clay loam	Clear	2 Flake No cultural material
TR 64-39 E15	0 to 28 28 to 40	Ap B	10YR 3/3 Silt loam 10YR 3/6 Silty clay loam	Clear	1 Flake No cultural material
TR 64-39 E10	0 to 20 20 to 45	Ap B	10YR 3/3 Silt loam 10YR 4/6 Silty clay loam	Clear	5 Flakes No cultural material
Site LBG-11					
TR 78-6	0 to 18 18 to 38 38 to 55	Ap E Bt	10YR 3/2 Silt loam 10YR 3/2 Silt loam mixed with 50% 10YR 4/3 Silty clay loam 10YR 5/4 Silty clay loam	Gradual Clear	No cultural material 14 Flakes No cultural material
TR 78-6 S10	0 to 37 37 to 50	Ap Bt	10YR 3/2 Silt loam 10YR 5/4 Silty clay	Gradual	2 Flakes No cultural material
TR 78-6 W10	0 to 27 27 to 40 40 to 51	Ap B Bt	10YR 3/2 Silt loam 10YR 5/1 Silty clay loam mottled with 15% 10YR 5/3 Silty clay loam 10YR 5/3 Silty clay loam	Gradual Clear	1 Flake No cultural material No cultural material
TR 78-6 N5	0 to 48 48 to 70	Ap B	10YR 3/2 Silt loam 10YR 4/3 Silty clay loam	Clear	No cultural material No cultural material
TR 78-6 N5 W10	0 to 37 37 to 53	Ap Bt	10YR 3/2 Silt loam 10YR 5/4 Silty clay loam	Gradual	No cultural material No cultural material

Shovel Test #	Depth (cm bgs)	Soil Horizon	Soil Description	Soil Boundary	Results
TR 78-6 N10	0 to 50 50 to 67	Ap B	10YR 2/2 Silt loam 10YR 4/3 Silty clay loam	Clear	No cultural material No cultural material
TR 78-6 N10 W10	0 to 41 41 to 52	Ap Bt	10YR 3/2 Silt loam 10YR 5/2 Silty clay loam	Clear	No cultural material No cultural material
TR 78-6 E5	0 to 35 35 to 45	Ap Bt	10YR 3/2 Silt loam 10YR 5/4 Silty clay loam	Clear	No cultural material No cultural material
TR 78-6 E10	0 to 47 47 to 60	Ap Bt	10YR 3/2 Silt loam 10YR 5/4 Silty clay loam	Clear	No cultural material No cultural material
TR 78-6 S5 W10	0 to 22 22 to 38 38 to 50	Ap B Bt	10YR 3/2 Silt loam 10YR 4/3 Silty clay loam mottled with 40% 10Yr 3/1 Silty clay loam 10YR 5/4 Silty clay loam	Clear Clear	No cultural material No cultural material No cultural material
TR 78-6 S10 W5	0 to 28 28 to 44 44 to 55	Ap A Bt	10YR 3/2 Silt loam 10YR 3/1 Silt loam 10YR 5/2 Silty clay loam	Clear Clear	No cultural material No cultural material No cultural material
TR78-6 S10 W10	0 to 30 30 to 55 55 to 65	Ap A Bt	10YR 3/2 Silt loam 10YR 3/1 Silt loam 10YR 5/2 Silty clay loam	Clear Clear	No cultural material No cultural material No cultural material
TR 78-6 S10 E5	0 to 37 37 to 50	Ap Bt	10YR 3/2 Silt loam 10YR 5/2 Silty clay loam	Clear	No cultural material No cultural material
TR 78-6 S10 E10	0 to 32 32 to 45	Ap Bt	10YR 3/2 Silt loam 10YR 4/3 Silty clay loam	Gradual	No cultural material No cultural material
TR 78-6 W15	0 to 40 40 to 53	Ap Bt	10YR 3/2 Silt loam 10YR 5/3 Silty clay loam	Gradual	No cultural material No cultural material
TR 78-6 W20	0 to 35 35 to 50 50 to 60	Ap A Bt	10YR 3/2 Silt loam 10YR 3/1 Silt loam 10YR 5/2 Silty clay loam	Gradual Clear	No cultural material No cultural material No cultural material
Site LBG-12					
TR 6-18	0 to 59 59 to 70	Ap Bt	10YR 3/2 Silt loam 10YR 5/3 Silty clay loam mottled with 10% 10YR 5/6 Silty clay loam	Clear	1 Flake No cultural material
TR 6-18 E10	0 to 40 40 to 55	Ap B	10YR 3/2 Silty clay loam 10YR 3/2 Silty clay loam mottled with 10% 10YR 4/3 Silty clay loam	Gradual	1Flake No cultural material
TR 16-18 N5	0 to 47 47 to 63	Ap Bt	10YR 3/2 Silt loam 10YR 5/3 Silty clay loam mottled with 10% 10YR 5/6 Silty clay loam	Gradual	No cultural material No cultural material

Shovel Test #	Depth (cm bgs)	Soil Horizon	Soil Description	Soil Boundary	Results
TR 16-18 N5 E10	0 to 59 59 to 78	Ap Bt	10YR 3/2 Silt loam 10YR 5/2 Silty clay loam mottled with 10% 10YR 5/6 Silty clay loam	Gradual	No cultural material No cultural material
TR 6-18 N10	0 to 55 55 to 70	Ap B	10YR 3/2 Silty clay loam 10YR 4/2 Silty clay loam mottled with 10% 10YR 5/6 Silty clay loam	Gradual	No cultural material No cultural material
TR 16-18 N10 E10	0 to 69 69 to 80	Ap Bt	10YR 3/2 Silt loam 10YR 5/2 Silty clay loam mottled with 10% 10YR 5/6 Silty clay loam	Gradual	No cultural material No cultural material
TR 16-18 E5	0 to 40 40 to 50	Ap B	10YR 3/2 Silt clay loam 10YR 3/2 Silty clay loam mottled with 20% 10YR 4/3 Silty clay loam	Gradual	No cultural material No cultural material
TR 16-18 E15	0 to 55 55 to 70	Ap B	10YR 3/1 Silt clay loam 10YR 3/1 Silty clay loam mottled with 30% 2.5Y 6/3 Silty clay loam	Abrupt	No cultural material No cultural material
TR 16-18 E20	0 to 30 30 to 50	Ap B	10YR 3/1 Silt clay loam 10YR 3/1 Silty clay loam mottled with 10% 10YR 4/1 Silty clay loam	Distinct	No cultural material No cultural material
TR 16-18 S5	0 to 47 47 to 63	Ap Bt	10YR 3/2 Silt clay loam 10YR 5/3 Silty clay loam mottled with 20% 10YR 5/6 Silty clay loam	Clear	No cultural material No cultural material
TR 16-18 S5 E10	0 to 40 40 to 60	Ap B	10YR 3/1 Silt clay loam 10YR 4/6 Silty clay loam	Gradual	No cultural material No cultural material
TR 16-18 S10	0 to 40 40 to 55	Ap Bt	10YR 3/2 Silt clay loam 10YR 4/2 Silty clay loam mottled with 20% 10YR 5/6 Silty clay loam	Clear	No cultural material No cultural material
TR 16-18 S10 E10	0 to 50 50 to 69	Ap Bt	10YR 3/2 Silt loam 10YR 5/2 Silty clay loam mottled with 20% 10YR 5/6 Silty clay loam	Gradual	No cultural material No cultural material
TR 16-18 W5	0 to 30 30 to 50	Ap B	10YR 3/2 Silt clay loam 10YR 3/2 Silty clay loam mottled with 20% 10YR 4/3 Silty clay loam	Gradual	No cultural material No cultural material
TR 16-18 W10	0 to 35 35 to 50	Ap B	10YR 3/2 Silt clay loam 10YR 3/2 Silty clay loam mottled with 20% 10YR 4/3 Silty clay loam	Gradual	No cultural material No cultural material
Site LBG-13					
TR 25-16	0 to 33	Ap	10YR 3/2 Silty clay loam mottled with 10% 10YR 4/4 Silty clay loam	Gradual	5Flakes

Shovel Test #	Depth (cm bgs)	Soil Horizon	Soil Description	Soil Boundary	Results
	33 to 56	B	10YR 4/4 Silty clay loam mottled with 10% 10YR 5/6 Silty clay loam and 20% 10YR 3/1 Silty clay loam		No cultural material
TR 25-16 N5	0 to 16 16 to 32 32 to 59 59 to 76	Ap Ap2 A B	10YR 3/1 Silt loam 10YR 3/2 Silt loam 10YR 2/1 Silt loam 10YR 4/1 Silty clay loam mottled with 5% 10YR 4/6 Silty clay loam	Clear Abrupt Clear	No cultural material No cultural material No cultural material No cultural material
TR 25-16 N10	0 to 13 13 to 60 60 to 75 75 to 89	Ap Ap2 A B	10YR 3/2 Silt loam 10YR 3/3 Silt loam 5Y 2.5/1 Silty clay loam 10YR 3/2 Silty clay	Clear Clear Clear	No cultural material No cultural material No cultural material No cultural material
TR 25-16 E5	0 to 18 18 to 32 32 to 63 63 to 74	Ap Fill Fill B	10YR 3/1 Silt loam 10YR 3/2 Silty clay loam mixed with 10YR 4/4 Silty clay loam 10YR 3/1 Silty clay loam mixed with 10YR 4/4 Silty clay loam 10YR 5/4 Silty clay loam mottled with 30% 10YR 4/6 Silty clay loam	Clear Clear Clear	No cultural material No cultural material No cultural material No cultural material
TR 25-16 S5	0 to 14 14 to 45 45 to 60	Ap Fill B	10YR 3/2 Silt loam 10YR 4/4 Silty clay loam mottled with 30% 10YR 4/2 Silty clay loam and 5% 10YR 5/6 Silty clay loam 7.5YR 3/2 Silty clay loam mottled with 20% 10YR 4/4 Silty clay loam	Clear Clear	No cultural material No cultural material No cultural material
TR 25-16 S10	0 to 14 14 to 49 49 to 61 61 to 73	Ap Fill A B	10YR 3/1 Silt loam 10YR 4/4 Silt loam mottled with 20% 5Y 2.5/1 Silt loam 5Y 2.5/1 Silty clay loam 10YR 4/1 Silty clay loam mottled with 35% 10YR 4/4 Silty clay loam	Clear Distinct Clear	No cultural material No cultural material No cultural material No cultural material
TR 25-16 W5	0 to 30 30 to 60 60 to 70	Ap A B	10YR 3/2 Silty clay loam 10YR 3/1 Silty clay loam 10YR 4/1 Silty clay loam	Clear Clear	No cultural material No cultural material No cultural material
TR 25-16 W10	0 to 83	Fill	10YR 3/2 Silty clay loam		No cultural material
Site LBG-14					
TR 69-34 E10	0 to 30 30 to 45	Ap B	10YR 3/2 Silt loam 10YR 4/3 Silty clay loam	Clear	3 Flakes No cultural material
TR 69-33	0 to 30	Ap	10YR 3/2 Silt loam	Clear	No cultural material

Shovel Test #	Depth (cm bgs)	Soil Horizon	Soil Description	Soil Boundary	Results
	30 to 45	Bt	10YR 5/3 Silty clay loam mottled with 40% 10YR 5/4 Silty clay loam		No cultural material
TR 69-34	0 to 30	Ap	10YR 3/2 Silt loam	Clear	No cultural material
	30 to 46	Bt	10YR 5/3 Silty clay loam mottled with 40% 10YR 5/4 Silty clay loam		No cultural material
TR 69-34	0 to 30	Ap	10YR 3/2 Silt loam	Gradual	No cultural material
N5 E10	30 to 50	Bt	10YR 5/4 Silty clay loam		No cultural material
TR 69-34	0 to 35	Ap	10YR 3/2 Silt loam	Clear	No cultural material
N10 E10	35 to 47	Bt	10YR 5/4 Silty clay loam		No cultural material
TR 69-34	0 to 30	Ap	10YR 3/2 Silt loam	Gradual	No cultural material
E5	30 to 45	Bt	10YR 5/4 Silty clay loam		No cultural material
TR 69-34	0 to 45	Ap	10YR 3/2 Silt loam	Gradual	No cultural material
E15	45 to 58	Bt	10YR 5/4 Silty clay loam		No cultural material
TR 69-34	0 to 37	Ap	10YR 3/2 Silt loam	Gradual	No cultural material
S5 E10	37 to 50	B	10YR 4/3 Silty clay loam		No cultural material
TR 69-34	0 to 42	Ap	10YR 3/2 Silt loam	Clear	No cultural material
S10 E10	42 to 56	Bt	10YR 5/4 Silty clay loam		No cultural material
Site LBG-15					
TR 63-26	0 to 18	Ap	10YR 3/2 Silt loam	Clear	1 Flake fragment
	18 to 32	Bt1	10YR 5/4 Silty clay loam		No cultural material
TR 64-26	0 to 29	Ap	10YR 4/3 Silt loam	Clear	1 Flake fragment
	39 to 41	Bt	10YR 5/6 Silty clay loam		No cultural material
TR 64-27	0 to 24	Ap	10YR 4/3 Silt loam	Clear	5 Flakes
	24 to 37	Bt	10YR 5/6 Silty clay loam		No cultural material
TR 64-27	0 to 30	Ap	10YR 3/2 Silt loam	Clear	1 Flake
N5	30 to 45	Bt	10YR 5/4 Silty clay loam		No cultural material
TR 64-27	0 to 25	Ap	10YR 3/2 Silt loam	Clear	1 Flake
N10	25 to 40	Bt	10YR 5/4 Silty clay loam mottled with 10% 10YR 4/1 Silty clay loam		No cultural material
TR 64-27	0 to 30	Ap	10YR 3/4 Silty clay loam	Gradual	1 Flake fragment
N10 E20	30 to 53	B	10YR 4/6 Silty clay loam mottled with 10% 10YR 4/3 Silty clay loam		No cultural material
TR 64-27	0 to 19	Ap	10YR 3/2 Silt loam	Clear	3 Flake fragments
N10 W10	19 to 31	Bt	10YR 5/4 Silty clay loam		No cultural material
TR 64-27	0 to 30	Ap	10YR 3/2 Silt loam	Abrupt	2 Flakes
N30 E15	28 to 46	Bt	10YR 5/6 Silty clay loam		No cultural material

Shovel Test #	Depth (cm bgs)	Soil Horizon	Soil Description	Soil Boundary	Results
TR 64-27 N30 E20	0 to 33 33 to 45	Ap Bt	10YR 3/2 Silt loam 10YR 5/6 Silty clay loam	Abrupt	1 Flake fragment No cultural material
TR 64-27 N30 E25	0 to 32 20 to 43	Ap Bt	10YR 3/2 Silt loam 10YR 5/6 Silty clay loam	Clear	1 Flake fragment No cultural material
TR 64-27 N40 E15	0 to 26 26 to 37 37 to 50	Ap B Bt	10YR 3/3 Silt loam 10YR 4/4 Silty clay loam 10YR 5/4 Silty clay loam	Clear Gradual	2 Flakes, 1 FCR No cultural material No cultural material
TR 64-27 N40 E25	0 to 27 27 to 42	Ap Bt	10YR 3/2 Silt loam 10YR 5/6 Silty clay loam	Clear	2 Flakes, 1 FRC No cultural material
TR 64-27 N45 E25	0 to 35 35 to 48	Ap B	10YR 3/2 Silt loam 10YR 4/4 Silty clay loam	Clear	1 Flake No cultural material
TR 64-27 E5	0 to 38 38 to 56	Ap B	10YR 3/3 Silt loam 10YR 4/4 Silty clay loam	Gradual	4 Flakes No cultural material
TR 64-27 E10	0 to 21 21 to 42	Ap B	10YR 3/3 Silt loam 10YR 4/3 Silt loam	Gradual Clear	3 Flakes No cultural material
	42 to 58	Bt	10YR 5/3 Silty clay loam		No cultural material
TR 64-27 S10	0 to 26 26 to 42	Ap Bt	10YR 3/2 Silty Clay loam 10YR 5/4 Silty clay loam mottled with 30% 10YR 4/6 Silty clay loam	Clear	4 Flakes No cultural material
TR 64-27 S10 E5	0 to 28 28 to 41	Ap Bt	10YR 3/2 Silt loam 10YR 5/4 Silty clay loam	Clear	6 Flakes No cultural material
TR 64-27 S10 W5	0 to 18 18 to 35	Ap Bt	10YR 3/3 Silt loam 10YR 5/4 Silty cly loam	Clear	2 Flakes No cultural material
TR 64-27 S15 W 5	0 to 24 24 to 39	Ap Bt	10YR 3/3 Silt loam 10YR 5/4 Silty clay loam	Clear	1 Flake fragment No cultural material
TR 64-27 W5	0 to 26 26 to 38	Ap Bt	10YR 3/3 Silty clay loam 10YR 5/6 Silty clay loam	Clear	4 Flakes No cultural material
<i>Isolated Find 1 (Isolate Artifact 16)</i>					
N5	0 to 8 8 to 21 21 to 39	Ap B Bt	10YR 3/3 Silt loam 10YR 4/3 Silt loam 10YR 5/4 Silty clay loam mottled with 5% 10YR 6/2 Silty clay loam	Clear Clear	No cultural material No cultural material No cultural material
E5	0 to 50 50 to 57	Ap Bt	10YR 4/4 Silty clay loam 10YR 5/4 Silty clay loam	Gradual	No cultural material No cultural material

Shovel Test #	Depth (cm bgs)	Soil Horizon	Soil Description	Soil Boundary	Results
S5	0 to 46 46 to 56	Ap Bt	10YR 3/2 Silt loam 10YR 5/6 Silty clay loam	Clear	No cultural material No cultural material
W5	0 to 46 46 to 57	Ap Bt	10YR 3/2 Silt loam 10YR 5/6 Silty clay loam	Clear	No cultural material No cultural material
<i>Isolated Find 2 (STP TR 1-3)</i>					
TR 1-3	0 to 10 10 to 32 32 to 45	Ap B Bt	10YR 3/2 Silt loam 10YR 3/3 Silt loam 10YR 5/4 Silty clay loam	Gradual Clear	No cultural material 1 Flake No cultural material
TR 1-3 N5	0 to 22 22 to 46 46 to 83	Ap A B	10YR 2/2 Silt loam 10YR 3/2 Silt loam 10YR 3/3 Silty clay loam	Gradual Clear	No cultural material No cultural material No cultural material
TR 1-3 N10	0 to 22 22 to 48 48 to 75	Ap A B	10YR 3/2 Silt loam 10YR 3/2 Silty clay loam 10YR 4/2 Silty clay loam	Clear Clear	3 Brick fragments No cultural material No cultural material
TR 1-3 E5	0 to 45 45 to 63	Ap B	10YR 3/2 Silt loam 7.5YR 3/2 Silty clay loam	Gradual	No cultural material No cultural material
TR 1-3 E10	0 to 60 60 to 77	Ap B	10YR 3/1 Silty clay loam 10YR 3/2 Silty clay loam	Gradual	No cultural material No cultural material
TR 1-3 S5	0 to 54 54 to 70	Ap B	10YR 3/2 Silty clay loam 7.5YR 3/2 Silty clay loam mottled with 30% 7.5YR 4/1 Silty clay loam	Gradual	No cultural material No cultural material
TR 1-3 S10	0 to 45 45 to 65	Ap B	10YR 3/2 Silt loam 7.5YR 3/2 Silty clay loam	Vague	No cultural material No cultural material
TR 1-3 W5	0 to 21 TR46-30	Ap B	10YR 4/4 Silt loam 10YR 4/1 Silty clay loam mottled with 10% 10YR 5/4 silty clay loam	Cklear Gradual	No cultural material No cultural material
	N30 W20	B	10YR 5/4 Silty clay loam mottled with 50% 10YR 4/1 Silty clay loam		No cultural material
TR 1-3 W10	0 to 57 57 to 73	Ap B	10YR 3/2 Silty clay loam 10YR 4/4 Silty clay loam mottled with 35% 10YR 4/1 Silty clay loam	Clear	No cultural material No cultural material
<i>Isolated Find 3 (STP TR 3-2)</i>					
TR 3-1	0 to 50 50 to 60	Ap B	10YR 3/1 Silty clay loam 10YR 4/1 Silt loam	Abrupt	No cultural material No cultural material
TR 3-2	0 to 38 38 to 60 60 to 70	Ap B1 B2	10YR 3/1 Silt loam 10YR 4/1 Silty clay loam 10YR 4/3 Silty clay loam mottled with 10% 10YR 5/3 Silty clay loam	Abrupt	1 Flake No cultural material No cultural material

Shovel Test #	Depth (cm bgs)	Soil Horizon	Soil Description	Soil Boundary	Results
TR 3-3	0 to 40	Ap	10YR 3/1 Silt loam	Abrupt	No cultural material
	40 to 50	B1	10YR 4/1 Silty clay loam		No cultural material
	50 to 60	B2	10YR 4/3 Silty clay loam mottled with 10% 10YR 5/3 Silty clay loam		No cultural material
TR 3-2 N5	0 to 26	Ap	10YR 3/2 Silty clay loam	Clear	No cultural material
	26 to 48	A	10YR 3/1 Silty clay loam	Clear	No cultural material
	48 to 78	B	10YR 4/3 Silty clay loam		No cultural material
TR 3-2 N10	0 to 25	Ap	10YR 3/2 Silty clay loam	Clear	No cultural material
	25 to 66	B1	10YR 4/1 Silty clay loam	Clear	No cultural material
	66 to 76	B2	10YR 4/3 Silty clay loam		No cultural material
TR 3-2 W5	0 to 25	Ap	10YR 3/2 Silt loam	Gradual	No cultural material
	25 to 46	A	10YR 3/1 Silt loam	Clear	No cultural material
	46 to 60	AB	10YR 3/1 Silt loam mixed with 30% 10YR 4/3 Silty clay loam	Gradual	No cultural material
	60 to 72	Bt	10YR 5/4 Silty clay		No cultural material
TR 3-2 W10	0 to 30	Ap	10YR 3/2 Silt loam	Gradual	No cultural material
	30 to 60	B	10YR 4/2 Silty clay loam mottled with 20% 10YR 4/3 Silty clay loam	Clear	No cultural material
	60 to 73	Bt	10YR 5/3 Silty clay loam mottled with 5% 10YR 4/4 Silty clay loam		No cultural material
TR 3-2 S5	0 to 38	Ap	10YR 3/2 Silt loam mixed with 80% gravel fill	Clear	No cultural material
	38 to 50	B	10YR 4/4 Silty clay loam mottled with 10% 10YR 5/6 Silty clay loam		No cultural material
TR 3-2 S10	0 to 40	Ap	10YR 3/2 Silt loam	40	No cultural material
	40 to 52	B	10YR 4/4 Silty clay loam mottled with 10% 10YR 5/6 Silty clay loam	52	No cultural material
TR 3-2 E5	0 to 27	Ap	10YR 3/3 Silty clay loam mixed with brick, mortar, cinders, and gravel (road bed)	Gradual	No cultural material
	27 to 47	A	10YR 2/2 Silty clay loam		No cultural material
	47 to 57	B	10YR 4/4 Silty clay loam		No cultural material
TR3-2 E10	0 to 37	Ap	10YR 3/2 Silty clay loam mixed with 5% brick and mortar	Clear	No cultural material
	37 to 50	B	10YR 5/6 Silty clay loam mottled with 15% 10YR 4/2 Silty clay loam		No cultural material
Isolated Find 4 (STP TR 3-12)					
TR 3-12	0 to 58	Ap	10YR 3/2 Silty clay loam		1 Flake
	58 to 68	B	10YR 3/4 Silty clay loam		No cultural material

Shovel Test #	Depth (cm bgs)	Soil Horizon	Soil Description	Soil Boundary	Results
TR 3-12 N10	0 to 26 26 to 50	Ap B	10YR 3/2 Silty clay 10YR 4/3 Silt loam	Gradual	No cultural material No cultural material
TR 3-12 E10	0 to 22 22 to 49 49 to 61	Ap B Bt	10YR 3/3 Silt loam 10YR 3/3 Silty clay loam mottled with 10% 10YR 5/6 Silty clay loam 10YR 5/6 Silty clay loam mottled with 50% 10YR 3/3 Silty clay loam	Clear Gradual	No cultural material No cultural material No cultural material
TR 3-12 E5	0 to 24 24 to 42 42 to 54	Ap1 B Bt	10YR 3/2 Silt loam 10YR 3/1 Silt loam mixed with 30% 10YR 4/3 Silty clay loam 10YR 5/3 Silty clay loam	Gradual Gradual	No cultural material No cultural material No cultural material
TR 3-12 S5	0 to 63 63 to 74	A B	10YR 3/1 Silt loam 10YR 4/2 silty clay loam mottled with 10% 10YR 5/6 Silty clay loam	Vague	No cultural material No cultural material
TR 3-12 W10	0 to 50 50 to 66	Ap B	10YR 3/2 Silt loam 10YR 4/3 Silty clay loam mottled with 50% 10YR 3/3 Silty clay loam	Gradual	No cultural material No cultural material
TR 3-12 N5	0 to 45 45 to 60	Ap Bt	10YR 3/2 Silty clay loam 10YR 5/4 Silty clay loam	Clear	No cultural material No cultural material
TR 3-12 S10	0 to 25 25 to 39 39 to 60	Ap A B	10YR 2/2 Silt loam 10YR 3/2 Silt loam 10YR 4/1 Silty clay loam	Clear Abrupt	No cultural material No cultural material No cultural material
TR 3-12 W5	0 to 39 39 to 53	Ap B	10YR 3/2 Silty clay loam 10YR 4/4 Silty clay loam mottled with 10% 10YR 4/1 Silty clay loam	Gradual	No cultural material No cultural material
<i>Isolated Find 5 (STP TR 3-22)</i>					
TR 3-22	0 to 40 40 to 75 75 to 87	Ap A B	10YR 3/2 Silt loam 7.5YR 3/2 Silty clay loam 10YR 5/3 Silty clay loam mottled with 40% 10YR 4/4 Silty clay loam	Vague Vague	1 Flake No cultural material No cultural material
TR 3-22 S10	0 to 7 7 to 19 19 to 100 100 to 150 150 to 170	Ap B A Bt1 Bt2	10YR 4/3 Silty clay loam 10YR 5/6 Silty clay loam 10YR 3/2 Silty clay loam 2.5/N Clay 3/N Clay	Clear Clear Gradual Gradual	No cultural material No cultural material No cultural material No cultural material No cultural material
TR 3-22 E5	0 to 19 19 to 70 70 to 88	Ap A B	10YR 2/2 Silt loam 10YR 3/2 Silt loam 10YR 4/1 Silty clay loam mottled with 10% 10YR 5/2 Silty clay loam	Gradual Clear	No cultural material No cultural material No cultural material

Shovel Test #	Depth (cm bgs)	Soil Horizon	Soil Description	Soil Boundary	Results
TR 3-22 E10	0 to 18 18 to 59 59 to 77	Ap A B	10YR 2/2 Silt loam 10YR 3/2 Silt loam 10YR 4/1 Silty clay loam mottled with 10% 10YR 5/1 Silty clay loam	Gradual Clear	No cultural material No cultural material No cultural material
TR 3-22 N10	0 to 18 18 to 80 80 to 134 134 to 148 148 to 163	Ap A1 A2 A3 B	10YR 2/2 Silt loam 10YR 3/1 Silt loam 10YR 2/1 Silt loam 10YR 3/1 Silty clay loam 10YR 4/1 Silty clay loam mottled with 10% 10YR 5/2 Silty clay loam	Gradual Gradual Gradual Gradual	No cultural material No cultural material No cultural material No cultural material No cultural material
TR 3-22 W10	0 to 72 72 to 94 94 to 115	Ap B B	10YR 3/2 Silty clay loam 10YR 4/2 Silty clay loam 10YR 4/1 Silty clay loam mottled with 50% 10YR 5/4 Silty clay loam	Gradual Gradual	No cultural material No cultural material No cultural material
TR 3-22 W 5	0 to 94 94 to 117	Ap B	10YR 3/2 Silty clay loam 10YR 5/4 Silty clay loam mottled with 40% 10YR 3/1 Silty clay loam	Clear	No cultural material No cultural material
TR 3-22 S5	0 to 92 92 to 106 106 to 128	Ap A B	10YR 4/2 Silt loam 10YR 2/2 Silty clay loam 10YR 2/2 Silty clay loam mottled with 10% 10YR 5/6 Silty clay loam	Clear	No cultural material No cultural material No cultural material
TR3-22 N5	0 to 121 121 to 167	Ap A	10YR 4/2 Silt loam 10YR 2/1 Silty clay loam	Clear	No cultural material
<i>Isolated Find 6 (STP TR 17-18)</i>					
TR 17-18	0 to 9 9 to 28 28 to 45	Ap A Bt	10YR 3/3 Silt loam 10YR 3/2 Silt loam 10YR 5/4 Silty clay loam	Clear Clear	1 Flake No cultural material No cultural material
TR 17-18 S10	0 to 34 34 to 46	Ap B	10YR 3/3 Silt loam 10YR 4/6 Silty clay loam	Clear	No cultural material No cultural material
TR 17-18 E10	0 to 11 11 to 35	Ap Bt	10YR 4/3 Silt loam 10YR 5/6 Silty clay loam	Clear	No cultural material No cultural material
TR 17-18 E5	0 to 30 30 to 45	Ap Bt	10YR 3/3 Silt loam mottled with 10% 10YR 5/8 Silty clay loam 10YR 5/6 Silty clay loam	Gradual	No cultural material No cultural material
TR 17-18 N10	0 to 33 33 to 46	Ap Bt	10YR 3/3 Silt loam mottled with 20% 10YR 5/4 Silty clay loam and 5% 7.5YR 5/4 Silty clay loam 10YR 5/4 Silty clay loam mottled with 20% 10YR 5/3 Silty clay loam and 20% 10YR 6/2 Silty clay loam	Clear	No cultural material No cultural material

Shovel Test #	Depth (cm bgs)	Soil Horizon	Soil Description	Soil Boundary	Results
TR 17-18 S5	0 to 33 33 to 47	Ap B	10YR 3/3 Silt loam 10YR 4/6 Silty clay loam	Clear	No cultural material No cultural material
TR 17-18 N5	0 to 9 9 to 13 13 to 30 30 to 40	Ap Fill B1 B2	10YR 3/3 Silt loam 10YR 5/4 Silty clay loam 10YR 3/2 Silty clay loam mottled with 30% 10YR 5/4 Silty clay loam 10YR 5/4 Silty clay loam mottled with 30% 10YR 3/2 Silty clay loam	Abrupt Abrupt Clear	No cultural material No cultural material No cultural material No cultural material
TR 17-18 W10	0 to 18 18 to 33 33 to 45	Ap B Bt	10YR 3/3 Silt loam mottled with 30% 10YR 5/3 Silty clay loam 10YR 3/2 Silty clay loam mottled with 30% 10YR 5/4 Silty clay loam 10YR 5/4 Silty clay loam mottled with 20% 10YR 5/2 Silty clay loam	Clear Gradual	No cultural material No cultural material No cultural material
TR 17-18 W5	0 to 14 14 to 34 34 to 45	Ap B Bt	10YR 3/3 Silty loam 10YR 3/3 Silty clay loam mottled with 20% 10YR 5/3 Silty clay loam and 5% 7.5YR Silty clay loam 10YR 5/4 Silty clay loam mottled with 20% 10YR 5/3 Silty clay loam	Clear Gradual	No cultural material No cultural material No cultural material
Isolated Find 7 (STP TR 20-18 S15)					
TR 20-18 S15	0 to 32 32 to 48	Ap B	10YR 3/3 Silty clay loam 10YR 4/6 Silty clay loam	Gradual	1 Flake No cultural material
TR 20-18 S15 W5	0 to 20 20 to 39	Apl B	10YR 4/3 Silty clay loam 10YR 4/6 Silty clay loam	Clear	No cultural material No cultural material
TR 20-18 S15 W10	0 to 25 25 to 42	Apl B	10YR 4/3 Silty clay loam 10YR 4/6 Silty clay loam	Gradual	No cultural material No cultural material
TR 20-18 S20	0 to 15 15 to 38	Ap B	10YR 4/3 Silty clay loam 10YR 4/4 Silty clay loam mottled with 5% 10YR 7/3 Silty clay loam and 10% 7.5YR 5/6 Silty clay loam	Gradual	No cultural material No cultural material
TR 20-18 S15 10E	0 to 12 1 to 26 26 to 37	Ap B Bt	10YR 3/2 Silt loam 10YR 3/1 Silt loam mixed with 30% 10YR 4/3 Silty clay loam 10YR 5/4 Silty clay loam	Gradual Clear	No cultural material No cultural material No cultural material
TR 20-18 S25	0 to 18 18 to 36 36 to 46	Ap B Bt	10YR 3/2 Silt loam 10YR 3/1 Silt loam mixed with 30% 10YR 4/3 Silty clay loam 10YR 5/4 Silty clay loam	Gradual Clear	No cultural material No cultural material No cultural material
TR 20-18 S10	0 to 16 16 to 32	Ap B	10YR 3/2 Silt loam 10YR 3/1 Silt loam mixed with 30% 10YR 4/3 Silty clay loam	Gradual Clear	No cultural material No cultural material

Shovel Test #	Depth (cm bgs)	Soil Horizon	Soil Description	Soil Boundary	Results
	32 to 42	Bt	10YR 5/4 Silty clay loam		No cultural material
TR 20-18	0 to 15	Ap	10YR 3/2 Silt loam	Gradual	No cultural material
S5	15 to 27	B	10YR 3/1 Silt loam mixed with 30% 10YR 4/3 Silty clay loam	Clear	No cultural material
	27 to 37	Bt	10YR 5/4 Silty clay loam		No cultural material
TR 20-18	0 to 15	Ap	10YR 3/2 Silt loam	Gradual	No cultural material
S15 E5	15 to 28	B	10YR 3/1 Silt loam mixed with 30% 10YR 4/3 Silty clay loam	Clear	No cultural material
	28 to 38	Bt	10YR 5/4 Silty clay loam		No cultural material
<i>Isolated Find 8 (STP TR 47-31)</i>					
TR 47-31	0 to 35	Ap1	10YR 3/3 Silt loam	Gradual	No cultural material
	35 to 55	B	10YR 3/3 Silt loam mottled with 10% 10YR4/6 Silty clay loam		No cultural material
TR 47-31	0 to 30	Ap	10YR 3/2 Silt loam	Gradual	No cultural material
W10	30 to 44	B	10YR 4/3 Silty clay loam	Clear	No cultural material
	44 to 59	B	10YR 5/4 Silty clay loam mottled with 40% 10YR 4/3 Silty clay loam		No cultural material
TR 47-31	0 to 34	Ap	10YR 3/3 Silt loam	Gradual	No cultural material
W5	34 to 41	B	10YR 4/3 Silty clay loam	Clear	No cultural material
	41 to 52	B	10YR 4/4 Silty clay loam mottled with 20% 10YR 4/2 Silty clay loam		No cultural material
TR 47-31	0 to 25	Ap	10YR 4/4 Silty clay loam	Clear	No cultural material
E10	25 to 50	B	10YR 3/4 Silty clay loam		No cultural material
TR 47-31	0 to 25	Ap	10YR 3/1 Silt loam	Clear	No cultural material
N10	25 to 51	Bt	10YR 5/6 Silty clay loam		No cultural material
TR 47-31	0 to 25	Ap	10YR 3/1 Silt loam	Clear	No cultural material
N5	25 to 51	Bt	10YR 5/6 Silty clay loam		No cultural material
TR 47-31	0 to 36	Ap	10YR 3/3 Silty clay loam	Clear	No cultural material
S10	36 to 50	B	10YR 4/4 Silt clay loam		No cultural material
TR 47-31	0 to 32	Ap	10YR 3/3 Silty clay loam	Clear	No cultural material
E5	32 to 50	B	10YR 4/4 Silty clay loam mottled with 20% 10YR 5/4 Silty clay loam and 10% 10YR 4/1 Silty clay loam		No cultural material
TR 47-31	0 to 30	Ap	10YR 3/3 Silt loam	Vague	No cultural material
S5	30 to 46	B	10YR 4/4 Silty clay loam		No cultural material
<i>Isolated Find 9 (STP TR 58-37)</i>					
TR 58-37	0 to 19	Ap	10YR 4/3 Silty clay loam	Clear	1 Flake
	19 to 33	B	10YR 4/4 Silty clay loam mottled with 30% 10YR 5/6 Silty clay loam		No cultural material

Shovel Test #	Depth (cm bgs)	Soil Horizon	Soil Description	Soil Boundary	Results
TR 58-37 W10	0 to 15 15 to 30	Ap B	10YR 3/2 Silty clay loam 10YR 4/4 Silty clay loam mottled with 50% 10YR 5/4 Silty clay loam	Clear	No cultural material No cultural material
TR 58-37 W5	0 to 18 18 to 30	Ap B	10YR 3/2 Silty clay loam 10YR 4/4 Silty clay loam mottled with 50% 10YR 5/4 Silty clay loam	Clear	No cultural material No cultural material
TR 58-37 E10	0 to 8 8 to 35	Ap B	10YR 4/4 Silty clay loam 10YR 4/6 Silty clay loam	Clear	No cultural material No cultural material
TR 58-37 E5	0 to 20 20 to 37	Ap B	10YR 4/3 Silty clay loam 10YR 4/6 Silty clay loam	Clear	No cultural material No cultural material
TR 58-37 N5	0 to 27 27 to 48	Ap B	10YR 4/4 Silty clay loam 10YR 4/6 Silty clay loam mottled with 10% 10YR 5/2 Silty clay loam	Clear	No cultural material No cultural material
TR 58-37 S10	0 to 30 30 to 45	Ap B	10YR 3/3 Silty clay loam 10YR 4/6 Silty clay loam	Clear	No cultural material No cultural material
TR 58-37 S5	0 to 25 25 to 30	Ap B	10YR 3/3 Silty clay loam 10YR 4/6 Silty clay loam mottled with 30% 10YR 5/4 Silty clay loam	Clear	No cultural material No cultural material
TR 58-37 N10	0-27 27-37	Ap B	10YR 3/3 Silty clay loam 10YR 5/4 Silty clay loam	Gradual	No cultural material No cultural material
<i>Isolated Find 10 (STP TR 60-44)</i>					
TR 60-44	0 to 30 30 to 40	Ap B	10YR 3/3 Silt loam 10YR 4/6 Silty clay loam	Clear	1 Flake No cultural material
TR 60-44 W10	0 to 18 18 to 30	Ap Bt	10YR 3/2 Silt loam 10YR 5/6 Silty clay loam	Clear	No cultural material No cultural material
TR 60-44 W5	0 to 27 27 to 38	Ap Bt	10YR 3/2 Silt loam 10YR 5/6 Silty clay loam	Clear	No cultural material No cultural material
TR 60-44 N10	0 to 30 30 to 50	Ap B	10YR 3/3 Silt loam 10YR 4/6 Silty clay loam	Clear	No cultural material No cultural material
TR 60-44 N5	0 to 25 25 to 41	Ap Bt	10YR 3/3 Silt loam 10YR 5/6 Silty clay loam	Clear	No cultural material No cultural material
TR 60-44 S10	0 to 30 30 to 40	Ap Bt	10YR 3/3 Silt loam 10YR 5/4 Silty clay loam	Clear	No cultural material No cultural material
TR 60-44 S5	0 to 30 30 to 47	Ap Bt	10YR 3/3 Silt loam 10YR 5/4 Silty clay loam	Clear	No cultural material No cultural material
TR 60-44 E10	0 to 22 22 to 35	Ap Bt	10YR 3/3 Silt loam 10YR 5/6 Silty clay loam	Clear	No cultural material No cultural material

Shovel Test #	Depth (cm bgs)	Soil Horizon	Soil Description	Soil Boundary	Results
TR 60-44	0 to 29	Ap	10YR 3/3 Silt loam	Clear	No cultural material
E5	29 to 40	Bt	10YR 5/6 Silty clay loam		No cultural material
<i>Isolated Find 11 (STP TR 66-18)</i>					
TR 66-18	0 to 30	Ap	10YR 3/2 Silt loam	Clear	1 Biface
	30 to 49	B	10YR 4/6 silty clay loam mottled with 20% 10YR 5/4 Silty clay loam		No cultural material
TR 66-18	0 to 34	Ap	10YR 3/2 Silt loam	Gradual	No cultural material
N10	34 to 46	B	10YR 4/4 Silty clay loam		No cultural material
TR 66-18	0 to 32	Ap	10YR 3/2 Silt loam	Gradual	No cultural material
N5	32 to 53	B	10YR 4/4 Silty clay loam		No cultural material
TR 66-18	0 to 19	Ap1	10YR 3/3 Silty clay loam	Gradual	No cultural material
S10	19 to 27	B	10YR 3/3 Silty clay loam mottled with 40% 10YR 4/4 Silty clay loam		No cultural material
	27 to 37	B	10YR 4/4 Silty clay loam mottled with 30% 10YR 4/2 Silty clay loam		No cultural material
TR 66-18	0 to 20	Ap1	10YR 3/3 Silty clay loam	Gradual	No cultural material
S5	20 to 31	B	10YR 3/3 Silty clay loam mottled with 40% 10YR 5/4 Silty clay loam		No cultural material
	31 to 43	Bt	10YR 5/4 Silty clay loam		No cultural material
TR 66-18	0 to 45	Ap	10YR 3/2 Silty clay loam	Gradual	No cultural material
W10	45 to 56	B	10YR 5/4 Silty clay loam mottled with 30% 10YR 3/2 Silty clay loam		No cultural material
TR 66-18	0 to 32	Ap	10YR 3/2 Silty clay loam	Clear	No cultural material
W5	32 to 45	B	10YR 5/4 Silty clay loam mottled with 20% 10YR 3/2 Silty clay loam		No cultural material
TR 66-18	0 to 19	Ap	10YR 3/2 Silt loam	Clear	No cultural material
E10	19 to 35	B	10YR 3/3 Silt loam		No cultural material
	35 to 49	Bt	10YR 5/3 Silty clay loam		No cultural material
TR 66-18	0 to 22	Ap	10YR 3/2 Silt loam	Clear	No cultural material
E5	22 to 38	B	10YR 4/3 Silt loam		No cultural material
	38 to 52	Bt	10YR 5/3 Silty clay loam		No cultural material
<i>Isolated Find 12 (STP TR 68-35)</i>					
TR 68-35	0 to 34	Ap	10YR 3/2 Silt loam	Clear	1 Flake
	34 to 46	B	10YR 4/4 Silty clay loam		No cultural material
TR 68-35	0 to 28	Ap	10YR 3/2 Silt loam	Clear	No cultural material
W10	28 to 40	Bt	10YR 5/4 Silty clay loam		No cultural material
TR 68-35	0 to 27	Ap	10YR 3/2 Silt loam	Clear	No cultural material
W5	27 to 40	Bt	10YR 5/4 Silty clay loam		No cultural material

Shovel Test #	Depth (cm bgs)	Soil Horizon	Soil Description	Soil Boundary	Results
TR 68-35 E5	0 to 29 29 to 40	Ap B	10YR 3/3 Silt loam 10YR 4/4 Silty clay loam	Clear	No cultural material No cultural material
TR 68-35 E10	0 to 18 18 to 33	Ap B	10YR 3/3 Silt loam 10YR 4/4 Silty clay loam	Clear	No cultural material No cultural material
TR 68-35 S10	0 to 19 19 to 37	Ap B	10YR 4/3 Silty clay loam 10YR 4/3 Silty clay loam mottled with 10% 10YR 5/1 silty clay loam	Gradual	No cultural material No cultural material
TR 68-35 S5	0 to 19 19 to 35	Ap B	10YR 4/3 Silty clay loam 10YR 4/3 Silty clay loam mottled with 10% 10YR 5/1 Silty clay loam	Gradual	No cultural material No cultural material
TR 68-35 N10	0 to 30 30 to 44	Ap Bt	10YR 4/2 Silt loam 10YR 5/4 Silty clay loam	Clear	No cultural material No cultural material
TR 68-35 N5	0 to 29 29- to 3	Ap B	10YR 3/2 Silt loam 10YR 4/4 Silty clay loam	Clear	No cultural material No cultural material
<i>Isolated Find 13 (STP TR 71-19)</i>					
TR 71-19	0 to 17 17 to 34 34 to 49	Ap E Bt	10YR 3/3 Silt loam 10YR 4/3 Silt loam 10YR 5/3 Silty clay loam	Clear Clear	1 Flake No cultural material No cultural material
TR 71-19 W 10	0 to 30 30 to 40	Ap B	10YR 3/2 Silt loam 10YR 3/6 Silty clay loam	Clear	No cultural material No cultural material
TR 71-19 W 15	0 to 32 32 to 40	Ap B	10YR 3/2 Silt loam 10YR 3/6 Silty clay loam	Clear	No cultural material No cultural material
TR 71-19 E 10	0 to 28 28 to 41	Ap B	10YR 3/2 Silty clay loam 10YR 4/4 Silty clay loam mottled with 30% 10YR 5/6 Silty clay loam	Gradual	No cultural material No cultural material
TR 71-19 E 5	0 to 22 22 to 37	Ap B	10YR 3/2 Silty clay loam 10YR 4/4 Silty clay loam mottled with 30% 10YR 5/6 Silty clay loam	Gradual	No cultural material No cultural material
TR 71-19 N10	0 to 20 20 to 35	Ap B	10YR 3/2 Silt loam 10YR 4/3 Silty clay loam mottled with 20% 10YR 5/4 Silty clay loam	Clear	No cultural material No cultural material
TR 71-19 N5	0 to 26 26 to 41	Ap B	10YR 3/2 Silty clay loam 10YR 4/4 Silty clay loam mottled with 30% 10YR 5/6 Silty clay loam	Gradual	No cultural material No cultural material
TR 71-19 S10	0 to 29 29 to 43	Ap B	10YR 3/2 Silt loam 10YR 5/4 Silty clay loam	Clear	No cultural material No cultural material
TR 71-19 S5	0 to 31 31 to 42	Ap B	10YR 3/2 Silt loam 10YR 5/4 Silty clay loam	Clear	No cultural material No cultural material

Shovel Test #	Depth (cm bgs)	Soil Horizon	Soil Description	Soil Boundary	Results
<i>Isolated Find 14 (STP TR 79-1)</i>					
TR 79-1	0 to 16	Ap	10YR 2/2 Silt loam	Gradual	No cultural material
	16 to 40	E	10YR 4/3 Silt loam	Clear	No cultural material
	40 to 80	A	7.5 YR 3/1 Silt loam	Clear	1 Flake
	80 to 92	B	10YR 4/1 Silty clay loam		No cultural material
TR 79-1 S10	0 to 20	Ap	10YR 3/2 Silt loam	Clear	No cultural material
	20 to 29	E	10YR 4/2 Silt clay loam	Clear	No cultural material
	29 to 78	A	10YR 3/1 Silt loam	Gradual	No cultural material
	78 to 90	B	10YR 5/1 Silty clay loam		No cultural material
TR 79-1 N10	0 to 25	Ap	10YR 3/2 Silt loam	Gradual	No cultural material
	25 to 55	E	10YR 4/3 Silt loam mottle with 30% 10YR 5/2 Silt loam	Clear	No cultural material
	55 to 90	A	10YR 3/1 Silt loam	Gradual	No cultural material
	90 to 100	B	10YR 4/1 Silty clay laom		No cultural material
TR 79-1 E10	0 to 38	Ap	10YR 3/2 Silt loam	Clear	No cultural material
	38 to 80	A1	10YR 3/1 Silt loam	Gradual	No cultural material
	80 to 90	B	10YR 4/1 Silty clay loam mottled with 30% 10YR 5/2 Silty clay loam		No cultural material
TR 79-1 E5	0 to 20	Ap	10YR 3/2 Silt loam	Clear	No cultural material
	20 to 35	E	10YR 4/3 silty clay loam mottled with 30% 10YR 5/2 Silty clay loam	Clear	No cultural material
	35 to 85	A	10YR 3/1 Silt loam	Gradual	No cultural material
	85 to 96	B	10YR 4/1 Silty clay loam mottled with 20% 10YR 5/2 Silty clay loam		No cultural material
TR 79-1 N5	0 to 48	Ap	10YR 3/2 Silt loam	Clear	No cultural material
	48 to 71	Bt	10YR 5/4 Silty clay loam		No cultural material
TR 79-1 S5	0 to 74	Ap	10YR 3/1 Silt loam	Gradual	No cultural material
	74 to 84	B	10YR 3/1 Silt loam mixed with 20% 10YR 5/4 Silty clay loam		No cultural material
TR 79-4	0 to 30	Ap	10YR 3/2 Silt loam	Clear	No cultural material
	30 to 42	Bt	10YR 5/2 Silty clay loam		No cultural material
TR 79-1 W10	0 to 52	Ap	10YR 3/2 Silt loam	Gradual	No cultural material
	52 to 65	B	10YR 4/2 Silty clay loam		No cultural material
TR 79-1 W5	0 to 21	Ap	10YR 3/2 Silt loam	Clear	No cultural material
	21 to 39	E	10YR 4/2 Silt loam	Clear	No cultural material
	39 to 72	A	10YR 3/1 Silt loam	Gradual	No cultural material
	72 to 82	B	10YR 4/1 Silty clay loam mottled with 20% 10YR 4/4 Silty clay loam		No cultural material
<i>Isolated Find 15 (STP TR 80-4)</i>					
TR 80-4	0-27	Ap	10YR 4/3 Silt loam	Clear	1 Flake
	27-38	B	10YR 5/4 Silty clay		No cultural material

Shovel Test #	Depth (cm bgs)	Soil Horizon	Soil Description	Soil Boundary	Results
TR 80-4 N5	0 to 32 32 to 45	Ap Bt	10YR 3/2 Silt loam 10YR 5/2 Silty clay loam	Gradual	No cultural material No cultural material
TR 80-4 N10	0 to 29 29 to 40	Ap Bt	10YR 4/2 Silt loam 10YR 5/4 Silty clay loam	Clear	No cultural material No cultural material
TR 80-4 E10	0 to 22 22 to 37	Ap Bt	10YR 4/2 Silt loam 10YR 5/4 Silty clay loam	Clear	No cultural material No cultural material
TR 80-4 E5	0 to 40 40 to 45	Ap B	10YR 4/2 Silt loam 10YR 4/6 Silty clay loam	Clear	No cultural material No cultural material
TR 80-4 W5	0 to 30 30 to 40	Ap Bt	10YR 4/2 Silt loam 10YR 5/4 Silty clay loam	Clear	No cultural material No cultural material
TR 80-4 W10	0 to 31 31 to 42	Ap B	10YR 3/2 Silt loam 10YR 4/2 Silty clay loam mottled with 30% 10YR 4/6 Silty clay loam	Gradual	No cultural material No cultural material
TR 80-4 S10	0 to 49 49 to 61	Ap B	10YR 3/1 Silt loam 10YR 4/2 Silty clay loam	Gradual	No cultural material No cultural material
TR 80-4 S5	0 to 34 34 to 49	Ap B	10YR 3/2 Silt loam 10YR 4/2 Silty clay loam mottled with 30% 10YR 4/6 Silty clay loam	Gradual	No cultural material No cultural material

APPENDIX E
ARTIFACT CATALOGING AND ANALYSIS METHODS
UTILIZED CODES
ARTIFACT CATALOG

ARTIFACT CATALOGING AND ANALYSIS METHODS

A. LABORATORY PROCESSING

All artifacts were transported from the field to Berger's laboratory. In the field, artifacts were bagged in 4-mil, resealable polyethylene bags. Artifact cards bearing provenience information were included in the plastic bags. A Field Number was assigned to each unique provenience in the field. This number appears with all the provenience information and is used throughout processing and analysis to track artifacts.

In the laboratory, provenience information on each artifact card was checked against a master list of Field Numbers with their proveniences. Any discrepancies were corrected at this time and a Catalog Number was assigned to each provenience, according to Kansas State Historical Society guidelines.

Prehistoric lithics and most historic artifacts were washed in water with a soft toothbrush. Prehistoric ceramics, faunal material, and fragile artifacts were wet-brushed with a soft natural-bristle paint brush or were simply dry-brushed. Metal objects were cleaned using a dry toothbrush or stainless steel wire brush. All artifacts were laid out to air-dry in preparation for analysis.

During analysis, individual Specimen Numbers were assigned to artifacts within each Catalog Number. After analysis, the artifacts were re-bagged into clean, perforated 4-mil resealable polyethylene bags. Artifacts are organized sequentially first by Site Number, then by Catalog Number, and finally by Specimen Number within each Catalog Number. An acid-free artifact card listing full provenience information and analytical class was included in each bag.

Artifacts were marked with provenience information following the below format, using black waterproof India ink on a base of Rhoplex AC-33. The label was then sealed with a top coat of 10% polyvinyl acetate (PVA) in acetone.

<u>(State Site Number)</u>	Ex.	<u>14LV111</u>
(Catalog #) – (Specimen #)		6-12

B. ANALYTICAL METHODS

All artifact analyses were conducted by the Laboratory Supervisor and/or Material Specialist(s). Berger maintains an extensive comparative collection and laboratory research library to contribute to the completeness and accuracy of the analyses.

Berger has developed a flexible analytical database system that fully integrates all artifacts in one database for use in data manipulation and interpretation. The computerized data management system is written using Paradox® 9, a relational database development package that runs on a Windows® platform.

Each class of artifacts (lithics, prehistoric ceramics, historic ceramics, curved (vessel) glass, small finds/architectural, and faunal) has a series of attributes, sometimes unique to that class, that are recorded to describe each artifact under analysis. Artifact information (characteristics), recorded on the data entry forms by the analysts, was entered into the system. The system was then used to enhance the artifact records with the addition of provenience information. Berger maintains a complete type and attribute coding book for each analytical class.

The artifact coding system employs a Type/SubType system developed by Berger's Cultural Resources Division. The format for the historic artifacts is based on the South/Noël Hume typology (South 1977),

as modified for use in a computerized system (Berger 2006). The prehistoric lithics system is based on Taylor, et al (1996) and the prehistoric ceramics is based on Koldehoff (1992), both modified for use in a computerized system (Berger 2006).

The Type/SubType system is comprised of a three-letter code followed by a number (integer). The first letter of the code represents the specific Class to which that artifact belongs: L, for Lithics; A, for Prehistoric Ceramics; C, for Historic Ceramics; G, for Curved (Vessel) Glass; S, for Small Finds/Architectural; and Z, for Faunal. The second and third letters and number represent further subdivisions of the artifact groups within the class and are defined in the below discussions for each analytical class.

The Notes field allows for individual written comments applicable to a specific entry. In general, notes are used to describe particulars of decorative motifs or unusual characteristics, or to record bibliographic references used for identification or dating.

C. LITHIC ARTIFACT ANALYSIS

Type/SubType. The first letter of the Type code for Lithic artifacts is always L. The second and third letters of the Type code denote the analytical class: DB, for Debitage; CR, for Cores; BF, for Bifaces; FT, for Flake Tools; GS, for Groundstone Tools; FC for Fire-cracked Rock; and UM, for Unmodified Cobbles and Pebbles. The numeric Subtype code provides further identification of artifact types within the analytical classes (e.g., LDB3 – Biface Reduction Flake), and are defined below.

1. *Technological and Functional Analysis of Lithics*

The analytical approach to stone tool production and use that was used in this analysis can be described as technomorphological; that is, artifacts were grouped into general classes and then further divided into specific types based upon key morphological attributes, which are linked to or indicative of particular stone tool production (reduction) strategies. Function was inferred from morphology as well as from use-wear. Data derived from experimental and ethnoarchaeological research were relied upon in the identification and interpretation of artifact types. The works of Callahan (1979), Clark (1986), Crabtree (1972), Flenniken (1981), Gould (1980), and Parry (1987) were drawn upon most heavily.

Surfaces and edges were examined for traces of use polish and damage with the unaided eye and with a 10X hand lens. A conservative approach to the identification of utilized and edge-retouched flakes was taken because a number of other factors, such as trampling of materials on living surfaces, spontaneous retouch during flake detachment, and trowel contact, can produce similar edge damage.

Organized by general artifact classes, artifact types are listed below, followed by their Type/Subtype and a brief description. All types were quantified by both count and weight (in grams). Also discussed below are the specific variables or attributes that were recorded and their corresponding codes.

a. *Debitage*

Debitage is the by-product of lithic reduction and includes all types of chipped-stone refuse that bear no obvious traces of having been utilized or intentionally modified. There are two basic forms of Debitage: flakes and shatter. Observations on raw material and cortex were recorded and are discussed later. The following descriptions are for the Debitage types identified, but not the full range of types described in Taylor et al. (1996).

Decortication Flakes (LDB 1) are intact or nearly intact flakes with 50% or more cortex covering their dorsal surface. These are the first series of flakes detached during lithic reduction.

Early Reduction Flakes (LDB 2) are intact or nearly intact flakes with less than 50% dorsal cortex, fewer than four dorsal flake scars, on the average, and irregularly shaped platforms with minimal faceting and lipping. Platform grinding is not always present. These flakes could have been detached from early-stage bifaces or cores of the freehand and bipolar types.

Biface Reduction Flakes (LDB 3) are intact or nearly intact flakes with multiple overlapping dorsal flake scars and small elliptically shaped platforms with multiple facets. Evidence of platform grinding is usually present. Platforms are distinctive because they represent tiny slivers of what once was the edge of a biface. Biface reduction flakes are generated during the middle and late stages of biface reduction and also during biface maintenance (resharpening).

Finishing Flake (LDB 6) are small flakes, usually detached through pressure flaking and are used to create the final cutting edge of the blade.

Flake Fragments (LDB 9) are sections of flakes that are too fragmentary to be assigned to a particular flake type.

Block Shatter (LDB 10) are angular or blocky fragments that do not possess platforms or bulbs. Generally the result of uncontrolled fracturing along inclusions or internal fracture planes, block shatter is most frequently produced during the early reduction of cores and bifaces. Thermal fracturing can also produce block shatter.

Other Flake Types (LDB 12) These are flake types for which there is no Lithica (Taylor et al 1996) designation. Their characteristics are described in the note field, as needed.

b. Cores

Cores are cobbles or blocks of raw material that have had one or more flakes detached and that have not been shaped into tools or used extensively for tasks other than as a nucleus from which flakes have been struck. The types of cores identified are listed below, but this does not represent the full range of types possible, as discussed in Taylor et al. (1996).

Freehand Cores (LCR 1) are blocks or cobbles that have had flakes detached in multiple directions by holding the core in one hand and striking it with a hammerstone held in the other (Crabtree 1972). This procedure generates flakes that can be used as expedient tools or can be worked into formalized tools. Freehand percussion cores come in various shapes and sizes, depending upon the raw material form and degree of reduction.

Flake cores (LCR 4) are made from tubular large flakes usually flaked on one side, often with a defined flaking pattern. Some large early reduction flakes could have been used as flake cores to produce flake-based scrapers or perhaps burins.

c. Bifaces

A biface is a flake or cobble that has had multiple flakes removed from the dorsal and ventral surfaces. Bilateral symmetry and a lenticular cross section are common attributes; however, these attributes vary with the stages of production, as do thickness and uniformity of edges (see Callahan 1979). Included in this artifact class are all hafted and unhafted bifaces that functioned as projectile points and/or knives, as

well as bifacially worked drill bits and unfinished bifaces. Specific types of bifaces represented in the collection are described below.

Projectile Points (LBF 1) are finished bifaces that were usually hafted and functioned primarily as projectiles. Projectile points are usually triangular in overall form, with various types of hafting elements.

Late-Stage Bifaces (LBF 4) are basically finished bifaces; they are well thinned, symmetrical in outline and cross section, and edges are centered. Small areas of cortex may still exist on one or both faces. These bifacial preforms are analogous to Callahan's Stage 4 bifaces (1979).

Middle-Stage Bifaces (LBF 5) look more like bifaces; they have been initially thinned and shaped. A lenticular cross section is developing, but edges are sinuous, and patches of cortex may still remain on one or both faces. These bifaces are roughly equivalent to Callahan's Stage 3 bifaces (1979). Biface reduction is a continuum; therefore, middle-stage bifaces are often difficult to distinguish from early- and late-stage bifaces, depending upon the point at which their reduction was halted. Plus, rejected bifaces may have been used for other tasks (recycled).

Indeterminate Bifaces (LBF 11) are sections of bifaces that are too badly damaged to be assigned to a specific type.

d. Flake Tools

Utilized and edge-retouched flakes are informal expedient tools. They are flakes that were struck from a core or a biface and used to perform one or more tasks, with little or no prior modification. In some cases, it is difficult to distinguish intentional retouch from use damage.

Utilized Flakes (LFT 1) are expedient tools that exhibit traces of use damage and/or polish on one or more edges. These flakes could have been detached from cores or bifaces.

e. Groundstone Tool

Groundstone tools are formal stone tools and ornaments that were manufactured by pecking, grinding, and sometimes flaking. Typical artifact types are grooved axes, pipes, pendants, etc.

Celts (LGS 3) are ungrooved axes; they were hafted by a different method than grooved axes.

f. Fire-cracked Rock

Cracked rock (LFC 1) includes all fragments of lithic debris that cannot be attributed to stone tool production. Generally, fire-cracked rock is recognized by surfaces that exhibit reddening and irregular breakages. Whether a broken cobble is actually fractured as a result of thermal stress is often difficult to discern. For this study, all fractured cobbles are considered fire-cracked rock, even if they exhibit no clear signs of being thermally altered.

g. Unmodified Cobbles and Pebbles

Unmodified Pebble (LUM 2) exhibit no evidence of cultural use or modification, however, may allow for interpretation of environmental conditions. A pebble is generally smaller than 6 cm in maximum dimension.

2. *Raw Material Analysis (Var 3)*

Raw materials were identified on the basis of macroscopic characteristics: color, texture, hardness, and inclusions. Magnification with a 10X hand lens, and on occasion higher levels of magnification, was used to identify inclusions and to evaluate texture and structure.

Several raw material types were identified during the analysis. Each type is listed below, followed by its Paradox code and a brief description of its physical properties and its availability.

Cortex (Var 9) was recorded for all chipped-stone artifacts with the following codes: 1 = absent, 3 = indeterminate, 4 = block, and 5 = cobble cortex. Block cortex denotes lithic procurement from primary sources or outcrops, while cobble cortex denotes procurement from secondary sources (e.g., gravel bars). Generally, block cortex is rather coarse textured, while cobble cortex is smooth and often polished. However, some cobbles frequently contain internal fracture planes and, when exposed by knapping, can appear similar to block cortex. Cortex was coded as indeterminate when it was unclear whether the cortex exhibited on an artifact was cobble or block.

Heat Treatment (Var 7) was recorded for all chipped stone artifacts with the following codes: 1 = absent, 2 = present, and 3 = indeterminate.

Chert (1) is cryptocrystalline quartz. Unlike vein quartz and rock quartz crystal, chert tends to occur within sedimentary rock formations. In general, most varieties of chert are amenable to flaking because they are homogeneous or isotropic materials that fracture in a clear conchoidal pattern.

Silicified Sediment (48) This material has a blocky, irregular, and finely crystalline appearance. It is opaque and light brown to tan in color. Heat treatment causes the color to change to red.

Florence Cherts (49) These cherts, also known as “Kay County” cherts, tend to occur in nodules and lenses in the Barneston limestone formation in the Flint Hills, extending from the eastern third of Cowley County, Kansas and Kay County, Oklahoma, as far into Oklahoma as the South Canadian River (Banks 1984:75; Haury 1984:72). Florence is either light gray or tan. Frequent and diagnostic features of this chert are multiple bands which produce a “wood grain” appearance. The bands alternate with darker and lighter shades of gray. If banding is not present, the material is heavily speckled and mottled with tiny fragments of fossils and uneven blotches of color. The texture tends to be smooth with a waxy to milky luster. (Haury 1984:71-73)

Jasper (501) is another form of cryptocrystalline quartz. The jasper recovered from the site is fine-grained and tan to brown in color.

Quartzite (551) Like quartz, quartzite exhibits a conchoidal fracture pattern. Quartzite has been traditionally considered as metamorphosed sandstone. Heat and/or pressure transform the sandstone into a more homogeneous matrix, which more readily transmits fractures through individual sand grains rather than around them.

Chalcedony (581) Like chert, chalcedony is a form of cryptocrystalline quartz. For this study, the term chalcedony is applied to a specific type of fine-grained raw material. Its texture and fracture mechanics differ from the cherts in the assemblage, as does its coloration.

Sandstone (641) Sandstone is composed of cemented sand grains. The few artifacts in the assemblage that have been identified as sandstone may actually be a low-level orthoquartzite or silicified sandstone.

Sedimentary (681) approximately 75% of the rocks exposed at the Earth's surface are sedimentary. These are non-crystalline rocks which contain rounded and angular grains of one or several compositional types. Grains may be set in a finer-grained matrix or cement. These rocks weather quickly. They contain minerals that can be removed by transporting agents (e.g., water); some of the sedimentary facies contain fossils.

3. *Stylistic Analysis*

Only projectile points or hafted bifaces were stylistically analyzed. These artifacts were segregated into groups on the basis of shared attributes related to morphology (overall size and shape, blade and haft shape) and technology (production and resharpening methods (flaking patterns), presence or absence of haft grinding, and presence or absence of blade serration

It is important to stress that projectile points are formalized tools that were designed to be maintained and reused. As a consequence, their morphology is not static but dynamic, and attempts by archaeologists to construct meaningful typologies must take this fact into account. The effects of resharpening and recycling on projectile point morphology should not be underestimated, but at the same time, these factors do not negate the usefulness of hafted bifaces as "index fossils" of past cultures. Raw material was not considered a variable, except insofar as different materials may have affected morphology because of their varying fracture mechanics (see Callahan 1979). These groups were then compared to a literature review of existing point types and types were assigned whenever possible (Perino 1985). If a point did not fit into an established type it was classed as untyped and it was described in the note field.

Condition (Var 6) was also recorded for these artifacts utilizing the following codes: 1 = whole, 2 = broken, 3 = tip, 4 = medial, 5 = base, 9 = nearly whole, tip missing, and 10 = nearly whole, base missing. Length, width, and thickness measurements (millimeters) were recorded only for complete dimensions (i.e., if base was missing, length was not recorded).

D. PREHISTORIC CERAMIC ANALYSIS

Type/SubType. The first and second letters of the Type code for Prehistoric Ceramics are always AC. The third letter denotes what type of item the artifact is from: V, for Vessel. The numeric Subtype code further defines the artifact type (e.g., ACV6 – Body Sherd).

1. *Typological Analysis*

The analytical approach applied to the study of the ceramic assemblage was designed primarily to facilitate comparisons with ceramic assemblages recovered from other sites. Toward this end, observations were recorded for a series of metric and non-metric attributes related to vessel form, paste, surface treatment, and decoration. All artifacts were counted and weighed (in grams). Vessel thickness was measured in millimeters.

2. *Prehistoric Ceramic Types*

a. *Ceramic Vessels*

Vessel sherds were classified according to which portion of the original vessel they represented based on the presence of distinctive morphological characteristics. The following variables and corresponding Type/Subtype (in parentheses) were utilized in the analysis.

Body (ACV 6) refers to a portion of the vessel body. Body fragments have concave interior and convex exterior surfaces.

3. *Attribute / Variable Definitions*

a. *Temper (Var 9)*

The primary tempering agent was recorded for all sherds, utilizing the following variable codes.

Quartz (14) refers to the use of crushed quartz as temper.

b. *Surface Treatment*

Exterior Surface Treatment (Var 3) and **Interior Surface Treatment (Var 6)** was recorded for all sherds and refers to characteristics of vessel surfaces (i.e., the lip area and interior and exterior surfaces) that reflect the application of specific vessel manufacturing technology or techniques, e.g., thinning or shaping with a paddle and anvil. Surface treatment is not generally considered decoration; however, specific portions of the vessel (e.g., shoulder and rim) may be treated differently in preparation for the subsequent application of other decoration.

Plain/Smooth (20) indicates no surface treatment, or a surface that has been smoothed over with the hand or a flat, plain tool.

E. HISTORIC CERAMIC ANALYSIS

The ceramic tabulation provides the following information: identification of ware types and techniques of surface decoration; dates based on manufacturing and decorative techniques; identification of vessel forms and functions; and descriptions of decoration motifs. The following are explanations of the variables used in the coding process.

Type/SubType. As mentioned previously, the first letter in the type codes for Historic Ceramics is always C. The second letter refers to general ware groups: R, for Refined Earthenwares; and P, for Porcelain. The third letter refers to specific ware types: e.g., W, for Whiteware; and J, for Hard Paste Porcelain. The Subtype numbers refer to particular decorative treatments or named types: e.g., CRW50 – Whiteware with Blue Transfer-Printed Decoration.

Begin/End Dates. Type/Subtype may be descriptive and undated or have specific dates which are automatically assigned by the database. Sources for these dates include, but are not limited to: Miller (1980).

Form (Var 5). Form indicates the shape and possible function of the complete vessel as represented by the sherds present. General categories, such as “Tableware, Hollowware,” are used for sherds whose small size or ambiguous characteristics make determination of form problematical. **Part (Var 7)** is used to indicate what part of a vessel is represented by the sherd(s) present.

F. CURVED (VESSEL) GLASS ANALYSIS

The glass artifacts from the collection were broken down, for analytical purposes, into four functionally distinct groupings based on Bottle, Table, Lighting, and Other use-categories. Window glass, considered more functionally inclusive under an architectural group of artifacts, was subsumed for analysis under

Small Finds/Architectural materials, as discussed below. The following are explanations of the variables used in the coding process.

Type/Subtype. The first letter of the Type code for Glass is always G. The second letter denotes the functional groupings: B, for Bottle; T, for Table; L, for Lighting; and O, for Other. The third letter denotes specific function within the appropriate use category, e.g., C, for Carbonates. The Subtype numbers denotes vessel form, e.g., GBC3 – Soda/Mineral Water Bottle.

Begin/End Date. Dating of the glass artifacts was completed according to established diagnostic criteria. These criteria, utilized either singly or in combination, can include various technological aspects of glass manufacture such as finish treatments, tooling methods, emponfilling techniques, mold markings, and Color (Var 9). Sources for glass dating include, but are not limited to: Jones and Sullivan (1985).

G. SMALL FINDS/ ARCHITECTURAL ANALYSIS

For the small finds/architectural analysis, each artifact was identified by its group and class, Material Type (Var 3) and Part/Portion (Var 6), and received a count and/or weight. Additional information, including Characteristic (Var 5) and Color (Var 9), was recorded as identified for the individual artifacts. Definitions of the variables used are presented below.

Type/Subtype. The first letter of the Type code for Small Finds/Architectural is always S. The second letter denotes the group of the artifact (e.g., A, for Architecture), and the third letter denotes a class within that group (e.g., F, for Fasteners). The Subtype number denotes the specific artifact type, (e.g., SAF6 – Wire Nail).

Begin/End Date. Dates for certain artifact were generated in the database based on the Type/Subtype. Other dates were entered manually and were based on various artifact characteristics. References used for dating of artifacts include, but are not limited to: Edwards and Wells (1993).

Characteristic (Var 5). A modifier that best described the form or manufacturing technique of each artifact was entered in this field.

H. FAUNAL ANALYSIS

The analysis of the faunal material allowed for the identification of species, Element (Var 5), and any modification to the specimen (e.g., Burning [Var 7], Butchering [Var 1], etc.).

Type/SubType. The first letter of the Type code for Faunal material is Z (for zoological). The second letter denotes the class of the animal (i.e., M, for Mammal; B, for Bird, etc.). The third letter distinguishes groups with the class (e.g., D, for Domestic; W, for Wild, etc.). The numeric Subtype code identifies species.

REFERENCES CITED

- Banks, Larry D.
1984 Lithic Resources and Quarries. *Prehistory of Oklahoma*, edited by Robert E. Bell. Academic Press, Inc., Orlando, Florida, pp 65-95.
- Callahan, Errett
1979 The Basics of Biface Knapping in the Eastern Fluted Point Tradition: A Manual for Flintknappers and Lithic Analysts. *Archaeology of Eastern North America* 7:1-180.
- Clark, John E.
1986 Another Look at Small Debitage and Microdebitage. *Lithic Technology* 15:21-23.
- Crabtree, Donald E.
1972 *An Introduction to Flintworking*. The Idaho State Museum, Occasional Papers No. 28. Pocatello, Idaho.
- Edwards, Jay D., and Tom Wells
1993 Historic Louisiana Nails: Aids to the Dating of Old Buildings. The Fred B. Kniffen Cultural Resources Laboratory Monograph Series No. 2. Geoscience Publications, Louisiana State University, Baton Rouge.
- Flenniken, J. Jeffery
1981 *Replicative Systems Analysis: A Model Applied to the Vein Quartz Artifacts from the Hoko River Site*. Laboratory of Anthropology Reports of Investigation No. 59, Washington State University, Pullman.
- Gould, Richard A.
1980 *Living Archaeology*. Cambridge University Press, Cambridge.
- Haury, Cherie E.
1984 *Availability, Procurement, and Use of Chert Resources by Late Archaic Populations in the Southern Flint Hills of Kansas*. Unpublished M.A. Thesis, University of Kansas.
- Jones, Olive R., and Catherine Sullivan
1985 *The Parks Canada Glass Glossary*. Studies in Archaeology, Architecture and History. National Historic Parks and Sites Branch, Parks Canada, Ottawa.
- Koldehoff, Brad
1993 A Guide to Ceramics: An R-Base Prehistoric Ceramic Analysis System. Ms. on file at The Cultural Resource Group of The Louis Berger Group, Inc., Marion, Iowa.
- The Louis Berger Group, Inc. [Berger]
2006 *Analytical Coding System for Historic and Prehistoric Artifacts*. Prepared by Susan E. Butler and Todd D. Hejlik, the Cultural Resource Group, The Louis Berger Group, Inc., Morristown, New Jersey.
- Miller, George L.
1980 Classification and Economic Scaling of 19th Century Ceramics. *Historical Archaeology* 14:1-40.

- Parry, William J.
1987 *Chipped Stone Tools in Formative Oaxaca, Mexico: Their Procurement, Production, and Use.* Museum of Anthropology Memoir No. 20. University of Michigan, Ann Arbor.
- Perino, Gregory
1985 *Selected Points and Knives of the North American Indians, Volume I.* Points & Barbs Press, Idabel, Oklahoma.
- South, Stanley
1977 *Method and Theory in Historical Archaeology.* Academic Press, New York.
- Taylor, Randolph, and Brad Koldehoff, with contributions and revisions from Alex Ortiz, Robert Wall, and Ludomir Lozny
1996 *A Guide to Lithica: An R-Base Lithic Analysis System.* Prepared for The Louis Berger Group, Inc.

Utilized Codes for CXE 4756 Fort Leavenworth Penitentiary, Leavenworth Co., KS Ph I

Lithics

Var1 Meaning	Var2 Meaning	Var3 Meaning	Var4 Meaning	Var5 Meaning	Var6 Meaning	Var7 Meaning	Var8 Meaning	Var9 Meaning	Var10 Meaning	Var11 Meaning
Point Type		Material	Termination	Flake Scars	Condition	Modification	Platform Type	Cortex	Temporal Affiliation	Size Category
Var6	Translation		Var3	Translation			Var9	Translation		
1	Whole		1	Chert			1	Absent		
2	Broken		48	Silicified Sediment			4	Block		
4	Medial		49	Florence Chert			5	Cobble		
5	Base		501	Jasper			Var7	Translation		
9	Nearly Whole (Tip Missing)		551	Quartzite			1	No Heating Present		
			581	Chalcedony			2	Heating Present		
			620	Coal			3	Heating Indeterminate		
			641	Sandstone						
			681	Sedimentary						

Historic Ceramic

Var1 Meaning	Var2 Meaning	Var3 Meaning	Var4 Meaning	Var5 Meaning	Var6 Meaning	Var7 Meaning	Var8 Meaning	Var9 Meaning	Var10 Meaning	Var11 Meaning
Maker's Mark	Vessel Number		Motif/Pattern	Form	Percent Complete	Part		Color	Wear	
					Var4	Translation		Var9	Translation	
					200	Chinoiserie - General		50	Blue	
								57	Turquoise	
								Var7	Translation	
								1	Body	
								9	Rim, Body & Base	
								Var5	Translation	
								77	Unidentified Tableware, Flatware	
								79	Unidentified Tableware	

Glass

Var1 Meaning	Var2 Meaning	Var3 Meaning	Var4 Meaning	Var5 Meaning	Var6 Meaning	Var7 Meaning	Var8 Meaning	Var9 Meaning	Var10 Meaning	Var11 Meaning
Maker's Mark	Vessel Number	Brand	Motif/Pattern	Manufacturing Technique	Percent Complete	Base	Finish	Color	Wear	Embossment/Label
					Var4	Translation		Var9	Translation	
					1	Panel		1	Colorless	
					92	Embossed Lettering		5	Light Olive/Dark Olive Green	
								7	Brown/Amber/Honey	
								9	Aquamarine (all shades)	
								11	Amethyst Tint (Solarized)	
								Var7	Translation	
								9	Machine-made Valve Mark	
								99	Unidentified	

Utilized Codes for CXE 4756 Fort Leavenworth Penitentiary, Leavenworth Co., KS Ph I

Small Finds/Architectural

Var1 Meaning	Var2 Meaning	Var3 Meaning	Var4 Meaning	Var5 Meaning	Var6 Meaning	Var7 Meaning	Var8 Meaning	Var9 Meaning	Var10 Meaning	Var11 Meaning
Maker's Mark/Brand		Material	Decoration	Characteristic	Percent Complete	Back Mark		Color		

Var6	Translation
1	Whole
2	Portion/Fragment
21	Shank

Var3	Translation
1	Brick
2	Asbestos
6	Asphalt
204	Earthenware
220	Stoneware
320	Glass
624	Ferrous Metal

Var9	Translation
10	Colorless
11	Aqua
13	White
98	See Note Field

Var5	Translation
110	Glazed
111	Enameled
409	Boxing
413	Finish
414	Common
586	Salt Glazed
810	Painted

Faunal

Var1 Meaning	Var2 Meaning	Var3 Meaning	Var4 Meaning	Var5 Meaning	Var6 Meaning	Var7 Meaning	Var8 Meaning	Var9 Meaning	Var10 Meaning	Var11 Meaning
Butchering Type		Illustrated Meat Cut	Age/Fusion	Element	Portion	Burning	Gnawing	Weathering	MNU Type	

Var6	Translation
1	Whole

Var5	Translation
85	Metacarpal/Metatarsal

Pattern Group and Class Translations

PatGrp	Pattern Analysis Group
0	Unidentified
1	Kitchen
2	Architecture
6	Personal
9	Prehistoric Lithics
10	Prehistoric Ceramics
11	Faunal
19	Hardware, Tools, & Machinery

PatCls	Pattern Analysis Class
0	Unidentified
2	Bottles/Jars/Cans
4	Tableware
11	Window Glass/Caming/Etc.
12	Nails, Spikes, Tacks, etc., and Misc. Construction Hardware
15	Plumbing/Heating/Fixtures
16	Misc. Building Materials/Floor Covering/Roofing Materials
44	Pharmaceutical/Medicine
90	Chipped Stone
91	Cobble & Groundstone
92	Cracked Rock
93	Lithics - Other
95	Vessels
115	Miscellaneous Hardware
127	Faunal - Other

Analytical Type Codes & Translations: Class -- Type -- Type Description -- Type Group

Faunal	ZMZ	Unidentified Mammal	MAMMALS	Lithics	LUM	Unmodified Rock	UNMODIFIED LITHICS
Glass	GBC	Carbonates	BOTTLE GLASS	Pceramic	ACV	Prehistoric Ceramic Vessel	PREHISTORIC
Glass	GBP	Pharmaceutical	BOTTLE GLASS	SmllFind	SAB	Building Materials	ARCHITECTURAL
Glass	GBU	Unidentified	BOTTLE GLASS	SmllFind	SAF	Fasteners	ARCHITECTURAL
Hceramic	CPJ	Hard Paste Porcelain	PORCELAIN	SmllFind	SAG	Glass	ARCHITECTURAL
Hceramic	CRW	Whiteware	EARTHENWARES	SmllFind	SAP	Plumbing/Heating	ARCHITECTURAL
Lithics	LBF	Bifaces	CHIPPED STONE	SmllFind	SAT	Tile and Floor Covering	ARCHITECTURAL
Lithics	LCR	Cores	CHIPPED STONE	SmllFind	SMH	Hardware (Non-Architectural)	HARDWARE, TOOLS, &
Lithics	LDB	Debitage	CHIPPED STONE	SmllFind	SOS	Unidentified	UNIDENTIFIED
Lithics	LFC	Fire-cracked Rocks	CRACKED ROCK				
Lithics	LFT	Flake Tools	CHIPPED STONE				
Lithics	LGS	Groundstone Tools	COBBLE &				

Site	Cat-Spec	Flid	Horizontal	Vertical	Type Type	Translation	Cnt	Wght	Beg-End Date	V3: Material	V4: Decrtn	V5: Form/ Other Char	V6: Portion	V7: Heating	V9: Cortex/ Color	Note
IF4756-01	1 - 1	1401	-	Surface	LDB 2	Early Reduction Flake	1	2.0	- -	Florence Chert	-	-	-	No Heating Present	Cobble	-
IF4756-02	1 - 1	2801	STP 1-3	Str 2	LDB 9	Flake Fragment	1	0.1	- -	Florence Chert	-	-	-	Heating Indeterminate	Absent	-
IF4756-03	1 - 1	2901	STP 3-2	Str 1	LDB 9	Flake Fragment	1	0.8	- -	Chert	-	-	-	No Heating Present	Absent	possible alibates
IF4756-04	1 - 1	1501	STP 3-12	Str 1	LDB 2	Early Reduction Flake	1	2.3	- -	Florence Chert	-	-	-	No Heating Present	Block	-
IF4756-05	1 - 1	1601	STP 3-22	Str 1/2	LDB 3	Biface Reduction Flake	1	0.8	- -	Jasper	-	-	-	No Heating Present	Cobble	-
IF4756-06	1 - 1	1701	STP 17-18	Str 1	LDB 2	Early Reduction Flake	1	0.8	- -	Florence Chert	-	-	-	No Heating Present	Block	-
IF4756-07	1 - 1	1801	STP 20-18 S15	Str 1	LDB 3	Biface Reduction Flake	1	1.3	- -	Florence Chert	-	-	-	No Heating Present	Block	-
IF4756-08	1 - 1	1901	STP 47-31	Str 1	LGS 3	Celt	1	12.6	- -	Sedimentary	-	-	Broken	-	-	-
IF4756-09	1 - 1	2001	STP 58-37	Str 1	LDB 9	Flake Fragment	1	1.7	- -	Silicified Sediment	-	-	-	Heating Present	Absent	-
IF4756-10	1 - 1	2101	STP 60-44	Str 1	LDB 2	Early Reduction Flake	1	2.5	- -	Jasper	-	-	-	No Heating Present	Cobble	-
IF4756-11	1 - 1	2201	STP 66-18	Str 1	LBF 4	Late-Stage Biface	1	3.7	- -	Chert	-	-	Medial	Heating Present	Absent	-
IF4756-12	1 - 1	2301	STP 68-35	Str 2	LDB 1	Decortication Flake	1	1.6	- -	Chert	-	-	-	No Heating Present	Block	possible alibates
IF4756-13	1 - 1	2501	STP 71-19	Str 1	LDB 9	Flake Fragment	1	0.4	- -	Florence Chert	-	-	-	No Heating Present	Block	-
IF4756-14	1 - 1	2601	STP 79-1	Str 3	LDB 3	Biface Reduction Flake	1	0.1	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
IF4756-15	1 - 1	2701	STP 80-4	Str 1	LDB 3	Biface Reduction Flake	1	0.1	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV167	1 - 1	101	STP 2-4	Str 1	LDB 9	Flake Fragment	1	0.6	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV167	2 - 1	102	STP 2-4 N10	Str 1	LDB 9	Flake Fragment	3	0.4	- -	Chert	-	-	-	No Heating Present	Absent	-
14LV167	3 - 1	103	STP 2-4 S5	Str 1	LDB 9	Flake Fragment	1	0.6	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV167	4 - 1	104	STP 2-4 E10	Str 1	LDB 2	Early Reduction Flake	1	1.0	- -	Chert	-	-	-	No Heating Present	Absent	possibly utilized; white chert
14LV167	4 - 2	104	STP 2-4 E10	Str 1	LDB 10	Block Shatter	1	0.7	- -	Chert	-	-	-	No Heating Present	Absent	white chert
14LV168	1 - 1	212	-	Surface	LDB 9	Flake Fragment	1	0.9	- -	Jasper	-	-	-	No Heating Present	Cobble	-
14LV168	1 - 2	212	-	Surface	LDB 2	Early Reduction Flake	1	0.9	- -	Jasper	-	-	-	No Heating Present	Absent	-
14LV168	1 - 3	212	-	Surface	LDB 2	Early Reduction Flake	1	5.9	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV168	1 - 4	212	-	Surface	LDB 3	Biface Reduction Flake	1	0.2	- -	Chert	-	-	-	No Heating Present	Absent	white chert
14LV168	1 - 5	212	-	Surface	LBF 1	Projectile Point	1	9.1	- -	Chert	-	-	Nearly Whole (Tip Missing)	No Heating Present	Absent	corner-notched
14LV168	1 - 6	212	-	Surface	LFT 1	Utilized Flake	1	0.4	- -	Chalcedony	-	-	Whole	No Heating Present	Absent	-
14LV168	1 - 7	212	-	Surface	LDB 10	Block Shatter	1	9.3	- -	Florence Chert	-	-	-	No Heating Present	Block	-
14LV168	1 - 8	212	-	Surface	LBF 1	Projectile Point	1	0.9	- -	Florence Chert	-	-	Nearly Whole (Tip Missing)	No Heating Present	Absent	Scallorn (Perino 1985:344); Late Woodland
14LV168	1 - 9	212	-	Surface	LBF 1	Projectile Point	1	0.3	- -	Chert	-	-	Nearly Whole (Tip Missing)	No Heating Present	Absent	Scallorn (Perino 1985:344); Late Woodland
14LV168	1 - 10	212	-	Surface	LBF 4	Late-Stage Biface	1	1.5	- -	Jasper	-	-	Whole	No Heating Present	Absent	-
14LV168	1 - 11	212	-	Surface	LBF 4	Late-Stage Biface	1	1.2	- -	Florence Chert	-	-	Nearly Whole (Tip Missing)	No Heating Present	Absent	possible drill
14LV168	1 - 12	212	-	Surface	LFT 1	Utilized Flake	1	1.0	- -	Florence Chert	-	-	Whole	Heating Indeterminate	Absent	-
14LV168	1 - 13	212	-	Surface	LFT 1	Utilized Flake	1	0.5	- -	Florence Chert	-	-	Broken	No Heating Present	Absent	-
14LV168	1 - 14	212	-	Surface	LFT 1	Utilized Flake	1	0.8	- -	Chert	-	-	Whole	Heating Indeterminate	Absent	-

Site	Cat-Spec	Fid	Horizontal	Vertical	Type Style	Translation	Cnt	Wght	Beg-End Date	V3: Material	V4: Decrtn	V5: Form/ Other Char	V6: Portion	V7: Heating	V9: Cortex/ Color	Note
14LV168	1 - 15	212	-	Surface	LDB 2	Early Reduction Flake	2	5.6	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV168	1 - 16	212	-	Surface	LDB 2	Early Reduction Flake	2	1.2	- -	Florence Chert	-	-	-	No Heating Present	Block	-
14LV168	1 - 17	212	-	Surface	LDB 2	Early Reduction Flake	1	1.0	- -	Chert	-	-	-	No Heating Present	Cobble	-
14LV168	1 - 18	212	-	Surface	LDB 12	Other Flake Type	1	3.2	- -	Jasper	-	-	-	No Heating Present	Block	core rejuvenation flake
14LV168	1 - 19	212	-	Surface	LFT 1	Utilized Flake	1	2.0	- -	Jasper	-	-	Whole	No Heating Present	Absent	-
14LV168	1 - 20	212	-	Surface	LDB 3	Biface Reduction Flake	39	13.8	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV168	1 - 21	212	-	Surface	LDB 3	Biface Reduction Flake	10	3.4	- -	Jasper	-	-	-	No Heating Present	Absent	-
14LV168	1 - 22	212	-	Surface	LDB 2	Early Reduction Flake	1	0.4	- -	Jasper	-	-	-	No Heating Present	Cobble	-
14LV168	1 - 23	212	-	Surface	LDB 2	Early Reduction Flake	1	0.6	- -	Chert	-	-	-	No Heating Present	Absent	-
14LV168	1 - 24	212	-	Surface	LDB 3	Biface Reduction Flake	4	1.4	- -	Chert	-	-	-	No Heating Present	Absent	-
14LV168	1 - 25	212	-	Surface	LDB 6	Finishing Flake	1	0.1	- -	Jasper	-	-	-	Heating Present	Absent	-
14LV168	1 - 26	212	-	Surface	LDB 9	Flake Fragment	14	8.0	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV168	1 - 27	212	-	Surface	LDB 9	Flake Fragment	1	0.6	- -	Florence Chert	-	-	-	No Heating Present	Block	-
14LV168	1 - 28	212	-	Surface	LDB 3	Biface Reduction Flake	1	0.3	- -	Chert	-	-	-	No Heating Present	Absent	white chert
14LV168	1 - 29	212	-	Surface	LDB 10	Block Shatter	3	4.4	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV168	1 - 30	212	-	Surface	LDB 10	Block Shatter	1	2.4	- -	Florence Chert	-	-	-	No Heating Present	Block	-
14LV168	2 - 1	201	STP 8-1	Str 1	LDB 6	Finishing Flake	1	0.1	- -	Chert	-	-	-	No Heating Present	Absent	-
14LV168	2 - 2	201	STP 8-1	Str 1	LDB 9	Flake Fragment	2	0.4	- -	Chert	-	-	-	No Heating Present	Absent	-
14LV168	3 - 1	202	STP 8-1 N10	Str 1	LDB 9	Flake Fragment	1	0.5	- -	Jasper	-	-	-	No Heating Present	Absent	-
14LV168	4 - 1	203	STP 8-1 S5	Str 1	LDB 2	Early Reduction Flake	1	0.6	- -	Jasper	-	-	-	No Heating Present	Cobble	-
14LV168	5 - 1	204	STP 8-1 E5	Str 1	LDB 3	Biface Reduction Flake	1	0.2	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV168	6 - 1	205	STP 8-1 W5	Str 1	LDB 2	Early Reduction Flake	1	0.5	- -	Florence Chert	-	-	-	No Heating Present	Cobble	-
14LV168	6 - 2	205	STP 8-1 W5	Str 1	LDB 3	Biface Reduction Flake	1	0.1	- -	Chert	-	-	-	No Heating Present	Absent	-
14LV168	6 - 3	205	STP 8-1 W5	Str 1	LDB 6	Finishing Flake	1	0.1	- -	Chert	-	-	-	No Heating Present	Absent	-
14LV168	7 - 1	206	STP 8-1 N10 W5	Str 1	LDB 1	Decortication Flake	1	0.3	- -	Florence Chert	-	-	-	No Heating Present	Cobble	-
14LV168	7 - 2	206	STP 8-1 N10 W5	Str 1	LDB 3	Biface Reduction Flake	2	1.9	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV168	7 - 3	206	STP 8-1 N10 W5	Str 1	LDB 6	Finishing Flake	1	0.1	- -	Chert	-	-	-	Heating Present	Absent	-
14LV168	7 - 4	206	STP 8-1 N10 W5	Str 1	LDB 9	Flake Fragment	1	0.1	- -	Chert	-	-	-	No Heating Present	Absent	-
14LV168	8 - 1	207	STP 9-2	Str 1	LDB 3	Biface Reduction Flake	1	0.2	- -	Jasper	-	-	-	Heating Present	Absent	-
14LV168	9 - 1	208	STP 9-2 W10	Str 1	LDB 9	Flake Fragment	1	0.1	- -	Chert	-	-	-	No Heating Present	Absent	white chert
14LV168	10 - 1	209	STP 9-2 W20	Str 1	LDB 3	Biface Reduction Flake	1	0.2	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV168	11 - 1	210	STP 9-2 W25	Str 1	LDB 3	Biface Reduction Flake	1	0.7	- -	Jasper	-	-	-	No Heating Present	Absent	-
14LV168	12 - 1	211	STP Iso 7 S5	Str 1	LDB 3	Biface Reduction Flake	1	0.8	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV169	1 - 1	301	STP A14	Str 1	LDB 3	Biface Reduction Flake	1	0.3	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV169	2 - 1	302	STP A14 W5	Str 2	LDB 6	Finishing Flake	1	0.1	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV169	3 - 1	303	STP A14 N10	Str 1	LDB 3	Biface Reduction Flake	1	0.3	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV169	3 - 2	303	STP A14 N10	Str 1	LDB 9	Flake Fragment	1	0.4	- -	Florence Chert	-	-	-	Heating Indeterminate	Absent	-

Site	Cat-Spec	Fid	Horizontal	Vertical	Type Style	Translation	Cnt	Wght	Beg-End Date	V3: Material	V4: Decrtn	V5: Form/ Other Char	V6: Portion	V7: Heating	V9: Cortex/ Color	Note
14LV169	4 - 1	304	STP A14 N10	Str 2	LDB 3	Biface Reduction Flake	1	1.6	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV169	5 - 1	305	STP A14 N10 E5	Str 1	LDB 3	Biface Reduction Flake	1	0.2	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV169	5 - 2	305	STP A14 N10 E5	Str 1	LDB 6	Finishing Flake	1	0.1	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV169	5 - 3	305	STP A14 N10 E5	Str 1	LDB 6	Finishing Flake	1	0.1	- -	Jasper	-	-	-	Heating Present	Absent	-
14LV169	6 - 1	306	STP A14 N10 W10	Str 1	LDB 3	Biface Reduction Flake	1	0.4	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV169	6 - 2	306	STP A14 N10 W10	Str 1	LDB 3	Biface Reduction Flake	1	0.2	- -	Florence Chert	-	-	-	No Heating Present	Block	-
14LV169	6 - 3	306	STP A14 N10 W10	Str 1	LDB 3	Biface Reduction Flake	2	0.7	- -	Jasper	-	-	-	No Heating Present	Absent	-
14LV169	6 - 4	306	STP A14 N10 W10	Str 1	LDB 6	Finishing Flake	2	0.2	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV169	6 - 5	306	STP A14 N10 W10	Str 1	LDB 9	Flake Fragment	1	0.3	- -	Chert	-	-	-	No Heating Present	Block	-
14LV169	7 - 1	307	STP A14 N10 W20	Str 1	LDB 2	Early Reduction Flake	1	0.4	- -	Florence Chert	-	-	-	No Heating Present	Block	-
14LV169	7 - 2	307	STP A14 N10 W20	Str 1	LDB 9	Flake Fragment	1	0.1	- -	Florence Chert	-	-	-	No Heating Present	Block	-
14LV169	7 - 3	307	STP A14 N10 W20	Str 1	LDB 9	Flake Fragment	1	0.4	- -	Chert	-	-	-	No Heating Present	Absent	-
14LV169	7 - 4	307	STP A14 N10 W20	Str 1	LDB 10	Block Shatter	1	5.3	- -	Florence Chert	-	-	-	No Heating Present	Block	-
14LV169	8 - 1	308	STP A14 N10 W25	Str 1	LDB 3	Biface Reduction Flake	1	0.3	- -	Jasper	-	-	-	No Heating Present	Absent	-
14LV169	8 - 2	308	STP A14 N10 W25	Str 1	LDB 3	Biface Reduction Flake	1	0.4	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV169	8 - 3	308	STP A14 N10 W25	Str 1	LDB 6	Finishing Flake	2	0.2	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV169	9 - 1	309	STP A14 N10 W25	Str 3	LDB 9	Flake Fragment	1	0.5	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV169	10 - 1	310	STP A14 N15 E5	Str 1	LDB 9	Flake Fragment	1	0.1	- -	Jasper	-	-	-	No Heating Present	Absent	-
14LV169	10 - 2	310	STP A14 N15 E5	Str 1	LDB 9	Flake Fragment	1	0.1	- -	Chert	-	-	-	Heating Present	Absent	-
14LV169	11 - 1	311	STP A14 N15 W5	Str 1	LDB 3	Biface Reduction Flake	1	0.2	- -	Jasper	-	-	-	Heating Present	Absent	-
14LV169	11 - 2	311	STP A14 N15 W5	Str 1	LDB 9	Flake Fragment	1	0.3	- -	Florence Chert	-	-	-	No Heating Present	Cobble	-
14LV169	11 - 3	311	STP A14 N15 W5	Str 1	LDB 9	Flake Fragment	1	0.1	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV169	12 - 1	312	STP A14 N20 W5	Str 1	LDB 3	Biface Reduction Flake	1	0.2	- -	Chert	-	-	-	No Heating Present	Absent	-
14LV169	13 - 1	313	STP A14 N20 W15	Str 1	LFT 1	Utilized Flake	1	1.4	- -	Florence Chert	-	-	Broken	No Heating Present	Absent	-
14LV169	13 - 2	313	STP A14 N20 W15	Str 1	LDB 6	Finishing Flake	2	0.2	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV169	13 - 3	313	STP A14 N20 W15	Str 1	LDB 9	Flake Fragment	1	0.1	- -	Jasper	-	-	-	No Heating Present	Absent	-
14LV169	13 - 4	313	STP A14 N20 W15	Str 1	LDB 9	Flake Fragment	1	0.4	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV169	14 - 1	314	STP A14 N25 W10	Str 1	LDB 3	Biface Reduction Flake	1	0.9	- -	Chert	-	-	-	No Heating Present	Absent	-
14LV169	15 - 1	315	STP A14 N25 W15	Str 1	LDB 6	Finishing Flake	2	0.1	- -	Jasper	-	-	-	No Heating Present	Absent	-
14LV169	15 - 2	315	STP A14 N25 W15	Str 1	LDB 9	Flake Fragment	1	0.1	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV169	15 - 3	315	STP A14 N25 W15	Str 1	LDB 9	Flake Fragment	2	0.2	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV169	16 - 1	316	STP A14 S5	Str 1	LDB 2	Early Reduction Flake	1	0.6	- -	Florence Chert	-	-	-	No Heating Present	Cobble	-
14LV169	17 - 1	317	STP A14 S5 E5	Str 1	LBF 1	Projectile Point	1	0.6	- -	Florence Chert	-	-	Medial	No Heating Present	Absent	Scallorn (Perino 1985:344); Late Woodland
14LV169	17 - 2	317	STP A14 S5 E5	Str 1	LDB 2	Early Reduction Flake	2	1.5	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV169	17 - 3	317	STP A14 S5 E5	Str 1	LDB 3	Biface Reduction Flake	1	0.2	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV169	18 - 1	318	STP A14 S5 W15	Str 1	LDB 9	Flake Fragment	1	0.7	- -	Jasper	-	-	-	Heating Present	Absent	-
14LV169	19 - 1	319	STP A14 S5 W20	Str 1	LDB 9	Flake Fragment	3	0.8	- -	Florence Chert	-	-	-	No Heating Present	Absent	-

Site	Cat-Spec	Fld	Horizontal	Vertical	Type Style	Translation	Cnt	Wght	Beg-End Date	V3: Material	V4: Decrtn	V5: Form/ Other Char	V6: Portion	V7: Heating	V9: Cortex/ Color	Note
14LV169	20 - 1	320	STP A14 S5 W25	Str 2	LDB 9	Flake Fragment	1	0.8	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV169	21 - 1	321	STP A14 S10 E5	Str 1	LDB 1	Decortication Flake	1	0.3	- -	Jasper	-	-	-	No Heating Present	Cobble	-
14LV169	21 - 2	321	STP A14 S10 E5	Str 1	LDB 3	Biface Reduction Flake	1	0.5	- -	Jasper	-	-	-	No Heating Present	Absent	-
14LV169	22 - 1	322	STP A14 S10 E10	Str 1	LDB 3	Biface Reduction Flake	1	1.3	- -	Florence Chert	-	-	-	Heating Present	Block	-
14LV169	23 - 1	323	STP A14 S10 W5	Str 1	LDB 2	Early Reduction Flake	1	3.9	- -	Florence Chert	-	-	-	No Heating Present	Cobble	-
14LV169	24 - 1	324	STP A14 S10 W15	Str 1	LDB 3	Biface Reduction Flake	1	0.1	- -	Florence Chert	-	-	-	Heating Indeterminate	Absent	-
14LV169	25 - 1	325	STP A14 S15 E10	Str 1	LDB 3	Biface Reduction Flake	2	0.6	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV169	26 - 1	326	STP A14 S20	Str 1	LDB 3	Biface Reduction Flake	1	0.8	- -	Florence Chert	-	-	-	No Heating Present	Cobble	-
14LV169	27 - 1	327	STP A14 S20 E10	Str 1	LBF 1	Projectile Point	1	0.8	- -	Florence Chert	-	-	Whole	No Heating Present	Absent	Scallorn (Perino 1985:344); Late Woodland
14LV169	28 - 1	328	STP A14 S20 E15	Str 1	LDB 12	Other Flake Type	1	3.4	- -	Jasper	-	-	-	Heating Present	Cobble	core rejuvenation flake
14LV169	28 - 2	328	STP A14 S20 E15	Str 1	LBF 4	Late-Stage Biface	1	6.0	- -	Chert	-	-	Nearly Whole (Tip Missing)	Heating Present	Absent	-
14LV169	29 - 1	329	STP A14 S35	Str 1	LFC 1	Fire-cracked Rock	1	143.0	- -	Quartzite	-	-	-	-	-	-
14LV169	29 - 2	329	STP A14 S35	Str 1	LDB 3	Biface Reduction Flake	1	2.6	- -	Chert	-	-	-	No Heating Present	Absent	-
14LV169	29 - 3	329	STP A14 S35	Str 1	LDB 9	Flake Fragment	1	0.7	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV169	30 - 1	330	STP A14 S35 E10	Str 1	LDB 3	Biface Reduction Flake	1	0.3	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV169	31 - 1	331	STP A14 S35 W10	Str 1	LDB 3	Biface Reduction Flake	2	2.0	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV170	1 - 1	403	-	Surface	LDB 2	Early Reduction Flake	1	5.0	- -	Florence Chert	-	-	-	No Heating Present	Block	-
14LV170	1 - 2	403	-	Surface	LDB 3	Biface Reduction Flake	1	0.9	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV170	1 - 3	403	-	Surface	LDB 3	Biface Reduction Flake	2	0.4	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV170	1 - 4	403	-	Surface	LDB 9	Flake Fragment	1	0.3	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV170	1 - 5	403	-	Surface	LDB 9	Flake Fragment	2	0.4	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV170	1 - 6	403	-	Surface	LDB 9	Flake Fragment	1	0.1	- -	Chert	-	-	-	No Heating Present	Absent	-
14LV170	2 - 1	401	STP Conc 2	Str 1	LDB 3	Biface Reduction Flake	1	0.5	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV170	2 - 2	401	STP Conc 2	Str 1	LDB 3	Biface Reduction Flake	1	0.3	- -	Chert	-	-	-	No Heating Present	Absent	white chert
14LV170	2 - 3	401	STP Conc 2	Str 1	LDB 9	Flake Fragment	1	2.6	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV170	3 - 1	402	STP Conc 2 W10	Str 1	LDB 3	Biface Reduction Flake	1	0.7	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV170	3 - 2	402	STP Conc 2 W10	Str 1	LDB 6	Finishing Flake	1	0.1	- -	Jasper	-	-	-	No Heating Present	Absent	white chert
14LV171	1 - 1	514	-	Surface	LDB 10	Block Shatter	1	6.9	- -	Florence Chert	-	-	-	Heating Present	Cobble	-
14LV171	2 - 1	501	STP 11-19	Str 1	LFT 1	Utilized Flake	1	6.0	- -	Florence Chert	-	-	Whole	Heating Present	Absent	-
14LV171	2 - 1	526	STP 12-19 N25 E15	Str 1	LCR 4	Flake Core	1	10.7	- -	Florence Chert	-	-	Whole	No Heating Present	Absent	expended core
14LV171	3 - 1	502	STP 11-19 E5	Str 1	LDB 1	Decortication Flake	1	2.3	- -	Florence Chert	-	-	-	No Heating Present	Block	-
14LV171	3 - 2	502	STP 11-19 E5	Str 1	LDB 3	Biface Reduction Flake	1	0.1	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV171	4 - 1	503	STP 11-19 N5 E10	Str 1	LBF 1	Projectile Point	1	7.2	- -	Florence Chert	-	-	Base	No Heating Present	Absent	side-notched; weak shoulders
14LV171	4 - 2	503	STP 11-19 N5 E10	Str 1	ACV 6	Body Sherd	2	3.2	- -	Plain/Smoothed	-	-	Plain/Smoothed	-	Quartz	refit
14LV171	5 - 1	504	STP 11-19 N5 E15	Str 1	LDB 2	Early Reduction Flake	1	8.1	- -	Florence Chert	-	-	-	No Heating Present	Block	-
14LV171	6 - 1	505	STP 11-19 N5 E25	Str 2	LDB 3	Biface Reduction Flake	1	0.2	- -	Jasper	-	-	-	Heating Indeterminate	Absent	-

Site	Cat-Spec	Fld	Horizontal	Vertical	Type Style	Translation	Cnt	Wght	Beg-End Date	V3: Material	V4: Decrtn	V5: Form/ Other Char	V6: Portion	V7: Heating	V9: Cortex/ Color	Note
14LV171	7 - 1	506	STP 11-19 S5	Str 1	LDB 6	Finishing Flake	1	0.1	- -	Chert	-	-	-	No Heating Present	Absent	-
14LV171	8 - 1	507	STP 11-19 S5 E5	Str 1	LDB 2	Early Reduction Flake	1	1.2	- -	Jasper	-	-	-	No Heating Present	Cobble	-
14LV171	9 - 1	508	STP 11-19 S5 E10	Str 1	LDB 2	Early Reduction Flake	1	1.2	- -	Florence Chert	-	-	-	No Heating Present	Cobble	-
14LV171	10 - 1	509	STP 11-19 S5 W5	Str 1	LDB 3	Biface Reduction Flake	1	0.6	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV171	11 - 1	510	STP 11-19 S5 W10	Str 1	LDB 3	Biface Reduction Flake	1	1.3	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV171	12 - 1	511	STP 11-19 S10 E5	Str 1	LDB 3	Biface Reduction Flake	1	0.6	- -	Florence Chert	-	-	-	No Heating Present	Cobble	-
14LV171	13 - 1	512	STP 11-19 S10 E10	Str 1	LDB 3	Biface Reduction Flake	1	0.2	- -	Florence Chert	-	-	-	Heating Indeterminate	Absent	-
14LV171	13 - 2	512	STP 11-19 S10 E10	Str 1	LDB 9	Flake Fragment	1	0.1	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV171	14 - 1	513	STP 11-19 S10 E20	Str 1	LDB 9	Flake Fragment	1	1.1	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV171	15 - 1	515	STP 12-19	Str 1	LDB 9	Flake Fragment	1	1.1	- -	Florence Chert	-	-	-	Heating Indeterminate	Cobble	-
14LV171	16 - 1	516	STP 12-19 E45	Str 1	LDB 9	Flake Fragment	2	0.3	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV171	17 - 1	517	STP 12-19 N5	Str 1	LDB 9	Flake Fragment	2	0.7	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV171	18 - 1	518	STP 12-19 N5 E10	Str 1	LDB 3	Biface Reduction Flake	1	0.3	- -	Jasper	-	-	-	No Heating Present	Absent	-
14LV171	18 - 2	518	STP 12-19 N5 E10	Str 1	LDB 2	Early Reduction Flake	1	1.0	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV171	18 - 3	518	STP 12-19 N5 E10	Str 1	LDB 3	Biface Reduction Flake	1	0.6	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV171	19 - 1	519	STP 12-19 N5 E15	Str 1	LDB 9	Flake Fragment	1	0.1	- -	Chert	-	-	-	Heating Present	Cobble	-
14LV171	19 - 2	519	STP 12-19 N5 E15	Str 1	LDB 9	Flake Fragment	2	0.2	- -	Jasper	-	-	-	No Heating Present	Absent	-
14LV171	19 - 3	519	STP 12-19 N5 E15	Str 1	LDB 9	Flake Fragment	1	0.3	- -	Jasper	-	-	-	No Heating Present	Cobble	-
14LV171	20 - 1	520	STP 12-19 N5 E20	Str 1	LDB 3	Biface Reduction Flake	1	1.1	- -	Jasper	-	-	-	No Heating Present	Block	-
14LV171	20 - 2	520	STP 12-19 N5 E20	Str 1	LDB 3	Biface Reduction Flake	1	0.4	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV171	21 - 1	521	STP 12-19 N5 E25	Str 1	LDB 2	Early Reduction Flake	1	6.3	- -	Florence Chert	-	-	-	No Heating Present	Cobble	-
14LV171	21 - 2	521	STP 12-19 N5 E25	Str 1	LDB 3	Biface Reduction Flake	1	1.4	- -	Jasper	-	-	-	No Heating Present	Cobble	-
14LV171	22 - 1	522	STP 12-19 N5 E45	Str 1	LDB 2	Early Reduction Flake	1	2.5	- -	Florence Chert	-	-	-	No Heating Present	Block	-
14LV171	23 - 1	523	STP 12-19 N15 E10	Str 1	LDB 1	Decortication Flake	1	2.4	- -	Florence Chert	-	-	-	No Heating Present	Block	-
14LV171	24 - 1	524	STP 12-19 N15 E20	Str 1	LDB 9	Flake Fragment	1	1.3	- -	Jasper	-	-	-	No Heating Present	Absent	-
14LV171	24 - 2	524	STP 12-19 N15 E20	Str 1	LDB 9	Flake Fragment	1	0.6	- -	Jasper	-	-	-	Heating Present	Absent	-
14LV171	25 - 1	525	STP 12-19 N25 E10	Str 1	LDB 9	Flake Fragment	1	0.5	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV171	26 - 1	527	STP 12-19 N25 E25	Str 1	LDB 10	Block Shatter	1	1.5	- -	Jasper	-	-	-	No Heating Present	Cobble	-
14LV171	27 - 1	528	STP 12-19 N35 E25	Str 1	LDB 3	Biface Reduction Flake	1	0.2	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV171	28 - 1	529	STP 12-19 S5 E25	Str 1	LDB 9	Flake Fragment	1	1.1	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV171	29 - 1	530	STP 12-19 S5 E35	Str 1	LDB 6	Finishing Flake	1	0.1	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV171	30 - 1	531	STP 12-19 S10	Str 1	LDB 1	Decortication Flake	1	0.7	- -	Jasper	-	-	-	No Heating Present	Cobble	-
14LV171	31 - 1	532	STP 12-19 S10 E10	Str 1	LBF 1	Projectile Point	1	4.2	- -	Florence Chert	-	-	Base	Heating Indeterminate	Absent	same type as Fld 503-1
14LV171	32 - 1	533	STP 12-19 S10 E20	Str 1	LDB 6	Finishing Flake	1	0.1	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV171	33 - 1	534	STP 12-19 S10 E35	Str 1	LDB 9	Flake Fragment	1	0.4	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV171	34 - 1	535	STP 12-19 S15	Str 1	LDB 6	Finishing Flake	1	0.1	- -	Florence Chert	-	-	-	No Heating Present	Absent	-

Site	Cat-Spec	Fid	Horizontal	Vertical	Type Style	Translation	Cnt	Wght	Beg-End Date	V3: Material	V4: Decrtn	V5: Form/ Other Char	V6: Portion	V7: Heating	V9: Cortex/ Color	Note
14LV171	35 - 1	536	STP 12-19 S20 E10	Str 1	LDB 10	Block Shatter	1	5.1	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV171	36 - 1	537	STP 12-19 S20 E35	Str 1	LDB 9	Flake Fragment	1	0.2	- -	Jasper	-	-	-	No Heating Present	Absent	-
14LV171	37 - 1	538	STP 12-19 S25	Str 1	LDB 3	Biface Reduction Flake	1	0.5	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	1 - 1	601	STP 16-24	Str 1	LDB 3	Biface Reduction Flake	2	0.5	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	1 - 2	601	STP 16-24	Str 1	LDB 6	Finishing Flake	1	0.1	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	2 - 1	602	STP 16-24 N5	Str 1	LDB 10	Block Shatter	1	0.6	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV172	2 - 2	602	STP 16-24 N5	Str 1	LDB 3	Biface Reduction Flake	1	0.1	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	2 - 3	602	STP 16-24 N5	Str 1	LDB 6	Finishing Flake	2	0.2	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	2 - 4	602	STP 16-24 N5	Str 1	LDB 9	Flake Fragment	1	0.1	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	3 - 1	603	STP 16-24 N10 E15	Str 1	LFT 1	Utilized Flake	1	2.5	- -	Florence Chert	-	-	Broken	No Heating Present	Absent	-
14LV172	3 - 2	603	STP 16-24 N10 E15	Str 1	LDB 3	Biface Reduction Flake	1	0.4	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	3 - 3	603	STP 16-24 N10 E15	Str 1	LDB 2	Early Reduction Flake	1	0.8	- -	Florence Chert	-	-	-	No Heating Present	Block	-
14LV172	4 - 1	604	STP 16-24 N10 W15	Str 1	LDB 3	Biface Reduction Flake	1	0.2	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	5 - 1	605	STP 16-24 N15	Str 1	LDB 3	Biface Reduction Flake	1	0.4	- -	Chert	-	-	-	No Heating Present	Absent	-
14LV172	5 - 2	605	STP 16-24 N15	Str 1	LDB 6	Finishing Flake	4	0.4	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	5 - 3	605	STP 16-24 N15	Str 1	LDB 6	Finishing Flake	1	0.1	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV172	6 - 1	606	STP 16-24 N15 E15	Str 1	LBF 4	Late-Stage Biface	1	5.0	- -	Florence Chert	-	-	Broken	Heating Present	Absent	-
14LV172	7 - 1	607	STP 16-24 N15 E20	Str 1	LDB 3	Biface Reduction Flake	1	0.2	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	8 - 1	608	STP 16-24 N20	Str 1	LDB 2	Early Reduction Flake	1	1.0	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	9 - 1	609	STP 16-24 N20 W5	Str 1	LDB 6	Finishing Flake	1	0.1	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	10 - 1	610	STP 16-24 N25 E15	Str 1	LDB 6	Finishing Flake	1	0.1	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV172	11 - 1	611	STP 16-24 N25 W5	Str 1	LDB 3	Biface Reduction Flake	1	1.4	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV172	11 - 2	611	STP 16-24 N25 W5	Str 1	LDB 9	Flake Fragment	1	0.3	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV172	11 - 3	611	STP 16-24 N25 W5	Str 1	LDB 9	Flake Fragment	1	0.7	- -	Florence Chert	-	-	-	Heating Present	Cobble	-
14LV172	12 - 1	612	STP 16-24 N25 W5	Str 2	LDB 3	Biface Reduction Flake	1	0.6	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV172	12 - 2	612	STP 16-24 N25 W5	Str 2	LDB 6	Finishing Flake	1	0.1	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	13 - 1	613	STP 16-24 N25 W10	Str 1	LDB 3	Biface Reduction Flake	2	0.8	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	14 - 1	614	STP 16-24 N25 W15	Str 1	LDB 3	Biface Reduction Flake	1	1.1	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV172	15 - 1	615	STP 16-24 E5	Str 1	LFT 1	Utilized Flake	1	0.5	- -	Florence Chert	-	-	Broken	No Heating Present	Absent	-
14LV172	15 - 2	615	STP 16-24 E5	Str 1	LDB 1	Decortication Flake	1	1.2	- -	Florence Chert	-	-	-	No Heating Present	Block	-
14LV172	15 - 3	615	STP 16-24 E5	Str 1	LDB 2	Early Reduction Flake	1	0.9	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	15 - 4	615	STP 16-24 E5	Str 1	LDB 3	Biface Reduction Flake	2	1.4	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	15 - 5	615	STP 16-24 E5	Str 1	LDB 3	Biface Reduction Flake	1	0.3	- -	Jasper	-	-	-	No Heating Present	Absent	-
14LV172	15 - 6	615	STP 16-24 E5	Str 1	LDB 9	Flake Fragment	2	0.2	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	16 - 1	616	STP 16-24 E15	Str 1	LBF 1	Projectile Point	1	0.9	- -	Florence Chert	-	-	Whole	Heating Present	Absent	Scallorn (Perino 1985:344); Late Woodland; one edge heavily re-sharpened
14LV172	16 - 2	616	STP 16-24 E15	Str 1	LDB 2	Early Reduction Flake	1	0.6	- -	Florence Chert	-	-	-	No Heating Present	Absent	-

Site	Cat-Spec	Fld	Horizontal	Vertical	Type Style	Translation	Cnt	Wght	Beg-End Date	V3: Material	V4: Decrtn	V5: Form/ Other Char	V6: Portion	V7: Heating	V9: Cortex/ Color	Note
14LV172	16 - 3	616	STP 16-24 E15	Str 1	LDB 9	Flake Fragment	1	0.6	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	17 - 1	617	STP 16-24 W5	Str 1	LFT 1	Utilized Flake	1	0.8	- -	Florence Chert	-	-	Whole	Heating Present	Absent	-
14LV172	17 - 2	617	STP 16-24 W5	Str 1	LDB 9	Flake Fragment	1	0.1	- -	Chert	-	-	-	No Heating Present	Absent	-
14LV172	17 - 3	617	STP 16-24 W5	Str 1	LDB 10	Block Shatter	1	2.1	- -	Florence Chert	-	-	-	No Heating Present	Cobble	-
14LV172	18 - 1	618	STP 16-24 W15	Str 1	LDB 9	Flake Fragment	1	0.2	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV172	18 - 2	618	STP 16-24 W15	Str 1	LDB 10	Block Shatter	1	0.2	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV172	19 - 1	619	STP 16-24 S5	Str 1	LDB 2	Early Reduction Flake	1	1.4	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	19 - 2	619	STP 16-24 S5	Str 1	LDB 3	Biface Reduction Flake	2	1.4	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	19 - 3	619	STP 16-24 S5	Str 1	LDB 9	Flake Fragment	1	0.1	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	19 - 4	619	STP 16-24 S5	Str 1	LDB 9	Flake Fragment	1	0.1	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV172	20 - 1	620	STP 16-24 S5	Str 2	LDB 9	Flake Fragment	1	0.2	- -	Jasper	-	-	-	Heating Present	Absent	-
14LV172	21 - 1	621	STP 16-24 S5 E15	Str 1	LDB 3	Biface Reduction Flake	1	0.5	- -	Jasper	-	-	-	Heating Present	Absent	-
14LV172	21 - 2	621	STP 16-24 S5 E15	Str 1	LDB 9	Flake Fragment	2	0.3	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	22 - 1	622	STP 16-24 S5 E20	Str 1	LDB 9	Flake Fragment	1	0.1	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV172	23 - 1	623	STP 16-24 S5 E30	Str 1	LDB 3	Biface Reduction Flake	1	0.5	- -	Jasper	-	-	-	No Heating Present	Cobble	-
14LV172	24 - 1	624	STP 16-24 S5 E35	Str 2	LDB 3	Biface Reduction Flake	1	0.2	- -	Jasper	-	-	-	Heating Present	Absent	-
14LV172	25 - 1	625	STP 16-24 S5 W15	Str 1	LDB 3	Biface Reduction Flake	1	0.4	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	26 - 1	626	STP 16-24 S15	Str 1	LBF 5	Middle-Stage Biface	1	13.8	- -	Florence Chert	-	-	Whole	No Heating Present	Block	-
14LV172	26 - 2	626	STP 16-24 S15	Str 1	LCR 1	Freehand Core	1	17.9	- -	Florence Chert	-	-	Broken	No Heating Present	Block	-
14LV172	26 - 3	626	STP 16-24 S15	Str 1	LFT 1	Utilized Flake	1	7.7	- -	Florence Chert	-	-	Whole	No Heating Present	Absent	-
14LV172	26 - 4	626	STP 16-24 S15	Str 1	LDB 10	Block Shatter	1	3.0	- -	Florence Chert	-	-	-	Heating Present	Block	-
14LV172	27 - 1	627	STP 16-24 S15 E15	Str 1	LDB 3	Biface Reduction Flake	1	0.2	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	27 - 2	627	STP 16-24 S15 E15	Str 1	LDB 3	Biface Reduction Flake	1	0.2	- -	Chert	-	-	-	No Heating Present	Absent	white chert
14LV172	27 - 3	627	STP 16-24 S15 E15	Str 1	LDB 9	Flake Fragment	1	0.1	- -	Chert	-	-	-	Heating Present	Absent	-
14LV172	28 - 1	628	STP 16-24 S15 E20	Str 1	LBF 11	Indeterminate Biface	1	1.3	- -	Florence Chert	-	-	Broken	No Heating Present	Block	-
14LV172	28 - 2	628	STP 16-24 S15 E20	Str 1	LDB 9	Flake Fragment	1	0.1	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	29 - 1	629	STP 16-24 S20 E10	Str 1	LDB 9	Flake Fragment	1	0.3	- -	Florence Chert	-	-	-	Heating Indeterminate	Absent	-
14LV172	30 - 1	630	STP 18-25	Str 1	LDB 9	Flake Fragment	1	0.2	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	31 - 1	631	STP 18-25 N5 E10	Str 1	LDB 2	Early Reduction Flake	1	1.1	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV172	31 - 2	631	STP 18-25 N5 E10	Str 1	LDB 3	Biface Reduction Flake	3	2.6	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	31 - 3	631	STP 18-25 N5 E10	Str 1	LDB 3	Biface Reduction Flake	1	0.3	- -	Florence Chert	-	-	-	No Heating Present	Cobble	-
14LV172	32 - 1	632	STP 18-25 N5 W10	Str 1	LDB 3	Biface Reduction Flake	3	1.7	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	32 - 2	632	STP 18-25 N5 W10	Str 1	LDB 9	Flake Fragment	1	0.9	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	32 - 3	632	STP 18-25 N5 W10	Str 1	LDB 10	Block Shatter	1	1.2	- -	Florence Chert	-	-	-	Heating Present	Block	-
14LV172	33 - 1	633	STP 18-25 N10 W5	Str 1	LDB 3	Biface Reduction Flake	2	1.5	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	34 - 1	634	STP 18-25 N10 W20	Str 1	LDB 3	Biface Reduction Flake	1	0.2	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	34 - 2	634	STP 18-25 N10 W20	Str 1	LDB 10	Block Shatter	1	0.9	- -	Jasper	-	-	-	No Heating Present	Cobble	-

Site	Cat-Spec	Fid	Horizontal	Vertical	Type Style	Translation	Cnt	Wght	Beg-End Date	V3: Material	V4: Decrtn	V5: Form/ Other Char	V6: Portion	V7: Heating	V9: Cortex/ Color	Note
14LV172	35 - 1	635	STP 18-25 N10 W30	Str 1	LDB 3	Biface Reduction Flake	1	0.1	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV172	36 - 1	636	STP 18-25 N10 W40	Str 1	LDB 2	Early Reduction Flake	1	9.4	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	36 - 2	636	STP 18-25 N10 W40	Str 1	LDB 9	Flake Fragment	1	1.1	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV172	37 - 1	637	STP 18-25 E10	Str 1	LDB 9	Flake Fragment	1	0.6	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV172	37 - 2	637	STP 18-25 E10	Str 1	LDB 10	Block Shatter	1	10.4	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	38 - 1	638	STP 18-25 E15	Str 1	LBF 1	Projectile Point	1	0.9	- -	Jasper	-	-	Base	No Heating Present	Absent	Scallorn (Perino 1985:344); Late Woodland
14LV172	38 - 2	638	STP 18-25 E15	Str 1	LBF 4	Late-Stage Biface	1	3.5	- -	Florence Chert	-	-	Broken	No Heating Present	Absent	-
14LV172	38 - 3	638	STP 18-25 E15	Str 1	LDB 9	Flake Fragment	2	1.0	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	38 - 4	638	STP 18-25 E15	Str 1	LDB 9	Flake Fragment	1	0.2	- -	Chert	-	-	-	No Heating Present	Absent	-
14LV172	39 - 1	639	STP 18-25 E15	Str 2	LDB 3	Biface Reduction Flake	1	0.4	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	40 - 1	640	STP 18-25 W5	Str 1	LDB 10	Block Shatter	1	0.7	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	41 - 1	641	STP 18-25 W10	Str 1	LDB 2	Early Reduction Flake	1	6.5	- -	Florence Chert	-	-	-	No Heating Present	Block	-
14LV172	41 - 2	641	STP 18-25 W10	Str 1	LDB 3	Biface Reduction Flake	1	0.8	- -	Florence Chert	-	-	-	No Heating Present	Block	-
14LV172	41 - 3	641	STP 18-25 W10	Str 1	LDB 6	Finishing Flake	1	0.1	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	41 - 4	641	STP 18-25 W10	Str 1	LDB 9	Flake Fragment	1	0.5	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	42 - 1	642	STP 18-25 W30	Str 1	LDB 3	Biface Reduction Flake	1	0.2	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	43 - 1	643	STP 18-25 W40	Str 1	LDB 3	Biface Reduction Flake	1	0.3	- -	Florence Chert	-	-	-	No Heating Present	Cobble	-
14LV172	44 - 1	644	STP 18-25 S5 E15	Str 1	LDB 9	Flake Fragment	1	0.1	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	45 - 1	645	STP 18-25 S5 E15	Str 2	LDB 3	Biface Reduction Flake	1	0.2	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	46 - 1	646	STP 18-25 S5 E20	Str 1	LDB 9	Flake Fragment	1	0.6	- -	Florence Chert	-	-	-	No Heating Present	Block	-
14LV172	47 - 1	647	STP 18-25 S5 E20	Str 2	LDB 6	Finishing Flake	1	0.1	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	48 - 1	648	STP 18-25 S5 E25	Str 1	LDB 9	Flake Fragment	1	0.2	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	49 - 1	649	STP 18-25 S5 E25	Str 2	LDB 6	Finishing Flake	1	0.2	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV172	50 - 1	650	STP 18-25 S5 W5	Str 1	LDB 6	Finishing Flake	1	0.1	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	51 - 1	651	STP 18-25 S5 W10	Str 1	LDB 9	Flake Fragment	1	0.1	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV172	52 - 1	652	STP 18-25 S5 W15	Str 1	LDB 6	Finishing Flake	1	0.1	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	53 - 1	653	STP 18-25 S5 W40	Str 1	LDB 6	Finishing Flake	1	0.1	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	53 - 2	653	STP 18-25 S5 W40	Str 1	LDB 6	Finishing Flake	1	0.1	- -	Chalcedony	-	-	-	No Heating Present	Absent	-
14LV172	53 - 3	653	STP 18-25 S5 W40	Str 1	LGR 1	Freehand Core	1	11.1	- -	Florence Chert	-	-	Whole	No Heating Present	Absent	-
14LV172	54 - 1	654	STP 18-25 S10 E25	Str 2	LDB 3	Biface Reduction Flake	1	0.3	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV172	54 - 2	654	STP 18-25 S10 E25	Str 2	LUM 2	Unmodified Pebble	1	7.1	- -	Coal	-	-	-	-	-	clinker; naturally occuring burnt coal
14LV172	55 - 1	655	STP 18-25 S10 W25	Str 1	LDB 3	Biface Reduction Flake	1	0.2	- -	Florence Chert	-	-	-	Heating Present	Cobble	-
14LV172	56 - 1	656	STP 18-25 S10 W30	Str 1	LDB 3	Biface Reduction Flake	2	0.8	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV172	56 - 2	656	STP 18-25 S10 W30	Str 1	LDB 9	Flake Fragment	1	0.2	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV173	1 - 1	701	STP 17-20	Str 1	LDB 2	Early Reduction Flake	1	1.0	- -	Florence Chert	-	-	-	No Heating Present	Block	-
14LV173	1 - 2	701	STP 17-20	Str 1	LDB 3	Biface Reduction Flake	1	0.5	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV173	1 - 3	701	STP 17-20	Str 1	LDB 9	Flake Fragment	1	1.0	- -	Florence Chert	-	-	-	Heating Present	Absent	-

Site	Cat-Spec	Fid	Horizontal	Vertical	Type Style	Translation	Cnt	Wght	Beg-End Date	V3: Material	V4: Decrtn	V5: Form/Other Char	V6: Portion	V7: Heating	V9: Cortex/Color	Note
14LV173	2 - 1	702	STP 17-20 S10	Str 1	LDB 2	Early Reduction Flake	1	1.0	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV173	2 - 2	702	STP 17-20 S10	Str 1	LDB 6	Finishing Flake	2	0.2	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV173	3 - 1	703	STP 17-20 S10 E5	Str 1	LDB 3	Biface Reduction Flake	2	1.8	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV173	3 - 2	703	STP 17-20 S10 E5	Str 1	LDB 9	Flake Fragment	2	0.9	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV173	4 - 1	704	STP 17-20 S10 E15	Str 1	LDB 9	Flake Fragment	1	0.2	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV173	5 - 1	705	STP 17-20 S15	Str 1	LDB 9	Flake Fragment	1	0.1	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV173	5 - 2	705	STP 17-20 S15	Str 1	LBF 4	Late-Stage Biface	1	1.4	- -	Florence Chert	-	-	Medial	No Heating Present	Absent	-
14LV174	1 - 1	801	-	Surface	LDB 9	Flake Fragment	1	0.3	- -	Florence Chert	-	-	-	Heating Present	Cobble	-
14LV174	1 - 2	801	-	Surface	LCR 1	Freehand Core	1	41.9	- -	Florence Chert	-	-	Whole	No Heating Present	Block	-
14LV174	1 - 3	801	-	Surface	LDB 9	Flake Fragment	1	1.5	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV174	1 - 4	801	-	Surface	LBF 11	Indeterminate Biface	1	4.1	- -	Florence Chert	-	-	Broken	Heating Present	Cobble	-
14LV174	1 - 5	801	-	Surface	LDB 2	Early Reduction Flake	1	8.1	- -	Florence Chert	-	-	-	No Heating Present	Block	-
14LV174	2 - 1	802	STP 51-16	Str 1	LDB 3	Biface Reduction Flake	1	0.3	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV174	3 - 1	803	STP 51-16 E10	Str 1	LDB 6	Finishing Flake	1	0.1	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV174	4 - 1	804	STP 50-16 N5 E20	Str 1	LDB 9	Flake Fragment	1	0.2	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV175	1 - 1	901	STP 63-15	Str 1	GBU 4	Unidentified Bottle/Jar-Body	2	-	- - -	-	-	-	-	-	Colorless	-
14LV175	1 - 2	901	STP 63-15	Str 1	GBU 2	Unidentified Bottle/Jar-Base	1	-	- - -	-	-	-	-	Unidentified	Colorless	-
14LV175	2 - 1	902	STP 63-15 N5 E20	Str 2	SAB 1	Brick	1	61.2	- -	Brick	-	Painted	Portion/Fragment	-	White	-
14LV175	2 - 2	902	STP 63-15 N5 E20	Str 2	SAG 13	Window Glass	12	7.3	- -	Glass	-	-	Portion/Fragment	-	Colorless	-
14LV175	2 - 3	902	STP 63-15 N5 E20	Str 2	SAB 45	Asphalt Roofing Shingle	1	1.1	- -	Asphalt	-	-	Portion/Fragment	-	-	-
14LV175	2 - 4	902	STP 63-15 N5 E20	Str 2	SAF 6	Wire Nail	2	-	1880 -	Ferrous Metal	-	Common	Whole	-	-	-
14LV175	2 - 5	902	STP 63-15 N5 E20	Str 2	SAF 6	Wire Nail	1	-	1880 -	Ferrous Metal	-	Boxing	Whole	-	-	-
14LV175	2 - 6	902	STP 63-15 N5 E20	Str 2	SAF 6	Wire Nail	1	-	1880 -	Ferrous Metal	-	Boxing	Portion/Fragment	-	-	-
14LV175	2 - 7	902	STP 63-15 N5 E20	Str 2	SAT 1	Tile	1	-	- - -	Asbestos	-	-	Portion/Fragment	-	-	-
14LV175	2 - 8	902	STP 63-15 N5 E20	Str 2	SAT 1	Tile	1	-	- - -	Earthenware	-	Glazed	Portion/Fragment	-	White	-
14LV175	2 - 9	902	STP 63-15 N5 E20	Str 2	SOS 2	Unidentified Glass	1	1.1	- -	Glass	-	Enameled	Portion/Fragment	-	White	-
14LV175	3 - 1	903	STP 63-15 N15 E10	Str 2	GBU 4	Unidentified Bottle/Jar-Body	2	-	- - -	-	-	-	-	-	Light Olive/Dark Olive Green	-
14LV175	3 - 2	903	STP 63-15 N15 E10	Str 2	GBU 4	Unidentified Bottle/Jar-Body	1	-	1880 1915 -	-	-	-	-	-	Amethyst Tint (Solarized)	-
14LV175	3 - 3	903	STP 63-15 N15 E10	Str 2	SAF 19	Spike	1	-	- - -	Ferrous Metal	-	-	Portion/Fragment	-	-	-
14LV175	4 - 1	904	STP 63-15 N15 E20	Str 1	SAT 1	Tile	1	-	- - -	Asbestos	-	-	Portion/Fragment	-	-	-
14LV175	4 - 2	904	STP 63-15 N15 E20	Str 1	SAG 13	Window Glass	1	0.5	- -	Glass	-	-	Portion/Fragment	-	Colorless	-
14LV175	5 - 1	905	STP 63-15 N15 W10	Str 1	CRW 84	Whiteware - Colored Glaze	7	-	1820 -	-	-	Unidentified Tableware	-	Rim, Body & Base	Turquoise	-
14LV175	6 - 1	906	STP 63-15 N25 E10	Str 1	CRW 50	Whiteware - Transfer Printed - Blue	1	-	1820 1915 -	-	Chinoiserie - General	Unidentified Tableware, Flatware	-	Body	Blue	-

Site	Cat-Spec	Fid	Horizontal	Vertical	Type Style	Translation	Cnt	Wght	Beg-End Date	V3: Material	V4: Decrtn	V5: Form/Other Char	V6: Portion	V7: Heating	V9: Cortex/Color	Note
14LV175	6 - 2	906	STP 63-15 N25 E10	Str 1	SAG 13	Window Glass	2	1.0	- -	Glass	-	-	Portion/Fragment	-	Colorless	-
14LV175	6 - 3	906	STP 63-15 N25 E10	Str 1	SAF 74	Machine Cut Nail - Unknown Head	1	-	1790 -	Ferrous Metal	-	-	Shank	-	-	-
14LV175	7 - 1	907	STP 63-15 N25 E10	Str 2	SAG 13	Window Glass	3	5.2	- -	Glass	-	-	Portion/Fragment	-	Colorless	-
14LV175	7 - 2	907	STP 63-15 N25 E10	Str 2	SMH 1	Screw	1	-	- -	Ferrous Metal	-	-	Portion/Fragment	-	-	-
14LV175	7 - 3	907	STP 63-15 N25 E10	Str 2	SOS 2	Unidentified Glass	1	1.9	- -	Glass	-	-	Portion/Fragment	-	Aqua	melted
14LV175	8 - 1	908	STP 63-15 N25 E20	Str 1	GBU 4	Unidentified Bottle/Jar-Body	1	-	- -	-	-	-	-	-	Brown/Amber/Honey	-
14LV175	8 - 2	908	STP 63-15 N25 E20	Str 1	GBU 4	Unidentified Bottle/Jar-Body	1	-	1880 1915 -	-	-	-	-	-	Amethyst Tint (Solarized)	-
14LV175	8 - 3	908	STP 63-15 N25 E20	Str 1	SAG 13	Window Glass	1	1.0	- -	Glass	-	-	Portion/Fragment	-	Aqua	-
14LV175	8 - 4	908	STP 63-15 N25 E20	Str 1	SAF 6	Wire Nail	1	-	1880 -	Ferrous Metal	-	Common	Whole	-	-	-
14LV175	8 - 5	908	STP 63-15 N25 E20	Str 1	SAF 6	Wire Nail	3	-	1880 -	Ferrous Metal	-	Common	Portion/Fragment	-	-	-
14LV175	8 - 6	908	STP 63-15 N25 E20	Str 1	SAF 6	Wire Nail	1	-	1880 -	Ferrous Metal	-	-	Shank	-	-	-
14LV175	8 - 7	908	STP 63-15 N25 E20	Str 1	SAF 6	Wire Nail	1	-	1880 -	Ferrous Metal	-	Finish	Whole	-	-	-
14LV175	9 - 1	909	STP 63-15 N35 E20	Str 1	GBU 4	Unidentified Bottle/Jar-Body	1	-	1880 1915 -	-	-	-	-	-	Amethyst Tint (Solarized)	-
14LV175	9 - 2	909	STP 63-15 N35 E20	Str 1	SMH 77	Washer	1	-	- -	Ferrous Metal	-	-	Whole	-	-	lock washer
14LV175	10 - 1	910	STP 63-15 N45	Str 1	GBU 2	Unidentified Bottle/Jar-Base	1	-	- -	-	Embossed Lettering	-	-	Machine-made Valve Mark	Colorless	embossed "...ANGER/ ...E ORIGINAL"
14LV175	11 - 1	911	STP 63-15 S5	Str 2	SOS 1	Unidentified Metal	1	1.4	- -	Ferrous Metal	-	-	Portion/Fragment	-	-	-
14LV175	12 - 1	912	STP 63-15 S5 E20	Str 2	SAG 13	Window Glass	2	1.9	- -	Glass	-	-	Portion/Fragment	-	Colorless	-
14LV175	12 - 2	912	STP 63-15 S5 E20	Str 2	SAT 1	Tile	1	-	- -	Asbestos	-	Painted	Portion/Fragment	-	See Note Field	painted green over yellow
14LV175	13 - 1	913	STP 64-15	Str 1	SAT 1	Tile	3	-	- -	Asbestos	-	-	Portion/Fragment	-	-	-
14LV175	13 - 2	913	STP 64-15	Str 1	SAP 1	Salt-Glazed Stoneware Drain Pipe	1	-	1810 -	Stoneware	-	Salt Glazed	Portion/Fragment	-	-	-
14LV175	14 - 1	914	STP 64-15 N10	Str 1	CPJ 0	Hard Paste Porcelain	1	-	- -	-	-	Unidentified Tableware	-	Body	-	-
14LV175	14 - 2	914	STP 64-15 N10	Str 1	GBC 3	Soda/Mineral Water Bottle	1	-	- -	-	-	-	-	-	Aquamarine (all shades)	-
14LV175	14 - 3	914	STP 64-15 N10	Str 1	GBP 6	Patent/Proprietary Medicine/Drug Bottle/Jar	1	-	1880 1915 -	-	Panel	-	-	-	Amethyst Tint (Solarized)	embossed "... PR.../ ...ELI.../ ..."
14LV175	14 - 4	914	STP 64-15 N10	Str 1	GBU 4	Unidentified Bottle/Jar-Body	1	-	- -	-	-	-	-	-	Light Olive/Dark Olive Green	-
14LV175	14 - 5	914	STP 64-15 N10	Str 1	SAG 13	Window Glass	1	0.8	- -	Glass	-	-	Portion/Fragment	-	Colorless	-
14LV175	14 - 6	914	STP 64-15 N10	Str 1	SAG 13	Window Glass	1	0.6	- -	Glass	-	-	Portion/Fragment	-	Aqua	-
14LV175	14 - 7	914	STP 64-15 N10	Str 1	ZMZ 1	Unidentified Mammal	1	12.7	- -	-	-	Metacarpal/Metatarsal	Whole	-	-	-
14LV176	1 - 1	1001	STP 62-38	Str 2	LDB 2	Early Reduction Flake	1	3.1	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV176	2 - 1	1002	STP 62-38 N5	Str 1	LDB 9	Flake Fragment	1	0.8	- -	Silicified Sediment	-	-	-	Heating Present	Absent	-
14LV176	3 - 1	1003	STP 62-38 N5 E20	Str 1	LDB 9	Flake Fragment	1	0.8	- -	Silicified Sediment	-	-	-	Heating Present	Absent	-

Site	Cat-Spec	Fld	Horizontal	Vertical	Type Style	Translation	Cnt	Wght	Beg-End Date	V3: Material	V4: Decrtn	V5: Form/ Other Char	V6: Portion	V7: Heating	V9: Cortex/ Color	Note
14LV176	4 - 1	1004	STP 62-38 N5 E30	Str 2	LDB 9	Flake Fragment	1	1.0	- -	Silicified Sediment	-	-	-	Heating Present	Absent	-
14LV176	5 - 1	1005	STP 62-38 N10 E10	Str 1	LDB 1	Decortication Flake	1	2.4	- -	Jasper	-	-	-	No Heating Present	Cobble	-
14LV176	5 - 2	1005	STP 62-38 N10 E10	Str 1	LDB 3	Biface Reduction Flake	1	0.4	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV176	5 - 3	1005	STP 62-38 N10 E10	Str 1	LDB 6	Finishing Flake	1	0.1	- -	Silicified Sediment	-	-	-	Heating Present	Absent	-
14LV176	6 - 1	1006	STP 62-38 N10 E15	Str 1	LDB 9	Flake Fragment	1	0.3	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV176	7 - 1	1007	STP 62-38 N10 E25	Str 1	LDB 9	Flake Fragment	1	0.1	- -	Silicified Sediment	-	-	-	No Heating Present	Absent	-
14LV176	8 - 1	1008	STP 62-38 N15 E30	Str 1	LDB 2	Early Reduction Flake	1	3.1	- -	Florence Chert	-	-	-	No Heating Present	Cobble	-
14LV176	9 - 1	1009	STP 62-38 E10	Str 1	LFT 1	Utilized Flake	1	3.2	- -	Silicified Sediment	-	-	-	No Heating Present	Absent	-
14LV176	9 - 2	1009	STP 62-38 E10	Str 1	LFT 1	Utilized Flake	1	2.5	- -	Silicified Sediment	-	-	-	Heating Present	Absent	-
14LV176	9 - 3	1009	STP 62-38 E10	Str 1	LDB 3	Biface Reduction Flake	1	0.2	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV176	9 - 4	1009	STP 62-38 E10	Str 1	LDB 6	Finishing Flake	3	0.3	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV176	10 - 1	1010	STP 62-38 E15	Str 1	LDB 3	Biface Reduction Flake	1	0.3	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV176	10 - 2	1010	STP 62-38 E15	Str 1	LDB 3	Biface Reduction Flake	1	0.1	- -	Silicified Sediment	-	-	-	Heating Indeterminate	Absent	-
14LV176	11 - 1	1011	STP 62-38 E20	Str 1	LDB 2	Early Reduction Flake	1	0.9	- -	Silicified Sediment	-	-	-	Heating Present	Absent	-
14LV176	11 - 2	1011	STP 62-38 E20	Str 1	LDB 9	Flake Fragment	1	0.2	- -	Silicified Sediment	-	-	-	No Heating Present	Absent	-
14LV176	11 - 3	1011	STP 62-38 E20	Str 1	LDB 9	Flake Fragment	1	0.2	- -	Jasper	-	-	-	No Heating Present	Absent	-
14LV176	11 - 4	1011	STP 62-38 E20	Str 1	LDB 9	Flake Fragment	1	0.1	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV176	12 - 1	1012	STP 62-38 E25	Str 1	LDB 3	Biface Reduction Flake	2	0.4	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV176	12 - 2	1012	STP 62-38 E25	Str 1	LDB 3	Biface Reduction Flake	1	0.2	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV176	12 - 3	1012	STP 62-38 E25	Str 1	LDB 6	Finishing Flake	1	0.1	- -	Silicified Sediment	-	-	-	Heating Present	Absent	-
14LV176	12 - 4	1012	STP 62-38 E25	Str 1	LDB 6	Finishing Flake	1	0.1	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV176	12 - 5	1012	STP 62-38 E25	Str 1	LDB 9	Flake Fragment	1	0.2	- -	Chert	-	-	-	Heating Present	Absent	-
14LV176	13 - 1	1013	STP 62-38 W5	Str 1	LDB 3	Biface Reduction Flake	1	0.3	- -	Silicified Sediment	-	-	-	Heating Present	Absent	-
14LV176	14 - 1	1014	STP 62-38 W15	Str 1	LDB 3	Biface Reduction Flake	1	0.3	- -	Jasper	-	-	-	No Heating Present	Absent	-
14LV176	15 - 1	1015	STP 62-38 S5 E20	Str 1	LDB 9	Flake Fragment	1	0.1	- -	Silicified Sediment	-	-	-	No Heating Present	Absent	-
14LV176	16 - 1	1016	STP 64-39	Str 1	LDB 9	Flake Fragment	2	2.3	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV176	17 - 1	1017	STP 64-39 E10	Str 1	LDB 3	Biface Reduction Flake	3	1.3	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV176	17 - 2	1017	STP 64-39 E10	Str 1	LDB 3	Biface Reduction Flake	1	0.2	- -	Chert	-	-	-	No Heating Present	Absent	-
14LV176	17 - 3	1017	STP 64-39 E10	Str 1	LDB 9	Flake Fragment	1	0.7	- -	Florence Chert	-	-	-	No Heating Present	Block	-
14LV176	18 - 1	1018	STP 64-39 E15	Str 1	LDB 9	Flake Fragment	1	0.7	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV177	1 - 1	1101	STP 78-6	Str 2	LDB 1	Decortication Flake	1	1.1	- -	Florence Chert	-	-	-	Heating Present	Cobble	-
14LV177	1 - 2	1101	STP 78-6	Str 2	LDB 3	Biface Reduction Flake	2	0.5	- -	Chert	-	-	-	No Heating Present	Absent	-
14LV177	1 - 3	1101	STP 78-6	Str 2	LDB 3	Biface Reduction Flake	1	0.3	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV177	1 - 4	1101	STP 78-6	Str 2	LDB 3	Biface Reduction Flake	1	0.1	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV177	1 - 5	1101	STP 78-6	Str 2	LDB 6	Finishing Flake	1	0.1	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV177	1 - 6	1101	STP 78-6	Str 2	LDB 6	Finishing Flake	2	0.2	- -	Florence Chert	-	-	-	Heating Indeterminate	Absent	-

Site	Cat-Spec	Fld	Horizontal	Vertical	Type Style	Translation	Cnt	Wght	Beg-End Date	V3: Material	V4: Decrtn	V5: Form/ Other Char	V6: Portion	V7: Heating	V9: Cortex/ Color	Note
14LV177	1 - 7	1101	STP 78-6	Str 2	LDB 9	Flake Fragment	2	0.6	- -	Chert	-	-	-	Heating Present	Absent	-
14LV177	1 - 8	1101	STP 78-6	Str 2	LDB 9	Flake Fragment	1	0.6	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV177	1 - 9	1101	STP 78-6	Str 2	LDB 9	Flake Fragment	1	0.1	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV177	2 - 1	1102	STP 78-6 W10	Str 1	LDB 9	Flake Fragment	1	0.8	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV177	3 - 1	1103	STP 78-6 S10	Str 1	LDB 2	Early Reduction Flake	1	2.4	- -	Florence Chert	-	-	-	No Heating Present	Block	-
14LV177	3 - 2	1103	STP 78-6 S10	Str 1	LDB 9	Flake Fragment	1	0.2	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV178	1 - 1	1201	STP 6-18	Str 1	LDB 2	Early Reduction Flake	1	13.8	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV178	2 - 1	1202	STP 6-18 E10	Str 1	LDB 3	Biface Reduction Flake	1	0.4	- -	Chert	-	-	-	No Heating Present	Absent	-
14LV179	1 - 1	1301	STP 25-16	Str 1	LDB 3	Biface Reduction Flake	2	0.5	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV179	1 - 2	1301	STP 25-16	Str 1	LDB 9	Flake Fragment	3	0.5	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV180	1 - 1	2401	STP 69-34 E10	Str 1	LDB 6	Finishing Flake	2	0.1	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV180	1 - 2	2401	STP 69-34 E10	Str 1	LDB 9	Flake Fragment	1	0.1	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV181	1 - 1	3001	STP 63-26	Str 1	LDB 9	Flake Fragment	1	0.1	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV181	2 - 1	3002	STP 64-26	Str 1	LDB 9	Flake Fragment	1	0.1	- -	Chert	-	-	-	Heating Present	Absent	-
14LV181	3 - 1	3003	STP 64-27	Str 1	LDB 9	Flake Fragment	1	0.8	- -	Jasper	-	-	-	No Heating Present	Absent	-
14LV181	3 - 2	3003	STP 64-27	Str 1	LDB 6	Finishing Flake	1	0.1	- -	Silicified Sediment	-	-	-	No Heating Present	Absent	-
14LV181	3 - 3	3003	STP 64-27	Str 1	LDB 9	Flake Fragment	1	0.1	- -	Jasper	-	-	-	Heating Present	Absent	-
14LV181	3 - 4	3003	STP 64-27	Str 1	LDB 9	Flake Fragment	2	0.3	- -	Silicified Sediment	-	-	-	No Heating Present	Absent	-
14LV181	4 - 1	3004	STP 64-27 W5	Str 1	LDB 3	Biface Reduction Flake	1	0.5	- -	Jasper	-	-	-	No Heating Present	Absent	-
14LV181	4 - 2	3004	STP 64-27 W5	Str 1	LDB 9	Flake Fragment	1	0.5	- -	Silicified Sediment	-	-	-	Heating Present	Absent	-
14LV181	4 - 3	3004	STP 64-27 W5	Str 1	LDB 9	Flake Fragment	1	0.3	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV181	4 - 4	3004	STP 64-27 W5	Str 1	LDB 9	Flake Fragment	1	0.1	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV181	5 - 1	3005	STP 64-27 S15 W5	Str 1	LDB 9	Flake Fragment	1	0.6	- -	Silicified Sediment	-	-	-	Heating Present	Absent	-
14LV181	6 - 1	3006	STP 64-27 S10 W5	Str 1	LDB 2	Early Reduction Flake	1	2.9	- -	Florence Chert	-	-	-	No Heating Present	Cobble	-
14LV181	6 - 2	3006	STP 64-27 S10 W5	Str 1	LDB 3	Biface Reduction Flake	1	0.1	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV181	7 - 1	3007	STP 64-27 N10 W10	Str 1	LDB 9	Flake Fragment	1	0.6	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV181	7 - 2	3007	STP 64-27 N10 W10	Str 1	LDB 9	Flake Fragment	1	0.1	- -	Jasper	-	-	-	No Heating Present	Absent	-
14LV181	7 - 3	3007	STP 64-27 N10 W10	Str 1	LDB 9	Flake Fragment	1	0.2	- -	Silicified Sediment	-	-	-	No Heating Present	Absent	-
14LV181	8 - 1	3008	STP 64-27 E5	Str 1	LDB 3	Biface Reduction Flake	1	0.3	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV181	8 - 2	3008	STP 64-27 E5	Str 1	LDB 3	Biface Reduction Flake	1	0.5	- -	Silicified Sediment	-	-	-	Heating Present	Absent	-
14LV181	8 - 3	3008	STP 64-27 E5	Str 1	LDB 9	Flake Fragment	2	0.2	- -	Silicified Sediment	-	-	-	No Heating Present	Absent	-
14LV181	9 - 1	3009	STP 64-27 E10	Str 1	LDB 3	Biface Reduction Flake	1	0.3	- -	Silicified Sediment	-	-	-	No Heating Present	Block	-
14LV181	9 - 2	3009	STP 64-27 E10	Str 1	LDB 3	Biface Reduction Flake	2	0.6	- -	Silicified Sediment	-	-	-	Heating Present	Absent	-
14LV181	10 - 1	3010	STP 64-27 N5	Str 1	LDB 3	Biface Reduction Flake	1	1.3	- -	Silicified Sediment	-	-	-	Heating Present	Absent	-
14LV181	11 - 1	3011	STP 64-27 N10	Str 1	LDB 6	Finishing Flake	1	0.1	- -	Silicified Sediment	-	-	-	No Heating Present	Absent	-
14LV181	12 - 1	3012	STP 64-27 S10	Str 1	LDB 3	Biface Reduction Flake	1	0.6	- -	Silicified Sediment	-	-	-	Heating Present	Absent	-
14LV181	12 - 2	3012	STP 64-27 S10	Str 1	LDB 6	Finishing Flake	1	0.1	- -	Jasper	-	-	-	No Heating Present	Absent	-

Site	Cat-Spec	Fld	Horizontal	Vertical	Type Style	Translation	Cnt	Wght	Beg-End Date	V3: Material	V4: Decrtn	V5: Form/ Other Char	V6: Portion	V7: Heating	V9: Cortex/ Color	Note
14LV181	12 - 3	3012	STP 64-27 S10	Str 1	LDB 9	Flake Fragment	2	0.1	- -	Silicified Sediment	-	-	-	No Heating Present	Absent	-
14LV181	13 - 1	3013	STP 64-27 S10 E5	Str 1	LDB 2	Early Reduction Flake	1	1.3	- -	Silicified Sediment	-	-	-	No Heating Present	Absent	-
14LV181	13 - 2	3013	STP 64-27 S10 E5	Str 1	LDB 3	Biface Reduction Flake	1	0.3	- -	Silicified Sediment	-	-	-	Heating Present	Absent	-
14LV181	13 - 3	3013	STP 64-27 S10 E5	Str 1	LDB 6	Finishing Flake	1	0.1	- -	Chert	-	-	-	Heating Present	Absent	-
14LV181	13 - 4	3013	STP 64-27 S10 E5	Str 1	LDB 6	Finishing Flake	1	0.1	- -	Jasper	-	-	-	No Heating Present	Absent	-
14LV181	13 - 5	3013	STP 64-27 S10 E5	Str 1	LDB 9	Flake Fragment	1	0.3	- -	Silicified Sediment	-	-	-	No Heating Present	Absent	-
14LV181	13 - 6	3013	STP 64-27 S10 E5	Str 1	LDB 9	Flake Fragment	1	0.1	- -	Silicified Sediment	-	-	-	Heating Present	Absent	-
14LV181	14 - 1	3014	STP 64-27 N30 E15	Str 1	LDB 6	Finishing Flake	1	0.1	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV181	14 - 2	3014	STP 64-27 N30 E15	Str 1	LDB 9	Flake Fragment	1	0.3	- -	Silicified Sediment	-	-	-	Heating Present	Absent	-
14LV181	15 - 1	3015	STP 64-27 N40 E15	Str 1	LDB 3	Biface Reduction Flake	1	0.7	- -	Silicified Sediment	-	-	-	No Heating Present	Absent	-
14LV181	15 - 2	3015	STP 64-27 N40 E15	Str 1	LDB 9	Flake Fragment	1	0.3	- -	Chert	-	-	-	Heating Present	Absent	-
14LV181	15 - 3	3015	STP 64-27 N40 E15	Str 1	LFC 1	Fire-cracked Rock	1	77.4	- -	Silicified Sediment	-	-	-	-	-	-
14LV181	16 - 1	3016	STP 64-27 N10 E20	Str 1	LDB 9	Flake Fragment	1	0.1	- -	Chert	-	-	-	No Heating Present	Absent	white chert
14LV181	17 - 1	3017	STP 64-27 N30 E20	Str 1	LDB 9	Flake Fragment	1	0.5	- -	Chert	-	-	-	No Heating Present	Absent	white and gray chert
14LV181	18 - 1	3018	STP 64-27 N30 E25	Str 1	LDB 9	Flake Fragment	1	0.2	- -	Chert	-	-	-	No Heating Present	Absent	white chert
14LV181	19 - 1	3019	STP 64-27 N40 E25	Str 1	LDB 6	Finishing Flake	1	0.1	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV181	19 - 2	3019	STP 64-27 N40 E25	Str 1	LDB 9	Flake Fragment	1	0.1	- -	Silicified Sediment	-	-	-	No Heating Present	Absent	-
14LV181	19 - 3	3019	STP 64-27 N40 E25	Str 1	LFC 1	Fire-cracked Rock	1	583.5	- -	Sandstone	-	-	-	-	-	-
14LV181	20 - 1	3020	STP 64-27 N45 E25	Str 1	LDB 3	Biface Reduction Flake	1	0.2	- -	Silicified Sediment	-	-	-	Heating Present	Absent	-
14LV364	1 - 1	3101	STP 45-41 N10 E20	Str 1	LDB 10	Block Shatter	1	13.3	- -	Florence Chert	-	-	-	No Heating Present	Block	-
14LV365	1 - 1	3201	STP 58-40	Str 1	LDB 9	Flake Fragment	1	0.6	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV365	2 - 1	3202	STP 58-40 S5	Str 1	LDB 3	Biface Reduction Flake	1	1.0	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV365	3 - 1	3203	STP 58-40 N20	Str 2	LDB 9	Flake Fragment	1	1.9	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV365	4 - 1	3204	STP 58-40 N20 W10	Str 1	LDB 3	Biface Reduction Flake	1	0.2	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV365	4 - 2	3204	STP 58-40 N20 W10	Str 1	LDB 9	Flake Fragment	1	1.0	- -	Florence Chert	-	-	-	Heating Present	Absent	-
14LV365	5 - 1	3205	STP 58-40 N30 E10	Str 1	LBF 11	Indeterminate Biface	1	1.6	- -	Florence Chert	-	-	Broken	No Heating Present	Absent	-
14LV365	6 - 1	3206	STP 58-40 N40 W10	Str 1	LDB 3	Biface Reduction Flake	1	0.2	- -	Florence Chert	-	-	-	No Heating Present	Absent	-
14LV365	6 - 2	3206	STP 58-40 N40 W10	Str 1	LDB 3	Biface Reduction Flake	1	0.4	- -	Silicified Sediment	-	-	-	No Heating Present	Absent	-
14LV365	7 - 1	3207	STP 58-40 N50 E10	Str 1	LDB 2	Early Reduction Flake	1	0.5	- -	Florence Chert	-	-	-	Heating Present	Block	-
14LV365	7 - 2	3207	STP 58-40 N50 E10	Str 1	LDB 3	Biface Reduction Flake	1	0.7	- -	Silicified Sediment	-	-	-	Heating Present	Absent	-
14LV365	8 - 1	3208	STP 58-40 N60 W10	Str 1	LDB 6	Finishing Flake	1	0.1	- -	Silicified Sediment	-	-	-	Heating Present	Absent	-
14LV365	8 - 2	3208	STP 58-40 N60 W10	Str 1	LDB 9	Flake Fragment	1	0.6	- -	Chert	-	-	-	Heating Indeterminate	Block	-

APPENDIX F
LETTER OF AGREEMENT FOR CURATION



KANSAS

STATE

HISTORICAL

SOCIETY

◆
Robert J. Hoard, PhD,
RPA
State Archeologist
Cultural Resources
Extension 269
rhoard@kshs.org

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◆
KANSAS HISTORY CENTER

Administration
Center for Historical Research
Cultural Resources
Education / Outreach
Historic Sites
Kansas Museum of History
Library & Archives

HISTORIC SITES

Adair Cabin
Constitution Hall
Cottonwood Ranch
First Territorial Capitol
Fort Hays
Goodnow House
Grinter Place
Hollenberg Station
Kaw Mission
Marais des Cygnes Massacre
Mine Creek Battlefield
Native American Heritage Museum
Pawnee Indian Village
Pawnee Rock
Shawnee Indian Mission

Curation Agreement

The Archeology Office of the Kansas State Historical Society agrees to curate the following archeological materials and associated records:

Proposed New Federal Correctional Institution (FCI) and Federal Prison
Camp at the United States Penitentiary (USP) in Leavenworth, Kansas
Berger Ref # CXE 4756

A one-time curation fee of \$350.00 per cubic foot will be assessed. Additional charges will be made for oversized objects or if specimens require work to make them compatible with KSHS curation standards. Curation boxes will be provided by KSHS upon request.

Approximate date that the material will be transferred to KSHS: 9/15/11

Mode of transfer: Shipped by UPS or US Mail
 Hand delivered
 Other

For the Collecting Organization:

Name: Susan E. Parker Title: Laboratory Supervisor
(Signature) Date: 6/27/11

Organization: The Louis Berger Group, Inc.
Address: 950 50th Street, Marion, Iowa 52302

In accordance with the following Contracting Entity (collection owner):

Contact Person: Bridgette Lyles
Organization: US Dept of Justice, Federal Bureau of Prisons
Address: 500 First St NW, Room 653, Washington, DC 20534

For the Kansas State Historical Society:

Name: [Signature] Title: State Archeologist
(Signature) Date: 7.7.11

APPENDIX G
ARCHITECTURAL SURVEY PHOTOGRAPHS



1_Chief Medical Off Res_View NE.JPG



1_Chief Medical Off Res_View SSW.JPG



2_Bachelor Quarters_View NE.JPG



2_Bachelor Quarters_View NW.JPG



2_Bachelor Quarters_View SW.JPG



3_Armory and Shed_View E.JPG



4_Tower 1_View W.JPG



5_Shelter_View NW.JPG



6_Assoc Wardens Res_Gar_View NW.JPG



6_Assoc Wardens Res_View NE.JPG



6_Assoc Wardens Res_View SSE.JPG



6_Assoc Wardens Res_View SSW.JPG



7_Assoc Wardens Res_View NE.JPG



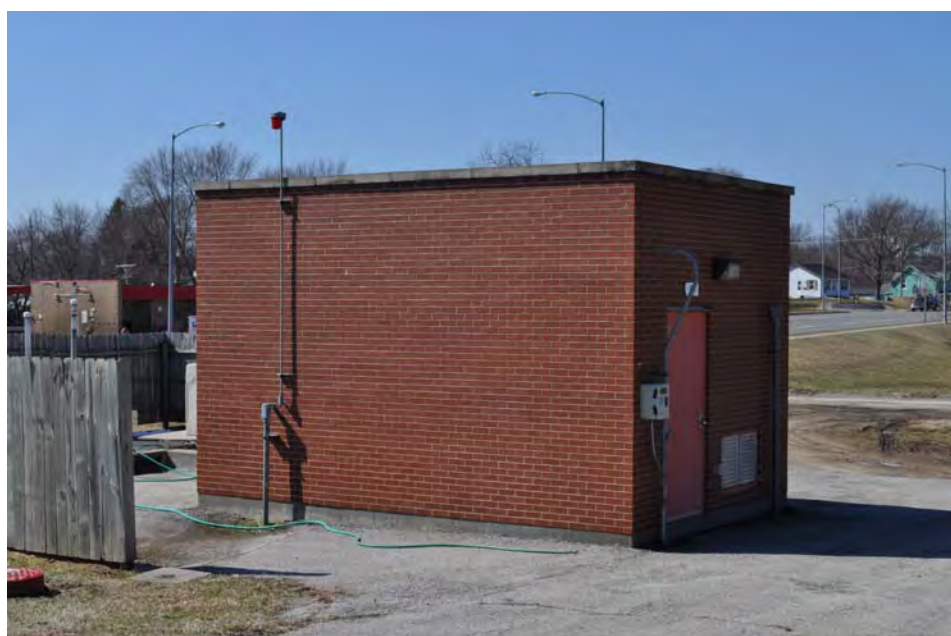
7_Assoc Wardens Res_View NW.JPG



7_Assoc Wardens Res_View SE.JPG



8_Lift Station #1_View SE.JPG



8_Lift Station #1_View SW.JPG



9_Receiving Depot_View NE.JPG



9_Receiving Depot_View WSW.JPG



10_Warehouse_View SE.JPG



10_Warehouse_View SW.JPG



11_Hatchery Building_View NE.JPG



11_Hatchery Building_View SW.JPG



12_1104 Metropolitan Ave_View W.JPG



13_1102 Metropolitan Ave_View NW.JPG



14_1030 Metropolitan Ave_View N.JPG



15_1028 Metropolitan Ave_View N.JPG



15_1028 Metropolitan Ave_View SE.JPG



16_1008-10 Metropolitan Ave_View W.JPG



17_1000-02 Metropolitan Ave_View W.JPG



18_920-22 Metropolitan Ave_View E.JPG



18_920-22 Metropolitan Ave_View W.JPG



19_Sheds and Guard Shack_Staff Res Area_View NE.JPG



19_Sheds and Guard Shack_Staff Res Area_View W.JPG



20_910 Metropolitan Ave_View NW.JPG



21_908 Metropolitan Ave_View NW.JPG



22_906 Metropolitan Ave_View N.JPG



22_906 Metropolitan Ave_View W.JPG



23_904 Metropolitan Ave_View N.JPG



24_902 Metropolitan Ave_Gar_View NE.JPG



24_902 Metropolitan Ave_View NE.JPG



25_816 Metropolitan Ave_Gar_View NE.JPG



25_816 Metropolitan Ave_View NE.JPG



26_812 Metropolitan Ave_Carport_View SE.JPG



26_812 Metropolitan Ave_View SE.JPG



27_Garage_View NE.JPG



28_Receiving Depot_View NW.JPG



29_Industries Warehouse_View NE.JPG



30_UNICOR Raw Storage_View SE.JPG



31_Salvage Warehouse_View SW.JPG



32_Cement Storage_View SE.JPG



33_Warehouse_View SW.JPG



34_Power Plant_View S.JPG



35_Vegetable Storage_View NE.JPG



36_Heifer Barn_View NE.JPG



37_Slaughter Hse_View W.JPG



38_Unicor Building_View NNE.JPG



39_Unicor Storage Shed_View N.JPG



40_Dairy Barn_View N.JPG



40_Dairy Barn_View NE.JPG



41_Cow Shelter_View SW.JPG



42_Old Dairy Barn_View SE.JPG



43_Old Garage_View NE.JPG



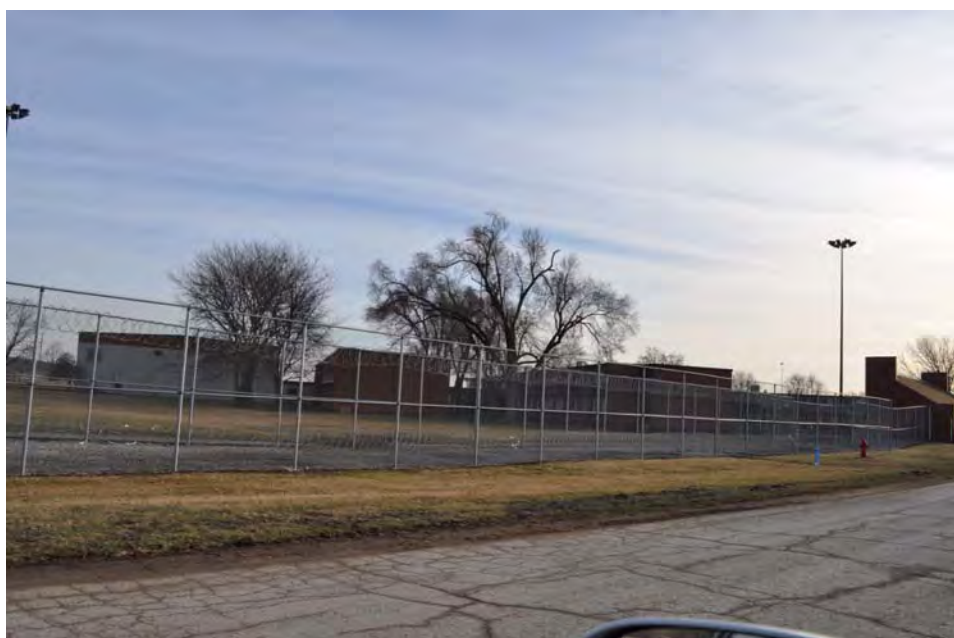
44_Cell Tower and Bldgs South of Dairy Barn_View SE.JPG



45_Pump House_View SE.JPG



46_Farm Dormitory_View N.JPG



46_Farm Dormitory_View NE.JPG



46_Farm Dormitory_View NW.JPG



47_Cemetery_View NW.JPG



47_Cemetery_View W.JPG



48_Officer Training Center_Low Wall_View NE .JPG



48_Officer Training Center_View N.JPG



48_Officer Training Center_View NE.JPG



48_Officer Training Center_View SE.JPG



48_Officer Training Center_View SW.JPG



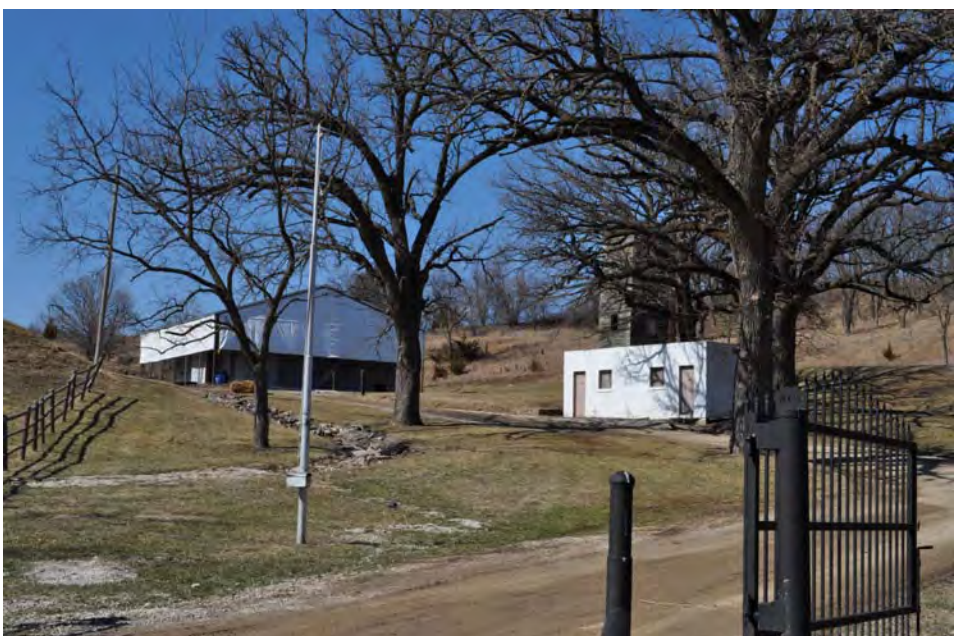
49_Toilet Block_View NE.JPG



49_Toilet Block_View SW.JPG



50_Indoor Target Range_View NW.JPG



51_52_77_Outdoor Target Range_View NW.JPG



53_Observation Tower_View W.JPG



54_Brick Grill in Picnic Area_View SE.JPG



54_Picnic Area_View E.JPG



55_Former Wardens Res_View E.JPG



55_Former Wardens Res_View N.JPG



71_Sheds_NE Cor of Prison_View SW.JPG



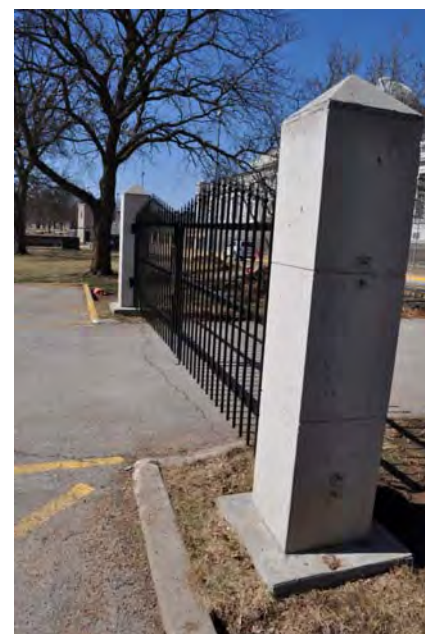
75_Conc Shed_View NE.JPG



Brick structure 2_View SE.JPG



Brick structure_View SE.JPG



Modern Gate_View W.JPG



Overall View East USP_View N.JPG



Overall View USP_View E.JPG



Overall View USP_View NE.JPG



Overall View USP_View NW.JPG



Overall View_USP_View SE.JPG



Shed Near OTC_View W.JPG



Shed Near_Farm Dormitory_View SE.JPG



Staff Housing Overview_View N.JPG



Staff Housing Overview_View NE.JPG



Staff Housing Overview_View West.JPG

CULTURAL RESOURCE SURVEY -- 2015

Proposed United States Penitentiary Expansion Leavenworth, Kansas

Final Report for Phase III Evaluations of Five Archaeological Sites at the United States Penitentiary, Leavenworth, Leavenworth County, Kansas

Prepared for:

**U.S. Department of Justice
Federal Bureau of Prisons
Washington, D.C.**

Prepared by:

**The Louis Berger Group, Inc.
Washington, D.C.**

January 2015

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Washington, D.C.**

Prepared by:

**Christopher M. Schoen, RPA
Andrew P. Wilkins, RPA**

**The Louis Berger Group, Inc.
Washington, D.C.**

January 2015

ABSTRACT

Pursuant to Section 106 of the National Historic Preservation Act, the United States Department of Justice, Federal Bureau of Prisons authorized The Louis Berger Group, Inc. (Louis Berger), to conduct Phase III evaluations of archaeological Sites 14LV169, 14LV171, 14LV172, 14LV176, and 14LV181, which are located in the area of potential effects (APE) for the development of a Federal Correctional Institution (FCI) and Federal Prison Camp (FPC) at the United States Penitentiary (USP) at Leavenworth, Leavenworth County, Kansas. Development is proposed on two sites within the boundaries of the USP: the 238-acre (96.3-hectare) East Site and the 144-acre (58.3-hectare) West Site. The purpose of the current investigation was to identify whether any of these five sites possessed attributes that would support a recommendation for listing in the National Register of Historic Places under Criterion D.

The five sites subject to Phase III evaluation were among the six previously recorded archaeological sites, 15 new archaeological sites, and 15 isolated finds that were investigated during the Phase II intensive survey across the USP Leavenworth property in 2011. Archaeological testing at Sites 14LV169, 14LV171, 14LV172, 14LV176, and 14LV181 has revealed that these sites have been sufficiently degraded by erosion and cultivation that the archaeological context generally has been lost. The majority of artifacts lie within the plowzone or near the top of subplowzone strata. No charcoal or other material suitable for radiocarbon assay was found to obtain absolute dates of occupation. Few diagnostic lithic artifacts were recovered, and all of the ceramic sherds, which were very few in number, lacked surface treatment or stylistic traits that could be used to attribute cultural affiliation.

Based on the results of the current investigation, Louis Berger recommends that Sites 14LV169, 14LV171, 14LV172, 14LV176, and 14LV181 be considered not eligible for listing in the National Register of Historic Places under Criterion D. The Kansas State Historic Preservation Office concurred with this recommendation in a letter to the Federal Bureau of Prisons on November 6, 2014. Therefore no additional investigations are needed at these sites to fulfill the Section 106 requirements prior to construction of the new FCI and FPC at USP Leavenworth.

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I. INTRODUCTION

A. PURPOSE OF INVESTIGATIONS

On behalf of the United States Department of Justice, Federal Bureau of Prisons (BOP), The Louis Berger Group, Inc. (Louis Berger), conducted Phase III site evaluations for archaeological Sites 14LV169, 14LV171, 14LV172, 14LV176, and 14LV181, which are situated in two proposed alternative development sites located on the existing Leavenworth United States Penitentiary (USP) property in Leavenworth, Kansas. The USP property is situated about 0.5 mile (0.8 kilometer) west of the Missouri River, on the north side of the City of Leavenworth in northeastern Leavenworth County, Kansas (Figure 1). The entire BOP property at Leavenworth includes 754 acres (305 hectares). The southern limit of the property is Metropolitan Street (U.S. Highway 73), the east boundary is Grant Avenue, the northern boundary is Fort Leavenworth, and the west side is a diagonal boundary that extends from a point along Mount Olivet Road, about 0.5 mile (0.8 kilometer) west of the intersection of Metropolitan Street with Santa Fe Trail, north-northeastward to a point by Santa Fe Trail about 0.5 mile (0.8 kilometer) northwest of the intersection of Santa Fe Trail and Hancock Avenue. The two development sites lie in portions of the southern half of Sections 22 and 23 and in portions of the northern half of Sections 26 and 27 in Kickapoo Township (T8S, R22E).

The BOP proposes to develop a new Federal Correctional Institution (FCI) and Federal Prison Camp (FPC) at the USP as a means of better managing the present crowding in the federal prison system and meeting anticipated growth in the federal inmate population. The two alternative development sites proposed for the new construction are the West Site and the East Site. The West Site includes 144 acres (58.3 hectares) situated on the west side of the extant FCI complex and includes the current FPC and a pasture for buffalo (Figure 2). This location is generally bounded by Metropolitan Street on the south, Santa Fe Trail on the west, and an abandoned railroad grade on the north. The East Site includes 238 acres (96.3 hectares) located on the east side of the FCI complex north of Metropolitan Street, west of Grant Avenue, and south of Corral Creek. Together, the East Site and West Site include 382 acres (154.6 hectares).

A Phase II intensive survey by Louis Berger identified five sites (listed above) that appeared to have intact deposits and cultural materials that could contribute important new data about the prehistory of the region (Schoen and Deiber 2011). The purpose of the current Phase III archaeological investigation was to provide information regarding the potential significance of each of the five sites and make recommendations regarding the eligibility of each site for listing in the National Register of Historic Places (National Register) under Criterion D.

B. PROJECT AUTHORIZATION AND PERSONNEL

The cultural resource investigation was undertaken pursuant to Section 106 of the National Historic Preservation Act of 1966 (as amended); the Archaeological and Historical Preservation Act of 1974; Executive Order 11593; and Title 36 of the Code of Federal Regulations, Parts 660-66 and 800 (as appropriate). The field investigations and technical report meet the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (*Federal Register* 48:190:44716-44742) (United States (U.S.) Department of the Interior 1983). The Project Archaeologist who performed the investigations meets or exceeds the qualifications described in the Secretary of the Interior's Professional Qualifications Standards (*Federal Register* 48:190:44738-44739) (U.S. Department of the Interior 1983). The investigation followed the guidelines established by the Kansas State Historic Preservation Office (SHPO) (Epperson et al. 2004). All cultural material collected, along with all project records, has been cared for in accordance with the requirements set forth in 36 CFR 79. At the conclusion of the project, the artifacts will be curated at the Kansas State Historical Society in Topeka.

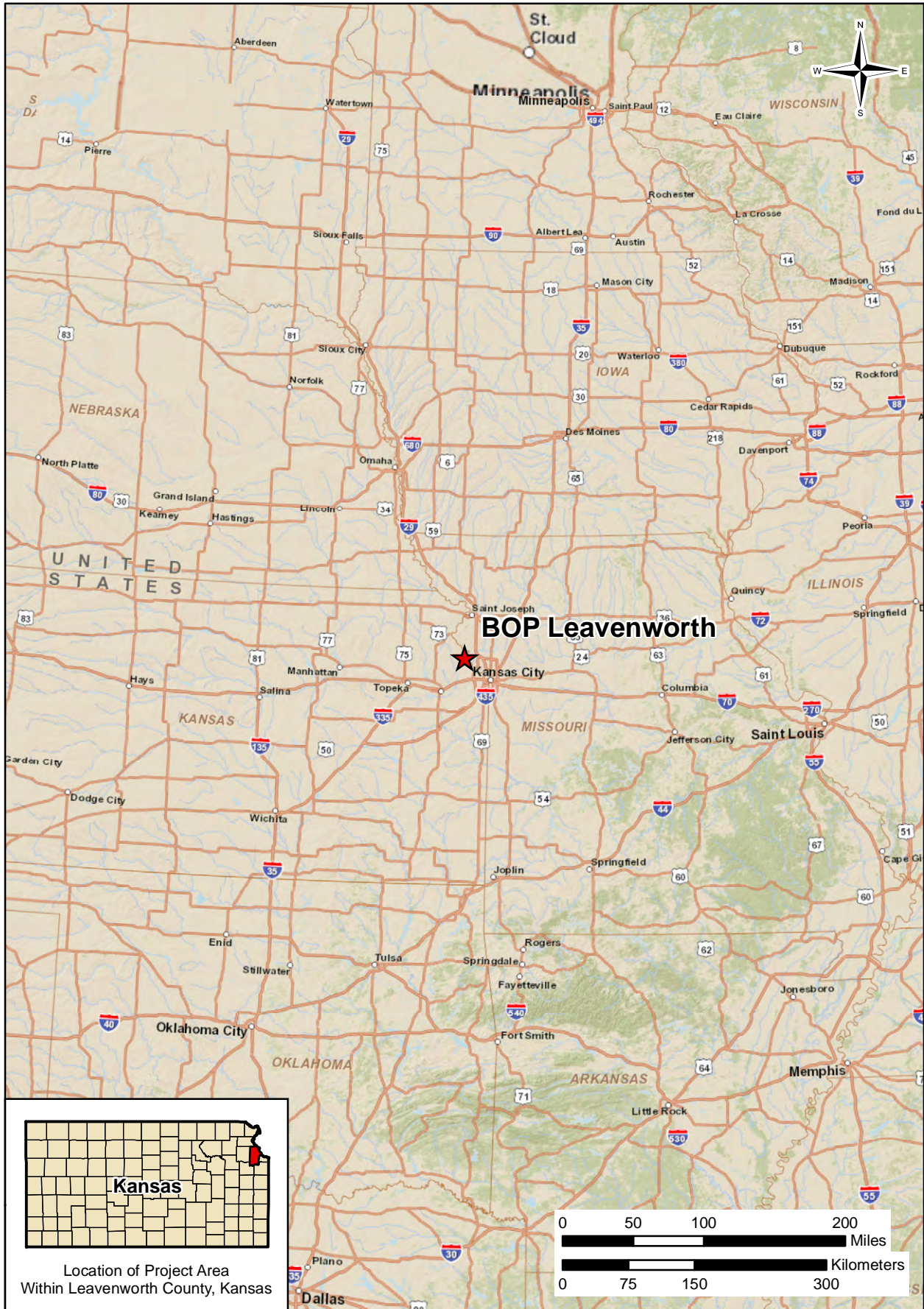


FIGURE 1: Project Location (ESRI 2014)

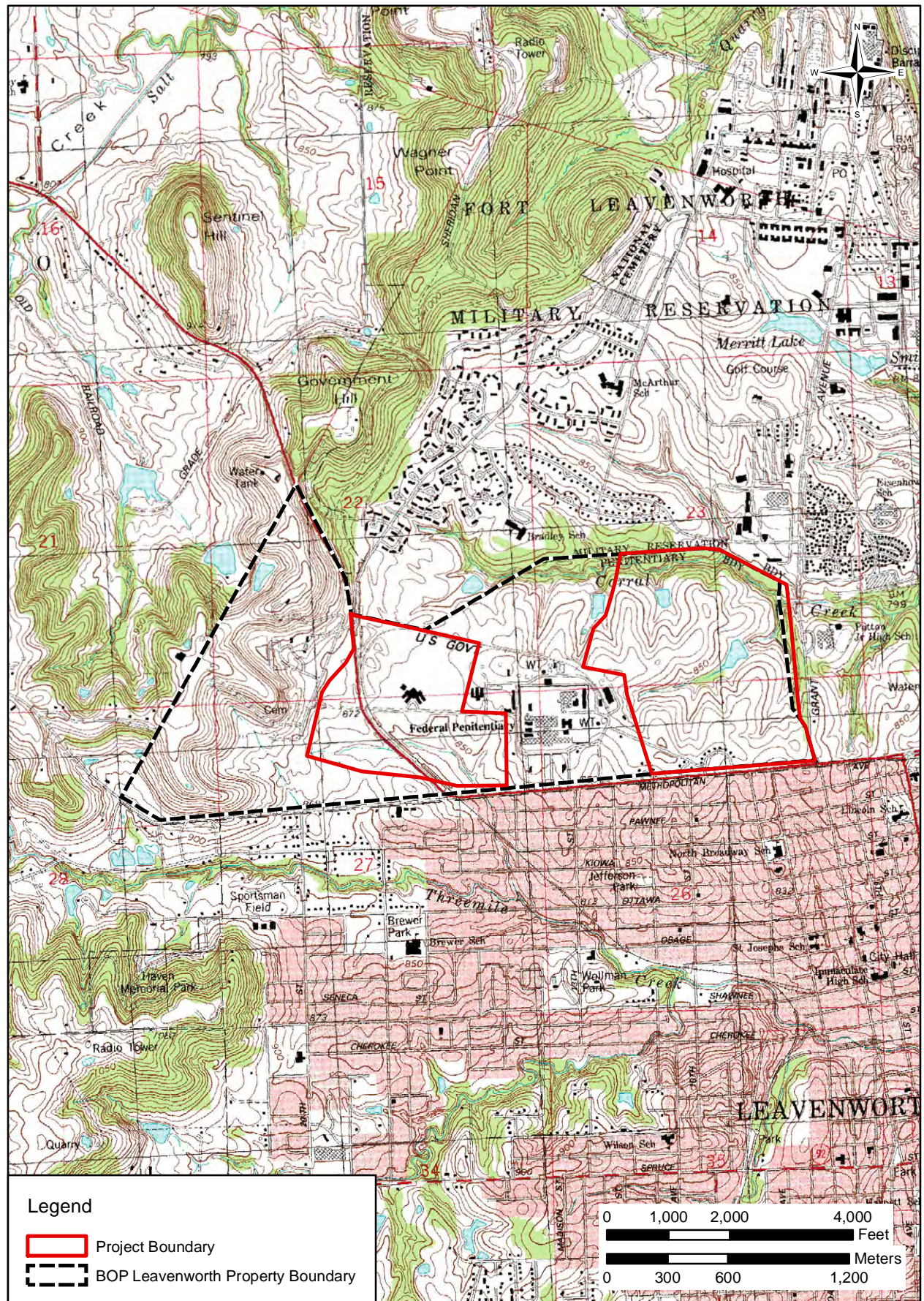


FIGURE 2: Project Area (USGS Leavenworth 1984)

The archaeological investigations were performed under the direction of Senior Archaeologist Christopher M. Schoen. Mr. Schoen selected the locations of test units and designed the testing strategy. When not providing direct supervision on site, Mr. Schoen managed the excavation activities through regular telephone discussion and email correspondence. He was assisted in the field by Field Archaeologists David Boschi and Jason Roberts, who supervised Field Archaeologists Colleen Cheverko, Jonathan Roddy, Barbara Saur, Kathryn Schuelke, Rebecca Sponseller, and Gene Virgilio. Artifact analysis was completed by Jason Roberts under the supervision of Laboratory Supervisor Kathryn Lamzik. CADD/GIS/Graphics Specialist Jacqueline Horsford prepared the figures for this report. Editing was provided by Principal Editor Anne Moiseev. The report was written by Mr. Schoen with assistance from Archaeologist Andrew Wilkins in the site discussions. Mr. Schoen is responsible for the content of this report.

Louis Berger would like to acknowledge the staff at USP Leavenworth for their assistance with the archaeological investigation, particularly Groundskeeper Mr. Sargeant, who coordinated access to the USP property and shared knowledge about the facility.

II. ENVIRONMENTAL SETTING

A. PHYSIOGRAPHIC REGION

1. *Topography and Geology*

Kansas lies in the center of the Continental United States in a region known as the Central Plains. Leavenworth County is situated in the Central Lowland physiographic province of the Interior Plains division of North America (Schoewe 1949). The Central Lowland is divided into five sub-provinces: the Glaciated Region, the Osage Cuestas, the Cherokee Lowlands, the Chautauqua Hills, and the Flint Hills (Fenneman 1931). The two development sites are located in the Glaciated Region, which is in the northeastern part of Kansas, bordered on the south by the Kansas River and on the west by the Flint Hills.

During the Pre-Illinoian glacial episodes, some two million to 600,000 years ago, this area was at the edge of a continental ice sheet known as the Laurentide ice sheet. When the ice sheet retreated around 12,000 years ago, glacial deposits of consolidated till were left behind on a broad plain. Over the thick deposits of till and outwash, a fine, wind-blown sand and clay (loess) was deposited across the region. Meltwater streams from the dissolving glacier cut this material by streams after about 12,000 years ago, creating a hilly region, known as the Dissected Till Plain (Mandel 2006:11-12). The topography is often rugged along major stream valleys with relatively steep convex slopes. Where first- and second-order streams approach major streams, valleys are deep, narrow, and V-shaped. Bedrock outcrops are common (Mandel et al. 1991). As a result this area is sometimes called “Little Switzerland.” Though usually quite rocky, glacial tills are generally very fertile and suitable for horticulture and small-scale agriculture.

The till contains cobbles of igneous and metamorphic rock, such as granite, basalt, diabase, and quartzite, that were carried south and west by the glaciers during their advance and then left behind as the ice retreated. Cutting of the streams has exposed these cobbles and they are strewn along the drainages. These materials would have been readily available to prehistoric groups in the region.

The underlying bedrock of the Dissected Till Plain in Leavenworth County is Pennsylvanian-age (290 to 325 million years old) limestone, sandstone, and shale of the Lawrence Shale Member within the Douglas Formation. The majority of the Lawrence Formation is composed of gray shale and sandstone with minor amounts of red shale, coal, gray limestone, and conglomerate. The thickness of this formation ranges from 140 to 250 feet (43 to 76 meters). The primary rock types associated with the Douglas Formation are shale, limestone, sandstone, conglomerates, and coal.

Cherokee coals were found some 700 feet below ground at Leavenworth in 1865, and the U.S. Army had begun mining the deposits by 1870. During the 1880s and 1890s, at least four other deep shaft mines operated in the coal seams near Leavenworth, including the penitentiary at Lansing (Buchanan 1984:16).

Today the topography of the east third of the USP property area generally consists of gently rolling hills, although some slopes are moderately steep. Elevations range from 825 to 890 feet (251 to 271 meters) above mean sea level (amsl). The topography of the central third of the property is more level. Elevations range from about 845 to 880 feet (258 to 268 meters) amsl across a broad area. The area around the FIC is fairly level with an elevation of about 860 feet (262 meters) amsl except in the northwestern portion, which increases to about 880 feet (268 meters) amsl. The west third of the USP property, which is situated west of Santa Fe Trail, is again hilly, with steep-sided slopes rising to the uplands.

2. Soils

Mandel (1987:III-30) has identified the soils of this region as predominantly Typic Udolls of the Mollisol order. Parent material is glacial till and thick to moderately thick deposits of loess. Soil associations in the USP property are Marshall-Sharpsburg and Gosport Sogn. Marshall-Sharpsburg soils are gently sloping to moderately steep deposits on the rolling loess hills below the Oread Limestone escarpment northwest of the city. Gosport-Sogn soils are moderately sloping to steep deposits on uplands (Zavesky and Boatright 1977).

The *Web Soil Survey* of the United States Department of Agriculture-Natural Resources Conservation Service (USDA-NRCS) (2014) and Zavesky and Boatright (1977) identify the soils across the northern and western portions of the proposed West Site as Sharpsburg silty clay loam, 1 to 4 percent slopes (7540), and the southeastern third of the proposed West Site as Sharpsburg silty clay loam, 4 to 8 percent slopes (7542). A small amount of this soil also is along the far west margin of the area. Table 1 summarizes the soils across the penitentiary property. The distribution of the soils at USP Leavenworth is shown in Figure 3.

TABLE 1
PROJECT AREA SOILS

SOIL SERIES (MAP SYMBOL)	MAJOR SOIL HORIZONS	GEOMORPHIC CONTEXT	DRAINAGE CAPABILITY	PARENT MATERIAL	NATIVE VEGETATION
Kennebec silt loam, occasionally flooded (7050)	Ap-A1-A2-A3- AC-C1-C2-C-3	Floodplains in river valleys and on drainageways in uplands	Moderately well drained	Alluvium	Tall-grass prairie
Kennebec silt loam, frequently flooded (7051)	Ap-A1-A2-A3- AC-C1-C2-C-3	Floodplains in river valleys and on drainageways in uplands	Moderately well drained	Alluvium	Tall-grass prairie
Knox silt loam, 7 to 12% slopes (7955)	A-E-Bt1-Bt2- Bt3-BC	Strongly dissected hills and bluffs bordering the Missouri River Valley and its tributaries	Well drained	Loess	Mixed hardwood trees and tall grass prairie
Ladoga silt loam, 3 to 8% slopes (7285)	A-E-BE-Bt1-Bt2- Bt3-Bt4-Bt5-C	Convex summits of interfluves, sideslopes, and nose slopes on the treads and risers of steam terraces	Moderately well drained	Loess	Oak-hickory forest and tall- grass prairie
Marshall silt loam, 5 to 9% slopes (7291)	Ap-A1-A2-BA- Bw1-Bw2-Bw3- Bg-BCg-Cg	Interfluves and sideslopes on uplands and on the risers and treads of stream terraces	Well drained	Loess	Tall-grass prairie
Sharpsburg silty clay loam, 1 to 4% slopes (7540)	Ap-A1-A2-Bt1- Bt2-Bt3-BC-C	Interfluves and sideslopes on dissected till plains and on the risers and treads of stream terraces in river valleys	Moderately well drained	Loess	Tall-grass prairie
Sharpsburg silty clay loam, 4 to 8 % slopes (7542)	Ap-A1-A2-Bt1- Bt2-Bt3-BC-C	Interfluves and sideslopes on dissected till plains and on the risers and treads of stream terraces in river valleys	Moderately well drained	Loess	Tall-grass prairie

Source: Zavesky and Boatright 1977; USDA-NRCS 2014

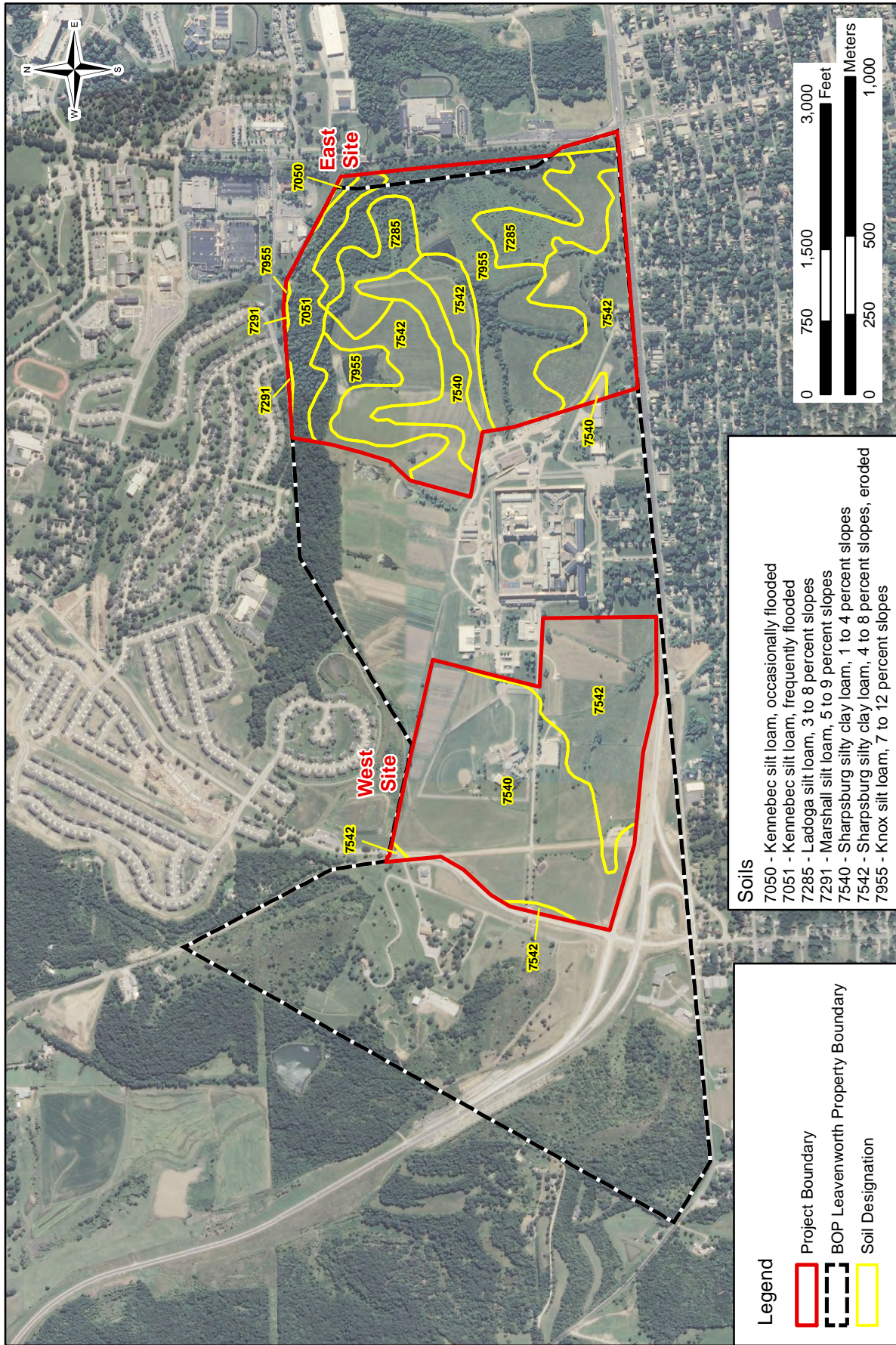


FIGURE 3: Soils Identified at USP Leavenworth (Kansas DASC 2010; Soil Data Mart 2010)

The soils in the proposed East Site are more complex. The soils in the forested area along Corral Creek at the northern margin of the proposed site are Kennebec silt loam, frequently flooded (7051). Two small areas of Marshall silt loam, 5 to 9 percent slopes (7291) are at the far northwestern corner of the proposed site. A small area of Kennebec silt loam, occasionally flooded (7050) is at the northeastern border of the proposed site. Along the southern edge of the forested area, across the east forested area, on the lower slopes south of the forested area, and across the south-central part of the proposed site are soils identified as Knox silt loam, 7 to 12 percent slopes (7955). This includes the locations of the two ponds and drainages. South and east of the Knox soils are two area of Ladoga silt loam, 3 to 8 percent slopes (7285). Sharpsburg silty clay loam, 1 to 4 percent slopes (7540) is present on the top of the hill in the north-central part of the proposed East Site. Sharpsburg silty clay loam, 4 to 8 percent slopes (7542) is on the upper slopes north and east of the hilltop and at the southern portion of the area.

3. *Hydrology*

The USP Leavenworth property is situated in the Missouri River Basin and the Independence-Sugar Watershed (Louis Berger 2011:III-10). The Missouri River lies approximately 0.6 mile (1 kilometer) east of the property. The surface waters that drain the area include one perennial stream (Corral Creek), intermittent streams, and ephemeral drainages. Corral Creek flows eastward through the woods at the north and northeast sides of the property (see Figure 2). The bed of Corral Creek is in the top of the limestone and shale bedrock. Segments of narrow terraces are present on the north side of the creek and also on the south side of the creek near the east boundary of the USP property. A tributary drainage flows north near the east boundary of the proposed East Site. A second tributary drainage flows northeastward through the center of the East Site, interrupted by a small impoundment. These tributary drainages are deep and narrow and cut into the top of the limestone and shale bedrock. A series of short, deeply incised ravines drain into Corral Creek at the northern margin of the proposed East Site.

The second main drainage is an unnamed tributary of Threemile Creek, which is situated about 0.25 mile (0.4 kilometer) to the south. This intermittent stream flows east and then southeast across the southern quarter of the USP property where the buffalo pasture is located in the area of the proposed West Site. The banks of the stream are low in the west third of the drainage but become steep and 5 to 6 feet (1.5 to 1.8 meters) high in the middle portion of the proposed West Site. The sides of the drainage diminish somewhat in the east third of the proposed West Site, where the stream bends toward the southeast.

B. LATE PREHISTORIC ENVIRONMENT

Judging from the artifacts recovered from the five archaeological sites that are the subject of this investigation (Sites 14LV169, 14LV171, 14LV172, 14LV176, and 14LV181), the period of significance appears to be the Late Prehistoric period in Kansas (1,000 to 450 years before present). The following discussion summarizes the environmental conditions that were believed to be present at the time the sites were occupied.

1. *Climate*

Beginning around 5,000 years ago, the climate in the Late Holocene became more variable and an increased northerly flow of air brought a warm, moist, tropical air mass from the Gulf of Mexico into the Central Plains. Vegetation density increased in upland areas as mixed and tall-grass prairie species replaced short-grass prairie communities and as forests expanded across floodplains and hillslopes in the Midwest. Oak and hickory forests were present on the sides of valleys and floodplains by 4,000 years ago (Mandel 2006:25).

Since about 4,000 years ago, the Central Plains region has suffered frequent droughts lasting a few years to decades. Between about 3,100 and 2,700 years ago, the region endured a period of increased aridity.

Around 400 to 150 years ago, the climate of the Eastern Plains was characterized by a cool, moist episode known as the “Neo-boreal” or “Little Ice Age” (Mandel 2006:26). Thus, during the Late Prehistoric period, the climate of the Leavenworth area was generally dry with episodes of drought.

If modern meteorological patterns can be assumed to generally describe conditions in the Late Prehistoric period, weather in the Leavenworth area was characterized by cold winters and hot, dry summers. According to the U.S. National Climatic Data Center (2011), temperatures ranged from an average low of about 20 degrees Fahrenheit (F) (-7 degrees Celsius [C]) in January to an average high of nearly 90 degrees F (32 degrees C) in July. The minimum temperature falls below 32 degrees F (0 degrees C) on an average of 114 days per year. Typically, the first fall freeze occurs between the last week of September and the first day of November. The last spring freeze occurs between the last day of March and the last week of April. The maximum temperature of 90 degrees F (32 degrees C) is reached an average of 44 days each year, and 100 degrees F (38 degrees C) an average of four days each year.

The Leavenworth area receives nearly 41 inches (104 centimeters) of precipitation during an average year with the largest share falling in May and June. On average there are 93 days with measurable precipitation. Winter snowfall generally occurs four days of the year, with at least 1.0 inch (2.5 centimeters) of snow on three of those days. Severe storms, including tornadoes, are not uncommon and are more frequent than in other portions of the state (U.S. National Climatic Data Center 2011).

2. Hydrology

Both Corral Creek and the unnamed tributary would have provided reliable sources of water. Corral Creek in particular drains a broader area than the unnamed tributary. Its base is bedrock and rests in a deeply incised valley, indicating that the stream was well established during the Late Prehistoric period and channeled intermittent episodes of high volume precipitation and runoff. The unnamed tributary of Threemile Creek has also cut down to bedrock, though the banks are less high and steep than those of Corral Creek because of the lower elevation of this location. The drainage may have had minimal water during periods of extreme drought but otherwise was probably a dependable water source. This conclusion is supported by the locations of previously identified archaeological sites in the vicinity of the tributary.

3. Fauna and Flora

The perennial water of the Missouri River and the Kansas River valleys and their major tributary streams allowed oak-hickory forests to establish across much of northeastern Kansas, replacing what was once tall-grass prairie. Kuchler (1974) identifies the native vegetation of the project area as primarily white oak (*Quercus alba*), red oak (*Quercus borealis*), black oak (*Quercus valutina*), bitternut hickory (*Carya cordiformis*), and shagbark hickory (*Carya ovate*) with lesser occurrences of black jack oak (*Quercus marilandica*), elm (*Ulmus sp.*), white ash (*Fraxinus americana*), green ash (*Fraxinus pennsylvanica*), black walnut (*Juglans nigra*), sugar maple (*Acer succharum*), black locust (*Robina pseudocacia*), basswood (*Tilia Americana*), hackberry (*Celtis occidentalis*), willow (*Salix sp.*), and cottonwood (*Populus deltoids*).

Johnson (1974) reports that the understory of the forests in the area included weedy annuals and perennials such as wild ginger (*Asarum spp.*), may apple (*Podophyllum peltatum*), aster (*Aster spp.*), sickle-pod (*Arabis canadensis*), horse weed (*Ambrosia trifida*), and lamb’s quarters (*chenopodium album*). Brushy plants and vines included greenbriar (*Smilax hispida*), Missouri gooseberry (*Ribes missouriense*), choke cherry (*Prunus virginiana*), high bush blackberry (*Rubus ostryfolius*), elderberry (*Sambucus canadensis*), pawpaw (*Asimina triloba*), smooth sumac (*Rhus glabra*), river bank grape (*Vitis riparia*), Virginia creeper (*Parthenocissus quinquefolia*), and poison ivy (*Rhus radicans*).

Patches of prairie included tall-grass prairie species dominated by big bluestem (*Andropogon gerardi*) and little bluestem (*Andropogon scoparius*) grasses but also included Indian grass (*Sorghastrum nutans*), sideoats

grama (*Bouteloua curtipendula*), switchgrass (*Panicum virgatum*), and rough dropseed (*Sporobolus asper*) (Kuchler 1974).

Native mammalian species identified at adjacent Fort Leavenworth by Brumwell (1951) and Davis et al. (2005) include predators such as the puma or mountain lion (*Puma concolor*), bobcat (*Lynx rufus*), gray fox (*Vulpes vulpes*), and coyote (*Canis latrans*); ungulates such as the white-tailed deer (*Odocoileus virginianus*); small species like the opossum (*Didelphis virginiana*), Northern raccoon (*Procyon lotor*), woodchuck (*Marmota monax*), mink (*Mustela vison*), long-tailed weasel (*Mustela frenata*), Northern river otter (*Lontra canadensis*), muskrat (*Ondatra zibethicus*), Eastern spotted skunk (*Spilogale putorius*), striped skunk (*Mephitis mephitis*), Eastern cottontail (*Sylvilagus floridanus*), and black-tailed jackrabbit (*Lepus californicus*); four small rodents: Western harvest mouse (*Reithrodontomys megalotis*), Eliot's short-tailed shrew (*Blarina hylophaga*), least shrew (*Cryptotis parva*), and Eastern mole (*Scalpus aquaticus*); and six bats: big brown bat (*Eptesicus fuscus*), red bat (*Lasiurus borealis*), hoary bat (*Lasiurus cinereus*), little brown bat (*Myotis lucifugus*), evening bat (*Nycticeius humeralis*), and the Eastern pipistrelle (*Pipistellus subflavus*).

The Kansas Ornithological Society (2014) lists hundreds of birds that can be found in Kansas. Birds that occupied the area in the Late Prehistoric included wild turkey (*Meleagris gallopavo*), quail (*Callipepla squamata*), bobwhite (*Colinus virginianus*), passenger pigeon (*Ectopistes migratorius*), prairie chicken (*Tympanuchus cupido*), and ruffed grouse (*Bonasa umbellus*). Seasonally migrating waterfowl coursed along the Missouri and Kansas rivers and rested in the area. Other waterfowl were resident the entire year. Waterfowl included Canada geese (*Branta canadensis*), snow geese (*Chen caerulescens*), ducks (*Anas sp.*, *Aythya sp.*, *Bucephala sp.*), swans (*Cynus sp.*), cranes (*Grus sp.*), and egrets and herons (*Egretta sp.*).

Raptors included bald eagles (*Haliaeetus leucocephalus*), red-tailed hawk (*Buteo jamaicensis*), falcons (*Falco sp.*), hawks (*Buteo sp.*), turkey vultures (*Cathartes aura*), great horned owls (*Bubo virginianus*), and barred owls (*Strix varia*). Other birds included crows and ravens (*Corvus sp.*), flycatchers (*Empidonax sp.*), swallows (*Tachycineta sp.*), chickadees (*Poecile sp.*), wrens (*Troglodytes sp.*), Eastern bluebirds (*Sialia sialis*), warblers (*Dendroica sp.*), and finches (*Carpodacus sp.*).

Reptiles included the timber rattlesnake (*Crotalus horridus*), redbelly snake (*Storeria occipitomaculata*), smooth earth snake (*Virginia valeriae*), box turtles (*Emydidae sp.*), snapping turtles (*Chelydridae sp.*), softshell turtles (*Trionychidae sp.*), and skinks (*Scincidae sp.*).

Fish species available in the Missouri River and to a lesser extent in tributary streams included black bullheads (*Ameiurus melas*), channel catfish (*Ictalurus punctatus*), crappie (*Pomoxis sp.*), sunfish (*Lepomis sp.*), bass (*Micropterus sp.*), drumfish (*Aplodinotus grunniens*), carp (*Cyprinus carpio*), gar (*Lepisosteus sp.*), perch (*Percina sp.*), sauger (*Stizostedion canadensis*), and walleye (*Stizostedion vitreum*).

4. Lithic Resources

As indicated above, the till deposited during the retreat of the Laurentide ice sheet left boulders, cobbles, and gravels of granite, basalt, biabase, quartzite, and schist. These were available in outcrops and in drainages that cut through the till. Chert occurs in 13 of the 78 named limestone formations of the Pennsylvanian system (Stein 2006:268). However, chert is not common except in the formations of the Kansas City Group, which outcrops in a belt about 25 miles (40 kilometers) wide from Linn to Montgomery counties (Moore 1949). Winterset and Westerville cherts from the Kansas City Group are commonly found in prehistoric sites in northeastern Kansas. Outcrops are few, however, and the chert deposits may be buried under thick layers of loess and till. Further, though chert may be exposed, the quantity may be limited or of too poor quality to be used for chipped stone tools (Stein 2006:268).

Winterset chert usually varies in color from light gray to very dark gray but can also be very pale brown (Stein 2006:2069). Common veins of white calcite can give the chert a zebra-striped appearance (McLean 1998; Reid 1984). Westerville chert is yellowish-brown in color. White calcite inclusions and veins may

be present. Fossils are rarely abundant. The texture typically is medium-grained but can range from fine to coarse (Stein 2006:269).

Glacially redeposited pipestone, often referred to as “Kansas pipestone,” exists in till deposits in northeastern Kansas (Gundersen and Tiffany 1986:46). The Kansas pipestone is classified as quartz-pyrophyllite argillite (Gundersen 1993:561). Minnesota pipestone, or catlinite, is classified as muscovite-diaspore-pyrophyllite argillite by Gundersen. Catlinite was preferred overwhelmingly by late prehistoric Oneota groups, especially after AD 1450, and almost exclusively by historic-period groups (Gundersen and Tiffany 1986:63, Henning and Shermer 2004:511). However, Gundersen (1993:561) found that Great Bend populations in south-central Kansas used Kansas pipestone almost exclusively.

III. PREHISTORIC CONTEXTS

This prehistory of the Glaciated Region of northeastern Kansas, also known as the Dissected Till Region, is based on review of several sources, including Bailey and Young (2001), Hoard and Banks (2006), Logan (2010), Reynolds and Lees (2004), and Wedel (1959). All sources suggest that the first human presence in the Americas occurred at the end of the late Pleistocene epoch. The present Holocene era is a warming period or “interglacial” following the most recent of at least eight episodes of global cooling and warming during the Pleistocene Epoch. The Pleistocene in North America was characterized by the advance and retreat of continental glaciers known collectively as the Laurentide Ice Sheet east of the Rocky Mountains and the Cordilleran Ice Sheet west of the Rocky Mountains. The glacial tills in northeastern Kansas are composed of the detritus picked up by south-flowing continental Laurentide Ice Sheet and deposited at its southern terminus during pre-Illinoian glacial episodes that occurred prior to about 300,000 years before present (BP). The more recent advances of the Laurentide Ice Sheet include the Illinoian glacial period (300,000 to 130,000 BP) and the Wisconsinan glacial period (122,000 to 10,000 BP). During these later ice ages, however, the Laurentide Ice Sheet did not extend as far south as Kansas. The pre-Illinoian tills have been deeply dissected by erosion since their deposition. Though usually quite rocky, glacial tills are generally very fertile and suitable for small-scale agriculture.

A. PALEOINDIAN PERIOD (prior to 10,000 BP)

The first people arrived in North America at the end of the latest (Wisconsinan) glaciations during the Bølling/Allerød interstadial, a 2,000-year-long period of warming and glacial retreat that began around 14,700 BP. There is considerable linguistic and genetic evidence that the first Americans originated in northeastern Asia (Siberia). They traveled either by boat or by land utilizing a corridor of grassland steppe land between northeastern North America and Northwest Asia known as “Beringia.” Beringia was an area, now covered by the Bering Sea, that was periodically exposed during the Pleistocene by retreats of the Cordilleran Ice Sheet and a dramatic lowering of sea levels caused by the capture and retention in glaciers of available global atmospheric water.

The arrival of humans in the New World was almost certainly not the result of a single long-distance migration from Asia to North America across the Beringia. Instead, their appearance in the New World was the probable culmination of episodic movements or expansions of small, probably coastal, hunter-gatherer group(s) into unpopulated territories farther east and south over the course of several thousands of years. Several mammals are known to have migrated from Asia to North America across the Bering land bridge, including the woolly mammoth and the cave lion. During the same period horses and camelids migrated from North America to Asia.

The earliest archaeological sites in North America provide evidence that these peoples subsisted (as did their Siberian progenitors) by hunting and gathering with an emphasis, at least as evidenced by the archaeological record, on the hunting of largest available herbivores, members of a group of animals known as Pleistocene “megafauna.” There is direct archaeological evidence that the earliest peoples in North America hunted several of the largest megafauna species, including the extinct woolly mammoth (*mammuthus primigenius*) and ancient bison (*bison antiquus*), from which the much smaller existing subspecies the American plains bison (*Bison bison bison*) and the now-extinct wood bison (*Bison bison athabascae*) evolved. The extinction of 35 genera and more than 45 species of the Pleistocene fauna soon after the arrival of the first humans in North and South America mirrors mass faunal extinctions soon after the arrival of humans in unsettled areas elsewhere, such as in Australia (50,000 to 45,000 BP), Europe (12,000 to 10,000 BP), and New Zealand (800 BP).

Populations of humans that coexisted with the Pleistocene megafauna are commonly termed “Paleoindians” in the archaeological literature. The surviving archaeological evidence, found throughout

North America, suggests that the earliest of these people produced stone artifact assemblages well suited to the taking and processing of very large animals. Large, well-crafted “Clovis” stone spear or dart points displaying longitudinal flakes (flutes) detached from the base and stone butchering and hide-scraping implements typify sites dating until 10,500 BP. The presence of Clovis artifacts throughout North America indicates that the expansion of the Clovis people was very rapid. In Kansas the evidence of a Clovis presence is restricted to isolated surface artifact finds.

Slightly later are assemblages found in association with Folsom projectile points. Folsom points found in dated contexts suggest that the people who made them lived between 11,000 and 10,000 BP. Though Folsom points are smaller than Clovis points, they are also fluted. The flutes on Folsom points are longer than those on Clovis points and extend almost the full length of the point. The woolly mammoth was extinct by or shortly after the beginning of the Folsom period. Folsom artifact assemblages found in Logan County in west Kansas and elsewhere in the Plains Region suggest that the people who made them hunted the largest of the remaining large herbivores, primarily *Bison antiquus*. In addition to the Clovis and Folsom artifact assemblages, other spear or dart point styles (such as the Plainview, Scottsbluff, and Eden varieties) are associated with the late Paleoindian period. These distinctive late Paleoindian artifacts suggest that by the end of the Paleoindian period around 8000 BP, groups were beginning to adopt a regionally based subsistence and settlement strategy.

A defining characteristic of the Paleoindian period is expansion. When the first Paleoindian peoples entered North America, their movements did not result in opposition from other human groups—a situation typical of nomadic groups in longer-occupied, more populated areas of the world—for there were no other humans in North America. The universal occurrence of very similar Clovis assemblages throughout North America demonstrates that Paleoindian lifeways were sufficiently adaptable to allow their exploitation of the full range of environments present throughout North America. Unrestricted by the need to deal with different and/or hostile human groups and afforded a continent full of large game animals, Paleoindians populated, however sparsely, the entirety of North America in little more than a millennium. The archaeological evidence suggests that Paleoindians lived in small, very mobile (nomadic) hunter-gatherer groups who stopped briefly at specific locations long enough to exploit the resources available. Small campsites, butchering/kill sites, and isolated artifact finds constitute the bulk of the archaeological evidence of Paleoindian people.

The traditional archaeological literature labels the time following the Paleoindian period as the Archaic period (8000 to 2000 BP). The assignment of this new label to archaeological assemblages postdating the Paleoindians and predating the occurrence of horticulture and ceramic technology suggests that there is evidence of a distinctive and relatively abrupt change in the characteristics of the artifact assemblages dating to the beginning of the Archaic, implying distinctive and rapid shifts in the ways in which people lived. However, such distinct and abrupt alterations are not present in the archaeological record. Most of the archaeological assemblages, dating to all but the latest of the Archaic subperiods, show a continuation of the Paleoindian, hunter-gatherer way of life with hunting focused on the largest of available game animals. There is no evidence suggesting substantial changes in the hunting and gathering practices focused on smaller resources.

There is, however, evidence to suggest that expansion was no longer the norm, as specific groups apparently became relatively constrained to specific regions, probably because they were, by the Archaic period, surrounded by other people. The archaeological record dating to the early Archaic shows regional and temporal differences in projectile point styles. Numerous Archaic campsites show evidence of repeated occupation, suggesting that Archaic peoples had adopted a seasonal round type of nomadism as opposed to the free-ranging nomadism characteristic of the Paleoindians.

B. ARCHAIC PERIOD (8000 TO 2000 BP)

By around 10,000 BP, the herbivorous Pleistocene megafauna and the large predators such as the tremarctine bears, North American lion (*Panthera atrox*), dire wolf (*Canis dirus*), and saber-toothed cat (*Smilodon fatalis*) that depended on them were extinct. In response to the disappearance of the megafauna, later hunters in Kansas gradually focused on the largest of the remaining herbivores, including elk (*Cervus canadensis*), deer (*Cervidae sp.*), and bison. Though the archaeological record seems to suggest that Paleoindian and Archaic hunters focused on large animals, it is certain that the hunting and gathering of smaller animals, including reptiles, insects, fish, and shellfish, and the gathering of widely available vegetal materials for food and other uses constituted a substantial portion of their subsistence and technological exploitation strategies.

Several distinct cultures are recognized in the archaeological record dating to the Archaic. These cultures are characterized by small semi-permanent habitation sites, a few with post-supported structures. Ground stone artifacts are found in some Archaic assemblages, including celts and axes, food and pigment grinding implements, and boat stones/atlatl weights. In Kansas intentional burials are evidenced both inside and outside settlements early in the Archaic period at the Lansing (14LV315) and Stigenwalt (14LT351) sites.

Distinct Archaic cultures include the early Logan Creek phase dating to approximately 8000 BP and identified by distinctive triangular-shaped side-notched projectile points found throughout Kansas, Nebraska, and Iowa. Logan Creek assemblages have been interpreted as small settlements and kill/butchering sites.

The Munkers Creek phase includes approximately 6,000-year-old sites in the Flint Hills and Western Osage Cuestas. The Munkers Creek phase is characterized by large lanceolate projectile points, long narrow chert knives, gouges, and thick ground stone axes. Many of the small settlements of the Munkers Creek phase show repeated use, strongly suggesting a subsistence pattern that used seasonally available floral and faunal resources and chert sources for tools in different parts of a broad territory.

Similar to, and probably contemporary with, Munkers Creek deposits are Black Vermilion phase sites, which are distinguished by the presence of lanceolate and triangular-shaped points with corner and basal notches. Black Vermilion phase sites appear to be small, seasonally occupied campsites focused on seasonally available resources. Sites are distributed through the Flint Hills and Osage Cuestas.

Nebo Hill phase sites are found in eastern Kansas and probably date to around 4000 BP. Nebo Hill assemblages are characterized by large lanceolate (Nebo Hill) projectile points, flaked stone hoes, grooved axes, and gouges. Nebo Hill people buried their dead on ridgetops outside semi-permanent settlements.

Eldorado phase assemblages also occupied the Western Osage Cuestas and the Flint Hills and date to approximately 4000 BP, thus following Munkers Creek in age. Eldorado phase settlement patterns include larger “base camps” and scattered smaller campsites focused on the exploitation of specific resources. Dustin, Lamoka, and Table Rock points are found in Eldorado phase assemblages, as are flexed human burials within settlements.

Walnut phase assemblages are found in the same areas as Eldorado, though 3,000-year-old dates suggest that they may be a developmental continuation of the Eldorado phase assemblages. The small triangular projectile points found in Eldorado phase assemblages suggest that Eldorado peoples may have added the bow and arrow to their inventory of hunting equipment, probably the result of diffusion through trade or contact with peoples already possessing the technology.

C. EARLY CERAMIC PERIOD (2000 to 1000 BP)

The major technological distinction in the archaeological record separating the Archaic period from the Ceramic period is the gradual but widespread adoption of ceramic technology in the form of cooking and storage vessels. Ceramic technology was already present as a component of the Eastern Woodland cultures and diffused into Kansas, either as a result of trade, actual migration of peoples from the Eastern Woodland cultures, or a combination of diffusion and migration. The acquisition of ceramic technology indicates that other substantial changes were taking place in the adaptive strategies of the cultures involved. Ceramic storage vessels imply the need and/or the ability to store surplus food resources. Ceramic vessels are relatively fragile, relatively heavy, and are poorly suited to survive the rigors of pedestrian transport. Their presence suggests that abundant resources became increasingly available in relatively restricted areas. It is likely that the diffusion of ceramic technology was accompanied by the spread of food production strategies (horticulture) and the introduction or invention of additional tools necessary for raising and processing agricultural products.

Contemporary with the development of ceramic/horticultural technology was a trend for some Early Ceramic Culture settlements to become larger and more permanent, indicating a somewhat more sedentary (less nomadic) lifestyle. Climate changes and population pressures may have influenced increased sedentism, but the gradual adoption of food production through agriculture probably played a major role. The introduction of food production (as opposed to food gathering and hunting) tends to influence substantial changes in the ways people interact with their environment and with each other. An increase in available calories provided by the addition of cultigens to the food supply almost invariably results in increases in population density and larger, more sedentary settlements. Larger populations and settlements and the adoption of agriculture also influence modifications in cultural practices involving, for example, land use and intra- and inter-group interactions.

Though probably adopted late in the Archaic, there is increasing evidence in the early ceramic archaeological assemblages of the widespread use of the bow and arrow. Though spear and atlatl dart points are commonly found in Early Ceramic archaeological assemblages, by the end of the period they are far outnumbered by smaller arrow points.

The archaeological record suggests that the groups became increasingly localized and locally distinctive throughout the Ceramic periods. A progressive proliferation of temporally and geographically distinctive artifact styles, particularly with regard to projectile points and ceramics, suggests that environmental or cultural factors somewhat inhibited free inter-cultural interchange of (non-functional) stylistic and technological practices and encouraged relatively independent intra-cultural stylistic development. Conversely, the presence of exotic materials, such as obsidian, from distant sources in the archaeological record suggests an increase in either long-distance travel by individuals or small groups or complex intercultural trade relationships.

Two distinctive cultural groups occupied eastern Kansas during the Early Ceramic period. These were the Kansas City Hopewell and the Plains Woodland cultures. Hopewell cultures included groups of indigenous peoples that shared cultural traits extending from Florida to New York and as far west as eastern Kansas. Their presence in Kansas introduced several new cultural characteristics, including burying the dead in mounds on ridgetops and increased reliance on cultigens and ceramic technology. Their presence in Kansas is the result of either migration or the diffusion of Hopewellian cultural characteristics. The Plains Woodland cultures, on the other hand, probably developed in place from earlier local Archaic cultures.

D. MIDDLE CERAMIC PERIOD (1000 to 450 BP)

The Middle Ceramic period also is known as the Late Prehistoric period. Middle Ceramic assemblages show an increase in cultural diversity and complexity, trade, settlement size, and reliance on agriculture. Current archaeological information is not sufficient to clearly identify the precise temporal and geographic boundaries of the various Middle Ceramic period groups, and the description of the characteristics of their archaeological assemblages varies in the literature.

There is agreement, however, that a major category of archaeological assemblages in Kansas during the Middle Ceramic belong to the Central Plains tradition. Most sites of this tradition are assigned to the either the Smoky Hill phase or the Upper Republican phase. Other phases in northeastern Kansas include the Nebraska and Steed-Kisker (Roper 2006; Trabert 2009). Sites are typically located on terraces or floodplains in river valleys. Occasionally, sites are located on bluffs overlooking river valleys. Common to all Central Plains tradition sites are square or rectangular earth lodge structures with central hearths in permanent/semi-permanent habitation sites and both interior and exterior cache pits. Houses were pole-supported structures covered with wattle and daub. Human burials are commonly found within structures. Subsistence strategies combined small-scale horticulture with hunting (Roper 2006). The Nebraska phase sites have been reported in the vicinity of the Missouri River in western Iowa, eastern Nebraska, northeastern Kansas, and northwestern Missouri, dating between 1100 BP and 500 BP.

The large Nebraskan settlements found on bluffs overlooking the Missouri River and its immediate tributaries are characterized by rectangular, deep pit earth lodges with short entries oriented south or east and a central hearth. Large Nebraskan settlements were probably major habitation sites and were associated with smaller, outlying campsites that focused on the acquisition of seasonally available resources. Nebraskan hunters relied on bison but certainly exploited smaller available local game animals. Small, usually triangular projectile points suggest that the bow and arrow was the primary hunting weapon. Their sites contain abundant pottery vessels, suggesting a substantial reliance on agricultural products, primarily corn, beans, squash, and sunflower. Their ceramic vessels include sand- or grog-tempered globular jars and pots with smooth or cordmarked surfaces, often-decorated shoulders and strap handles. The Nebraskan tradition is considered to be an *in situ* outgrowth of earlier Plains Woodland cultures.

Steed-Kisker phase sites dating from around 1150 BP to 650 BP (AD 1000 to 1400) are another cultural group of the Middle Ceramic period. These sites are found in northeastern Kansas and northwestern Missouri in the Leavenworth and Kansas City area. Sites in Kansas are found in the Missouri River valley or on the bluffs above and near the mouth of the Kansas River (Roper 2006). One recently discovered Steed-Kisker site in Leavenworth County is the Scott Site (14LV1082), which is below the confluence of Stranger Creek and Little Stranger Creek (Logan 2004). Other important sites of this culture in Leavenworth County include the DB Site (14LV1071) (Logan 1998) and the Zacharias Site (14LV380) (Logan 1990). Steed-Kisker peoples were bow hunters and agriculturalists who lived in relatively large villages. They buried their dead in hilltop cemeteries near their villages. Assemblages resemble those of groups situated farther east and are interpreted as deriving from Eastern Mississippian cultures, such as those at the American Bottom in the St. Louis area, possibly, but not necessarily, as a result of migration (O'Brien 1993; Roper 2006; Wedel 1943).

Steed-Kisker vessels include large and small jars with hemispherical underbodies, round to angular shoulders, constricted necks, flaring rims, and rounded undecorated lips. Bowls with vertical sides also are found (Wedel 1943). They are grit-tempered and seldom decorated. The vessels may have zoomorphic effigies attached to their rims (Roper 2006). Chapman (1980) identified two types of ceramics: Platte Valley Plain, which is shell-tempered and without decoration, and Steed-Kisker incised, which is decorated. Grog-tempered globular jars and pots with smooth and/or cordmarked surfaces also are sometimes found in the Kansas River basin. Decoration motifs include incised lines (curvilinear,

rectilinear, parallel, and nested chevrons) on shoulders, pinching, tool impressions, and tabs attached to rims and lips (Roper 2006; Trabert 2009). O'Brien (1993) suggests that the sunburst and the cross were two dominant thematic elements and that a four-part pattern on shoulders was common. Strap handles and lugs also are common. Shell-tempered globular pots often had polished surfaces with zoomorphic heads attached to the rims. Sites also frequently contain zoomorphic pipes.

Partially contemporaneous with Steed-Kisker were Pomona Complex groups. Pomona artifact assemblages evidence Central Plains characteristics found in eastern Kansas (including the Osage Cuestas, the Dissected Till Plains, and the Flint Hills Upland) and in extreme western Missouri. Radiocarbon assay dates place Pomona sites between approximately AD 700 and 1500 (1250 BP to 550 BP). Their structures were small and ovoid, constructed with a frame of saplings that were covered with thatch. They were built on the ground surface of streamside terraces. They lack interior hearths, suggesting that Pomona sites represent summer occupations associated with some other Central Plains group. The fact that Pomona artifact assemblages are sometimes found overlying Plains Woodland assemblages suggests that the Pomona developed from or intruded upon Plains Woodland peoples. The Pomona hunted bison and smaller game and practiced small-scale horticulture. The Zacharias Site (14LV380) in Leavenworth County includes both Pomona and Steed-Kisker pottery (Logan 2006:90).

Most Pomona ceramics include undecorated, thin-walled, globular pots with knotted, cordmarked exterior surfaces and flared, constricted S-shaped necks, and unthickened rims that are sometimes collared. Crushed sherds or indurated clay are the usual temper, but grit-tempered ceramics have been found (B.G. Williams 1986). Lithics at Pomona sites include triangular notched and unnotched arrow point types as well as larger corner-notched or stemmed dart points similar to Central Plains Tradition sites. Endscrapers are common as are other expedient tools and debitage. Bone preservation is poor in the acidic soils of eastern Kansas, so bone tools are not commonly found (Roper 2006).

Oneota artifact assemblages are interpreted as representing a diffusional upper Mississippian manifestation originating in eastern Wisconsin, "linking" Plains cultures to those of the Eastern Woodlands. The Oneota tradition dates from about AD 1000 to the early historic period in the Midwest and Eastern regions of the United States. In Kansas Oneota sites are identified with the White Rock phase. Work by Logan (1995) and Ritterbush (2006) indicates that the White Rock phase represents a late intrusion of Oneota groups into the Central Plains of southern Nebraska and northern Kansas between about AD 300 and 1450. Their structures include winter pit houses and summer pole-supported structures built on the surface. Large Oneota sites often show evidence of long houses that increased in size through time. Large pit storage features are found at their sites both inside and outside structures. Oneota agriculture was focused on corn, beans, squash, and sunflowers. Localized hunting of a wide variety of smaller game animals was important, and the Oneota participated in annual long-range bison hunts to the west. That they participated in long-range trade is evidenced by the presence of Gulf Coast shell, Alibates, agatized dolomite from the Texas Panhandle, and obsidian from New Mexico, Wyoming, Idaho, and Utah in many Oneota assemblages. Their ceramic wares included shell-tempered pots with constricted orifices and rounded bottoms and plain broad-mouthed bowls. Their pots were both plain and decorated with punches, finger/tool impressions, dashes and/or trailed lines. The shoulders of pots were often decorated.

E. LATE CERAMIC PERIOD (450 TO 250 BP)

The Late Ceramic period also is known as the protohistoric period because the cultures of that time were beginning to obtain objects of Euro-American manufacture, and early explorers, missionaries, and traders were starting to record the Native American peoples in North America. In Kansas the earliest Euro-American influences probably originated in the Southwest as a result of the Spanish invasion and exploration of Central America and Southwestern North America and, more directly, the Coronado expedition that passed through Kansas in AD 1541. Spanish explorer Juan de Oñate crossed portions of

southern Kansas in 1601. The earliest archaeological evidence of Euro-American influence is the El Cuartelejo Pueblo in Scott County (western Kansas). This site, the only Pueblo known in Kansas, was probably settled by Puebloan refugees from the Southwest as it contains distinctive southwestern ceramic sherds dating to about 300 BP. The community became an outpost of Spanish civilization and a rendezvous for French traders before 1720.

After the Coronado expedition, numerous traders, trappers and explorers traversed Kansas and they undoubtedly had a profound influence on the technology and cultures of the indigenous Kansan peoples. The indigenous Kansas peoples included the Plains Apache, Arapaho, Cheyenne, Comanche, Kansa, Kiowa, Osage, Pawnee, and Wichita. Many other groups of Native Americans, either forcibly or as refugees from Euro-American disruptions to their cultures, arrived in Kansas from the East. Those Native people moved into Kansas by the U.S. Army as a result of the Indian Removal Act of 1830 included the Cherokee, Chippewa, Delaware, Illini, Iowa, Iroquois, Kaskaskia, Kickapoo, Miami, Missouriia, New York tribes (Brothertown, Cayuga, Munsee, Oneida, Onondaga, St. Regis, Seneca, Stockbridge, and Tuscarora), Otoe, Ottawa, Peoria, Piankashaw, Potawatomi, Quapaw, Sac and Fox, Shawnee, Wea, and Wyandot.

In Leavenworth County the Kansa were the indigenous group in the early 1700s when Euro-American explorers, fur trappers, and traders began to venture into the region where the Kansas River joined with the Missouri River (Wedel 1959:51). The Kansa had villages with adjacent cornfields and gardens primarily along the Kansas River and as far west as the Manhattan area, where they settled at the mouth of the Blue River (Site 14PO24). However, for a few years the Kansa had a village along the Missouri River in Doniphan County (Site 14DP1). The Kansa made seasonal hunting expeditions in western Kansas to hunt bison. Between 1847 and 1873, the Kansa placed their villages on reserved lands along the Neosho River in east-central Kansas. In 1873 the Kansa, greatly reduced by warfare, disease, and neglect by the U.S. government, settled on a portion of the Osage Reservation in northern Oklahoma.

Following the Indian Removal Act, Leavenworth County and the western part of Wyandotte County were assigned as the Delaware Indian Reserve in 1831. Delaware warriors, esteemed for their tracking and fighting skills, were commonly employed as scouts by the U.S. Army. In 1843 the Delaware tribe sold the Wyandot tribe of the Upper Sandusky, Ohio, region 39 sections on a triangular tract near the confluence of the Kansas and Missouri rivers. Many of the Wyandot relocated to Indian Territory in Oklahoma in 1859. In 1868 the Delaware moved to a new reservation in Oklahoma.

Most of the Native American groups in Kansas were also relocated to Oklahoma, though many Native Americans and their descendants continue to reside throughout Kansas. The only remaining Federally recognized Indian tribes remaining in Kansas are the Iowa Tribe of Kansas and Nebraska, the Kickapoo Tribe of Indians in Kansas, the Prairie Band Potawatomi Nation, and the Sac and Fox Nation, located in Brown, Doniphan, and Jackson counties in northeastern Kansas.

IV. PREVIOUS INVESTIGATIONS AT USP LEAVENWORTH

A. PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS

Six archaeological investigations have been made in the area of the two proposed construction site alternatives at USP Leavenworth (Barr and Rowlison 1977; Rowlison and Reynolds 1974; Schoen and Deiber 2011; TEC, Inc. 2009; and Thies 1984, 2006). Six other investigations have been done within 1.0 mile (1.6 kilometers) of the facility (Fox et al. 2000; Latham and Mandel 2002; McLean and Rust 2004; Prichard 2005; Wagner et al. 1989; Walz 2008). The studies are summarized in Table 2. Figure 4 shows the areas previously surveyed at the USP Leavenworth and surrounding vicinity.

In 1974 Kansas State Historical Society archaeologists Don Rowlison and John Reynolds performed an archaeological survey of an undetermined number of acres in Leavenworth County for proposed improvements to U.S. Highway 73 (Rowlison and Reynolds 1974). Part of that survey included the southwestern portion of the proposed West Site on the USP property. They found three chert flakes, one very small possible grit-tempered pottery sherd, and one very small mollusk shell in an area of about 10 acres (4 hectares) situated south of Honor Farm Road and west of the former alignment of Santa Fe Trail. Also present were burned and unburned rock debris and historic brick and ceramic fragments. Subsurface testing suggested that the prehistoric materials were at least partially undisturbed. The historic artifacts were thought to be associated with warehouses, wagon yards, and corrals of the Russell, Majors, and Waddell Company, which operated as freighters for the U.S. Army between 1860 and 1870 and provided hardware for civilian use. The site was assigned the number 14LV337.

In 1977 Kansas State Historical Society archaeologists Donald Rowlison and Thomas Barr made an archaeological inventory of the Fort Leavenworth Military Reservation for the United States Army Corps of Engineers (USACE), Kansas City District (Barr and Rowlison 1977). Three archaeological sites were identified within the boundaries of the proposed East Site: Sites 14LV364, 14LV365, and 14LV366. Site 14LV364 is a small prehistoric camp or lithic reduction site on a ridge toe in the northwestern part of the East Site. Artifacts include a biface, a corner-notched projectile point base, a scraper section, a core remnant, two flakes, and mollusk fragments. Site 14LV365 is on a knoll on a ridge toe in the northern part of the East Site and includes both prehistoric and historic artifacts. Prehistoric items include two biface sections, a hammerstone, two possible celts, two core fragments, and 44 flakes. Historic items include two brass cartridges, a bullet, a picket pin, a mule shoe, a metal chain segment, and bottle glass. Site 14LV366 is a prehistoric camp or lithic reduction site on a ridgetop in the western part of the East Site south-southeast of Site 14LV364 and southwest of Site 14LV365. Artifacts include a core remnant and four flakes. The three sites were not evaluated with regard to National Register eligibility.

In 1984 Kansas Historical Society archaeologist Randall Thies performed site evaluation testing at Site 14LV337 (Thies 1984). Three test pits, each 30 centimeters square, were excavated on the high ground at the western end of the site to a depth of 30 centimeters. The excavations found scattered brick fragments and modern debris. No prehistoric or early historic materials were found, and Thies recommended that the site be considered not eligible for listing in the National Register.

In 1988 the American Resources Group, Ltd. (Wagner et al. 1989) conducted archaeological survey and site evaluations on the Fort Leavenworth Military Reservation for the USACE, Kansas City District. Among the 35 archaeological sites recorded were two in the southern portion of the East Site: Sites 14LV110 and 14LV111. Site 14LV110 is a historic-period dump strung along an intermittent drainage with butchered cow and pig bone and broken dishes, bottle glass, and other materials dating from the early twentieth century and associated with the early history of the USP. This site was recommended as

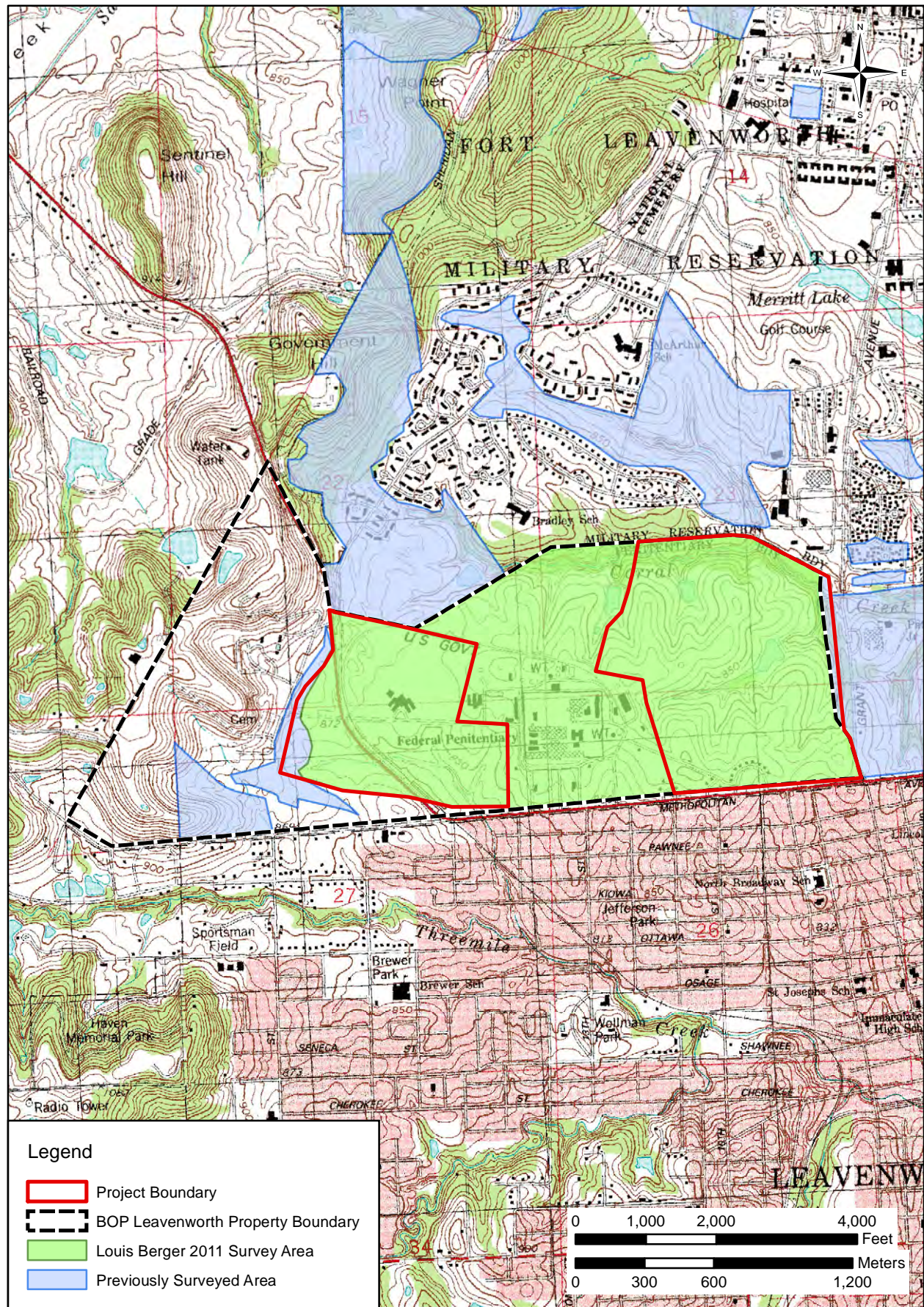


FIGURE 4: Previously Surveyed Areas (USGS Leavenworth 1984)

TABLE 2

ARCHAEOLOGICAL SURVEYS NEAR THE PROJECT AREA

PROJECT NAME	REPORT AUTHOR(S)	PUBLICATION DATE	RESULTS AND NATIONAL REGISTER RECOMMENDATIONS
U.S. Highway 73	Rowlison and Reynolds	1974	Phase II intensive survey. Recorded Site 14LV337. Site recommended as eligible for National Register
Archaeological Inventory of Fort Leavenworth Military Reservation	Barr and Rowlison	1977	Phase II intensive survey. Recorded Sites 14LV364, 14LV365, 14LV366. No recommendation of National Register eligibility
U.S. Highway 73	Thies	1984	Phase III site evaluation of Site 14LV337. Site recommended as not eligible for National Register
Site Evaluations for Fort Leavenworth Military Reservation	Wagner et al.	1989	Phase III evaluation of Sites 14LV110 and 14LV111. Site 14LV110 recommended potentially eligible for the National Register. Site 14LV111 recommended not eligible for National Register
Site Evaluations at Sites 14LV114 and 14LV118 at Fort Leavenworth	Fox et al.	2000	Phase III evaluation of Sites 14LV114 and 14LV118. Site 14LV114 recommended eligible for the National Register. No recommendation was made for Site 14LV118
Geomorphological and archaeological survey in Fort Leavenworth	Latham and Mandel	2002	Phase II intensive archaeological and geomorphological survey of Housing Site 3 and Phase III testing at Site 14LV120. Site 14LV120 recommended not eligible for National Register
Cultural Resources Survey for U.S. Army Reserve Center	McLean and Rust	2004	Phase II intensive survey. Recorded Site 14LV158. Site recommended as eligible for National Register
Archaeological Survey in Fort Leavenworth	Pritchard	2005	Phase II intensive survey of proposed residential communities (Areas O-S). Sites 14LV114, 14LV117, 14LV118, and 14LV159 revisited. Three new archaeological sites. All recommended as not eligible for National Register
U.S. Highway 73	Thies	2006	Phase II intensive survey. Western end of Site 14LV3337 revisited. Site recommended as not eligible for National Register
Site Evaluation for 14LV165, Fort Sully	Walz et al.	2008	Phase III evaluation of Site 14LV165, a Civil War era fortification. Site recommended as eligible for National Register
USP Leavenworth	TEC Inc.	2009	Phase I reconnaissance survey. Recommended archaeological and historical studies of the project area
USP Leavenworth	Schoen and Deiber	2011	Phase II intensive survey of two construction site alternatives. Sites 14LV110, 14LV111, 14LV337, 14LV364, 14LV365, and 14LV366 revisited. 15 new sites and 15 isolated finds recorded. Sites 14LV169, 14LV171, 14LV172, 14LV176, and 14LV181 recommended as potentially eligible for National Register

potentially eligible for listing in the National Register. Site 14LV111 consists of an isolated find of one chert flake in a bulldozed area by a cattle loading facility in the southeastern portion of the East Site. This site was recommended as not eligible for listing in the National Register.

Archaeologists from the Archaeology Laboratory, University of South Dakota (Fox et al. 2000) completed site evaluations at Site 14LV114 and 14LV118 at Fort Leavenworth in 1999. Fieldwork included both pedestrian survey to inspect stream banks at Site 14LV114 as well as excavation of 34 bucket auger tests and 10 square meters in 12 formal test units. Site 14LV114 was confirmed to be a trash dump dating between about 1900 and 1925. The site was recommended as potentially eligible for listing in the National Register. Site 14LV118 was a small lithic scatter. Not enough testing was completed to make a recommendation of National Register eligibility.

In 2002 Burns & McDonnell archaeologist Mark Latham and geomorphologist Rolfe Mandel completed investigations at three proposed housing developments in Fort Leavenworth (Latham and Mandel 2000). After determining that Housing Sites 1, 2, and 3 had been previously surveyed (Wagner et al. 1989) and that only archaeological Site 14LV120, situated within Housing Site 3, was likely to be impacted, archaeological investigation focused on that site. Three backhoe trenches, three 1x1 meter test units, and 34 shovel tests were excavated at Site 14LV120, which was identified as a prehistoric lithic scatter of undetermined cultural affiliation by Wagner et al. (1989). Latham determined that the site belonged to the Kansas City phase of the Kansas City Hopewell culture. The site was recommended as not eligible for listing in the National Register.

Archaeologists Janice McLean and James Rust at 4G Consulting completed an intensive cultural resources survey of 23.8 acres in the southwestern portion of the UPS Leavenworth property for a proposed United States Army Reserve Center (USARC) in 2004 (McLean and Rust 2004). This survey was done outside the main part of the USP property. A historic-period trash dump associated with the early occupation of USP Leavenworth was recorded as Site 14LV158. The site was determined to have stratified deposits. The site was recommended as eligible for listing in the National Register.

In 2005 archaeologists from Brockington and Associates, Inc. performed an intensive archaeological survey of five parcels (Areas O to S) totaling 200 acres for proposed new housing at Fort Leavenworth (Pritchard 2005). Four previously recorded sites (14LV114, 14LV117, 14LV118, and 14LV123) were revisited and three new archaeological sites were recorded (Field Site 1, Field Site 2, and Site 14LV159). Field Site 1 was a concrete stairway associated with the remains of a deactivated NIKE-Hercules missile site (KC-80). Field Site 2 was an abandoned exercise trail. Site 14LV159 was an abandoned section of the Atchison, Topeka & Santa Fe Railroad grade. All three sites were recommended as not eligible for listing in the National Register.

In 2006 Randall Thies completed archaeological survey in the southwestern portion of the proposed West Site for planned improvements to U.S. Highway 73 and a northern extension of 20th Street, which resulted in the realignment of Santa Fe Trail (Thies 2006). Thies made a systematic pedestrian survey of about nine acres with transects 12 to 15 meters apart. Surface visibility was 30 to 40 percent. Within the proposed construction APE and across the western end of Site 14LV337, Thies used a hand auger to place a line of seven tests at 15-meter intervals, with additional testing west of the center of the line. Brick fragments and coal were found in the plowzone within the upper 20 centimeters. No prehistoric artifacts were found. Thies again recommended that Site 14LV337 should be considered not eligible for listing in the National Register.

Archaeologists from the University of Illinois, Urbana-Champaign completed a National Register eligibility evaluation investigations at Site 14LV165 in 2008 (Walz et al. 2008). The site is the location of a fortification known as "Fort Sully" on a ridge overlooking Fort Leavenworth. Constructed in 1864, the

gun emplacement was intended to defend against Confederate attack. The site was recommended as eligible for listing in the National Register.

In 2009 TEC Inc. completed a reconnaissance study of the current proposed USP Leavenworth project. Data was collected on topography, geology, soils, surface water, groundwater, hazardous waste, natural resources, cultural resources, socioeconomic resources, and utilities to determine whether potential impacts to these resources or impacts to the project by these resources would make the site alternatives non-viable. The study was performed using desktop research on available online information from state and federal agencies, available reports, and site visits (TEC Inc 2009:4).

In 2011 Louis Berger completed Phase II intensive archaeological survey across the USP Leavenworth property and an inventory of the buildings and structures present at the facility (Schoen and Deiber 2011). Archaeological survey was not performed in the portions of the property south of Metropolitan Avenue or west of Santa Fe Trail. Approximately 382 acres (154.6 hectares) were investigated during the 2011 archaeological survey, 144 acres (58.3 hectares) for the proposed West Site and 238 acres (96.3) for the proposed East Site. The investigations included pedestrian reconnaissance and shovel testing. Because it was judged that there was only very low potential for deeply buried archaeological sites in the project area, no systematic deep testing was conducted; however, on creek terraces shovel tests often were extended with hand augering to check for old ground surfaces more than 3.3 feet (1.0 meter) below the current ground surface. When present, these strata were sampled for evidence of buried cultural deposits.

Louis Berger revisited six previously recorded sites on the USP property: Site 14LV110 (dump, 1906 to 1930), Site 14LV111 (isolated find), Site 14LV337 (prehistoric lithic and historic artifact scatter), Site 14LV364 (prehistoric lithic scatter), Site 14LV365 (prehistoric lithic and historic artifact scatter), and Site 14LV366 (prehistoric lithic scatter). Louis Berger also recorded 15 new archaeological sites and 15 isolated find spots. The sites are discussed below. Five of these sites, 14LV169, 14LV171, 14LV172, 14LV176, and 14LV181, appeared to be associated with the Middle Ceramic period and were recommended for Phase III site evaluation.

The architectural investigation in 2011 included a comprehensive survey of all buildings on the USP complex to reevaluate the period of significance, the contributing/non-contributing status of each structure, and the boundary delineation of the district. Data collection for this survey involved the compilation of background information and review of previous architectural resource documentation. The results of the study were incorporated into the Environmental Impact Statement for the proposed new prison construction.

B. SITES RECORDED AT USP LEAVENWORTH

There are 22 archaeological sites and 15 isolated find sites within the boundaries of the USP Leavenworth property (Table 3). Site 14LV158 was determined eligible for listing in the National Register in 2004 (McLean and Rust 2004). As reported above, six previously recorded archaeological sites were revisited by Louis Berger during the 2011 study (Schoen and Deiber 2011): Sites 14LV110, 14LV111, 14LV337, 14LV364, 14LV365, and 14LV366. Subsurface testing was done at Sites 14LV337, 14LV110, 14LV364, and 14LV365; the other two were defined solely by surface artifacts in plowed fields.

Historic Site 14LV110 was found to be significantly disturbed by episodes of rapid erosion, which have redeposited the historic artifacts along 673 feet (205 meters) of steam bed. As the site appeared confined to the drainage, no subsurface testing was performed at this site. The site was recommended as not eligible for listing in the National Register. Sites 14LV364 and 14LV365 were investigated by systematic shovel testing at 10-meter intervals. Multi-component Site 14LV365 and prehistoric Sites 14LV337, 14LV364, and 14LV366 were recommended as not eligible. Prehistoric Site 14LV111 was an isolated find. Louis Berger found no reason to amend the previous recommendation of not eligible by Wagner et al. (1989).

TABLE 3

ARCHAEOLOGICAL SITES RECORDED WITHIN USP LEAVENWORTH

SITE NUMBER	SITE TYPE	CULTURAL AFFILIATION	LANDFORM CONTEXT	NRHP STATUS*	ORIGINAL RECORDER
14LV110	Dump	Historic (ca 1903-1930)	Stream bank	Not Eligible	Wagner et al. 1989
14LV111	Isolated find	Undetermined Prehistoric	Bluff slope	Not Eligible	Wagner et al. 1989
14LV158	Dump	Historic (ca 1850-1900)	Stream bank	Potentially Eligible	McLean and Rust 2004
14LV167	Lithic scatter	Undetermined Prehistoric	Upland	Not Eligible	Schoen and Deiber 2011
14LV168	Lithic scatter	Late Prehistoric	Upland	Not Eligible	Schoen and Deiber 2011
14LV169	Lithic scatter	Late Prehistoric	Upland	Potentially Eligible	Schoen and Deiber 2011
14LV170	Lithic scatter	Undetermined Prehistoric	Upland	Not Eligible	Schoen and Deiber 2011
14LV171	Camp	Late Prehistoric	Upland	Potentially Eligible	Schoen and Deiber 2011
14LV172	Lithic scatter	Late Prehistoric	Upland	Potentially Eligible	Schoen and Deiber 2011
14LV173	Lithic scatter	Undetermined Prehistoric	Upland	Not Eligible	Schoen and Deiber 2011
14LV174	Lithic scatter	Undetermined Prehistoric	Upland	Not Eligible	Schoen and Deiber 2011
14LV175	Foundation and artifact scatter	Historic (ca 1938-1981)	Upland	Not Eligible	Schoen and Deiber 2011
14LV176	Lithic scatter	Undetermined Prehistoric	Ridge toe	Potentially Eligible	Schoen and Deiber 2011
14LV177	Lithic scatter	Undetermined Prehistoric	Terrace	Not Eligible	Schoen and Deiber 2011
14LV178	Lithic scatter	Undetermined Prehistoric	Upland	Not Eligible	Schoen and Deiber 2011
14LV179	Lithic scatter	Undetermined Prehistoric	Upland	Not Eligible	Schoen and Deiber 2011
14LV180	Lithic scatter	Undetermined Prehistoric	Upland bench	Not Eligible	Schoen and Deiber 2011
14LV181	Lithic scatter	Undetermined Prehistoric	Ridge top	Potentially Eligible	Schoen and Deiber 2011
14LV337	Lithic scatter	Undetermined Prehistoric; Historic (ca 1903-1930)	Upland	Not Eligible	Rowlison and Reynolds 1974
14LV364	Lithic scatter	Undetermined Prehistoric	Upland toe	Not Eligible	Barr and Rowlison 1977
14LV365	Artifact scatter	Undetermined Prehistoric Historic (ca 1870-1900)	Upland toe	Not Eligible	Barr and Rowlison 1977
14LV366	Lithic scatter	Undetermined Prehistoric	Upland	Not Eligible	Barr and Rowlison 1977

TABLE 3 (continued)

SITE NUMBER	SITE TYPE	CULTURAL AFFILIATION	LANDFORM CONTEXT	NRHP STATUS*	ORIGINAL RECORDER
IF-1	Chipped stone flake	Undetermined Prehistoric	Upland	Not Eligible	Schoen and Deiber 2011
IF-2	Chipped stone flake	Undetermined Prehistoric	Upland	Not Eligible	Schoen and Deiber 2011
IF-3	Chipped stone flake	Undetermined Prehistoric	Upland	Not Eligible	Schoen and Deiber 2011
IF-4	Chipped stone flake	Undetermined Prehistoric	Upland	Not Eligible	Schoen and Deiber 2011
IF-5	Chipped stone flake	Undetermined Prehistoric	Terrace	Not Eligible	Schoen and Deiber 2011
IF-6	Chipped stone flake	Undetermined Prehistoric	Upland	Not Eligible	Schoen and Deiber 2011
IF-7	Chipped stone flake	Undetermined Prehistoric	Upland	Not Eligible	Schoen and Deiber 2011
IF-8	Celt	Undetermined Prehistoric	Upland	Not Eligible	Schoen and Deiber 2011
IF-9	Chipped stone flake	Undetermined Prehistoric	Upland	Not Eligible	Schoen and Deiber 2011
IF-10	Chipped stone flake	Undetermined Prehistoric	Upland	Not Eligible	Schoen and Deiber 2011
IF-11	Late stage biface	Undetermined Prehistoric	Upland	Not Eligible	Schoen and Deiber 2011
IF-12	Chipped stone flake	Undetermined Prehistoric	Upland	Not Eligible	Schoen and Deiber 2011
IF-13	Chipped stone flake	Undetermined Prehistoric	Upland	Not Eligible	Schoen and Deiber 2011
IF-14	Chipped stone flake	Undetermined Prehistoric	Terrace	Not Eligible	Schoen and Deiber 2011
IF-15	Chipped stone flake	Undetermined Prehistoric	Terrace	Not Eligible	Schoen and Deiber 2011

*National Register status prior to the Phase III Site Evaluations

As reported above, 15 new archaeological sites and 15 new isolated find spots were identified and investigated in 2011 by Louis Berger (Schoen and Deiber 2011). Sites 14LV167, 14LV170, 14LV173, 14LV174, 14LV176, 14LV177, 14LV178, 14LV179, 14LV180, and 14LV181 were reported as prehistoric lithic scatters of unknown cultural affiliation. Sites 14LV168, 14LV169, 14LV171, and 14LV172 were all Late Prehistoric/Middle Ceramic period sites, based on arrow point types. Site 14LV175 is the location of the prison farm manager's residence (1938 to about 1981). This historic site was recommended as not eligible for listing in the National Register.

Sites 14LV169, 14LV171, 14LV172, 14LV176, and 14LV181 were recommended as potentially eligible for listing in the National Register under Criterion D. The other 10 prehistoric sites and the 15 prehistoric isolated find spots were all recommended as not eligible for listing in the National Register (Schoen and Deiber 2011). The isolated find spots were not assigned state site numbers, consistent with the Kansas SHPO guidelines (Epperson et al. 2004).

C. SITES RECORDED IN THE VICINITY OF USP LEAVENWORTH

There are five previously recorded prehistoric archaeological sites and two prehistoric isolated find spots of undetermined affiliation and age within a 1.0-mile (1.6-kilometer) radius of the main portion of the

USP Leavenworth property (Table 4). The five sites consist of one lithic scatter of undetermined cultural affiliation and four camps (one Late Archaic, one Kansas City Hopewell, and two of undetermined affiliation). Site 14LV158 is a historic dump site situated in the southwestern corner of the USP Leavenworth property south of Metropolitan Avenue and west of Santa Fe Trail.

The 19 previously recorded historic sites include three artifact scatters, six dumps, one dugout, one cement watering trough, one segment of road grade, three segments of railroad grade, one group of railroad structures, one military earthworks (Fort Sully), and one complex of 132 concrete tent pads and plumbing for military bathhouses (Camp Lincoln). One isolated find (Site 14LV112) was historic in age. All of these historic and prehistoric sites are located on the Fort Leavenworth Reservation.

As Table 4 indicates, three prehistoric sites (14LV101, 14LV118, and 14LV120) and 10 historic sites (14LV103, 14LV104, 14LV106, 14LV107, 14LV108, 14LV114, 14LV123, 14LV124, 14LV165, and 14LV391) have all been recommended as potentially eligible for listing in the National Register. Historic Sites 14LV102, 14LV105, 14LV152, 14LV153, and 14LV155 have not been evaluated with regard to National Register eligibility. Prehistoric Sites 14LV109 and 14LV117 and two prehistoric isolated find spots (Sites 14LV115 and 14LV116) were recommended as not eligible for listing in the National Register. Four historic sites (14LV119, 14LV121, 14LV122, and 14LV157) and one historic isolated find spot (Site 14LV112) were recommended as not eligible for listing in the National Register.

TABLE 4

ARCHAEOLOGICAL SITES RECORDED WITHIN A 1.0-MILE RADIUS OF USP LEAVENWORTH

SITE NUMBER	SITE TYPE	CULTURAL AFFILIATION	LANDFORM CONTEXT	NRHP STATUS	ORIGINAL RECORDER
14LV101	Lithic scatter	Unknown Prehistoric	Ridge toe	Potentially eligible	Wagner et al. 1989
14LV102	Railroad Grade	Historic (ca 1872-1893)	Ridge slope	Not evaluated	Wagner et al. 1989
14LV103	Dump	Historic (ca 1850-1900)	Stream bank	Potentially eligible	Wagner et al. 1989
14LV104	Dump	Historic (ca 1870-1910)	Ravine	Potentially Eligible	Wagner et al. 1989
14LV105	Cement trough	Historic (ca 1860-1960)	Bluff slope	Not evaluated	Wagner et al. 1989
14LV106	Dump	Historic (ca 1870-1900)	Bluff slope	Potentially eligible	Wagner et al. 1989
14LV107	Artifact scatter	Historic (ca 1870-1910)	Bluff slope	Potentially eligible	Wagner et al. 1989
14LV108	Dump	Historic (ca 1870-1910)	Ridge slope	Potentially eligible	Wagner et al. 1989
14LV109	Camp	Late Archaic (Table Rock)	Terrace	Not eligible	Wagner et al. 1989
14LV112	Isolated find	Historic (ca 1827-1900)	Ridge slope	Not Eligible	Wagner et al. 1989

TABLE 4 (continued)

SITE NUMBER	SITE TYPE	CULTURAL AFFILIATION	LANDFORM CONTEXT	NRHP STATUS	ORIGINAL RECORDER
14LV113	Artifact scatter	Historic (ca 1870-1915)	Creek bed	Not Eligible	Wagner et al. 1989
14LV114	Dump	Historic (ca 1870-1900)	Stream bank	Potentially eligible	Wagner et al. 1989
14LV115	Isolated find	Unknown Prehistoric	Ridge spur	Not eligible	Wagner et al. 1989
14LV116	Isolated find	Unknown Prehistoric	Ridge spur	Not eligible	Wagner et al. 1989
14LV117	Camp	Unknown Prehistoric	Ridge toe	Not eligible	Wagner et al. 1989
14LV118	Camp	Unknown Prehistoric	Ridge slope	Potentially eligible	Wagner et al. 1989
14LV119	Dump	Historic (ca 1870-1900)	Ridge slope	Not eligible	Wagner et al. 1989
14LV120	Camp	Kansas City Hopewell	Terrace	Potentially eligible	Wagner et al. 1989
14LV121	Railroad grade	Historic (ca 1886-1935)	Ridge slope	Not eligible	Wagner et al. 1989
14LV122	Railroad grade	Historic (ca 1870-1930)	Stream valley	Not eligible	Wagner et al. 1989
14LV123	Railroad structures	Historic (ca 1870-1930)	Ridge slope	Potentially eligible	Wagner et al. 1989
14LV124	Road grade	Historic (ca 1870-1930)	Ridge slope	Potentially eligible	Wagner et al. 1989
14LV155	Artifact scatter	Historic (ca 1872-1950)	Ridge toe	Not evaluated	Bailey 1993
14LV157	Concrete pads for tent bathhouses	Historic (1900-1954)	Slope	Not eligible	Lucido 2002
14LV165	Earthworks and gun emplacement	Historic (1861-1900) Fort Sully	Hill top and slope	Potentially eligible	Walz 2008
14LV391	Dugout	Historic (ca 1820-1854)	Bluff	Potentially eligible	Banks 1999

V. TESTING METHODOLOGY

The goal of the present archaeological study was to collect sufficient information about Sites 14LV169, 14LV171, 14LV172, 14LV176, and 14LV181 to make recommendations of eligibility for each site for listing in the National Register under Criterion D: sites that “have yielded, or may be likely to yield, information important in prehistory or history” (36CRF 60.6 and 800.10). Factors considered in the evaluations included the following.

- the depositional condition of each site, including intact soil horizons
- the presence or absence of diagnostic artifacts or materials that could be used to obtain dates of occupation to support temporal/cultural identification of each site
- the presence or absence of archaeological features, such as hearths, storage pits, trash pits, house floors, or artifact concentrations suggesting specific activity areas
- the presence or absence of bone or plant remains that could provide information regarding subsistence strategies
- percentages of chipped stone material to assess preference for certain raw materials and their accessibility
- moderate to high percentages of chipped stone tools that could provide data regarding subsistence activities and lithic technology
- percentages of types of debitage to ascertain lithic reduction processes
- percentages of heat-altered lithic material for information about lithic technology
- ceramic attributes to discuss ceramic technology, surface treatment/decoration, and cultural affiliation

To gather these categories of information, Louis Berger proposed to excavate five 1x1-meter test units at each of the five sites. Test units were placed near clusters of shovel tests where artifacts had been found during the Phase II intensive survey by Louis Berger in 2011 (Schoen and Deiber 2011) and/or where diagnostic artifacts, such as prehistoric ceramics and chipped stone tools, had been recovered. Five test units at each site was judged by Louis Berger to be an adequate sample as each of the sites had been intensively investigated by shovel testing in 2011. The 2011 systematic shovel testing provided information regarding depths of soil horizons and artifact distribution across each site. Table 5 summarizes the area excavated at each of the five sites.

TABLE 5

TOTAL AREA EXCAVATED AT SITES 14LV169, 14LV171, 14LV172, 14LV176, AND 14LV181

SITE NUMBER	SITE AREA*	NUMBER OF SHOVEL TESTS	SHOVEL TEST AREA*	NUMBER OF TEST UNITS	TEST UNIT AREA*	TOTAL AREA EXCAVATED*
14LV169	2,948.0	81	32.4	5	5.0	37.4
14LV171	4,300.0	124	49.6	5	5.0	54.6
14LV172	4,876.0	143	57.2	5	5.0	62.4
14LV176	1,836.0	72	28.8	5	5.0	33.8
14LV181	3,000.0	93	37.2	5	5.0	42.2

*square meters

Test units at each site were placed on a grid established for that site. Each grid was established relative to the location of a shovel test recorded with a GPS unit during the Phase II intensive survey (Schoen and Deiber 2011). The survey files were loaded onto a GPS unit, which was used to navigate to the vicinity of a shovel test. Then the ground surface was cleaned with a flat shovel to discover the specific location of the shovel test. From that relocated shovel test, a grid was established in the cardinal directions relative to magnetic north (magnetic north was used when the grid of shovel tests was excavated in 2011). Survey tapes were used to lay out grid bases lines that could be employed to place test units and to prepare site maps. The locations of test units were recorded relative to the site grid. The test unit locations were also recorded with the GPS unit.

Each test unit was hand excavated using a flat shovel with a sharpened edge and with trowels. Efforts were made to keep unit walls vertical and the base of excavation levels flat to obtain constant volume of excavated material. Depths were measured using a line level on a string attached to a wooden unit datum stake. Unit datum stakes were typically placed 10 centimeters from the corner of the test unit that had the highest elevation. The height of the unit datum line was 10 centimeters above the ground surface at that point.

For the purpose of investigating the vertical distribution of artifacts in each test unit, excavation was done in arbitrary 10-centimeter increments. If there was a soil stratum change within a particular 10-centimeter level, materials from each stratum were recovered separately and the depths of the stratum change were recorded on the stratum/level form. To maintain even planes in excavation levels, the first level of each test unit was excavated to 10 centimeters below the highest elevation within that test unit. Thus, if the ground surface sloped somewhat, one side of the test unit would be excavated a full 10 centimeters but the downslope side of the test unit was excavated to less than 10 centimeters. Every succeeding arbitrary level, however, was excavated in full 10-centimeter increments. The expectation was that this procedure would assist in maintaining a constant volume of excavated soil and make it easier to compare volume of materials by level among test units within the site.

All excavated soil was sifted through 6.4-millimeter (0.25-inch) mesh hardware cloth to assist with the recovery of artifacts. Shovel test holes were excavated into culturally sterile subsoil (i.e., no artifacts or archaeological features present). All test units were backfilled upon completion of excavation records.

Information was recorded on standardized acid-free forms. The information on Stratum/Level forms included (1) the project name, (2) state site number, (3) test unit number, (4) the excavation level number, (5) the soil stratum number, (6) the feature number (if present), (7) the horizontal dimensions of the unit, (8) the datum location and elevation, (9) the depth of the four corners and center of the unit at the top and bottom of each level, (10) a description of the soil stratum/strata in each level, (11) the method of excavation and vertical controls, (12) disturbances in the level, (13) type and volume of any samples taken, (14) materials sampled or discarded, (15) a list of artifacts recovered, (16) the names of the excavators/recorders, (17) the date of excavation, and (18) comments regarding excavation of that level. A grid was provided on the back side of the form to map features, diagnostic artifact locations, multiple soils, or other relevant information. A summary discussion of each test unit was also recorded at the end of the excavation of each test unit on a Unit Summary form.

Soil characteristics were recorded using standard texture descriptions and Munsell soil color notation (Shoeneberger et al. 2002). Photographs were taken of one representative wall of each unit to record soil strata. A scaled drawing was made of the representative wall of each test unit to document depths of strata, soil color and texture, and any disturbance that was present.

Artifacts were collected by level and/or stratum and placed in a clear plastic bag with a resealable closure. Information regarding the provenience of recovered items was recorded on pre-printed cardstock tags that had blank spaces for the relevant data. This included (1) the project name, (2) state site number, (3) test

unit number, (4) the excavation level number, (5) the soil stratum number, (6) the feature number (if present), (7) the date collected, (8) the initials of the archaeologist, and (9) the number and kinds of artifacts recovered.

Each discrete provenience from which artifacts and soil samples were recovered was given an individual field inventory number, which was added to the provenience cardstock tag. This number was used to track the artifacts throughout the field effort and laboratory processing and analysis. In the laboratory a catalog number was assigned to individual artifacts or material sample. A complete artifact catalog for the project and full description of the analytic methods can be found in Appendix A. A Letter of Agreement for the curation of artifact collected during the project with the Kansas State Historical Society can be found in Appendix B.

In the laboratory artifacts were cleaned by hand, sorted by material class, and placed in clean clear plastic bags with resealable closures and new cardstock tags with the relevant provenience information. Laboratory analysis of chipped stone materials from the five prehistoric sites focused on tool identification, stages of lithic reduction, lithic raw material type, and percentages of heat alteration. Ceramic analysis included temper type and surface treatment or decoration. Recovered ceramic sherds were too few and too small to determine vessel type.

VI. RESULTS OF ARCHAEOLOGICAL INVESTIGATIONS

A. OVERVIEW

Discussions of Sites 14LV169, 14LV171, 14LV172, 14LV176, and 14LV181 are provided in this chapter. Each discussion includes a summary of the Phase II survey followed by the Phase III site excavation activities and a review with recommendations.

B. SITE 14LV169

Map Source:	Leavenworth, KS, 7.5' Series USGS Topographic Quad (1982)
Site Type:	Lithic scatter
Cultural Affiliation:	Late Prehistoric/Middle Ceramic
Site Size:	67.0 meters (219.8 feet) N to S by 44.0 meters (144.4 feet) E to W 2,948.0 square meters (31,739.1 square feet)
Phase II Methods:	Pedestrian survey and shovel testing
Phase III Methods:	Excavation of five 1x1 meter test units
Area Excavated:	81 Shovel tests and 5 test units (37.4 sq. meters/124.4 sq. feet)
Cultural Materials Collected:	Phase II: 2 Arrow points, 1 biface, 1 utilized flake, 63 debitage, and 1 fire-cracked rock Phase III: 7 Body sherds, 61 debitage, 108 limestones
Landform:	Upland
Elevation:	870 feet above mean sea level
Land Use/Surface Visibility:	Grass (Less than 10% surface visibility)
Soil Type:	Sharpsburg silt loam 1 to 4% slopes (7540)
Site Disturbance:	Cultivation and erosion
Relation to Project Limits:	100% within Alternative Hybrid; 100% outside Alternative FCI East-1
National Register Eligibility:	Not eligible
Recommendations:	No additional archaeological investigations

Site 14LV169 is the location of a moderately sized prehistoric lithic scatter attributed to the Late Prehistoric (Middle Ceramic) period based on projectile point types recovered from the site (Schoen and Deiber 2011). The site is situated in the uplands in the proposed West Site (Plates 1 and 2).

1. *Summary of Phase II Intensive Survey*

During the Phase II intensive survey in 2011, 81 shovel tests were excavated within a 30-meter grid. Shovel Test TR A-14 yielded one flake from the Ap horizon. Radial shovel tests excavated at 5- and 10-meter intervals to determine site boundaries resulted in 30 additional shovel tests with artifacts. Shovel testing determined that Site 14LV169 measured 67.0 meters north to south by 44.0 meters east to west. The northern and eastern boundaries of the site were defined by disturbances.

The soil profiles in the shovel tests included an Ap/A horizon of very dark grayish brown (10YR 3/2) silt loam that ranged from 18 to 50 centimeters thick but typically was about 35 centimeters thick. Below the surface layer was a Bt1 horizon of dark grayish brown (10YR 4/2) to yellowish brown (10YR 5/4) silty clay loam. The yellowish brown soil was often mottled with 20 to 40 percent of very dark grayish brown (10YR 3/2) or dark grayish brown (10YR 4/2) silty clay loam. The boundary between the two strata was gradual where the Ap was thickest and clear elsewhere. Where a third stratum was encountered, this Bt2 horizon was composed of dark yellowish brown (10YR 4/4) to yellowish brown (10YR 5/4) silty clay



PLATE 1: Overview of Site 14LV169, View West.



PLATE 2: Overview of Site 14LV169, View Northeast.

loam. The soil boundary was clear to gradual. Shovel tests were excavated to between 46 and 78 centimeters below ground surface (bgs).

Four tools, 59 pieces of debitage, and one fire-cracked rock were recovered from Site 14LV169 during the Phase II survey (Tables 6 and 7). Most of the artifacts came from the Ap horizon (N=64, 94%) with only three flakes from the Bt1 horizon and one from the Bt2 horizon. Most of the lithic material is Florence chert (N=47, 62.6% by weight), with smaller amounts of jasper (N=13, 14.3% by weight), and unidentified chert (N=7, 23.1% by weight). One quartzite fire-cracked rock was also recovered.

TABLE 6

ARTIFACT CLASS/TYPE BY STRATUM FROM PHASE II SURVEY, SITE 14LV169

ARTIFACT CLASS/TYPE	SOIL STRATUM			Total
	Ap/A	Bt1	Bt2	
Projectile Point	2	--	--	2
Late-Stage Biface	1	--	--	1
Utilized Flake	1	--	--	1
Decortication Flake	1	--	--	1
Early Reduction Flake	5	--	--	5
Biface Reduction Flake	23	1	--	24
Finishing Flake	10	1	--	11
Flake Fragment	18	1	1	20
Other Flake Type	1	--	--	1
Block Shatter	1	--	--	1
Fire-cracked Rock	1	--	--	1
Total	64	3	1	68

TABLE 7

ARTIFACT CLASS/TYPE BY MATERIAL TYPE
FROM PHASE II SURVEY, SITE 14LV169

ARTIFACT CLASS/TYPE	MATERIAL TYPE			Total
	Florence Chert	Chert	Jasper	
Projectile Point	2	--	--	2
Late-Stage Biface	--	1	--	1
Utilized Flake	1	--	--	1
Decortication Flake	--	--	1	1
Early Reduction Flake	5	--	--	5
Biface Reduction Flake	16	3	5	24
Finishing Flake	8	--	3	11
Flake Fragment	14	3	3	20
Other Flake Type	--	--	1	1
Block Shatter	1	--	--	1
Total	47	7	13	67

Heat treatment was present or indeterminate on only eight flakes and one late-stage biface (a projectile point). Biface reduction flakes and finishing flakes accounted for 35 flakes or just over half the collection from this site. Cortex was present on 12 pieces of debitage (six block shatter and six cobbles).

The tools consist of the medial section of a Scallorn variety point (Perino 1985:344) and a small unidentified stemmed point that appears to be a Woodland variety that was reworked to its present shape. Both projectile points are made from Florence chert. The stemmed point was made with heated chert. The utilized flake was of Florence chert. These three artifacts are shown in Plate 3.

Site 14LV169 was determined to be the location of a relatively dense cluster of chipped stone artifacts attributed to the Late Prehistoric or Middle Ceramic cultural period based on the Scallorn variety arrow point (Schoen and Deiber 2011). More than one-third of the shovel tests excavated at the site yielded artifacts. The types of artifacts recovered suggest a location where prehistoric people were reducing chert cobbles into biface preforms and shaping tools such as arrow points, knives, drills, and scrapers. Although the site has been disturbed to some degree by cultivation and erosion, and although most artifacts were from the Ap/A horizon, a few items came from the Bt horizons, suggesting the possibility of intact subsurface deposits. Two small pottery sherds found in nearby Site 14LV337 may have derived from Site 14LV169, further supporting the potential of the site to contribute significant new information about the late prehistory of the region.

Based on the findings of the Phase II intensive survey, Louis Berger recommended that Site 14LV169 be considered potentially eligible for listing in the National Register under Criterion D. Louis Berger recommended avoidance of the site by any proposed construction or other ground disturbance activities. If the site could not be avoided, Louis Berger recommended that Phase III site evaluation be performed to determine whether the site has sufficient integrity and potential to answer important research questions regarding the prehistory of the locality and/or region (Schoen and Deiber 2011).

2. Phase III Site Evaluation

At the time of site testing to evaluate the National Register eligibility of Site 14LV169 in July 2014, the site area was covered with mown prairie grass about 2.5 centimeters in height. Ground surface visibility was less than 10 percent. The Trimble GPS unit was used to navigate to the location of Shovel Test A-14. From this location, a five-meter grid was established over the site oriented to magnetic north. A point 20 meters west of Shovel Test A-14 was arbitrarily identified as grid North 1000, East 1000 (Figure 5).

a. Test Unit 1

Test Unit 1 was placed in the northern part of the site at grid North 1023 to 1024, East 1003 to 1004 (see Figure 5). During the Phase II survey three shovel tests situated within 5 meters of Test Unit 1 had yielded a total of 12 chipped stone artifacts from the Ap/A horizon. Test Unit 1 was 1x1 meter in size and excavated in seven arbitrary levels to a depth of 80 centimeters below datum (70 centimeters bgs). The unit datum was near the southwest corner of the unit. Three strata were observed in the unit (Figure 6; Plate 4). The Ap horizon was 15 centimeters thick and consisted of very dark grayish brown (10YR 3/2) silt loam. The Ap horizon changed into an A horizon, which was present at 15 to 51 centimeters bgs. The A horizon consisted of very dark grayish brown (10YR 3/2) silt loam mixed with pockets of dark yellowish brown (10YR 4/4) silt loam. The A horizon transitioned gradually into the underlying Bt horizon, which was composed of dark brown (7.5YR 3/2) clay loam.

In Test Unit 1 prehistoric artifacts consisted primarily of chipped stone debitage (N= 21), including three early reduction flakes, 10 biface reduction flakes, seven flake fragments, and one piece of block shatter (Table 8). Other items present in the A horizon to a depth of 50 centimeters bgs included one charcoal fragment, six small pottery sherds, and 55 stone fragments. Historic artifacts present to 30 centimeters bgs included five brick fragments, six mortar fragments, and two bottle/jar glass sherds.



PLATE 3: Chipped Stone Tools from Phase II Survey at Site 14LV169.

Figure 5 has been removed because it contains confidential information not for public distribution.

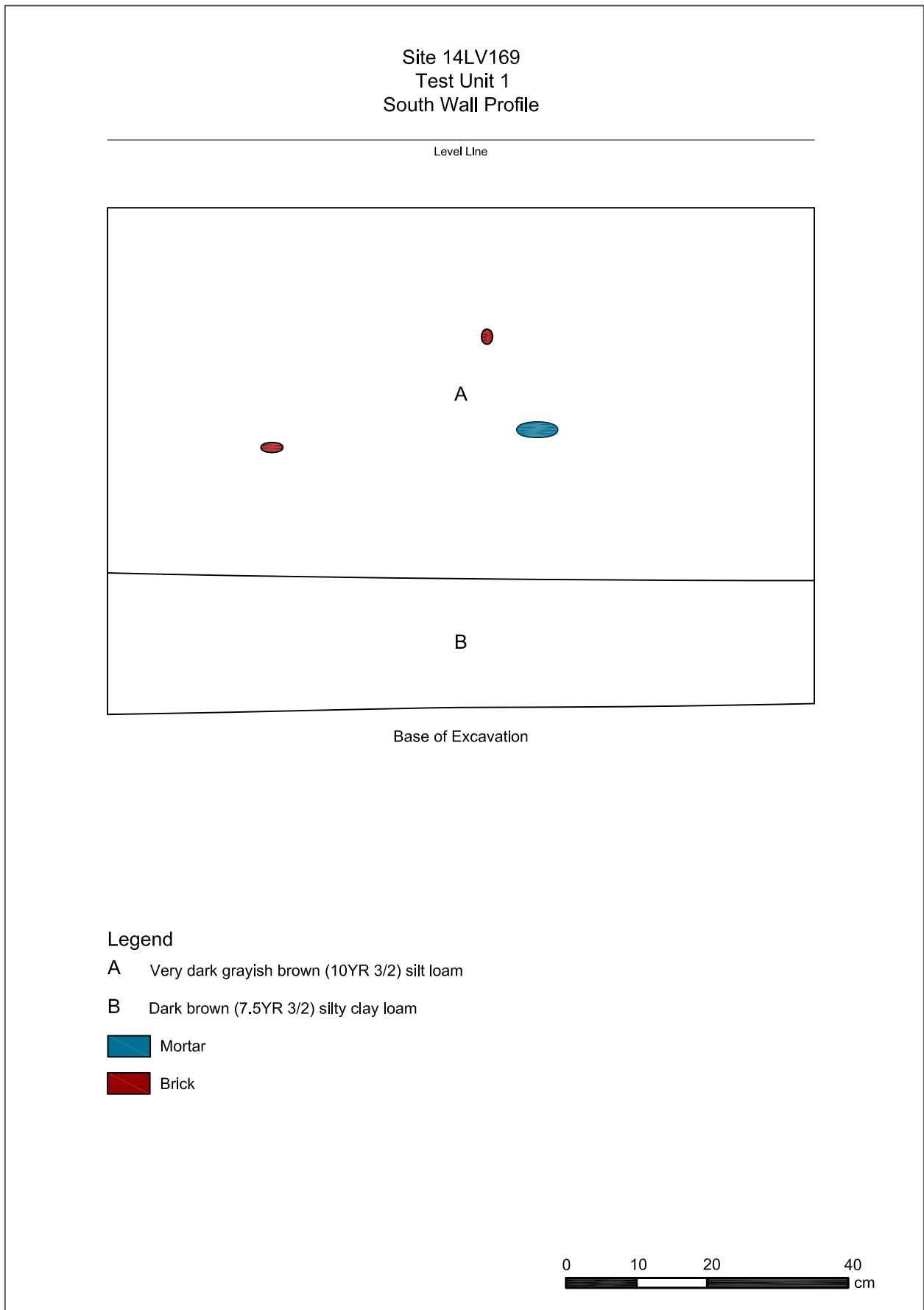


FIGURE 6: Profile of Test Unit 1 at Site 14LV169



PLATE 4: Profile of Test Unit 1 at Site 14LV169, View South.

TABLE 8

ARTIFACT DISTRIBUTION BY EXCAVATION LEVEL IN TEST UNIT 1 AT SITE 14LV169

ARTIFACT TYPE	1	2	3	4	5	6	7	TOTAL
Early Reduction Flake	--	2	--	1	--	--	--	3
Biface Reduction Flake	--	2	7	--	1	--	--	10
Flake Fragment	--	1	4	2	--	--	--	7
Block Shatter	--	1	--	--	--	--	--	1
Ceramic Body Sherd	--	--	1	5	--	--	--	6
Rock/Stone	--	21	22	12	--	--	--	55
Charcoal	--	--	--	--	1	--	--	1
Brick	1	4	--	--	--	--	--	5
Mortar	--	3	3	--	--	--	--	6
Container Glass	--	2	--	--	--	--	--	2
Total	1	36	37	20	2	0	0	96

The 21 lithic debitage pieces from Test Unit 1 consist of 12 artifacts of Plattsmouth chert, two of Winterset chert, two of Toronto chert, one of Smoky Hill jasper, three of unidentified light gray chert with no inclusions, and one flake of unidentified chert characterized as fine grained, light gray material with banding and no inclusions. Two of the Plattsmouth chert items showed evidence of heating.

The prehistoric ceramic sherd from 20 to 30 centimeters bgs in Test Unit 1 was grit-tempered and smooth on both surfaces. The five sherds from 30 to 40 centimeters bgs were also smooth on both surfaces but included crushed quartz as temper.

b. Test Unit 2

Test Unit 2 was situated in the central portion of the site at grid North 1012 to 1013, East 1015 to 1016 (see Figure 5). During the Phase II survey three shovel tests located within 5 meters of the 1-meter-square test unit had included 13 flakes in the Ap horizon and one flake in the A horizon. All 14 artifacts were in the upper 28 centimeters of the site deposits. Test Unit 2 was excavated in seven arbitrary levels to a depth of 80 centimeters below datum (70 centimeters bgs). The unit datum was near the northwest corner of the unit. Three strata were observed in the unit (Figure 7; Plate 5). The Ap/A horizon was as much as 55 centimeters thick and was composed of dark brown (10YR 3/3) silt loam. The base of the A horizon was irregular, suggesting old, deep plow scars cutting into the B1 horizon. The Bw horizon was 9 to 22 centimeters thick and formed of dark yellowish brown (10YR 4/4) silt loam mottled with dark brown (10YR 3/3) silt loam. At 60 centimeters bgs, the Bw horizon changed to a Bt horizon of yellowish brown (10YR 5/4) silty clay loam.

Four charcoal fragments were recovered from the plowzone in the Test Unit 2 (Table 9). Their location suggests that they are modern and not suitable for obtaining a radiocarbon date for the site. Prehistoric artifacts consisted of eight biface reduction flakes and three flake fragments from Level 2. The 11 pieces of debitage in the plowzone were mixed with historic materials, which included a bolt and a piece of container glass in Level 2 and a brick fragment, an iron ring, a piece of coal slag, and a second container glass sherd in Level 3.

The 11 lithic debitage from Test Unit 2 included 10 artifacts of Plattsmouth chert and one of Toronto chert. Four of the Plattsmouth chert items (two biface reduction flakes and two flake fragments) were heated.

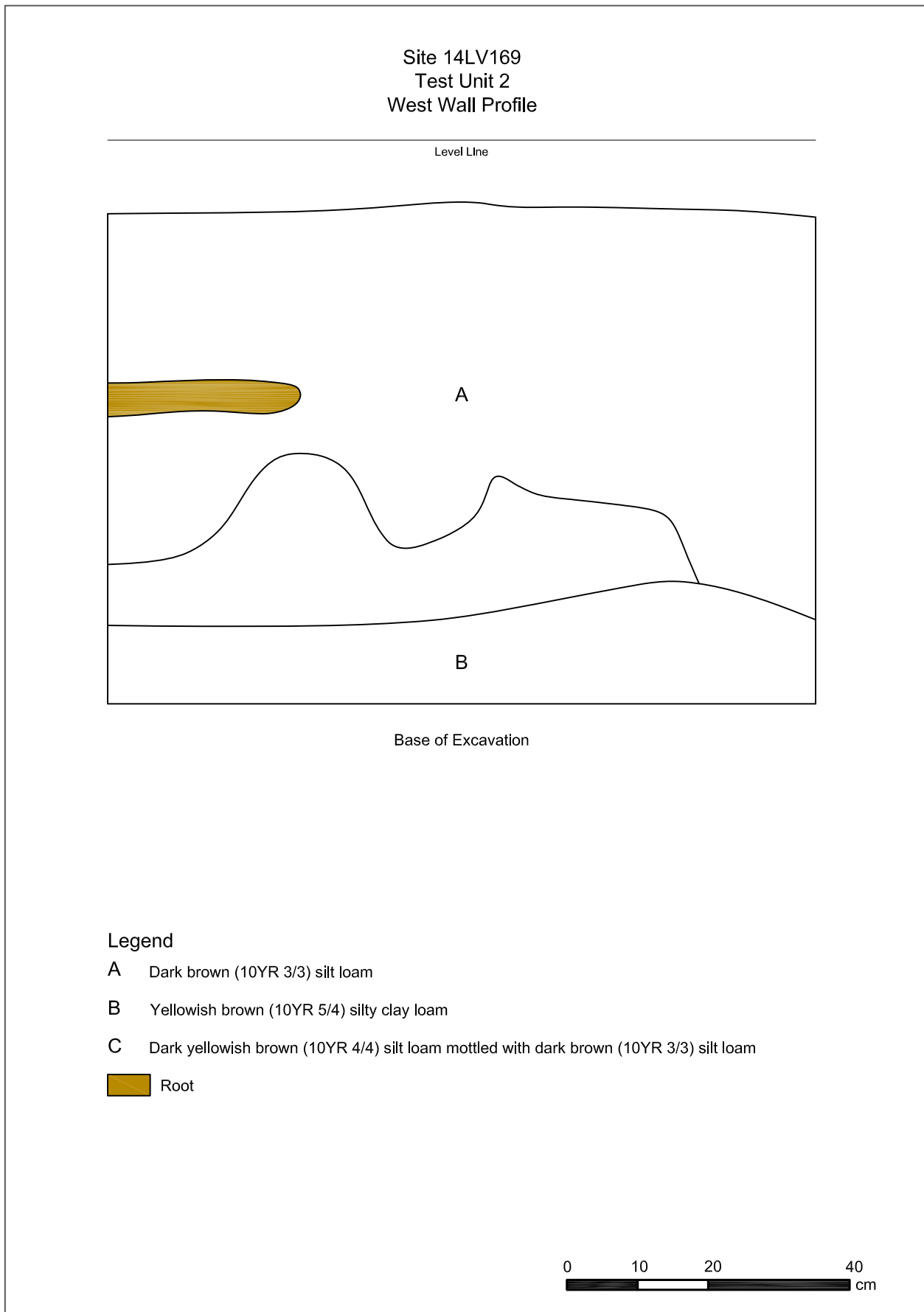


FIGURE 7: Profile of Test Unit 2 at Site 14LV169



PLATE 5: Profile of Test Unit 2 at Site 14LV169, View West.

TABLE 9

ARTIFACT DISTRIBUTION BY EXCAVATION LEVEL IN TEST UNIT 2 AT SITE 14LV169

ARTIFACT TYPE	1	2	3	4	5	6	7	TOTAL
Biface Reduction Flake	--	8	--	--	--	--	--	8
Flake Fragment	--	3	--	--	--	--	--	3
Charcoal	--	4	--	--	--	--	--	4
Bolt	-	1	--	--	--	--	--	1
Brick	--	--	1	--	--	--	--	1
Iron Ring	--	--	1	--	--	--	--	1
Coal Slag	--	--	1	--	--	--	--	1
Container Glass	--	1	1	--	--	--	--	2
Total	0	17	4	0	0	0	0	21

c. Test Unit 3

Test Unit 3 was placed on the southeastern part of the site at grid North 982 to 983, East 1030 to 1031 (see Figure 5). During the Phase II survey three shovel tests within 5 meters of the test unit yielded a total of four pieces of chipped stone debitage and the small stemmed projectile point shown above in Plate 3. The five lithic artifacts all came from the Ap horizon.

The 1-meter-square unit was excavated in 10 arbitrary levels to a depth of 110 centimeters below datum (100 centimeters bgs). The unit datum was near the northwest corner of the unit. Three strata were observed in the unit (Figure 8; Plate 6). The Ap/A horizon was composed of very dark grayish brown (10YR 3/2) silt loam and was 58 centimeters thick. This transitioned into an AB horizon of dark brown (7.5 YR 3/2) silty clay loam mottled with brown 10YR 4/3 silty clay loam to a depth of 75 centimeters bgs. The third stratum (Bt horizon) consisted of dark yellowish brown (10YR 4/4) clay loam.

Prehistoric artifacts in Test Unit 3 included one ceramic body sherd, four early reduction flakes, 13 biface reduction flakes, one finishing flake, three pieces of block shatter, and 46 limestones (Table 10). Most of the artifacts were in the plowzone to a depth of 30 centimeters bgs, but a few were recovered as deep as 80 centimeters bgs, probably as a result of natural forces such as rodent and worm burrowing, deeply penetrating roots, and freeze and thaw cracking.

Historic artifacts from the test unit included 19 brick fragments, 10 mortar fragments, two pieces of coal, one piece of coal slag, one fragment of container glass, and two pieces of unidentified metal. The 35 historic artifacts were found primarily in the plowzone (N=30, 85.7%), but four were found between 30 and 40 centimeters bgs and one was present as deep as 50 centimeters bgs.

The prehistoric ceramic sherd was tempered with crushed quartz and was smooth on both surfaces. It was recovered from the first 10 centimeters in the unit. Of the 21 lithic artifacts, three were fashioned from Smokey Hill Jasper, five were of Plattsmouth chert, seven were of Toronto chert, three were from identified chert, one was of Peoria chert, one was of Florence C chert, and one appears to be made of chalcedony. Three of the artifacts of Plattsmouth chert, two of Toronto chert, the Peoria chert item, and the three unidentified chert artifacts were from heated material.

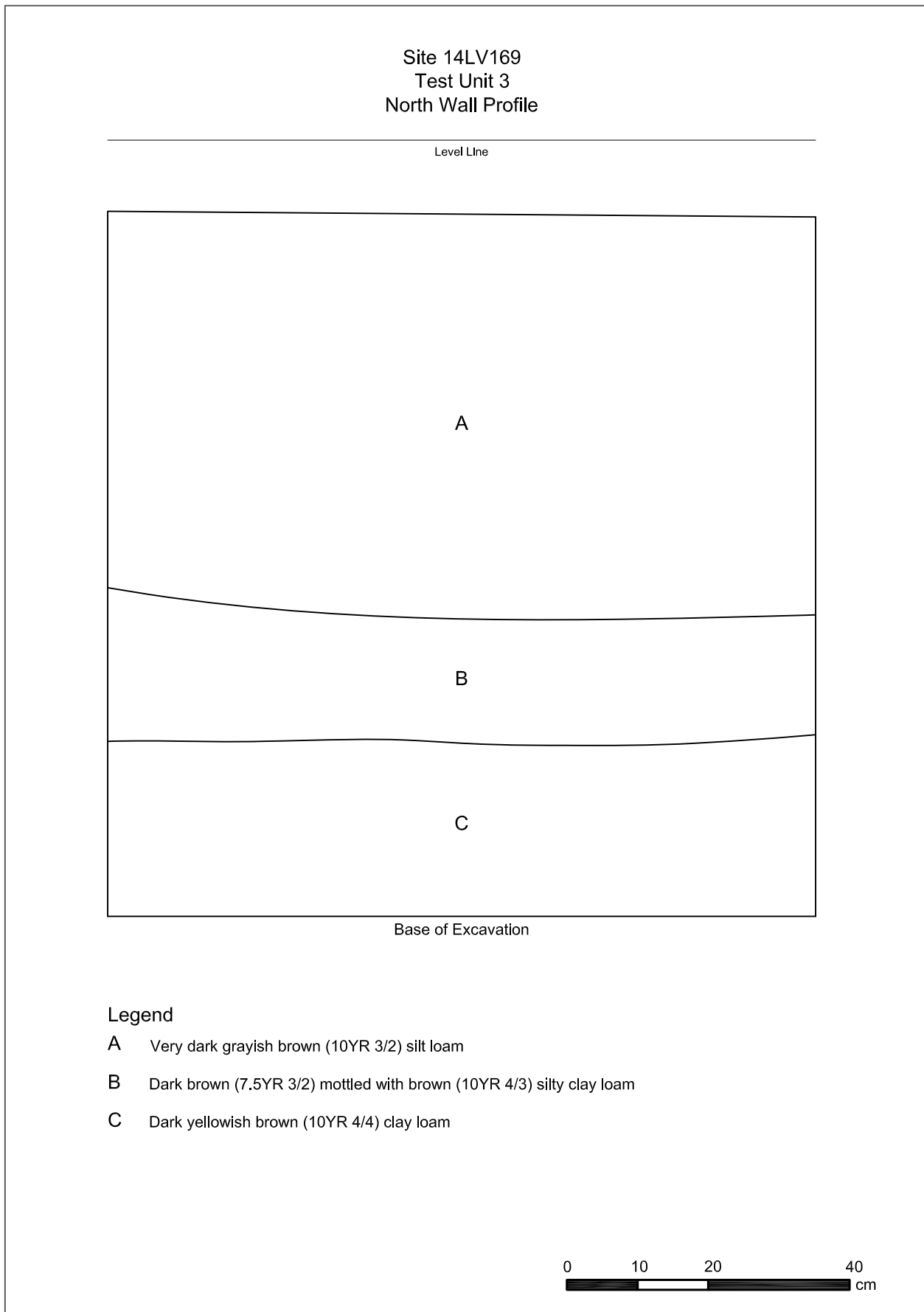


FIGURE 8: Profile of Test Unit 3 at Site 14LV169



PLATE 6: Profile of Test Unit 3 at Site 14LV169, View North.

TABLE 10

ARTIFACT DISTRIBUTION BY EXCAVATION LEVEL IN TEST UNIT 3 AT SITE 14LV169

ARTIFACT TYPE	1	2	3	4	5	6	7	8	TOTAL
Early Reduction Flake	2	1	--	1	--	--	--	--	4
Biface Reduction Flake	--	4	4	--	1	2	--	2	13
Finishing Flake	--	--	1	--	--	--	--	--	1
Block Shatter	--	1	1	1	--	--	--	--	3
Ceramic Body Sherd	1	--	--	--	--	--	--	--	1
Rock/Stone	4	8	33	1	--	--	--	--	46
Brick	4	3	11	--	1	--	--	--	19
Coal	--	1	1	--	--	--	--	--	2
Mortar	3	3	--	4	--	--	--	--	10
Coal Slag	1	--	--	--	--	--	--	--	1
Container Glass	1	--	--	--	--	--	--	--	1
Unidentified Metal	--	2	--	--	--	--	--	--	2
Total	16	23	51	7	2	2	0	2	103

d. Test Unit 4

Test Unit 4 was located in the east-central portion of Site 14LV169 at grid North 992 to 993, East 1023 to 1024 (see Figure 5). During the Phase II survey three shovel tests within 5 meters of the unit yielded a total of six chipped stone debitage and the middle of the serrated edged Scallorn variety arrow point shown in Plate 3. The artifacts were all found in the Ap horizon.

The 1-meter-square unit was excavated in six arbitrary levels to a depth of 70 centimeters below datum (60 centimeters bgs). The unit datum was near the northwest corner of the unit. Three strata were observed in Test Unit 4 (Figure 9; Plate 7). The Ap horizon was 10 centimeters thick and composed of very dark grayish brown (10YR 3/2) silt loam. From 10 to 42 centimeters bgs the matrix of the Bw horizon was brown (10YR 4/3) silt loam. Below 42 centimeters the Bt horizon was dark yellowish brown (10YR 4/4) silty clay loam

Only eight prehistoric artifacts were recovered from Test Unit 4: one finishing flake of Winterset chert, one piece of block shatter from heated Plattsmouth chert, and six limestones (Table 11). The two pieces of chipped stone debitage was from the top of the Bw horizon in Level 2. The limestone was from Level 3. Historic artifacts included 15 brick fragments and one mortar fragment found in the Bw horizon to 40 centimeters bgs.

TABLE 11

ARTIFACT DISTRIBUTION BY EXCAVATION LEVEL IN TEST UNIT 4 AT SITE 14LV169

ARTIFACT TYPE	1	2	3	4	5	6	TOTAL
Finishing Flake	--	1	--	--	--	--	1
Block Shatter	--	1	--	--	--	--	1
Rock/Stone	--	--	6	--	--	--	6
Brick	--	2	4	9	--	--	15
Mortar	--	--	--	1	--	--	1
Total	0	4	10	10	0	0	24

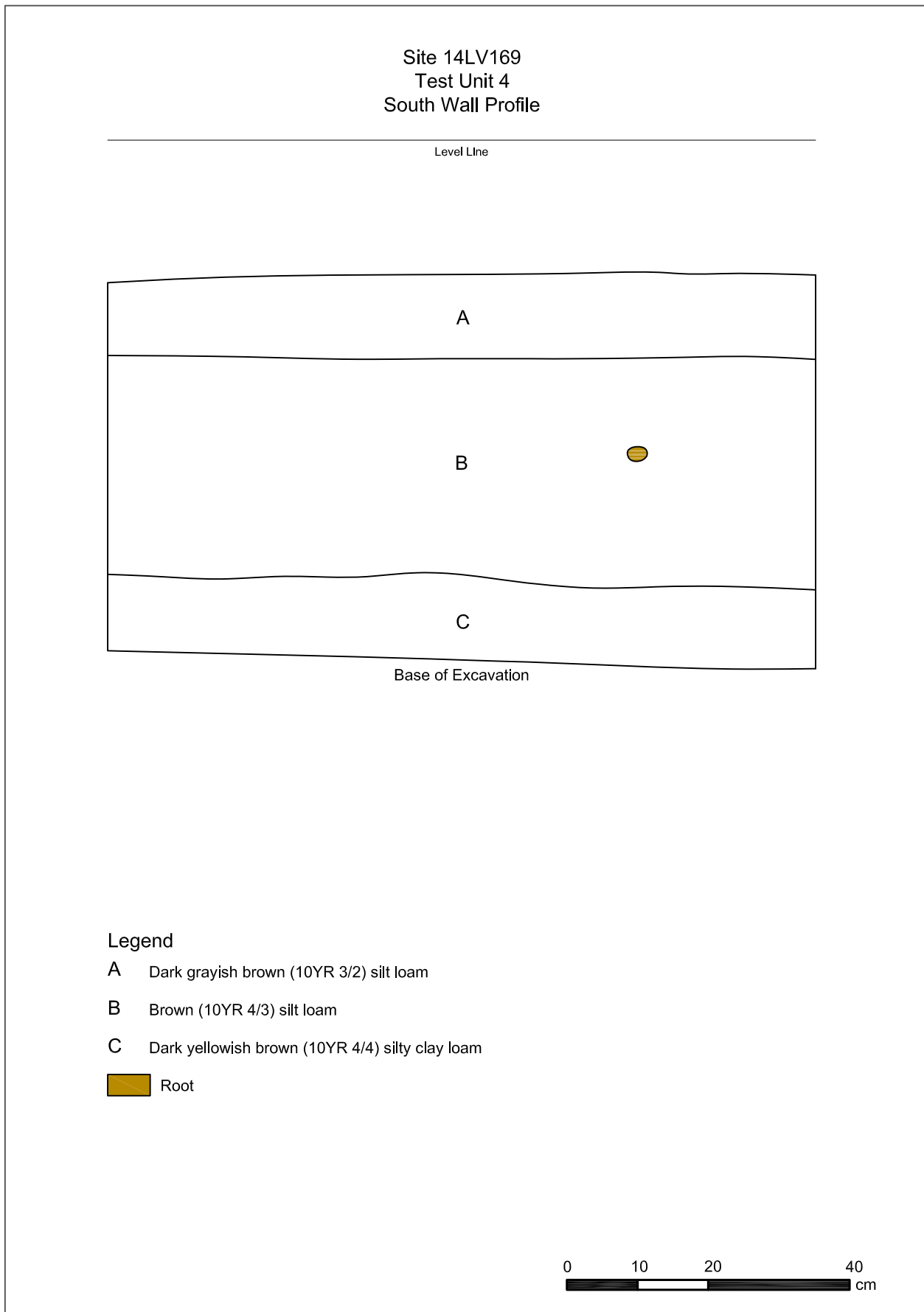


FIGURE 9: Profile of Test Unit 4 at Site 14LV169



PLATE 7: Profile of Test Unit 4 at Site 14LV169, View South.

e. Test Unit 5

Test Unit 5 was situated in the west-central portion of the site at grid North 992 to 993, East 1003 to 1004 (see Figure 5). During the Phase II survey three shovel tests within 5 meters of the unit included a total of five flakes from the Ap horizon. Test Unit 5 was 1 meter square and excavated in six arbitrary levels to a depth of 70 centimeters below datum (60 centimeters bgs). The unit datum was near the northwest corner of the unit.

Three strata were observed in the unit (Figure 10; Plate 8). The Ap horizon was up to 32 centimeters thick and was composed of very dark grayish brown (10YR3/2) silt loam. The underlying Bw horizon at 32 to 51 centimeters bgs was dark brown (10YR 3/3) silty clay loam. The Bt horizon was brown (10YR 4/3) silty clay loam mottled with yellowish brown (10YR 5/8) silty clay loam.

The prehistoric assemblage from Test Unit 5 included one early reduction flake of Toronto chert, two biface reduction flakes of heated Plattsmouth chert and heated silicified sandstone, one flake fragment of heated Plattsmouth chert, two pieces of block shatter of heated Plattsmouth chert, one very small fragment of orange material believed to be ochre, and one burned shale fragment. Seven of the eight artifacts were found in the Ap horizon; one biface reduction flake was found in the Bw horizon in Level 4 (Table 12).

The 20 brick fragments collected from the Ap horizon accounted for most of the historic artifacts from Test Unit 5. Also recovered from the Ap horizon were a piece of roofing slate, two fragments of container glass, one window glass sherd, and one unidentified nail.

TABLE 12

ARTIFACT DISTRIBUTION BY EXCAVATION LEVEL IN TEST UNIT 5 AT SITE 14LV169

ARTIFACT TYPE	1	2	3	4	5	6	TOTAL
Early Reduction Flake	--	1	--	--	--	--	1
Biface Reduction Flake	--	1	--	1	--	--	2
Flake Fragment	1	--	--	--	--	--	1
Block Shatter	--	2	--	--	--	--	2
Possible Ochre	--	--	1	--	--	--	1
Rock/Stone	--	--	1	--	--	--	1
Brick	11	8	1	--	--	--	20
Roofing Slate	--	1	--	--	--	--	1
Container Glass	--	2	--	--	--	--	2
Window Glass	--	1	--	--	--	--	1
Unidentified Nail	--	1	--	--	--	--	1
Total	12	17	3	1	0	0	33

f. Discussion

Five test units, each 1 meter square in size, were excavated at Site 14LV169 during the Phase III site evaluation investigations. The units were spaced to test different portions of the site and were located where two projectile points and clusters of positive shovel tests were situated. In Test Units 1, 2, and 3, the Ap horizon was indistinguishable from the underlying A horizon. In Test Units 4 and 5, which were in the center of the site, the Ap horizon was directly above a Bw horizon. The surface of the site is sufficiently level that the difference cannot be explained by the presence of a swale (see Plates 1 and 2). It may be that the central part of the site was slightly higher before the landscape was graded.

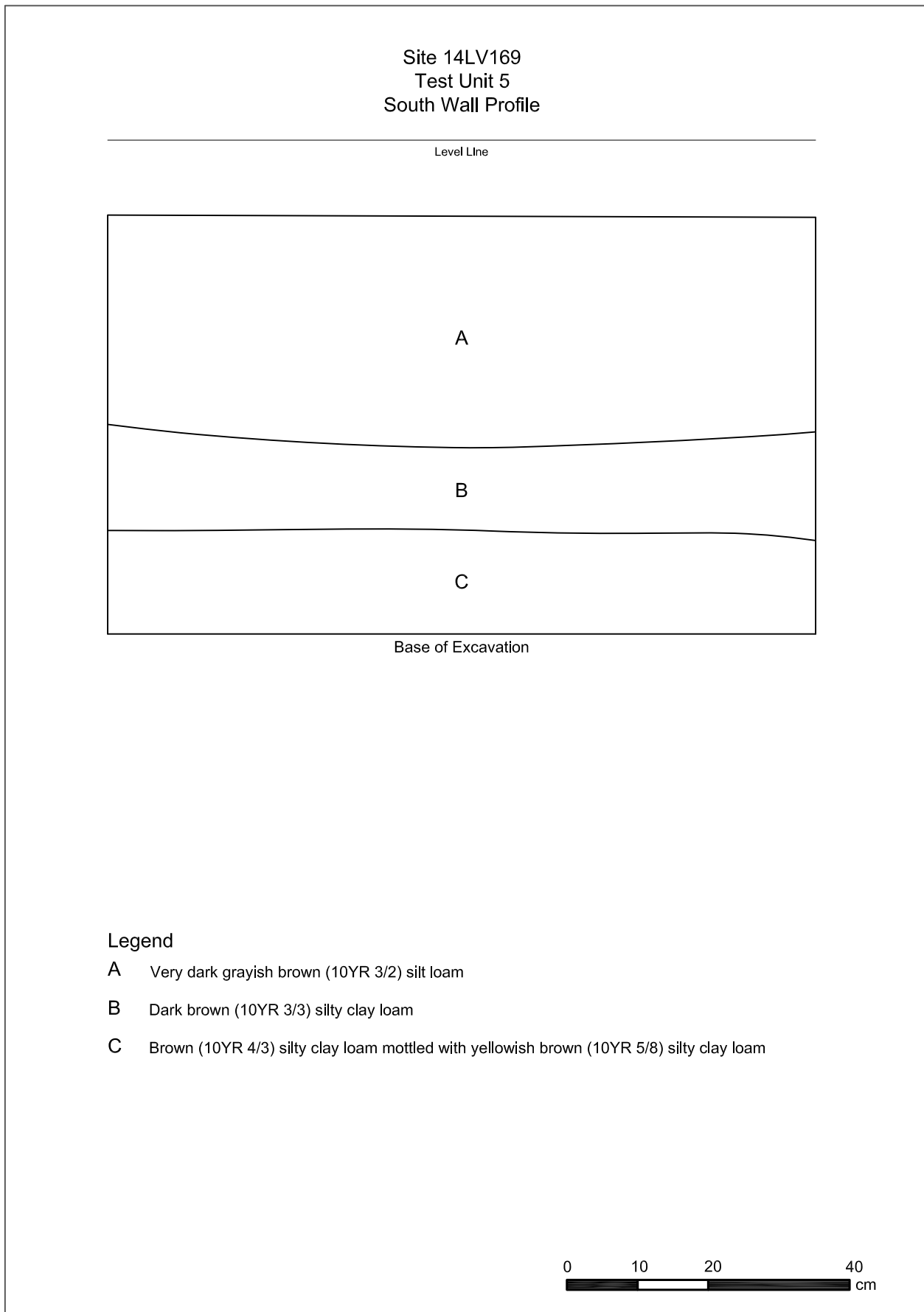


FIGURE 10: Profile of Test Unit 5 at Site 14LV169



PLATE 8: Profile of Test Unit 5 at Site 14LV169, View South.

Table 13 shows the distribution of artifacts by test unit. Test Units 1 and 3 included the highest numbers of prehistoric artifacts (N=82 and N=68, respectively). Discounting the high number of limestones from these two units, Test Unit 1 yielded 21 lithic debitage and six pottery sherds, and Test Unit 3 included 21 debitage and one pottery sherd. Eleven chipped stone debitage were in Test Unit 2, two debitage in Test Unit 4, and six debitage in Test Unit 5. This unit also contained a small piece of orange mineral thought to be ochre.

TABLE 13
ARTIFACT DISTRIBUTION BY TEST UNIT AT SITE 14LV169

ARTIFACT TYPE	TU 1	TU 2	TU 3	TU 4	TU 5	TOTAL
Early Reduction Flake	3	--	4	--	1	8
Biface Reduction Flake	10	8	13	--	2	33
Finishing Flake	--	--	1	1	--	2
Flake Fragment	7	3	--	--	1	11
Block Shatter	1	--	3	1	2	7
Possible Ochre	--	--	--	--	1	1
Ceramic Body Sherd	6	--	1	--	--	7
Rock/Stone	55	--	46	6	1	108
Charcoal	1	4	--	--	--	5
Bolt	--	1	--	--	--	1
Brick	5	1	19	15	20	60
Coal	--	--	2	--	--	2
Iron Ring	--	1	--	--	--	1
Mortar	6	--	10	1	--	17
Roofing Slate	--	--	--	--	1	1
Coal Slag	--	1	1	--	--	2
Container Glass	2	2	1	--	2	7
Window Glass	--	--	--	--	1	1
Unidentified Metal	--	--	2	--	--	2
Unidentified Nail	--	--	--	--	1	1
Total	96	21	103	24	33	277

Table 14 shows the distribution of artifacts from the five test units by 10-centimeter-thick excavation levels. With the exception of the two biface reduction flakes at 50 to 60 centimeters bgs and the two biface reduction flakes at 70 to 80 centimeters bgs in Test Unit 3, prehistoric artifacts were recovered from the Ap/A horizon in Test Units 1 to 4 and from the Ap and Bw horizons in Test Unit 5. The prehistoric materials typically were mixed with small amounts of historic artifacts. Thus, the depositional context appears disturbed across the site.

Table 15 shows the various kinds of lithic artifact by raw material. The most common raw material is Plattsmouth chert (52.5%), followed by Toronto Chert (18.0%), unidentified chert (11.5%), Smoky Hill Jasper (6.6%), and Winterset chert (4.9%). Florence C and Peoria chert, chalcedony, and silicified sandstone each account for 1.6%. Plattsmouth, Toronto, and Winterset cherts were available from the local Kansas City group (Logan 1988). Florence chert originates in the Permian formations of the Flint Hills of eastern Kansas (Padilla and Ritterbush 2005). Some materials may have come from glacial till exposures in nearby stream banks.

Plate 9 shows examples of the lithic material recovered. Heat treatment of stone is common (Table 16). All stages of lithic reduction are represented, though there are only two finishing flakes and no tools were found during the site evaluation activities. The material identified from the Phase III shows a preference for Plattsmouth chert; the bulk of the material identified during the Phase II survey is Florence chert. The lithic material from the Phase II was examined during identification of the Phase III assemblage, and as the kinds of lithic artifacts recovered from the Phase II are comparable with those from the Phase



PLATE 9: Chipped Stone Tools from Site 14LV169.

TABLE 14

ARTIFACT DISTRIBUTION BY DEPTH BELOW GROUND SURFACE AT SITE 14LV169

ARTIFACT TYPE	1	2	3	4	5	6	7	8	TOTAL
Early Reduction Flake	2	4	--	2	--	--	--	--	8
Biface Reduction Flake	--	15	11	1	2	2	--	2	33
Finishing Flake	--	1	1	--	--	--	--	--	2
Flake Fragment	1	4	4	2	--	--	--	--	11
Block Shatter	--	5	1	1	--	--	--	--	7
Possible Ochre	--	--	1	--	--	--	--	--	1
Ceramic Body Sherd	--	1	1	5	--	--	--	--	7
Rock/Stone	4	29	62	13	--	--	--	--	108
Charcoal	--	4	--	--	1	--	--	--	5
Bolt	--	1	--	--	--	--	--	--	1
Brick	16	17	17	9	1	--	--	--	60
Coal	--	1	1	--	--	--	--	--	2
Iron Ring	--	--	1	--	--	--	--	--	1
Mortar	3	6	3	5	--	--	--	--	17
Roofing Slate	--	1	--	--	--	--	--	--	1
Slag	1	--	1	--	--	--	--	--	2
Container Glass	1	5	1	--	--	--	--	--	7
Window Glass	--	1	--	--	--	--	--	--	1
Unidentified Metal	--	2	--	--	--	--	--	--	2
Unidentified Nail	--	1	--	--	--	--	--	--	1
Total	28	98	105	38	4	2	0	2	277

TABLE 15

ARTIFACT CLASS/TYPE BY MATERIAL TYPE FROM TEST UNITS AT SITE 14LV169

	EARLY REDUCT. FLAKE	BIFACE REDUCT. FLAKE	FINISHING FLAKE	FLAKE FRAGMENT	BLOCK SHATTER	TOTAL
Plattsmouth Chert	4	18	--	6	4	32
Toronto Chert	1	5	1	1	3	11
Winterset Chert	--	1	1	1	--	3
Florence C Chert	--	1	--	--	--	1
Peoria Chert	1	--	--	--	--	1
Chalcedony	--	1	--	--	--	1
Smoky Hill Jasper	2	2	--	--	--	4
Silicified Sandstone	--	1	--	--	--	1
Unidentified Chert	--	4	--	3	--	7
Total	8	33	2	11	7	61

III site testing investigation, the difference appears to be because of uneven distribution of lithic materials across the site rather than categorization by different analysts.

Seven pottery sherds were collected from the site during the Phase III, six from Test Unit 1 and one from Test Unit 3 (Plate 10). All of the sherds are small and none exhibit exterior or interior surface treatment. One sherd is grit-tempered and six have a crushed quartz temper. The sherds are orange to buff in color and moderately thin. Lack of surface decoration or rims prevented assigning the ceramics to a specific culture.

The Phase III site evaluation investigation of Site 14LV169 has yielded 61 pieces of chipped stone debitage, seven small ceramic body sherds, one very small fragment of possible ochre, and 108



PLATE 10: Pottery Sherds from Site 14LV169.

TABLE 16

HEAT-TREATED ARTIFACT CLASS/TYPE BY MATERIAL TYPE FROM TEST UNITS AT SITE 14LV169

	EARLY REDUCT. FLAKE	BIFACE REDUCT. FLAKE	FINISHING FLAKE	FLAKE FRAGMENT	BLOCK SHATTER	TOTAL
Plattsmouth Chert	1	6	--	3	4	14
Toronto Chert	--	1	--	--	1	2
Winterset Chert	--	--	--	--	--	0
Florence C Chert	--	--	--	--	--	0
Peoria Chert	1	--	--	--	--	1
Chalcedony	--	--	--	--	--	0
Smoky Hill Jasper	--	--	--	--	--	0
Silicified Sandstone	--	1	--	--	--	3
Unidentified Chert	--	3	--	--	--	3
Total	2	11	0	3	5	21

unmodified limestones. The prehistoric assemblage from the Phase II survey completed by Louis Berger (Schoen and Deiber 2011) contributed one Scallorn point, one small stemmed point, one late-stage biface, one large utilized flake, 63 debitage, and one fire-cracked rock. The seven ceramic sherds are not diagnostic; they are body sherds that lack decoration or surface treatment that might indicate cultural affiliation. The stemmed projectile point from Shovel Test A-14 S20 E10 near Test Unit 4 appears to be a reworked point from an undetermined type. The incomplete serrated Scallorn point from Shovel Test A-14 S5 E 5 near Test Unit 3 is the only temporally distinct artifact and that merely supports a Late Prehistoric period occupation. No carbonized material suitable for a radiocarbon date was found. It may be possible that the site is associated with the unnamed Late Woodland Kansas City period (AD 700 to 900), which is defined by grit-tempered, cordmarked globular pottery and Scallorn-like arrow points (O'Brien 1984).

Notched and unnotched arrow points are prominent lithic artifacts at Central Plains Tradition sites. Side-notched, double side-notched, and side- and basal-notched are typical varieties, particularly at Upper Republican and Smoky Hill phase sites (Roper 2006). Unnotched varieties are more common at Nebraska phase sites (Bozell and Ludwickson 1994). Triangular and ovoid bifaces are found as well as diamond-shaped, alternately beveled "Harahey" knives. Drills are a usual part of lithic assemblages as are endscrapers. Less common are sidescrapers and retouched or modified flakes (Roper 2006). These typical kinds of lithic artifacts appear to be absent at Site 14LV169, with the exception of the three tools found during the Phase II survey. Similarly, there is a notable absence of pottery. Only seven body sherds were recovered, none of them shell tempered or decorated. Ceramics are expected to be better represented at a site of this time period.

No archaeological features were found that suggest the presence of a house or activity areas at Site 14LV169. No cultigens were discovered and no bone tools or bone from processing animals for food were recovered to enhance knowledge of subsistence practices. The recovered assemblage lacks both volume and diversity of artifact types so that significant research questions cannot be meaningfully addressed. The absence of diagnostic artifacts and radiocarbon dates makes it impossible to attribute site to a specific time period. The prehistoric materials are nearly all from the upper 40 centimeters of the site and predominantly from the plowzone. They are mixed with historic artifacts and are not situated in contexts with good integrity. Other than providing new information about lithic reduction activities and selection of lithic material for tools, the site has low potential for contributing important new information about the prehistory of Leavenworth or the broader region. For all these reasons, Louis Berger recommends that Site 14LV169 be considered not eligible for listing in the National Register under Criterion D.

C. SITE 14LV171

Map Source:	Leavenworth, KS, 7.5' Series USGS Topographic Quad (1982)
Site Type:	Habitation
Cultural Affiliation:	Late Prehistoric/Middle Ceramic
Site Size:	50.0 meters (164.0 feet) N to S by 86.0 meters (282.2 feet) E to W 4,300.0 square meters (46,280.8 square feet)
Phase II Methods:	Pedestrian survey and shovel testing
Phase III Methods:	Excavation of five 1x1 meter test units
Area Excavated:	124 Shovel tests and 5 test units (54.6 sq. meters/587.5 sq. feet)
Cultural Materials Collected:	Phase II: 2 Pottery sherds, 2 side-notched arrow point bases, 1 core, 1 utilized flake, and 46 debitage Phase III: 3 Pottery sherds, 1 burned clay, 1 drill base, 1 biface tip, and 23 debitage
Landform:	Uplands
Elevation:	860 feet above mean sea level
Land Use/Surface Visibility:	Pasture (Less than 10% surface visibility)
Soil Type:	Sharpsburg silt loam 4 to 8% slopes (7542)
Site Disturbance:	Cultivation and erosion
Relation to Project Limits:	100% within Alternative Hybrid; 100% outside Alternative FCI East-1 and Alternative HYBRID
National Register Eligibility:	Not eligible
Recommendations:	No additional archaeological investigations

Site 14LV171 is the location of a moderate-sized habitation attributed to the Late Prehistoric (Middle Ceramic) period based on projectile point types recovered from the site (Schoen and Deiber 2011). The site is situated in the uplands in the proposed West Site (Plates 11 and 12).

1. Summary of Phase II Intensive Survey

During the Phase II Intensive survey in 2011, 124 shovel tests were excavated within a 30-meter grid. Shovel Test TR 11-19 yielded one utilized flake from the Ap horizon. Shovel Test 12-19 included one flake fragment in the Ap horizon. Radial shovel tests that were excavated at 5 and 10 meters from these two positive shovel tests to define site boundaries resulted in 39 additional shovel tests with artifacts. Shovel testing determined that Site 14LV171 measured 50.0 meters north to south by 86.0 meters east to west.

Shovel tests were excavated to between 40 and 90 centimeters bgs. The soil profiles in the shovel tests included an Ap horizon of very dark grayish brown (10YR 3/2) to dark brown (10YR 3/3) silt loam that ranged from 20 to 45 centimeters thick, but typically was about 30 to 35 centimeters thick. Below the surface layer was an A horizon of black (10YR 2/1) to dark gray (10YR 3/1) silty clay loam that was 12 to 20 centimeters thick. The soil boundary was clear. The third stratum was a Bt horizon of yellowish brown (10YR 5/4 to 10YR 5/6) silty clay loam. This soil was sometimes mottled with about 20 percent dark grayish brown (10YR 4/2) or brown (10YR 5/3) silty clay loam. The boundary between the A and Bt horizons usually was gradual.

Two projectile points, 46 pieces of chipped stone debitage, one flake core, one utilized flake, and two prehistoric ceramics were recovered from Site 14LV171 during the Phase II survey (Tables 17 and 18). The points are both weakly shouldered, side-notched base fragments made from Florence chert (Plate 13). The flake core and utilized flake are both made from Florence chert. The majority of the chert found at the site during the Phase II survey was Florence (N=35, 89.0% by weight) with smaller amounts of jasper (N=13, 10.8% by weight), and unidentified chert (N=2, 0.2% by weight). Most of the chert was not heat-



PLATE 11: Overview of Site 14LV171, View Southeast.



PLATE 12: Overview of Site 14LV171, View North.



PLATE 13: Points and Pottery Sherd from Phase II Survey at Site 14LV171

treated (N=41, 45.5% by weight). Cobble cortex was observed on 11 of the debitage (21.3% by weight) and block cortex was observed on five (16.4% by weight). The two sherds refit and are plain or smoothed with quartz temper. As with the other sites identified during the Phase II survey, nearly all of the artifacts came from the Ap horizon (N=50, 96%). One piece of block shatter was found on the ground surface, and one biface reduction flake was recovered from the Bt horizon.

TABLE 17

ARTIFACT CLASS/TYPE BY STRATUM FOR SITE 14LV171

ARTIFACT CLASS/TYPE	SOIL STRATUM			Total
	Surface	Ap	A	
Lithics	1	48	1	50
Projectile Point	--	2	--	2
Flake Core	--	1	--	1
Utilized Flake	--	1	--	1
Decortication Flake	--	3	--	3
Early Reduction Flake	--	6	--	6
Biface Reduction Flake	--	12	1	13
Finishing Flake	--	4	--	4
Flake Fragment	--	17	--	17
Block Shatter	1	2	--	3
Prehistoric Ceramic	--	2	--	2
Body Sherd	--	2	--	2
Total	1	50	1	52

TABLE 18

ARTIFACT CLASS/TYPE BY MATERIAL TYPE FOR SITE 14LV171

ARTIFACT CLASS/TYPE	MATERIAL TYPE			Total
	Florence Chert	Jasper	Chert	
Projectile Point	2	--	--	2
Flake Core	1	--	--	1
Utilized Flake	1	--	--	1
Decortication Flake	2	1	--	3
Early Reduction Flake	5	1	--	6
Biface Reduction Flake	9	4	--	13
Finishing Flake	3	--	1	4
Flake Fragment	10	6	1	17
Block Shatter	2	1	--	3
Total	35	13	2	50

Site 14LV171 was interpreted to be the location of a moderately sized prehistoric camp tentatively attributed to the Late Prehistoric or Middle Ceramic cultural period based on the base of the side-notched arrow points, two small pottery sherds, and the presence of three Late Prehistoric sites in the vicinity (Schoen and Deiber 2011). Approximately one-third of the shovel tests (N=41) excavated at the site yielded artifacts. The types of artifacts recovered suggest a location where prehistoric people were reducing chert cobbles into biface preforms and shaping tools such as arrow points, knives, drills, and scrapers. Although the site has been disturbed to some degree by bison wallowing, cultivation, and erosion, and although most artifacts were from the Ap horizon, the thickness of the Ap horizon and

presence of an A horizon suggested the possibility of intact subsurface deposits. The kinds of artifacts found at the site, the strong possibility of intact archaeological deposits, and the relationship of this site with other similar sites in the vicinity indicated that Site 14LV171 had good potential for contributing significant new information about the late prehistory of the Leavenworth locale and the broader region.

Based on the findings of the Phase II intensive survey, Louis Berger recommended that Site 14LV171 be considered potentially eligible for listing in the National Register under Criterion D. Louis Berger recommended avoidance of Site 14LV171 by any proposed construction or other ground disturbance activities. If the site could not be avoided, Louis Berger recommended that Phase III site evaluation be performed to determine whether the site has sufficient integrity and potential to answer important research questions regarding the prehistory of the locality and/or region (Schoen and Deiber 2011).

2. *Phase III Site Evaluation*

At the time of site testing to evaluate the National Register eligibility of Site 14LV171 in July 2014, the site area was still in use as a buffalo pasture. The ground surface had occasional scatters of brick, mortar, and drain tile fragments, which were concentrated near a drainage at the south end of the north to south oriented fence dividing the east and west pasture areas. These materials were likely refuse from the construction of prison facilities. The Trimble GPS unit was used to navigate to the location of Shovel Test 12-19. From this location a 5-meter grid was established over the site on magnetic north. A point 20 meters north of Shovel Test 12-19 was arbitrarily identified as grid North 1000, East 1000 (Figure 11).

a. *Test Unit 1*

Test Unit 1 was placed in the center of the site at grid North 971 to 972, East 1009 to 1010 (see Figure 11). During the Phase II survey two shovel tests situated within 5 meters of Test Unit 1 had yielded a total of seven chipped stone artifacts from the Ap horizon. Test Unit 1 was 1x1 meter in size and excavated in seven arbitrary 10-centimeter levels to a depth of 75 centimeters below datum (65 centimeters bgs). The unit datum was near the northeast corner of the unit. Three strata were observed in the unit. An O horizon of compacted humus was 14 centimeters thick, beneath which was an Ap horizon between 14 and 49 centimeters bgs. The A horizon was between 49 and 65 centimeters bgs. The O horizon was very dark brown (10YR 2/2) in color. The Ap horizon consisted of a very dark gray (10YR 3/1) silty clay loam. The A horizon was composed of a black (10YR 2/1) clay loam (Figure 12; Plate 14).

In Test Unit 1 prehistoric finds consisted of 11 pieces of chipped stone debitage, one biface tip, and the base of a chipped stone drill, all recovered from the Ap horizon up to a depth of 49 centimeters bgs (Table 19). Historic artifacts were also present in the Ap horizon and included six brick fragments, one iron bolt, six fence staples, 65 wire-drawn nails, six roofing nails, 20 unidentified metal fragments, one bison tooth fragment, and one plastic comb fragment.

The 13 lithic artifacts from Test Unit 1 include seven pieces of Plattsmouth chert, including the biface tip; five pieces of the Toronto chert, including the drill base; and one biface reduction flake of Winterset chert. Heating was present on six of the Plattsmouth chert artifacts—the biface tip, three biface reduction flakes, and two pieces of block shatter.

Figure 11 has been removed because it contains confidential information not for public distribution.

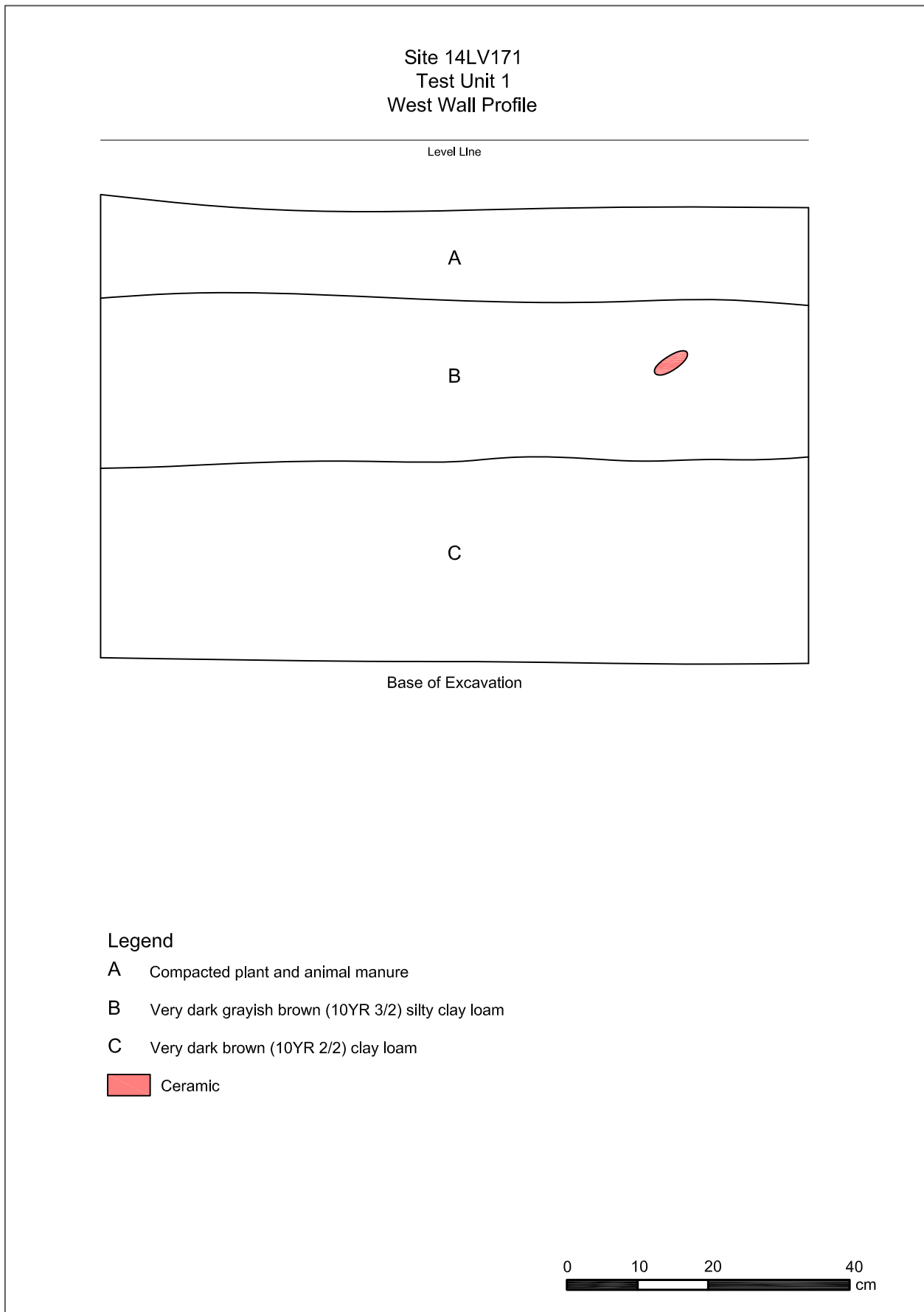


FIGURE 12: Profile of Test Unit 1 at Site 14LV171



PLATE 14: Profile of Test Unit 1 at Site 14LV171, View West.

TABLE 19

ARTIFACT DISTRIBUTION BY EXCAVATION LEVEL IN TEST UNIT 1 AT SITE 14LV171

ARTIFACT TYPE	1	2	3	4	5	6	7	8	TOTAL
Bison Tooth	1	--	--	--	--	--	--	--	1
Drill Base	--	--	--	1	--	--	--	--	1
Biface Tip	--	--	1	--	--	--	--	--	1
Early Reduction Flake	--	--	--	--	1	--	--	--	1
Biface Reduction Flake	--	--	2	1	4	--	--	--	7
Finishing Flake	--	--	1	--	--	--	--	--	1
Block Shatter	--	--	--	2	--	--	--	--	2
Bolt	--	--	1	--	--	--	--	--	1
Brick	--	--	1	4	1	--	--	--	6
Comb	--	--	1	--	--	--	--	--	1
Fence Staple	--	--	6	--	--	--	--	--	6
Roofing Nail	--	--	6	--	--	--	--	--	6
Wire	--	--	9	--	--	--	--	--	9
Wire Nail	--	--	65	--	--	--	--	--	65
Unidentified Metal	--	--	--	11	--	--	--	--	11
Total	1	0	93	19	6	0	0	0	119

b. Test Unit 2

Test Unit 2 was placed in the northern portion of the site at grid North 1004 to 1005, East 1014 to 1015 (see Figure 11). During the Phase II survey two positive shovel tests situated within 5 meters of Test Unit 2 each yielded one prehistoric artifact. Test Unit 2 was 1x1 meter in size and excavated in seven arbitrary 10-centimeter levels to a depth of 80 centimeters below datum (70 centimeters bgs). The unit datum was near the northeast corner of the unit. Three strata were observed in the unit. The Ap horizon was 32 centimeters thick and was composed of a dark grayish brown (10YR 4/2) silt loam (Figure 13; Plate 15). The A horizon on the south side of the unit was at 32 to about 46 centimeters bgs. On the north side, however, the A horizon pinched out and the Bt horizon was directly under the Ap horizon. The A horizon consisted of a dark yellowish brown (10YR 4/4) silty clay loam. The Bt horizon was present from 46 to the base of excavation at 70 centimeters bgs on the south side and from 32 to 70 centimeters bgs on the north side of the unit. The Bt horizon was yellowish brown (10YR 5/6) clay loam.

In Test Unit 2 prehistoric finds included only one piece of shatter and one biface reduction flake in the Ap horizon (Table 20). The biface reduction flake was made of Plattsmouth chert, and the block shatter was from an unidentified gray chert. No evidence of heat treatment was observed on either specimen. The two lithics were mixed with historic finds in the Ap horizon. Historic materials were as deep as 50 centimeters bgs. Historic artifacts included 11 brick fragments, two cement fragments, and one each of coal, mortar, coal slag, window glass, and unidentified material.

c. Test Unit 3

Test Unit 3 was placed in the eastern portion of the site at grid North 973 to 974, East 1034 to 1035 (see Figure 11). During the Phase II survey two positive shovel tests that were located within 5 meters of the test unit each yielded one prehistoric artifact. Test Unit 3 was 1 meter square in size and excavated in six arbitrary 10-centimeter levels to a depth of 65 centimeters below datum (55 centimeters bgs). The unit datum was placed near the northeast corner of the unit. Two strata were observed in the unit, an Ap horizon 35 centimeters thick underlain by an A horizon that extended from 35 centimeters to the base

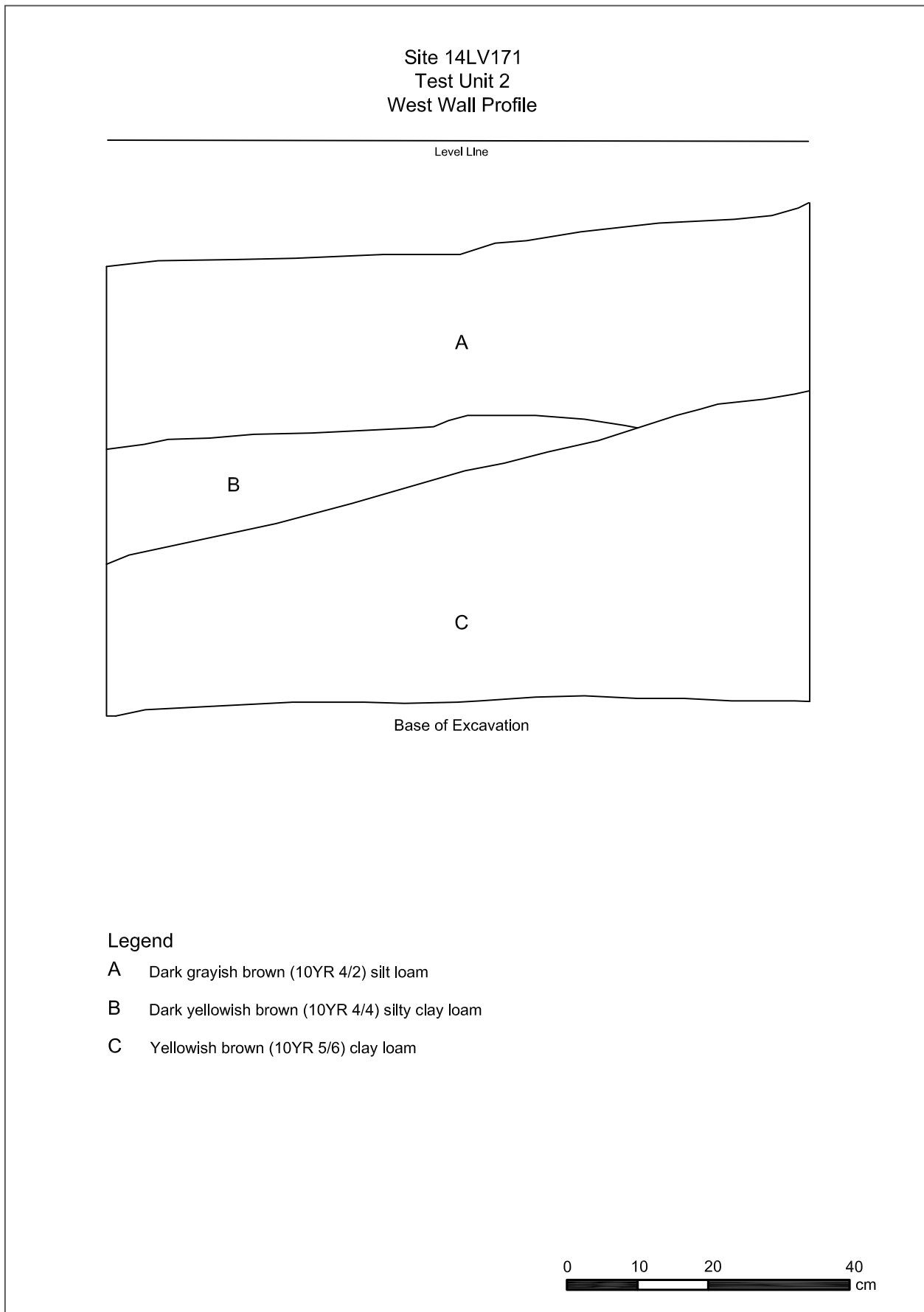


FIGURE 13: Profile of Test Unit 2 at Site 14LV171



PLATE 15: Profile of Test Unit 2 at Site 14LV171, View West.

TABLE 20

ARTIFACT DISTRIBUTION BY EXCAVATION LEVEL IN TEST UNIT 2 AT SITE 14LV171

ARTIFACT TYPE	1	2	3	4	5	6	7	8	TOTAL
Biface Reduction Flake	--	1	--	--	--	--	--	--	1
Block Shatter	--	1	--	--	--	--	--	--	1
Brick	--	4	3	--	4	--	--	--	11
Cement	--	--	--	--	2	--	--	--	2
Coal	--	--	--	1	--	--	--	--	1
Mortar	--	--	--	--	1	--	--	--	1
Slag	--	--	--	--	1	--	--	--	1
Window Glass	--	--	1	--	--	--	--	--	1
Unidentified Material	--	1	--	--	--	--	--	--	1
Total	0	7	4	1	8	0	0	0	20

of excavation at 55 centimeters bgs. The Ap horizon was composed of a dark grayish brown (10YR 3/2) silt loam. The A horizon consisted of a dark gray (10YR 3/1) clay loam (Figure 14; Plate 16). Although excavation ceased before the Bt horizon was reached, no definitively prehistoric artifacts were present, no historic artifacts were being found. The A horizon was below 30 centimeters bgs and the texture of the soil was similar to the clay loam Bt horizon identified elsewhere across the site.

In Test Unit 3 no chipped stone or prehistoric ceramic artifacts were recovered (Table 21), although the unmodified piece of limestone is assumed to be prehistoric in age. Historic artifacts from the Ap horizon between 10 and 35 centimeters bgs include five brick fragments and one cement fragment.

TABLE 21

ARTIFACT DISTRIBUTION BY EXCAVATION LEVEL IN TEST UNIT 3 AT SITE 14LV171

ARTIFACT TYPE	1	2	3	4	5	6	7	8	TOTAL
Rock/Stone	--	--	1	--	--	--	--	--	1
Brick	--	2	3	--	--	--	--	--	5
Cement	--	1	--	--	--	--	--	--	1
Total	0	3	4	0	0	0	0	0	7

d. Test Unit 4

Test Unit 4 was placed in the northwestern portion of the site at grid North 999 to 1000, East 990 to 991 (see Figure 11). During the Phase II survey two positive shovel tests were located within 5 meters of Test Unit 4 that produced a combined total of four chipped stone artifacts. The unit was 1x1 meter in size and excavated in eight arbitrary 10-centimeter levels to a maximum depth of 90 centimeters below datum (80 centimeters bgs). The unit datum was placed near the northwest corner of the unit. Four strata were observed in the unit. The Ap horizon was 20 centimeters thick and composed of very dark grayish brown (10YR 3/2) silt loam (Figure 15; Plate 17). A pocket of very dark gray (10YR 3/1) silt loam was below the Ap horizon in the northwest corner of the unit. Elsewhere the soil between 20 and 70 centimeters bgs was a Bw horizon of brown clayey silt loam mottled with dark brown (10YR 3/3) clayey silt loam. The Bt horizon began at 60 centimeters bgs on the north side of the unit and at 70 centimeters bgs on the south side of the unit. The Bt horizon was composed of very pale brown (10YR 7/4) silty clay loam mottled with yellowish brown (10YR 5/6) silty clay loam.

In Test Unit 4 one chipped stone flake and three sherds of undecorated prehistoric ceramic were recovered from the Bw horizon between 30 and 60 centimeters bgs (Table 22). One sherd exhibited

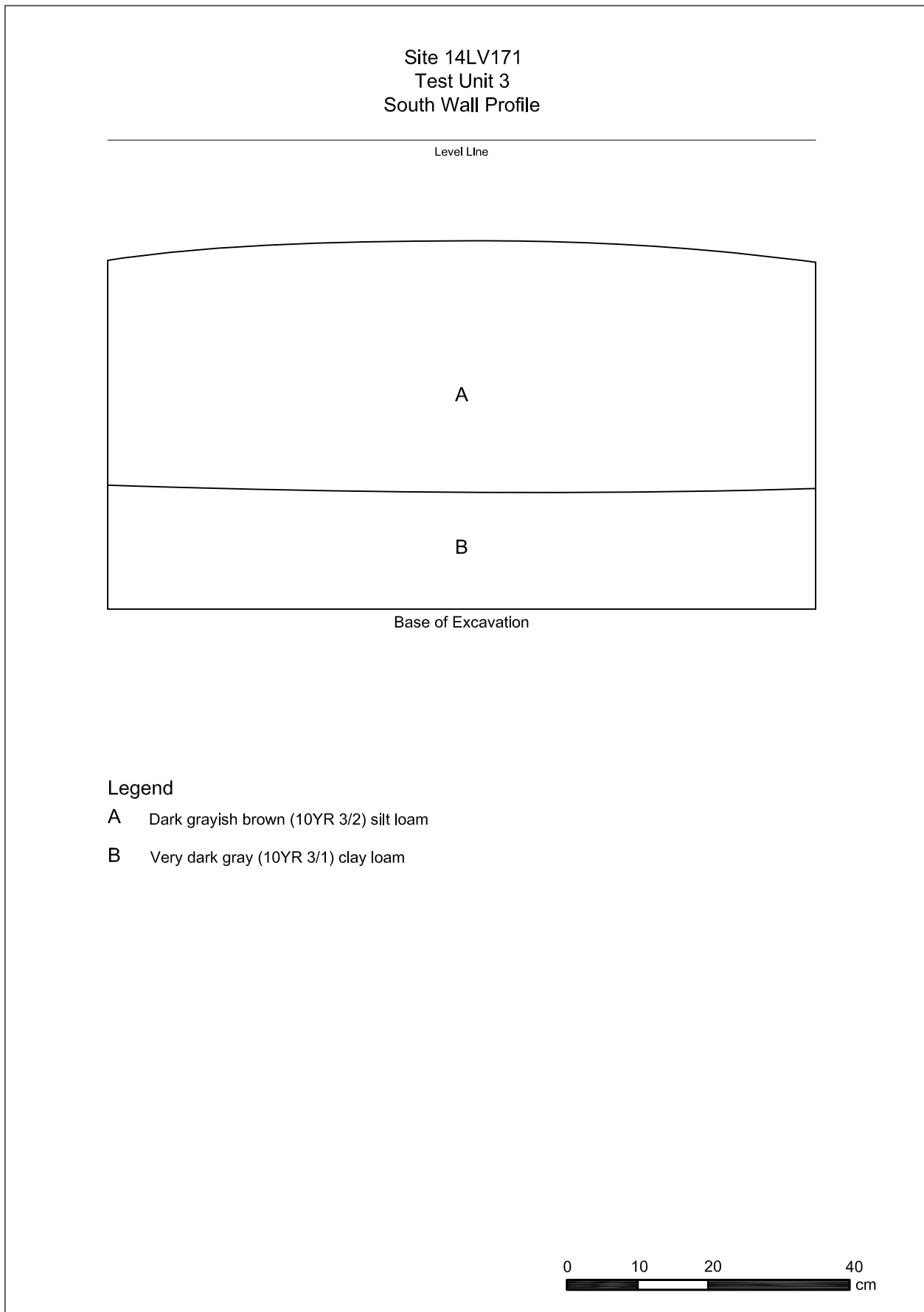


FIGURE 14: Profile of Test Unit 3 at Site 14LV171



PLATE 16: Profile of Test Unit 3 at Site 14LV171, View South.

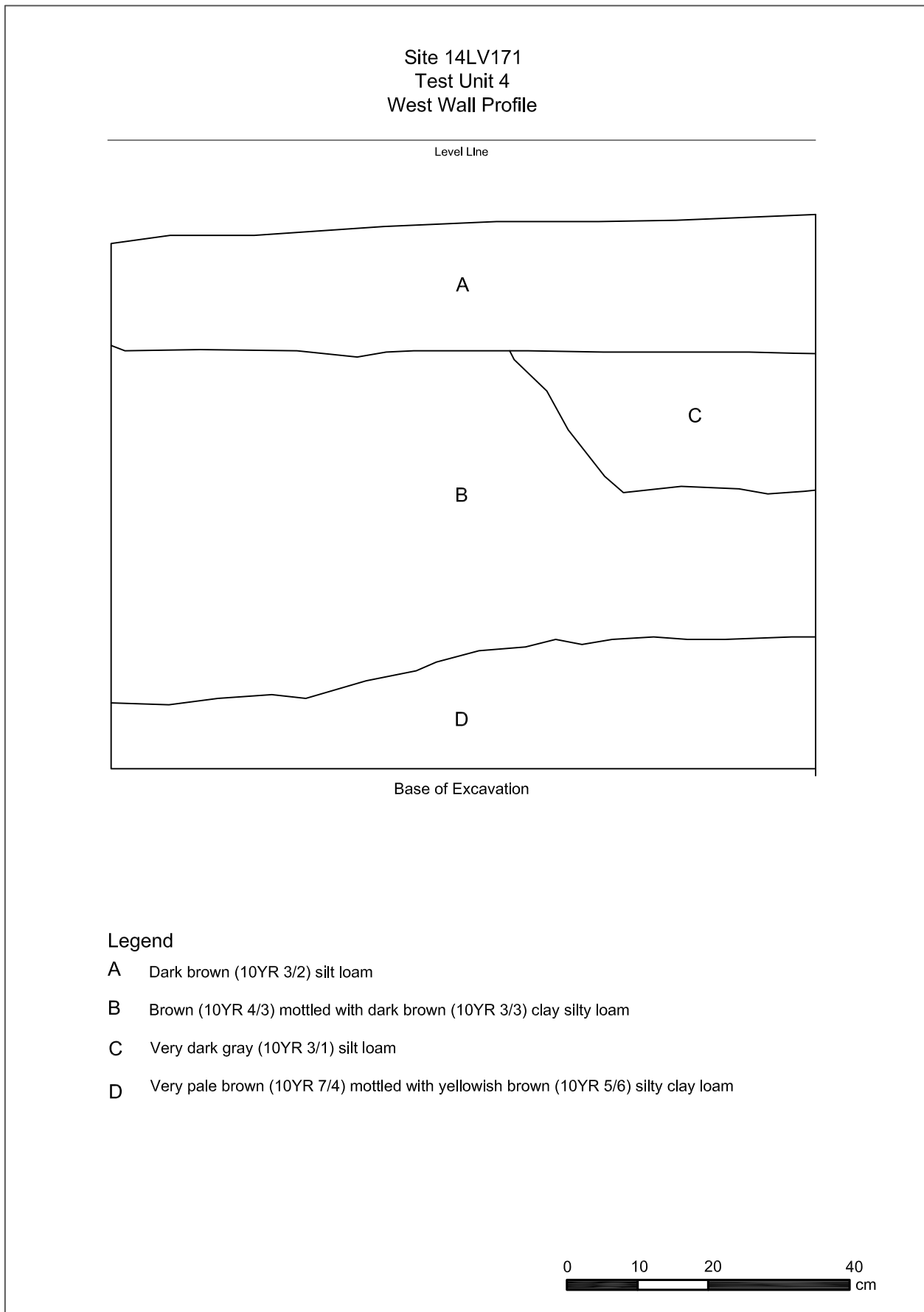


FIGURE 15: Profile of Test Unit 4 at Site 14LV171



PLATE 17: Profile of Test Unit 4 at Site 14LV171, View West.

smoothed surfaces and was tempered with grit or crushed rock. Two smaller sherds were tempered with quartz grit and had eroded surfaces. One of the two sherds from Level 4 measured 7.2 millimeters thick. The sherd from Level 3 was only 4.3 millimeters thick. The early reduction flake was made of Florence C chert and showed no signs of heat treatment.

TABLE 22

ARTIFACT DISTRIBUTION BY EXCAVATION LEVEL IN TEST UNIT 4 AT SITE 14LV171

ARTIFACT TYPE	1	2	3	4	5	6	7	8	TOTAL
Early Reduction Flake	--	--	--	--	--	1	--	--	1
Ceramic Body Sherd	--	--	--	2	--	1	--	--	3
Beer Bottle	--	7	--	1	--	--	--	--	8
Brick	--	1	--	--	1	--	--	--	2
Cement	--	1	--	--	--	--	--	--	1
Curved Glass	--	--	--	--	--	1	--	--	1
Mortar	--	--	1	--	--	--	--	--	1
Total	0	9	1	3	1	3	0	0	17

Seven beer bottle glass fragments, one brick fragment, and one piece of cement were recovered from the Ap horizon in Level 2. One beer bottle sherd, one brick fragment, a piece of mortar, and one piece of curved glass were found in the Bw horizon between 20 and 60 centimeters bgs. None of the prehistoric or historic artifacts was found in the pocket of dark silt loam in the northwestern corner of the unit.

e. Test Unit 5

Test Unit 5 was placed in the western portion of the site at grid North 982 to 983, East 983 to 984 (see Figure 11; Table 23). During the Phase II survey two positive shovel tests that were located within 5 meters of Test Unit 5 produced a total of three chipped stone artifacts from the Ap horizon. The unit was 1x1 meter in size and excavated in eight arbitrary 10-centimeter levels to a maximum depth of 90 centimeters below datum (80 centimeters bgs). The unit data was placed near the northwest corner of the unit. Three strata were observed in the unit (Figure 16; Plate 18). The Ap horizon was 30 centimeters thick. It overlaid an A horizon that extended from 30 to 73 centimeters bgs. The Bt horizon was present in the lower 10 centimeters of the test unit excavation. The Ap horizon was a dark grayish brown (10YR 4/2) silty clay loam. The A horizon was composed of a black (10YR 2/1) silty clay loam. The Bt horizon consisted of a grayish brown (2.5Y 5/2) clay loam mottled with black (10YR 2/1) and yellowish brown (10YR 5/8) clay loam.

TABLE 23

ARTIFACT DISTRIBUTION BY EXCAVATION LEVEL IN TEST UNIT 5 AT SITE 14LV171

ARTIFACT TYPE	1	2	3	4	5	6	7	8	TOTAL
Biface Reduction Flake	--	3	1	--	--	--	--	--	4
Flake Fragment	--	--	2	--	--	--	--	--	2
Block Shatter	--	1	2	--	--	--	--	--	3
Burned Clay	--	1	--	--	--	--	--	--	1
Rock/Stone	--	11	3	--	--	--	--	--	14
Brick	1	2	1	--	--	--	--	--	4
Total	1	18	9	0	0	0	0	0	28

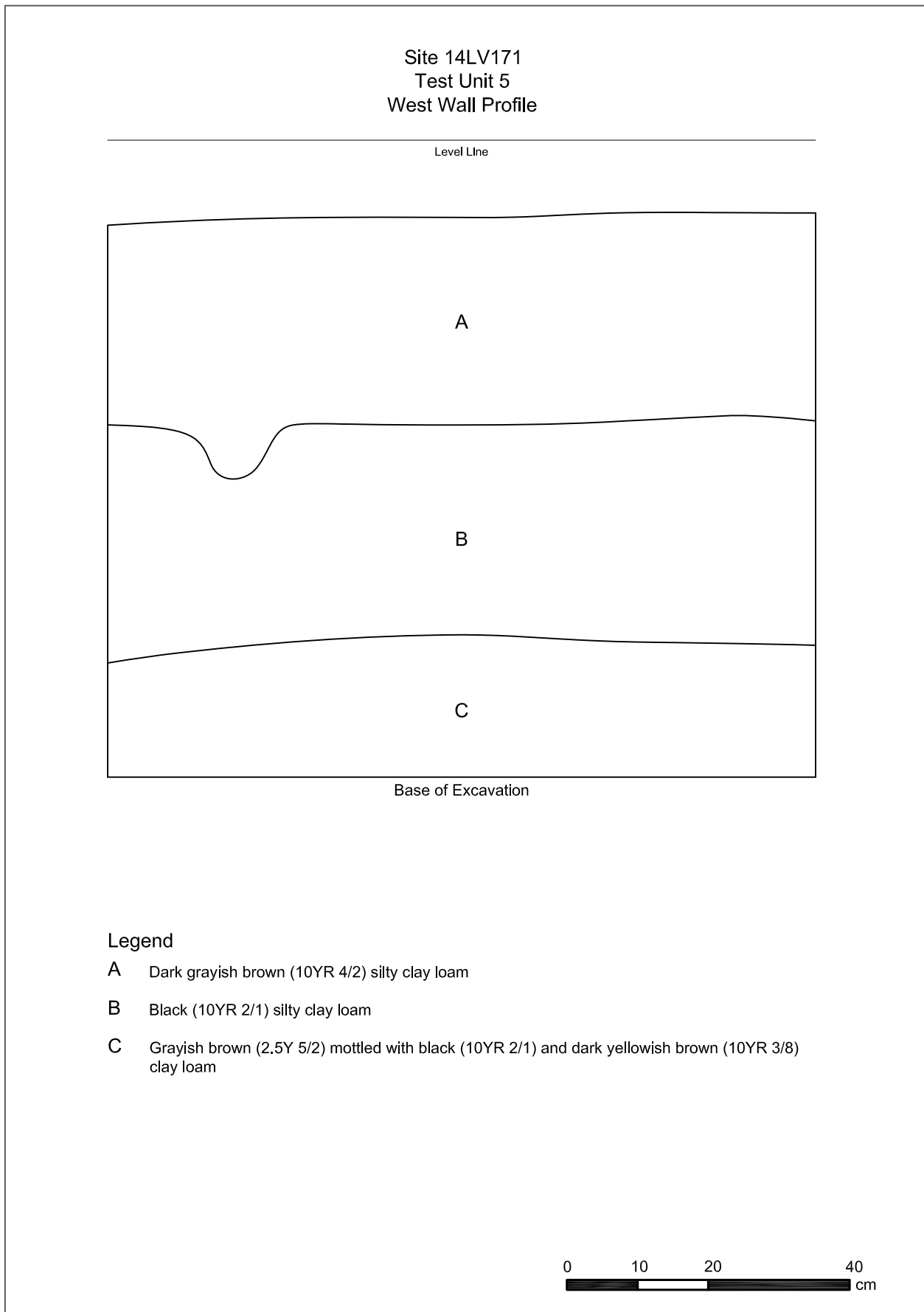


FIGURE 16: Profile of Test Unit 5 at Site 14LV171



PLATE 18: Profile of Test Unit 5 at Site 14LV171, View West.

Test Unit 5 yielded 21 prehistoric artifacts and five brick fragments from the Ap horizon and two pieces of block shatter from the A horizon. All eight pieces of the chipped stone debitage were from Plattsmouth chert. Of these, two biface reduction flakes, two flake fragments, and one piece of shatter were heated. Two rock fragments were of quartz and 12 were limestone. Also present was one piece of burned clay.

f. Discussion

The Phase III site evaluation investigations of Site 14LV171 included five 1x1 meter test units. The units were spaced to test different portions of the site and were located where Phase II survey shovel tests that yielded prehistoric artifacts were situated. The stratigraphy appeared to be variable across Site 14LV171. No A horizon was observed in Test Units 2 and 4, which were located in the northern portion of the site. In Test Units 1, 3, and 5, the A horizon below the Ap horizon was thick but clayey, possibly from periodic flooding of the nearby creek during the period of prehistoric occupation and later.

The five test units recovered a combined total of 191 artifacts, of which over three-quarters (N=145) were historic (Table 24). Of the 46 prehistoric artifacts, 15 were unmodified limestone or quartz, 25 were chipped debitage, two were lithic tools (a drill base and a biface tip), three were ceramic body sherds, and one was a burned clay fragment. The highest concentrations of prehistoric chipped stone artifacts were recovered from Test Units 1 and 5, in the southern and southwestern portions of the site area, respectively. A lower density of chipped stone artifacts was found in Test Units 2 and 4 in the northern and northwestern portions of the site area. Test Unit 3 in the eastern portion of Site 14LV171 yielded no lithics or pottery, but the unmodified limestone is assumed to be prehistoric in age.

TABLE 24

ARTIFACT DISTRIBUTION BY TEST UNIT AT SITE 14LV171

ARTIFACT TYPE	TU 1	TU 2	TU 3	TU 4	TU 5	TOTAL
Bison Tooth	1	--	--	--	--	1
Drill Base	1	--	--	--	--	1
Biface Tip	1	--	--	--	--	1
Early Reduction Flake	1	--	--	1	--	2
Biface Reduction Flake	7	1	--	--	3	11
Finishing Flake	1	--	--	--	--	1
Flake Fragment	--	--	--	--	2	2
Block Shatter	2	1	--	--	3	6
Ceramic Body Sherd	--	--	--	3	--	3
Burned Clay	--	--	--	--	1	1
Rock/Stone	--	--	1	--	14	15
Beer Bottle	--	--	--	8	--	8
Bolt	1	--	--	--	--	1
Brick	6	11	5	2	5	29
Cement	--	2	1	1	--	4
Coal	--	1	--	--	--	1
Comb	1	--	--	--	--	1
Curved Glass	--	1	--	--	--	1
Fence Staple	6	--	--	--	--	6
Mortar	--	1	--	1	--	2
Roofing Nail	6	--	--	--	--	6
Slag	--	1	--	--	--	1
Window Glass	--	1	--	--	--	1
Wire	65	--	--	--	--	65
Wire Nail	9	--	--	--	--	9
Unidentified Material	--	1	--	--	--	1
Unidentified Metal	11	--	--	--	--	11
Total	119	20	7	17	28	191

Table 25 shows the distribution of artifacts by excavation level. All artifacts were found in the Ap horizon, A horizon, or Bw horizon. The majority of the prehistoric finds (N=36, 87.8%) occurred between 10 and 40 centimeters bgs, but six flakes and one pottery sherd were found as deep as 60 centimeters bgs. As the prehistoric finds were mixed with a larger amount of modern intrusive artifacts, the depositional context appeared disturbed across the site.

TABLE 25
ARTIFACT DISTRIBUTION BY EXCAVATION LEVEL AT SITE 14LV171

ARTIFACT TYPE	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	TOTAL
Bison Tooth	1	--	--	--	--	--	--	--	1
Drill Base	--	--	--	1	--	--	--	--	1
Biface Tip	--	--	1	--	--	--	--	--	1
Early Reduction Flake	--	--	--	--	1	1	--	--	2
Biface Reduction Flake	--	3	3	1	4	--	--	--	11
Finishing Flake	--	--	1	--	--	--	--	--	1
Flake Fragment	--	--	2	--	--	--	--	--	2
Block Shatter	--	2	2	2	--	--	--	--	6
Ceramic Body Sherd	--	--	--	2	--	1	--	--	3
Burned Clay	--	1	--	--	--	--	--	--	1
Rock/Stone	--	11	4	--	--	--	--	--	15
Beer Bottle	--	7	--	1	--	--	--	--	8
Bolt	--	--	1	--	--	--	--	--	1
Brick	2	9	8	4	6	--	--	--	29
Cement	--	2	--	--	2	--	--	--	4
Coal	--	--	--	1	--	--	--	--	1
Comb	--	--	1	--	--	--	--	--	1
Curved Glass	--	--	--	--	--	1	--	--	1
Fence Staple	--	--	6	--	--	--	--	--	6
Mortar	--	--	1	--	1	--	--	--	2
Roofing Nail	--	--	6	--	--	--	--	--	6
Slag	--	--	--	--	1	--	--	--	1
Window Glass	--	--	1	--	--	--	--	--	1
Wire	--	--	9	--	--	--	--	--	9
Wire Nail	--	--	65	--	--	--	--	--	65
Unidentified Material	--	1	--	--	--	--	--	--	1
Unidentified Metal	--	--	--	11	--	--	--	--	11
Total	2	37	111	23	15	3	0	0	191

The chipped stone artifacts recovered in the Phase III test unit excavations include a small variety of chert stone material (Table 26). These include Plattsmouth, Toronto, and Winterset cherts from the local Kansas City group (Logan 1988). Florence chert originates in the Permian formations of the Flint Hills of eastern Kansas (Padilla and Ritterbush 2005). The two finished tools recovered include a drill of Toronto chert and a biface made of Plattsmouth chert. Those two local types also dominate the composition of the stone tool assemblage, with 66.7 percent (N=16) composed of Plattsmouth chert and 20.8 percent (N=5) of Toronto chert. Florence C, Winterset, and gray unidentified chert were each represented by only one artifact (4.1%). Heat treating was present on eight chipped stone artifacts (33.3%) at Site 14LV171 (Table 27). These consist of one finished biface, four biface reduction flakes, one flake fragment, and three lithic shatter; all of which are composed of Plattsmouth chert.

The lithic assemblage at Site 14LV171 reflects all stages of lithic reduction, with few varieties of chert utilized. Plate 19 shows examples of the lithic artifacts recovered. Although the Phase III data show a clear preference for local Plattsmouth and Toronto cherts, the stone materials identified in the Phase II survey were predominantly Florence chert and jasper. The difference could be attributed to uneven distribution of various lithic materials across the site.

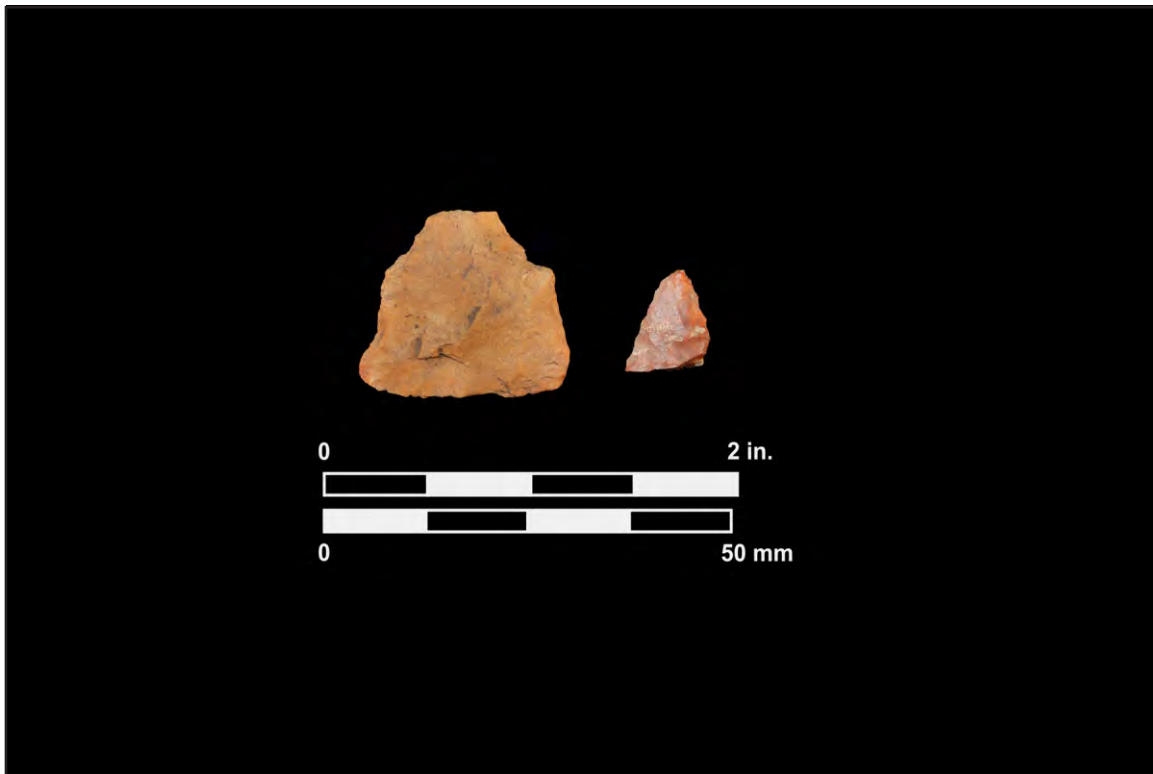


PLATE 19: Chipped Stone Tools from Site 14LV171.

TABLE 26

ARTIFACT CLASS/TYPE BY MATERIAL TYPE FROM TEST UNITS AT SITE 14LV171

	Biface Tip	Drill Base	Early Red. Flake	Biface Red. Flake	Finishing Flake	Flake Fragment	Block Shatter	Total
Florence C Chert	--	--	1	--	--	--	--	1
Plattsmouth Chert	1	--	--	8	--	2	5	16
Toronto Chert	--	1	1	2	1	--	--	5
Winterset Chert	--	--	--	1	--	--	--	1
Unidentified Chert	--	--	--	--	--	--	1	1
Total	1	1	2	11	1	2	6	24

TABLE 27

HEAT-TREATED LITHIC ARTIFACTS BY MATERIAL TYPE FROM TEST UNITS AT 14LV171

	Biface Tip	Drill Base	Early Red. Flake	Biface Red. Flake	Finishing Flake	Flake Fragment	Block Shatter	Total
Plattsmouth Chert	1	--	--	4	--	--	3	8
Total	1	0	0	4	0	0	3	8

Three pottery sherds were collected from the site during Phase III test unit excavations, all of which were recovered from Test Unit 4 (Plate 20). Two of the sherds are thick, have quartz or grit temper, eroded surfaces, and no decoration or other surface treatment. The other is a thin body sherd with smoothed surfaces. All sherds are buff to orange in color. The lack of surface decoration or rims prevented assigning the ceramics to a specific culture.

The Phase III site evaluation investigation of Site 14LV171 yielded three small ceramic sherds, one piece of burned clay, one drill base, one biface tip, and 22 pieces of chipped stone debitage. The prehistoric assemblage from the Phase II survey completed by Louis Berger (Schoen and Deiber 2011) contributed two ceramic sherds, two side-notched arrow point bases, one core, one utilized flake, and 46 pieces of chipped stone debitage. The ceramic sherds are not diagnostic, lacking surface decoration or treatment that might indicate cultural affiliation. The side-notched projectile point bases were from Shovel Test TR 11-19 N5 E10 near Test Unit 4 and from Shovel Test TR 12-19 S10 E10 near Test Unit 1. The two points are not classic examples of the arrow points found with Nebraska phase, Steed-Kisker phase, or Pomona phase sites. The notches are weak. As at Site 14LV169, the grit-tempered sherds suggest the possibility that the sites date earlier than the Middle Ceramic period and may be associated with the unnamed Kansas City culture. No carbonized material suitable for a radiocarbon date was found to elucidate cultural affiliation.

No cultural features were identified in the five test units at Site 14LV171 during Phase III excavations that would suggest the location of a house or activity area. The site in general can be characterized as a relatively low-density scatter of ceramic sherds and lithic materials over a large area, indicating a temporary camp site where people were engaged in the production and maintenance of stone tools or a seasonal habitation site. No cultigens were discovered and no bone tools or bone from processing animals for food were recovered to enhance our knowledge of subsistence practices. The recovered assemblage lacks both volume and diversity of artifact types so that significant research questions cannot be meaningfully addressed. The absence of diagnostic artifacts and radiocarbon dates makes it impossible to attribute the site to a particular cultural phase. The prehistoric materials are nearly all from the upper 40 centimeters of the site and predominantly from the plowzone. They are mixed with historic artifacts and are not situated in contexts with good integrity. Other than providing new information about lithic



PLATE 20: Miscellaneous Artifacts from Site 14LV171

reduction activities and selection of lithic material for tools, the site has low potential for contributing important new information about the prehistory of Leavenworth or the broader region. For all these reasons, Louis Berger recommends that Site 14LV171 be considered not eligible for listing in the National Register under Criterion D.

D. SITE 14LV172

Map Source:	Leavenworth, KS, 7.5' Series USGS Topographic Quad (1982)
Site Type:	Habitation
Cultural Affiliation:	Late Prehistoric/Middle Ceramic
Site Size:	106.0 meters (347.8 feet) NW to SE by 46.0 meters (150.9 feet) NE to SW 4,876.0 square meters (52,465.8 square feet)
Phase II Methods:	Pedestrian survey and shovel testing
Phase III Methods:	Excavation of five 1x1 meter test units
Area Excavated:	143 Shovel tests and 5 test units (62.2 sq. meters/669.5 sq. feet)
Cultural Materials Collected:	Phase II: 1 Corner-notched arrow point, 1 stemmed point, 4 bifaces, 2 cores, 4 utilized flakes, and 108 debitage Phase III: 1 Side-notched arrow point, 3 bifaces, 1 flake tool, 1 core, 114 debitage, 4 fire-cracked rock, 3 burned clay, and 10 limestones
Landform:	Uplands
Elevation:	850 to 870 feet above mean sea level
Land Use/Surface Visibility:	Pasture (Less than 10% surface visibility)
Soil Type:	Sharpsburg silt loam 4 to 8% slopes (7542)
Site Disturbance:	Cultivation and erosion
Relation to Project Limits:	100% outside Alternative FCI East-1 and Alternative Hybrid
National Register Eligibility:	Not eligible
Recommendations:	No additional archaeological investigations

Site 14LV172 is the location of a large prehistoric camp or habitation attributed to the Late Prehistoric (Middle Ceramic) period based on projectile point types recovered from the site. The site is situated in the uplands in the proposed West Site (Plates 21 and 22).

1. *Summary of Phase II Intensive Survey*

During the Phase II intensive survey in 2011, 143 shovel tests were excavated within a 30-meter grid. Shovel Test TR 16-24 yielded three flakes from the Ap horizon. Shovel Test 18-25 included one flake fragment in the Ap horizon. Radial shovel tests were excavated 5 and 10 meters from these two positive shovel tests to define site boundaries. Fifty-five additional shovel tests included prehistoric artifacts and what originally appeared to be separate areas of cultural material merged into a single elongated site with a maximum area measuring 106.0 meters northwest to southeast by 46.0 meters northeast to southwest.

The soil profiles in the shovel tests included an Ap horizon of very dark grayish brown (10YR 3/2) to dark brown (10YR 3/3) silt loam. The Ap horizon ranged in thickness from 15 to 50 centimeters thick, but typically was about 30 to 35 centimeters thick. The thickness of the Ap horizon was thinner at the base of the slope in the northern portion of the site. Below the surface layer was an A horizon of black (10YR 2/1) to dark gray (10YR 3/1) silty clay loam that was 14 to 40 centimeters thick. The soil boundary was clear to gradual. The third stratum was a Bt horizon either of brown (10YR 4/3) silty clay loam or of dark grayish brown (10YR 4/2) silty clay loam mottled with about 25 percent dark yellowish brown (10YR 4/4 to 10YR 5/4) silty clay loam. The boundary between the A and Bt horizons was clear to gradual. Shovel tests were excavated to between 45 and 80 centimeters bgs with an average depth of 60 centimeters.



PLATE 21: Overview of Site 14LV172, View South.



PLATE 22: Overview of Site 14LV172, View Southeast.

A total of 121 prehistoric artifacts were recovered from Site 14LV172 during Phase II intensive survey, consisting of 108 pieces of debitage, 12 tools, and one unmodified pebble (Tables 28 and 29). Most of the artifacts came from the Ap horizon (N=111, 93.6%). An additional 10 artifacts (6.4%) came from the A horizon. Most of the lithic material is Florence chert (N=107, 96.7% by weight), with smaller amounts of jasper (N=7, 2.5% by weight), unidentified chert (N=5, 0.7% by weight) and chalcedony (N=1, 0.1% by weight).

TABLE 28

ARTIFACT CLASS/TYPE BY STRATUM FOR SITE 14LV172

ARTIFACT CLASS/TYPE	SOIL STRATUM		
	Ap	A	Total
Projectile Point	2	--	2
Late-Stage Biface	2	--	2
Middle-Stage Biface	1	--	1
Indeterminate Biface	1	--	1
Freehand Core	2	--	2
Utilized Flake	4	--	4
Decortication Flake	1	--	1
Early Reduction Flake	8	--	8
Biface Reduction Flake	38	5	43
Finishing Flake	15	3	18
Flake Fragment	29	1	30
Block Shatter	8	--	8
Unmodified Pebble	--	1	1
Total	111	10	121

TABLE 29

ARTIFACT CLASS/TYPE BY MATERIAL TYPE FOR SITE 14LV172

ARTIFACT CLASS/TYPE	MATERIAL TYPE				Total
	Florence Chert	Jasper	Chert	Chalcedony	
Projectile Point	1	1	--	--	2
Late-Stage Biface	2	--	--	--	2
Middle-Stage Biface	1	--	--	--	1
Indeterminate Biface	1	--	--	--	1
Freehand Core	2	--	--	--	2
Utilized Flake	4	--	--	--	4
Decortication Flake	1	--	--	--	1
Early Reduction Flake	8	--	--	--	8
Biface Reduction Flake	37	4	2	--	43
Finishing Flake	17	--	--	1	18
Flake Fragment	26	1	3	--	30
Block Shatter	7	1	--	--	8
Total	107	7	5	1	120

Heat treatment was not observed on a majority of the artifacts (N=91, 86.6% by weight). Twenty-nine artifacts (15.4% by weight) were heated, and heating was indeterminate for one object. Most of the artifacts (N=104, 62.6% by weight) did not exhibit cortex. However, block cortex is present on 10 artifacts (33.8% by weight) and cobble cortex is present on seven (3.6% by weight) specimens.

The 12 tools consist of the lower half of a corner-notched point similar to a Koster point (Morrow 1984:78), an unidentified stemmed point, two late-stage bifaces, one middle-stage biface, one indeterminate biface, two cores, and four utilized flakes. The corner-notched point fragment is made from jasper. The stemmed point is extensively resharpened and appears to be from a reworked corner-notched point made from heat treated Florence chert. The remaining tools are all identified as Florence chert. The points and bifaces are shown in Plate 23.

Site 14LV172 was interpreted to be the location of a large prehistoric camp tentatively attributed to the Late Prehistoric or Middle Ceramic cultural period based on the presence of the arrow or dart points (Schoen and Dieber 2011). More than one-third of the shovel tests excavated at the site yielded artifacts. The types of artifacts recovered suggested a location where prehistoric people were reducing chert cobbles into biface preforms and shaping tools such as projectile points, knives, drills, and scrapers. Although the site had been disturbed to some degree by bison wallowing, cultivation, and erosion, and although most artifacts were from the Ap horizon, the thickness of the Ap horizon and presence of an A horizon suggested the possibility of intact subsurface deposits.

Based on the findings of the Phase II intensive survey, Louis Berger recommended that Site 14LV172 be considered potentially eligible for listing in the National Register under Criterion D. Louis Berger recommended avoidance of Site 14LV172 by any proposed construction or other ground disturbance activities. If the site could not be avoided, then Louis Berger recommended that Phase III site evaluation be performed to determine whether the site has sufficient integrity and potential to answer important research questions regarding the prehistory of the locality and/or region (Schoen and Deiber 2011).

2. *Phase III Site Evaluation*

At the time of the Phase III site testing to evaluate the National Register eligibility of Site 14LV172 in July 2014, the site area was still in use a buffalo pasture with less than 10 percent surface visibility. The Trimble GPS unit was used to navigate to the Phase II survey Shovel Test 16-24. From this location a 5-meter grid was established over the site oriented on magnetic north. A point 20 meters east and 15 meters south of Shovel Test 16-24 was arbitrarily identified as grid North 1000, East 1000 (Figure 17).

a. *Test Unit 1*

Test Unit 1 was placed near the center of the site at grid North 1014 to 1015, East 994 to 995 (see Figure 17). During the Phase II survey two positive shovel tests located within 5 meters of Test Unit 1 had a combined total of five chipped stone artifacts, including a projectile point, from the Ap horizon. Test Unit 1 was 1x1 meter in size and excavated in seven arbitrary 10-centimeter levels to a depth of 70 centimeters below datum (60 centimeters bgs). The unit datum was placed near the northeastern corner of the unit.

Two strata were observed in the unit (Figure 18; Plate 24). The Ap/A horizon was 56 centimeters thick and consisted of a very dark grayish brown (10YR 3/2) silt loam. The underlying B horizon was present from 56 centimeters bgs to the base of the excavation at 70 centimeters below datum. The B horizon consisted of a dark brown (7.5YR 3/2) clay loam.

In Test Unit 1 prehistoric artifacts included nine lithic flakes, two pieces of shatter, and one fragment of burned clay recovered from the Ap/A horizon, to a depth not exceeding 40 centimeters bgs (Table 30).



PLATE 23: Chipped Stone Tools from Phase II Survey at Site 14LV172

Figure 17 has been removed because it contains confidential information not for public distribution.

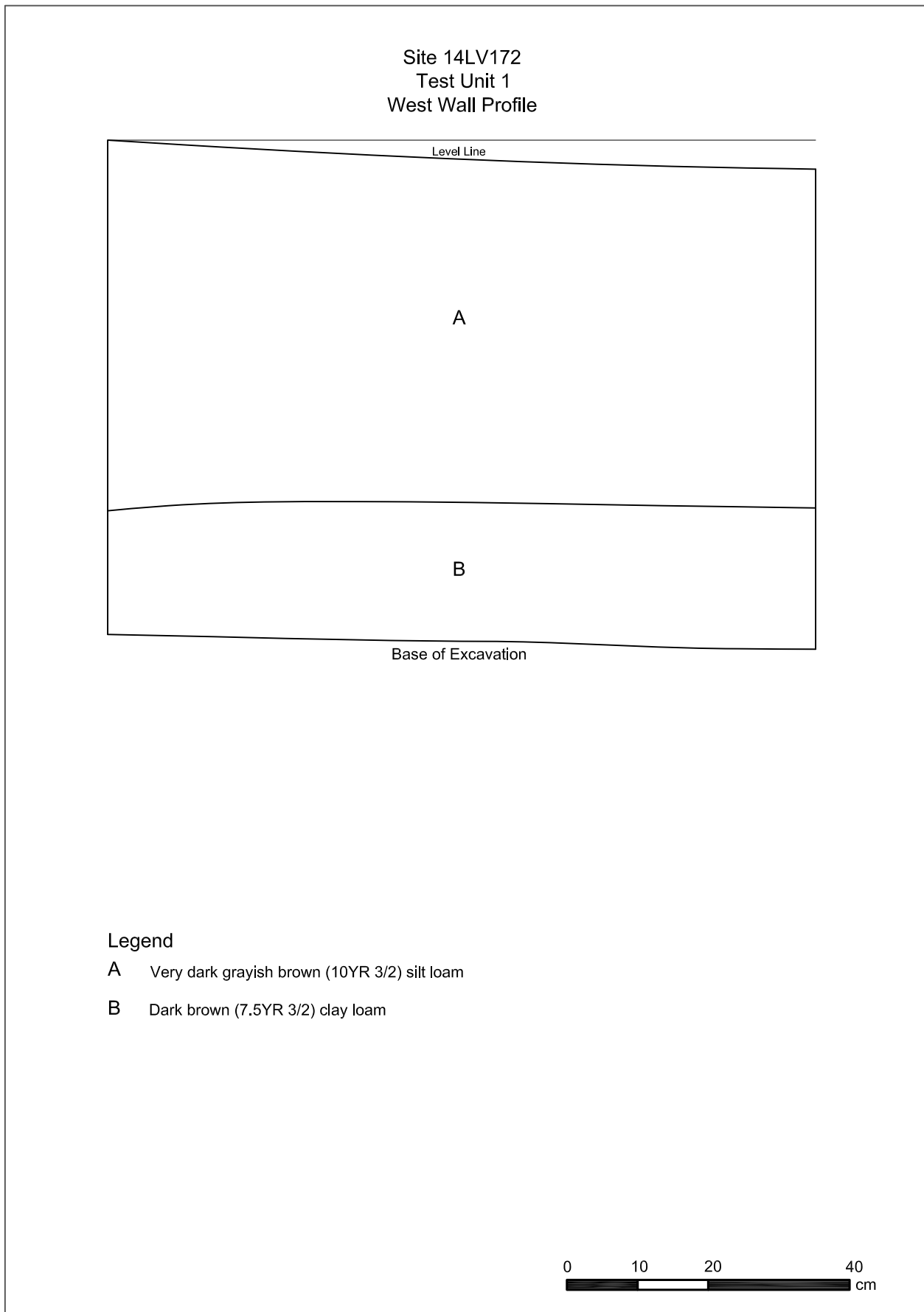


FIGURE 18: Profile of Test Unit 1 at Site 14LV172



PLATE 24: Profile of Test Unit 1 at Site 14LV172, View West.

Historic artifacts, composed of four brick fragments, three pieces of coal slag, one cement fragment, one rubber fragment, and one fragment of a ceramic insulator, were also found in the Ap horizon.

TABLE 30

ARTIFACT DISTRIBUTION BY EXCAVATION LEVEL IN TEST UNIT 1 AT SITE 14LV172

ARTIFACT TYPE	1	2	3	4	5	6	7	TOTAL
Early Reduction Flake	--	--	1	--	--	--	--	1
Biface Reduction Flake	--	4	--	2	--	--	--	6
Flake Fragment	--	--	--	1	--	--	--	1
Decortication Flake	--	--	1	--	--	--	--	1
Block Shatter	--	1	--	1	--	--	--	2
Burned Clay	--	--	--	1	--	--	--	1
Brick	--	3	1	--	--	--	--	4
Cement	--	1	--	--	--	--	--	1
Coal Slag	--	1	2	--	--	--	--	3
Ceramic Insulator	--	1	--	--	--	--	--	1
Unidentified Rubber	--	1	--	--	--	--	--	1
Rock/Stone	--	2	1	--	--	--	--	3
Total	0	14	6	5	0	0	0	25

Lithic material recovered in Test Unit 1 includes six pieces of Plattsmouth chert (54.6%), two of Toronto chert (18.2%), and one each (9.1%) of Argentine chert, Florence C chert, and an unidentified brown chert. Heat treatment is present on one early reduction flake and two biface reduction flakes of Plattsmouth chert and the biface reduction flake of Florence C chert.

b. Test Unit 2

Test Unit 2 was placed in the northwestern portion of the site at grid North 1043 to 1044, East 1024 to 1025 (see Figure 17). During the Phase II survey two positive shovels situated within 5 meters of Test Unit 2 yielded a total of seven chipped stone artifacts from the Ap horizon. Test Unit 2 was 1x1 meter in size and was excavated in five arbitrary 10-centimeter levels to a maximum depth of 63 centimeters below datum (53 centimeters bgs). The unit datum was placed near the southwest corner of the unit.

Three strata were observed in the unit (Figure 19; Plate 25). The Ap horizon measured 14 centimeters thick at the east side of the unit but expanded both upward and downward to 32 centimeters thick at the west side. The Ap horizon was dark grayish brown (10YR 3/2) silt loam. The underlying A horizon was at 14 to 28 centimeters bgs in the east side of the unit, but pinched off at the west side of the unit. The A horizon was composed of a dark grayish brown (10YR 4/2) silty clay loam. Under the A horizon, the B horizon was excavated to a maximum depth of 53 centimeters bgs. The B horizon consisted of a dark brown (10YR 2/2) silty clay loam.

In Test Unit 2 prehistoric cultural material includes three flakes from the Ap and A horizons, up to a depth of 33 centimeters bgs (Table 31). Lithic material includes one heated biface reduction flake of Florence C chert, one early reduction flake of Smoky Hill jasper, and a heated decortication flake of unidentified brown chert. Five historic artifacts were recovered from the Ap and A horizons: two brick fragments, two mortar fragments, one cement fragment, and one hex nut fragment.

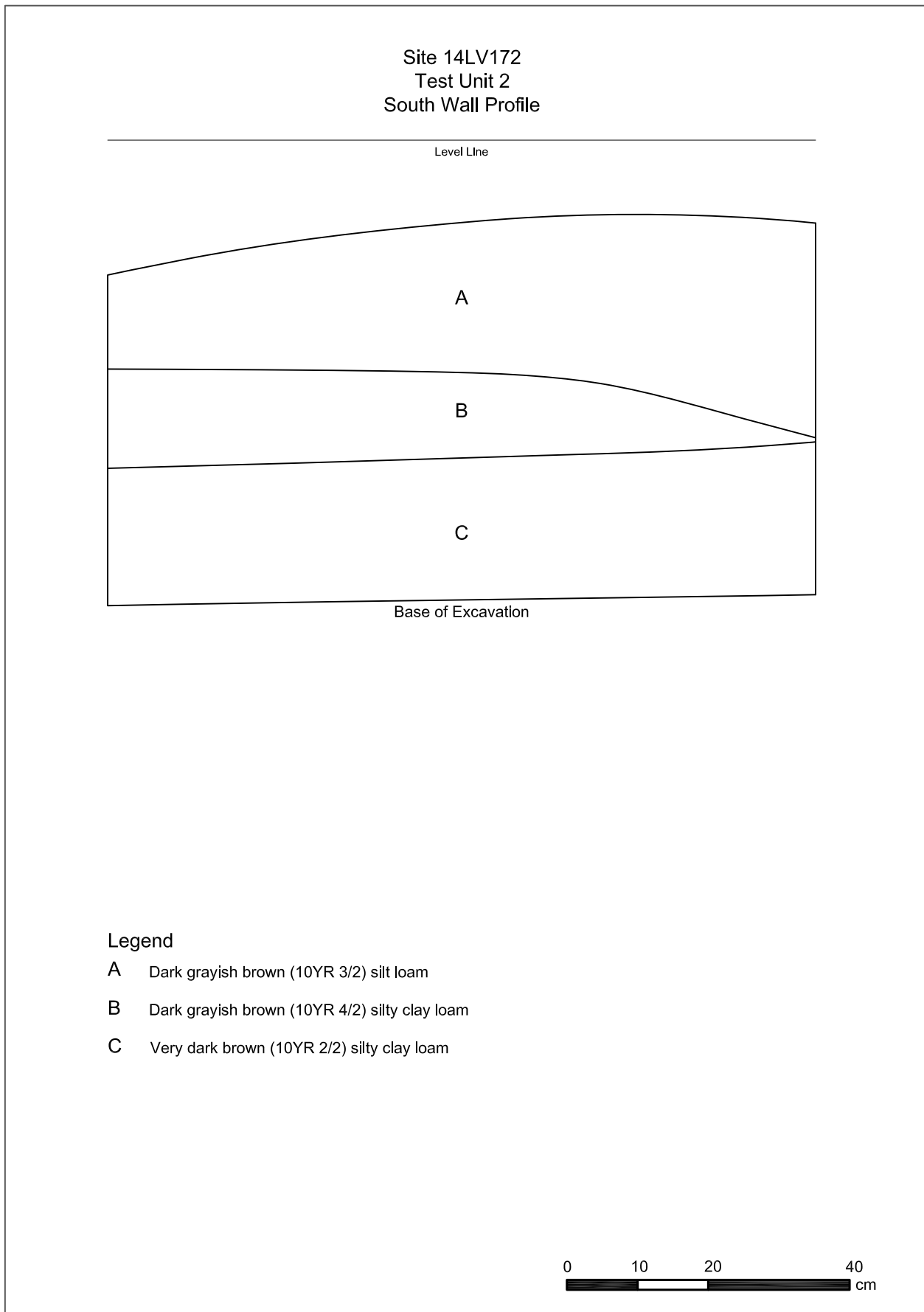


FIGURE 19: Profile of Test Unit 2 at Site 14LV172



PLATE 25: Profile of Test Unit 2 at Site 14LV172, View South.

TABLE 31

ARTIFACT DISTRIBUTION BY EXCAVATION LEVEL IN TEST UNIT 2 AT SITE 14LV172

ARTIFACT TYPE	1	2	3	4	5	TOTAL
Early Reduction Flake	--	--	1	--	--	1
Biface Reduction Flake	--	--	1	--	--	1
Decortication Flake	--	1	--	--	--	1
Brick	--	1	1	--	--	2
Cement	--	1	--	--	--	1
Mortar	--	1	1	--	--	2
Iron Hex Nut	--	--	1	--	--	1
Total	0	4	5	0	0	9

c. *Test Unit 3*

Test Unit 3 was placed in the north-central portion of Site 14LV172 at grid North 1012 to 1013, East 986 to 987 (see Figure 17). During the Phase II survey three positive shovel tests were situated within 5 meters of Test Unit 3 that produced a combined total of 17 chipped stone artifacts from the Ap horizon. Test Unit 3 was 1 meter square in size and excavated in 10 arbitrary 10-centimeter levels to a maximum depth of 110 centimeters below datum (100 centimeters bgs). The unit datum was placed near the southwestern corner of the unit.

Four strata were observed in the unit (Figure 20; Plate 26). The Ap horizon was 36 centimeters thick and composed of dark grayish brown (10YR 4/2) silt loam. Below the Ap horizon the Bt1 horizon was present between 36 and 58 centimeters bgs. The Bt1 horizon consisted of brown (10YR 4/3) silty clay loam. The third stratum was a Bt2 horizon of yellowish brown (10YR 5/6) clay loam mottled with very dark gray 10YR 3/1 silty clay redox inclusions. This stratum extended from 68 centimeters bgs to the base of the excavation at 100 centimeters bgs.

From Test Unit 3 prehistoric finds include one finished biface base and one tip, one biface fragment, one flake tool, 30 pieces of debitage, one core, six fire-cracked rocks, and two small fragments of charcoal. (Table 32). Artifacts were primarily found in the Ap and Bt1 horizons, up to a depth of 58 centimeters bgs, but three flakes were recovered from the upper part of the Bt2 horizon between 58 and 80 centimeters bgs. Historic artifacts consist of finds of two pieces of coal and one cement fragment, which were found in the base of the Ap horizon in Level 3.

The stone types composing the lithic assemblage in Test Unit 3 include 18 specimens of Plattsmouth chert (45%); six of Toronto chert (15%); five of unidentified chert (12.5%); three each of Florence C chert, Westerville chert, and Smoky Hill jasper (7.5%); and one each of Florence D chert and quartzite (2.5%). Heat treatment is present on 11 of the lithic assemblage, including the biface fragment, one early reduction flake, and four biface reduction flakes of Plattsmouth chert; one biface reduction flake of Florence C chert; two decortication flakes and one flake fragment of Toronto chert; and one biface reduction flake of unidentified chert.

d. *Test Unit 4*

Test Unit 4 was placed in the southern portion of the site at grid North 986 to 987, East 1024 to 1025 (see Figure 17). During the Phase II survey two positive shovel tests located within 5 meters of Test Unit 4 produced a combined total of nine chipped stone artifacts. Test Unit 4 was 1x1 meter in size and excavated in six arbitrary 10-centimeter levels to a maximum depth of 70 centimeters below datum (60 centimeters bgs). The unit datum was placed near the southwest corner of the unit.

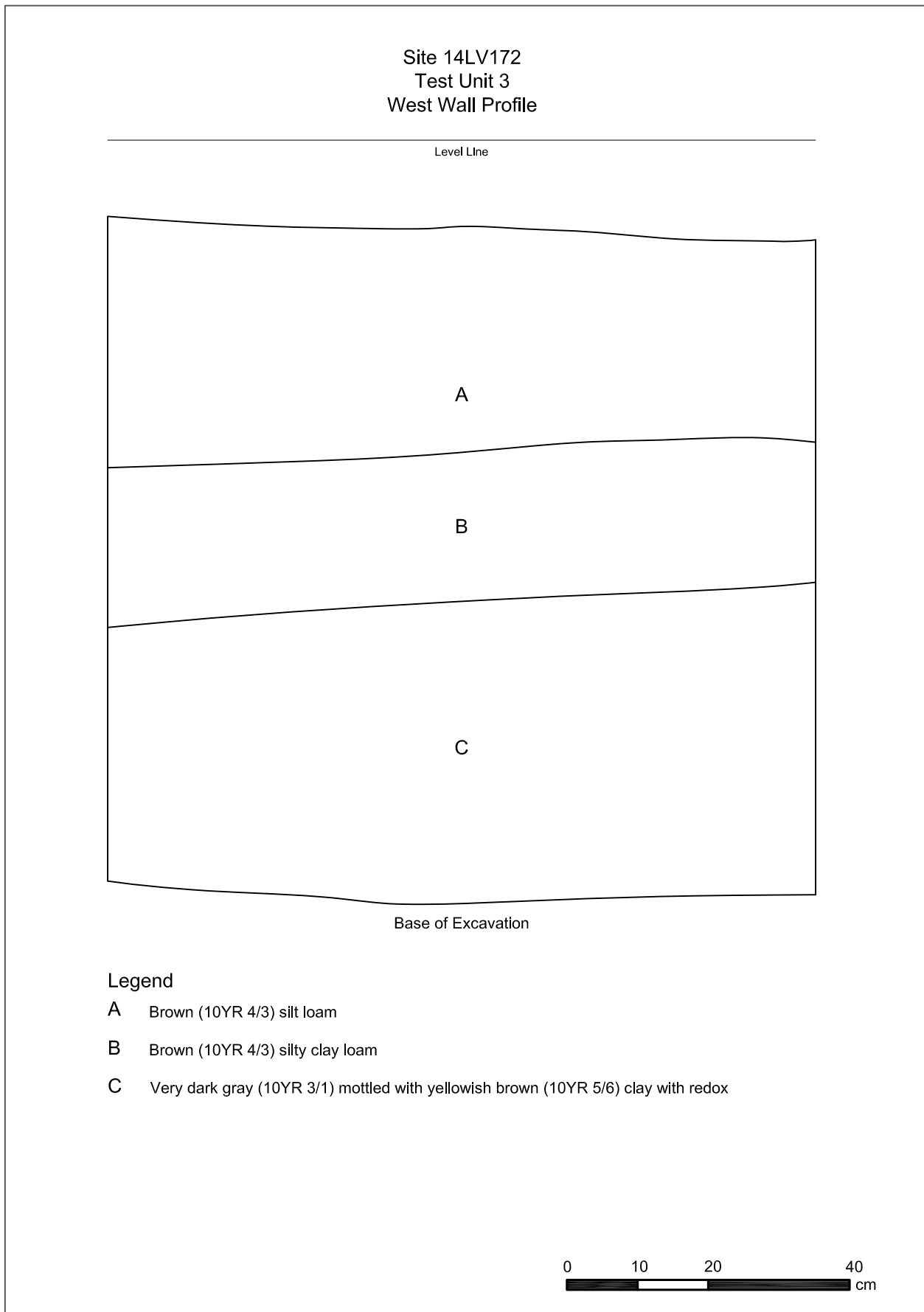


FIGURE 20: Profile of Test Unit 3 at Site 14LV172



PLATE 26: Profile of Test Unit 3 at Site 14LV172, View West.

TABLE 32

ARTIFACT DISTRIBUTION BY EXCAVATION LEVEL IN TEST UNIT 3 AT SITE 14LV172

ARTIFACT TYPE	1	2	3	4	5	6	7	8	9	10	TOTAL
Biface	--	--	--	--	1	--	--	--	--	--	1
Biface Tip	--	--	--	--	1	--	--	--	--	--	1
Biface Base	--	--	--	--	1	--	--	--	--	--	1
Flake Tool	--	--	--	--	1	--	--	--	--	--	1
Early Reduction Flake	--	--	4	--	1	--	--	--	--	--	5
Biface Reduction Flake	1	1	8	--	3	--	--	1	--	--	14
Finishing Flake	--	--	4	--	--	--	--	--	--	--	4
Decortication Flake	--	--	3	--	1	1	1	--	--	--	6
Flake Fragment	--	--	1	--	--	--	--	--	--	--	1
Block Shatter	--	--	1	--	3	--	1	--	--	--	5
Core	--	--	--	--	1	--	--	--	--	--	1
Fire-cracked Rock	--	--	1	--	3	--	--	--	--	--	4
Charcoal	--	--	2	--	--	--	--	--	--	--	2
Rock/Stone	--	--	--	--	6	--	--	--	--	--	6
Cement	--	1	--	--	--	--	--	--	--	--	1
Coal	--	--	2	--	--	--	--	--	--	--	2
Total	1	2	26	0	22	1	2	1	0	0	55

Three strata were observed in the unit (Figure 21; Plate 27). The Ap horizon was 18 centimeters thick and formed of very dark grayish brown (10YR 3/2) silt loam. The A horizon at 18 to 42 centimeters bgs was very dark grayish brown (10YR 3/2) silty clay loam. The Bt horizon, which was present from 42 centimeters to the base of the excavation at 60 centimeters bgs, consisted of dark brown (10YR 3/3) clay loam mottled with two yellowish brown (10YR 5/6 and 10YR 5/4) clay loams.

In Test Unit 4 one brick fragment was recovered from the Ap horizon. Prehistoric artifacts were recovered from both the Ap and A horizons, up to a depth of 30 centimeters bgs, including one side-notched projectile point of brown chert and 62 pieces of chipped-stone debitage (Table 33). The arrow point is similar to Reed points (Morrow 1984:82).

TABLE 33

ARTIFACT DISTRIBUTION BY EXCAVATION LEVEL IN TEST UNIT 4 AT SITE 14LV172

ARTIFACT TYPE	1	2	3	4	5	6	TOTAL
Projectile Point	--	1	--	--	--	--	1
Decortication Flake	--	1	2	--	--	--	3
Early Reduction Flake	--	7	2	--	--	--	9
Biface Reduction Flake	--	12	26	--	--	--	38
Finishing Flake	--	1	--	--	--	--	1
Block Shatter	--	2	2	--	--	--	4
Brick	--	1	--	--	--	--	1
Total	--	29	34	--	--	--	63

Plattsmouth chert is the most prevalent stone type in the lithic assemblage of Test Unit 4, consisting of 34 artifacts (54.8%). Present in lower quantities are Toronto chert (N=11, 17.7%), unidentified chert (N=7, 11.3%), Winterset chert (N=3, 4.8%), Florence C chert (N=3, 4.8%), Burlington chert (N=2, 3.2%), Florence D chert (N=1, 1.6%), and Chalcedony (N=1, 1.6%). Heat treatment is present on 18 (29.0%) of the lithic artifacts: four early reduction flakes and seven biface reduction flakes of Plattsmouth chert, four biface reduction flakes of Toronto chert, one flake fragment of Burlington chert, one flake fragment and one piece of shatter of unidentified chert.

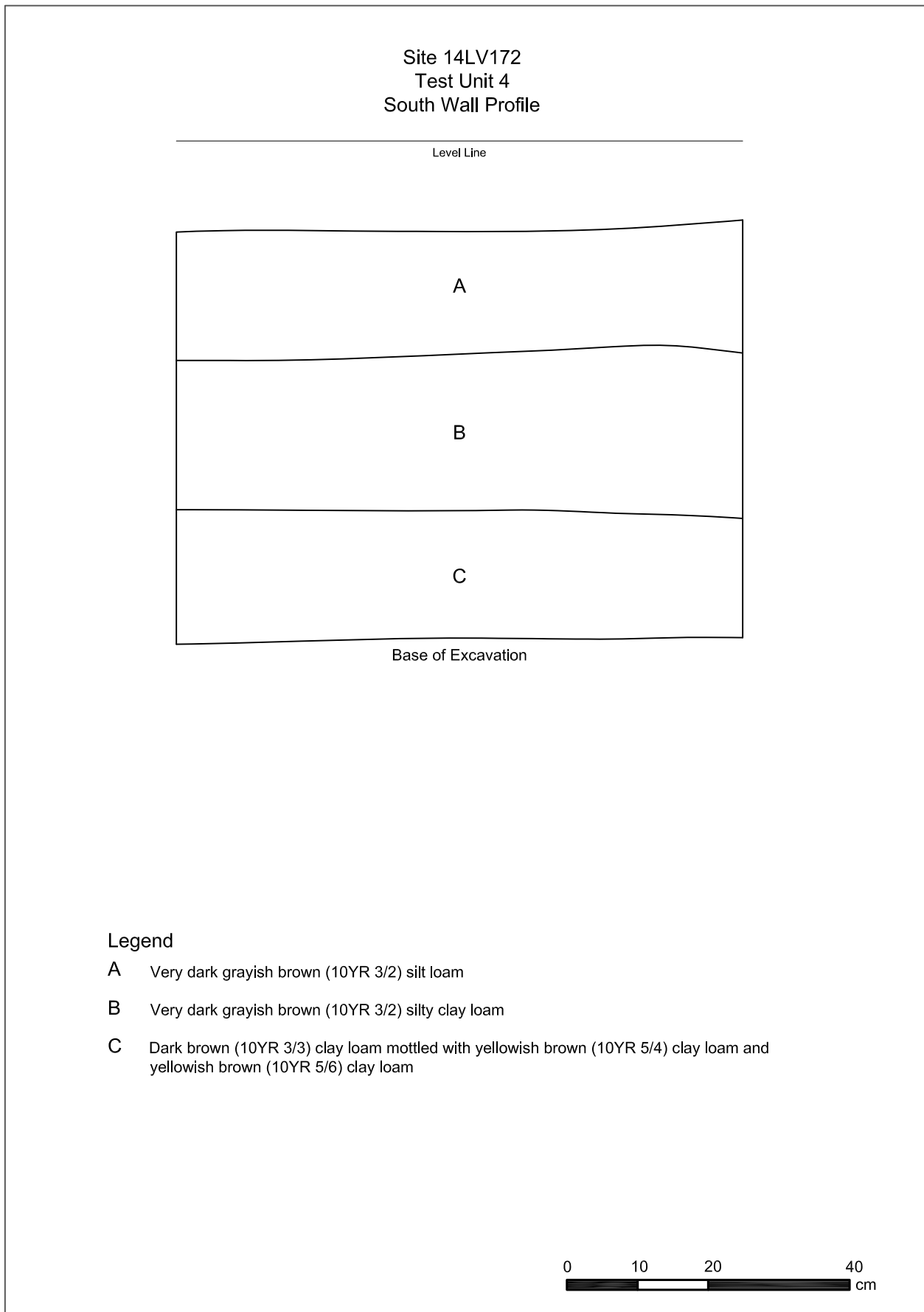


FIGURE 21: Profile of Test Unit 4 at Site 14LV172



PLATE 27: Profile of Test Unit 4 at Site 14LV172, View South.

e. *Test Unit 5*

Test Unit 5 was placed in the southeastern portion of the site at grid North 988 to 989, East 1044 to 1045 (see Figure 17). During the Phase II intensive survey Shovel Test 18-25 E15, which was situated within 5 meters of Test Unit 5, produced six chipped-stone artifacts from the Ap horizon, including the lower half of a corner-notched arrow point. Test Unit 5 was 1 meter square in size and excavated in six arbitrary 10-centimeter levels to a maximum depth of 70 centimeters below datum (60 centimeters bgs). The unit datum was placed near the southwestern corner.

Three strata were observed in Test Unit 5 (Figure 22; Plate 28). The Ap horizon was 22 centimeters thick on the east side and 32 centimeters thick on the west side because of the ground slope. It was dark grayish brown (10YR 4/2) silty clay loam. The A horizon was composed of a dark grayish brown (10YR 4/2) clay loam and extended to 40 centimeters bgs. The Bt horizon, which was present between 40 and 60 centimeters bgs, consisted of a grayish brown (10YR 5/2) clay loam. A narrow stain of very dark grayish (10YR 3/1) clay loam appeared to be the result of a decayed root of a tree or shrub.

In Test Unit 5 prehistoric artifacts were limited to the Ap and A horizons and include four pieces of lithic debitage, one unmodified stone, and two fragments of burned clay (Table 34). One biface reduction flake and two pieces of shatter are made of Plattsmouth chert. A flake fragment of Toronto chert was treated. Historic artifacts were also recovered from the Ap and A horizons and include four brick fragments, two window glass fragments, and one sherd of soft-paste porcelain.

TABLE 34

ARTIFACT DISTRIBUTION BY EXCAVATION LEVEL IN TEST UNIT 5 AT SITE 14LV172

ARTIFACT TYPE	1	2	3	4	5	6	TOTAL
Biface Reduction Flake	--	1	--	--	--	--	1
Flake Fragment	--	--	1	--	--	--	1
Block Shatter	1	--	--	1	--	--	2
Burned Clay	--	2	--	--	--	--	2
Rock/Stone	--	--	1	--	--	--	1
Brick	--	2	2	--	--	--	4
Window Glass	--	--	1	1	--	--	2
Soft-Paste Porcelain	--	1	--	--	--	--	1
Total	1	6	5	2	0	0	14

f. *Discussion*

A total of 166 artifacts were recovered during the Phase III excavations at Site 14LV172 (Tables 35 and 36). Of these, 120 (72.3%) are prehistoric chipped-stone artifacts. Prehistoric lithic artifacts were in the highest concentration in Test Unit 3 (N=44) and Test Unit 4 (N=62). Test Units 2 and 5 had the lowest densities of prehistoric lithic artifacts, totaling three and six items, respectively (see Tables 31 and 34). Test Units 3 and 4 were closer to the center of the site area; Test Unit 2 was situated in the northwestern portion of the site and Test Unit 5 at the southwestern edge of the site area. This indicates that prehistoric cultural material appears to be concentrated around the central portion of the site and diminishes in quantity rapidly toward the peripheries of the site. Test Units 3 and 4 were closest to the first two positive shovel tests at Site 14LV172 in the Phase II survey. TR 16-24 was located just one meter west of Test Unit 3 and TR 18-25 was located approximately 10 meters west of Test Unit 4. As discussed above, these two areas were distinct at first during the Phase II survey, but positive radial shovel tests eventually linked the two into a single elongated site area (Schoen and Dieber 2011). The Phase III test unit excavations elaborate on these findings as it now appears that the two areas represent two loci of prehistoric activity approximately 100 meters apart and connected by deposits of lower density.

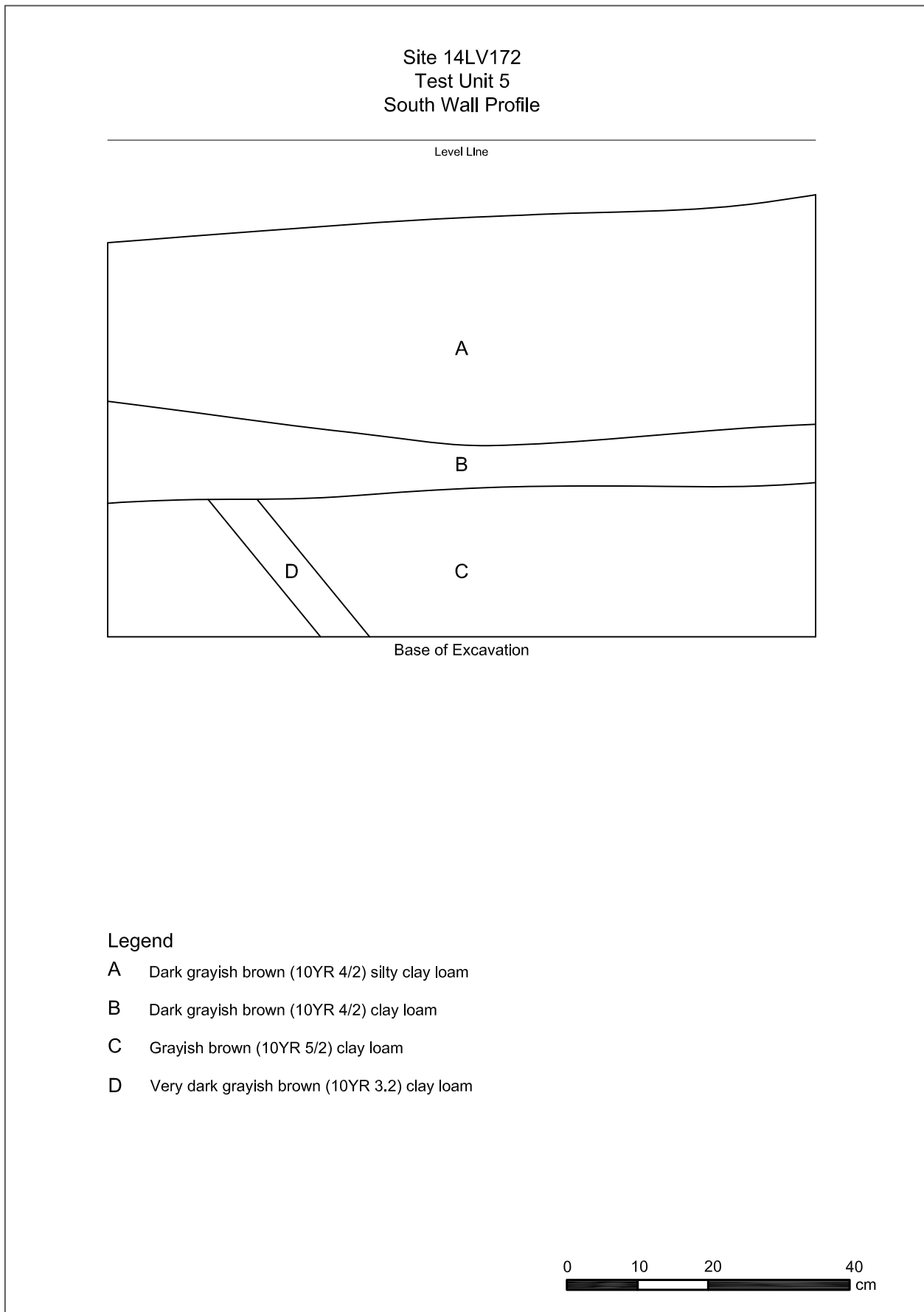


FIGURE 22: Profile of Test Unit 5 at Site 14LV172



PLATE 28: Profile of Test Unit 5 at Site 14LV172, View South.

TABLE 35

ARTIFACT DISTRIBUTION BY TEST UNIT AT SITE 14LV172

ARTIFACT TYPE	TU 1	TU 2	TU 3	TU 4	TU 5	TOTAL
Projectile Point	--	--	--	1	--	1
Biface Tip	--	--	1	--	--	1
Biface Base	--	--	1	--	--	1
Biface	--	--	1	--	--	1
Flake Tool	--	--	1	--	--	1
Decortication Flake	1	1	6	3	--	11
Early Reduction Flake	1	1	5	9	--	16
Biface Reduction Flake	6	1	14	38	1	60
Finishing Flake	--	--	4	1	--	5
Flake Fragment	1	--	1	6	1	9
Block Shatter	2	--	5	4	2	13
Core	--	--	1	--	--	1
Fire-cracked Rock	--	--	4	--	--	4
Burned Clay	1	--	--	--	2	3
Charcoal	--	--	2	--	--	2
Brick	4	2	--	1	4	11
Cement	1	1	1	--	--	3
Coal	--	--	2	--	--	2
Mortar	--	2	--	--	--	2
Iron Hex Nut	--	1	--	--	--	1
Coal Slag	3	--	--	--	--	3
Soft-Paste Porcelain	--	--	--	--	1	1
Ceramic Insulator	1	--	--	--	--	1
Unidentified Rubber	1	--	--	--	--	1
Window Glass	--	--	--	--	2	2
Rock/Stone	3	--	6	--	1	10
Total	25	9	55	63	14	166

All of the historic artifacts (N=27, 16%) were recovered from the Ap and A horizons, up to a depth of 40 centimeters bgs (see Table 36). A majority of prehistoric finds were also recovered from the Ap and A horizons, though 13 chipped-stone artifacts were recovered from the AB horizon between 40 and 50 centimeters bgs and four lithics were recovered from the Bt horizon at 60 to 80 centimeters bgs in Test Unit 3.

The diversity of chipped-stone artifact material at Site 14LV172 is notably higher than that of Sites 14LV169, 14LV171, and 14LV176. The 12 kinds of raw material identified among the lithic tools and debitage at 14LV172 include nine varieties of chert: Argentine, Burlington, Florence C, Florence D, Plattsmouth, Toronto, Westerville, Winterset, and an unidentified chert (Table 37). The stone tools include a Reed variety arrow point of brown unidentified chert, two biface fragments of Westerville chert, one biface of Plattsmouth chert, and one flake tool of unidentified chert. Overall, Plattsmouth chert accounts for the majority of chipped-stone artifacts (N=61, 50.8%), mostly occurring in the form of debitage. Toronto chert accounts for 16.7 percent (N=20) of the lithic assemblage, wholly in the form of debitage. Unidentified chert accounts for 11.7 percent (N=14) of the lithics. Other varieties include Florence C (N=8; 6.7%), Smoky Hill jasper (N=4; 3.3%), Westerville and Winterset (N=3; 2.5% each), Burlington and Florence D (N=2; 1.7% each), and one each (0.8%) of Argentine, chalcedony, and quartzite.

TABLE 36

ARTIFACT DISTRIBUTION BY EXCAVATION LEVEL AT SITE 14LV172

ARTIFACT TYPE	1	2	3	4	5	6	7	8	9	10	TOTAL
Projectile Point	--	1	--	--	--	--	--	--	--	--	1
Biface Tip	--	--	--	--	1	--	--	--	--	--	1
Biface Base	--	--	--	--	1	--	--	--	--	--	1
Biface	--	--	--	--	1	--	--	--	--	--	1
Flake Tool	--	--	--	--	1	--	--	--	--	--	1
Decortication Flake	--	2	6	--	1	1	1	--	--	--	11
Early Reduction Flake	--	7	8	--	1	--	--	--	--	--	16
Biface Reduction Flake	1	18	35	2	3	--	--	1	--	--	60
Finishing Flake	--	1	4	--	--	--	--	--	--	--	5
Flake Fragment	--	4	4	1	--	--	--	--	--	--	9
Block Shatter	1	3	3	2	3	--	1	--	--	--	13
Core	--	--	--	--	1	--	--	--	--	--	1
Fire-cracked Rock	--	--	1	--	3	--	--	--	--	--	4
Burned Clay	--	2	--	1	--	--	--	--	--	--	3
Charcoal	--	--	2	--	--	--	--	--	--	--	2
Brick	--	7	4	--	--	--	--	--	--	--	11
Cement	--	3	--	--	--	--	--	--	--	--	3
Coal	--	--	2	--	--	--	--	--	--	--	2
Mortar	--	1	1	--	--	--	--	--	--	--	2
Iron Hex Nut	--	--	1	--	--	--	--	--	--	--	1
Coal Slag	--	1	2	--	--	--	--	--	--	--	3
Soft-Paste Porcelain	--	1	--	--	--	--	--	--	--	--	1
Ceramic Insulator	--	1	--	--	--	--	--	--	--	--	1
Unidentified Rubber	--	1	--	--	--	--	--	--	--	--	1
Rock/Stone	--	2	2	--	6	--	--	--	--	--	10
Window Glass	--	--	1	1	--	--	--	--	--	--	2
Total	2	55	76	7	22	1	2	1	0	0	166

TABLE 37

ARTIFACT CLASS/TYPE BY MATERIAL TYPE FROM TEST UNITS AT 14LV172

	Projectile Point	Finished Biface	Flake Tool	Decort. Flake	Early Red. Flake	Biface Red. Flake	Finishing Flake	Flake Fragment	Block Shatter	Core	Total
Argentine Chert	--	--	--	--	--	1	--	--	--	--	1
Burlington Chert	--	--	--	--	--	--	1	1	--	--	2
Florence C Chert	--	--	--	--	1	6	--	1	--	--	8
Florence D Chert	--	--	--	--	--	1	1	--	--	--	2
Plattsmouth Chert	--	1	--	4	13	26	3	2	11	1	61
Toronto Chert	--	--	--	4	--	14	--	2	--	--	20
Westerville Chert	--	2	--	--	--	1	--	--	--	--	3
Winterset Chert	--	--	--	--	--	3	--	--	--	--	3
Unidentified Chert	1	--	1	3	--	6	--	2	1	--	14
Chalcedony	--	--	--	--	--	--	--	1	--	--	1
Quartzite	--	--	--	--	--	--	--	--	1	--	1
Smoky Hill Jasper	--	--	--	--	2	2	--	--	--	--	4
Total	1	3	1	11	16	60	5	9	13	1	120

The dominant quantities of tool stone present at Site 14LV172 are available locally, such as Toronto and Plattsmouth chert, with other local varieties of Argentine, Westerville, and Winterset chert present in smaller quantities. Though fewer in number, more exotic varieties, including Florence cherts, jasper, and chalcedony, likely originate farther west in Kansas. Burlington chert is more likely to originate in

southeastern Iowa, central and eastern Missouri, and west-central Illinois (Logan 1988; Padilla and Ritterbush 2005). Heat treatment is present on 37 (31%) of the lithic artifacts (Table 38).

TABLE 38

HEAT-TREATED LITHIC ARTIFACTS BY MATERIAL TYPE FROM TEST UNITS AT SITE 14LV172

	Finished Biface	Decort. Flake	Early Red. Flake	Biface Red. Flake	Flake Fragment	Block Shatter	Total
Burlington Chert	--	--	--	--	1	--	1
Florence C Chert	--	--	--	2	1	--	3
Plattsmouth Chert	1	1	6	13	--	--	21
Toronto Chert	--	2	--	4	2	--	8
Unidentified Chert	--	1	--	1	1	1	4
Total	1	4	6	20	5	1	37

All stages of lithic reduction are represented in the chipped stone assemblage, including the Reed-like projectile point, three bifaces, and a flake tool. The lithic assemblage reflects that the site occupants used diverse lithic materials, some of which may have come from non-local regions. Plate 29 shows examples of the types of materials found in the lithic assemblage of Site 14LV172. The stone material types identified in the Phase III show variety with a preference for local Plattsmouth and Toronto cherts. Lithic materials identified in the Phase II survey show a preponderance of Florence chert. The lithic material from the Phase II was examined during identification of the Phase III assemblage and as the types of artifacts from the Phase II were comparable with those of the Phase III, the difference in identifications is less likely to be a result of categorizing by two different individuals than an uneven distribution of lithic material across the site.

Three small pieces of burned clay were recovered from Site 14LV172 during Phase III test unit excavations (Plate 30). The fragments range in color from light gray to orange but have no identifiable temper or surfaces. The burned clay did not appear to be associated with a feature.

The Phase III site evaluation investigation of Site 14LV172 has yielded one Reed-type arrow point, three bifaces, one flake tool, one core, 114 pieces of chipped stone debitage, four fire-cracked rocks, and three pieces of burned clay. The prehistoric assemblage from the Phase II survey completed by Louis Berger (Schoen and Deiber 2011) contributed a heavily reworked corner-notched arrow point and a Koster-like arrow point, four bifaces, two cores, four utilized flakes, and 108 debitage. The three burned clay fragments are not diagnostic, and no charcoal was recovered suitable for carbon dating.

No archaeological features were found that suggest the presence of a house or activity areas at Site 14LV172. No cultigens were discovered and no bone tools or bone from processing animals for food were recovered to enhance our knowledge of subsistence practices. The recovered assemblage lacks both volume and diversity of artifact types so that significant research questions cannot be meaningfully addressed. The absence of radiocarbon dates makes it impossible to attribute site to any particular cultural phase with confidence. The three projectile points are the only temporally diagnostic artifacts recovered. Reed points have been found across eastern Great Plains from Oklahoma to Iowa and were used from about AD 500 to 1500 (Morrow 1984:82). Koster arrow points are common Late Woodland types throughout the Upper Mississippi River valley and eastern Iowa between AD 600 and 900 (Morrow 1984:78), so this identification is tentative. However, as has been suggested for Site 14LV169 and 14LV171, very few ceramic sherds have been found at these three sites — none at Site 14LV172 — which seems peculiar for Middle Ceramic period occupations. Perhaps Site 14LV172 is associated with the Early Ceramic period unnamed Kansas City culture.



PLATE 29: Chipped Stone Tools from Site 14LV172.

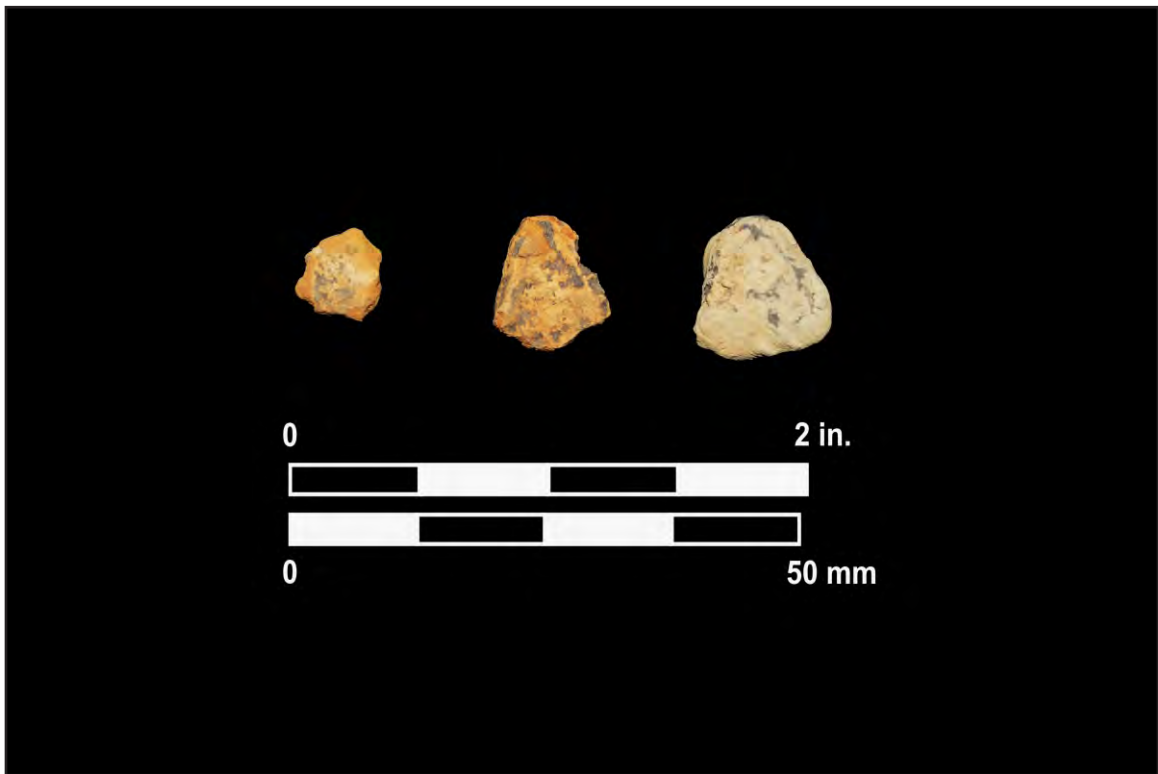


PLATE 30: Miscellaneous Artifacts from Site 14LV172.

Despite the recovery of several lithic artifacts from below the depth of 40 centimeters bgs in Test Unit 3, prehistoric material from the other test units was mixed with historic artifacts and were not situated in contexts with good integrity. Other than providing new information about lithic reduction activities and selection of lithic material for tools, the site has low potential for contributing important new information about the prehistory of Leavenworth or the broader region. For all these reasons, Louis Berger recommends that Site 14LV172 be considered not eligible for listing in the National Register under Criterion D.

E. SITE 14LV176

Map Source:	Leavenworth, KS, 7.5' Series USGS Topographic Quad (1982)
Site Type:	Lithic scatter
Cultural Affiliation:	Unknown prehistoric
Site Size:	102.0 meters (334.6 feet) NE to SW by 20.0 meters (65.6 feet) NW to SE 1,836.0 square meters (19,759.6 square feet)
Phase II Methods:	Pedestrian survey and shovel testing
Phase III Methods:	Excavation of five 1x1 meter test units
Area Excavated:	72 shovel tests and 5 test units (33.8 sq. meters/363.8 sq. feet)
Cultural Materials Collected:	Phase II: 2 Utilized flakes and 37 debitage Phase III: 2 Cores, 115 debitage, 4 fire-cracked rock, 1 hematite, and 2 unmodified sandstone
Landform:	Ridge toe
Elevation:	830 to 850 feet above mean sea level
Land Use/Surface Visibility:	Grass (Less than 10% surface visibility)
Soil Type:	Ladoga silt loam 3 to 8% slopes (7285)
Site Disturbance:	Cultivation and erosion
Relation to Project Limits:	30% within Alternative FCI East-1 and Alternative Hybrid
National Register Eligibility:	Not eligible
Recommendations:	No additional archaeological investigations

Site 14LV176 is the location of a large prehistoric lithic scatter of undetermined cultural association originally identified during the Phase II survey of the USP property (Schoen and Deiber 2011). The site is situated on an upland ridge toe in the proposed East Site (Plates 31 and 32).

1. *Summary of Phase II Intensive Survey*

During the Phase II intensive survey in 2011, 72 shovel tests were excavated within a 30-meter grid. Shovel Test TR 62-38 yielded one flake from the Bt horizon and Shovel Test TR 64-39 yielded two flake fragments from the Ap horizon. Radial shovel tests excavated at 5- and 10-meter intervals from these positive shovel tests to determine site boundaries resulted in an additional 18 shovel tests with artifacts. The positive tests were primarily located in the southwestern half of the site around Shovel Test TR 62-38, but three positive tests were situated approximately 30 meters to the northeast around Shovel Test TR 64-39, suggesting two loci of activity. Shovel testing determined that Site 14LV176 measured 102.0 meters northeast to southwest by 20.0 meters northwest to southeast.

The soil profiles in the shovel tests included an Ap horizon of very dark grayish brown (10YR 3/2) to dark brown (10YR 3/3) silt loam ranging in thickness from 17 to 44 centimeters, but usually between 25 and 30 centimeters thick. Below the Ap horizon was a Bt horizon of dark yellowish brown (10YR 4/6) or yellowish brown (10YR 5/4 or 10YR 5/6) silty clay loam. The boundary between the two strata was clear to gradual. Shovel tests were excavated to between 32 and 60 centimeters bgs.



PLATE 31: Overview of Site 14LV176, View West.



PLATE 32: Overview of Site 14LV176, View East.

Two utilized flakes and 37 pieces of debitage were recovered from Site 14LV176 during the Phase II survey. The majority of artifacts (N=37, 95%) were recovered from the Ap horizon, with only two items (5%) from the Bt horizon (Table 39). The material types include Florence chert (N=21, 50.0% by weight), silicified sediment (N=13, 37.8% by weight), jasper (N=3, 10.7% by weight), and unidentified chert (N=2, 1.5% by weight). Heat treatment is present on eight of the 13 pieces of silicified sediment (24% by weight). Only two of the 21 pieces of Florence chert (1.9% by weight) and one of the two unidentified chert artifacts (0.7% by weight) were heated. The debitage of jasper and silicified sediment were not heat treated. Cortex was identified on two flakes of Florence chert and on one jasper flake.

TABLE 39

ARTIFACT CLASS/TYPE BY STRATUM FOR SITE 14LV176

ARTIFACT CLASS/TYPE	SOIL STRATUM		
	Ap	Bt	Total
Utilized Flake	2	--	2
Decortication Flake	1	--	1
Early Reduction Flake	2	1	3
Biface Reduction Flake	13	--	13
Finishing Flake	6	--	6
Flake Fragment	13	1	14
Total	37	2	39

Site 14LV176 was determined to be the location of a large prehistoric lithic scatter of undetermined cultural association situated on a ridge toe (Schoen and Deiber 2011). One quarter (N=20) of the shovel tests excavated at the site yielded chipped stone artifacts, although no formal tools were recovered. The types of artifacts recovered suggested a location where prehistoric people were reducing chert cobbles into biface preforms and shaping formal tools such as arrow points, knives, drills, and scrapers. Although the site had been disturbed to some degree by cultivation and erosion, some artifacts were recovered from the Bt horizon, which suggested the possibility of intact subsurface deposits. When considered in conjunction with Sites 14LV169, 14LV171, 14LV172, and 14LV181 (of similar size and artifact density), Site 14LV176 was considered to be another site of Late Prehistoric age that represented, together with the other four sites, recurring occupation of the locale.

Based on the findings of the Phase II intensive survey, Louis Berger recommended that Site 14LV176 be considered potentially eligible for listing in the National Register under Criterion D. Louis Berger recommended avoidance of Site 14LV176 by any proposed construction or other ground disturbance activities. If the site could not be avoided, Louis Berger recommended that Phase III site evaluation be performed to determine whether the site has sufficient integrity and potential to answer important research questions regarding the prehistory of the locality and/or region (Schoen and Deiber 2011).

2. Phase III Site Evaluation

At the time of site testing to evaluate the National Register eligibility of Site 14LV176 in July 2014, the site area was covered in prairie grass with a small stand of locust trees in the northeastern end of the site. Ground surface visibility was less than 10 percent. The Trimble GPS unit was used to navigate to the location of Shovel Test TR 64-39. From this location a 5-meter grid was established over the site oriented to magnetic north. A point 25 meters south and 47 meters west of Shovel Test TR 64-39 was arbitrarily identified as grid North 1000, East 1000 (Figure 23).

Figure 23 has been removed because it contains confidential information not for public distribution.

a. *Test Unit 1*

Test Unit 1 was placed in the center of western half of the site at grid North 989 to 990, East 983 to 984 (see Figure 23). During the Phase II survey two positive shovel tests that were within 5 meters of Test Unit 1 yielded a combined total of eight prehistoric chipped stone artifacts from the Ap horizon. Test Unit 1 was 1x1 meter in size and excavated in five arbitrary 10-centimeter levels to a maximum depth of 60 centimeters below datum (50 centimeters bgs). The unit datum was placed near the northwestern corner of the unit.

Two strata were observed in the unit (Figure 24; Plate 33). The strata consisted of an Ap horizon 26 centimeters thick of compact brown (10YR 4/3) silty clay loam, changing to a Bt horizon of light olive brown (2.5Y 5/6) clay loam. The Bt horizon was observed between 26 centimeters bgs and the bottom of excavation at 50 centimeters bgs.

In Test Unit 1 prehistoric artifacts consisted primarily of chipped stone debitage (N=35), including 19 biface reduction flakes, 13 flake fragments, and three pieces of block shatter (Table 40). Other items present include one hematite fragment and two sandstone fragments. All artifacts were recovered from the Ap horizon.

TABLE 40

ARTIFACT DISTRIBUTION BY EXCAVATION LEVEL IN TEST UNIT 1 AT SITE 14LV176

ARTIFACT TYPE	1	2	3	4	5	TOTAL
Biface Reduction Flake	--	13	6	--	--	19
Flake Fragment	1	7	5	--	--	13
Block Shatter	1	2	--	--	--	3
Hematite	--	--	1	--	--	1
Rock/Stone	1	1	--	--	--	2
Total	3	23	12	0	0	38

The 35 pieces of lithic debitage from Test Unit 1 include 12 biface reduction flakes and seven flake fragments of Toronto chert (54.3%); two biface reduction flakes, three flake fragments, and one piece of shatter of Plattsmouth chert (17.1%); three biface reduction flakes of Burlington chert (8.6%); two biface reduction flakes and one flake fragment of an unidentified chert (8.6%) that was described as reddened, heat-treated coarse-grained material; one flake fragment of another unidentified chert that was characterized as a gray and white agatized material; and two pieces of shatter also of a third unidentified variety of chert. Heat treating is present on 19 of the 35 lithics (54.3%): 13 of the Toronto chert artifacts, on two of the Plattsmouth chert specimens, and four of the unidentified chert artifacts.

b. *Test Unit 2*

Test Unit 2 was placed in the far western end of the site at grid North 990 to 991, East 971 to 972 (see Figure 23). During the Phase II survey two positive shovel tests situated within 5 meters of Test Unit 2 produced a combined total of two chipped stone artifacts, one each from the Ap and Bt horizons. Test Unit 2 was 1 meter square in size and excavated in five arbitrary 10-centimeter levels to a maximum depth of 60 centimeters below datum (50 centimeters bgs). The unit datum was placed near the northwestern corner of the unit.

Three strata were observed in the unit (Figure 25; Plate 34). The Ap horizon, 25 centimeters thick, consisted of brown (10YR 4/3) silt loam. Between 25 and 40 centimeters bgs, a Bt1 horizon was encountered consisting of dark yellowish brown (10YR 4/6) silty clay loam. The Bt2 horizon was identified between 40 centimeters and the base of excavation at 50 centimeters bgs. It was composed of dark yellowish brown (10YR 4/6) clay loam.

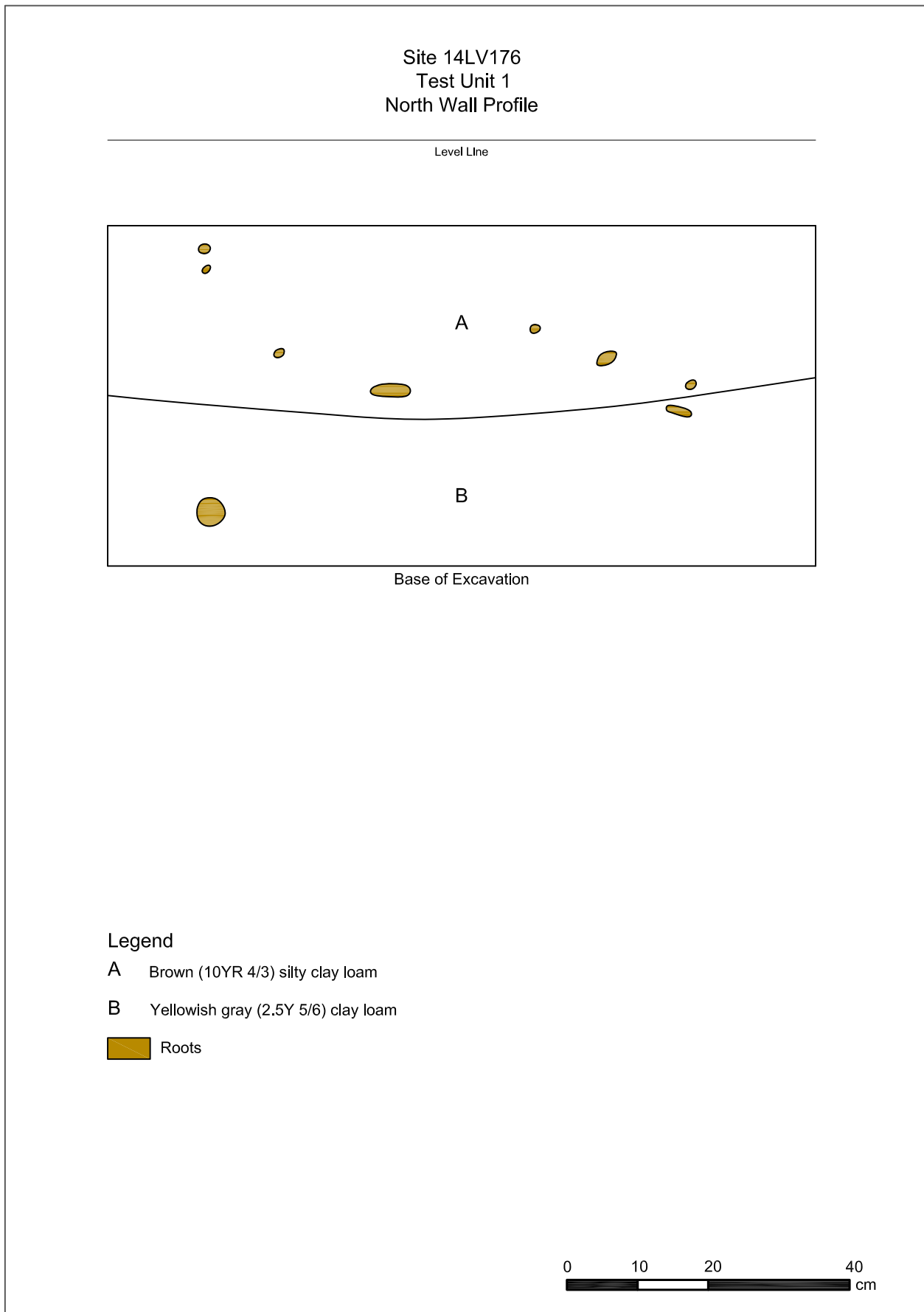


FIGURE 24: Profile of Test Unit 1 at Site 14LV176



PLATE 33: Profile of Test Unit 1 at Site 14LV176, View North.

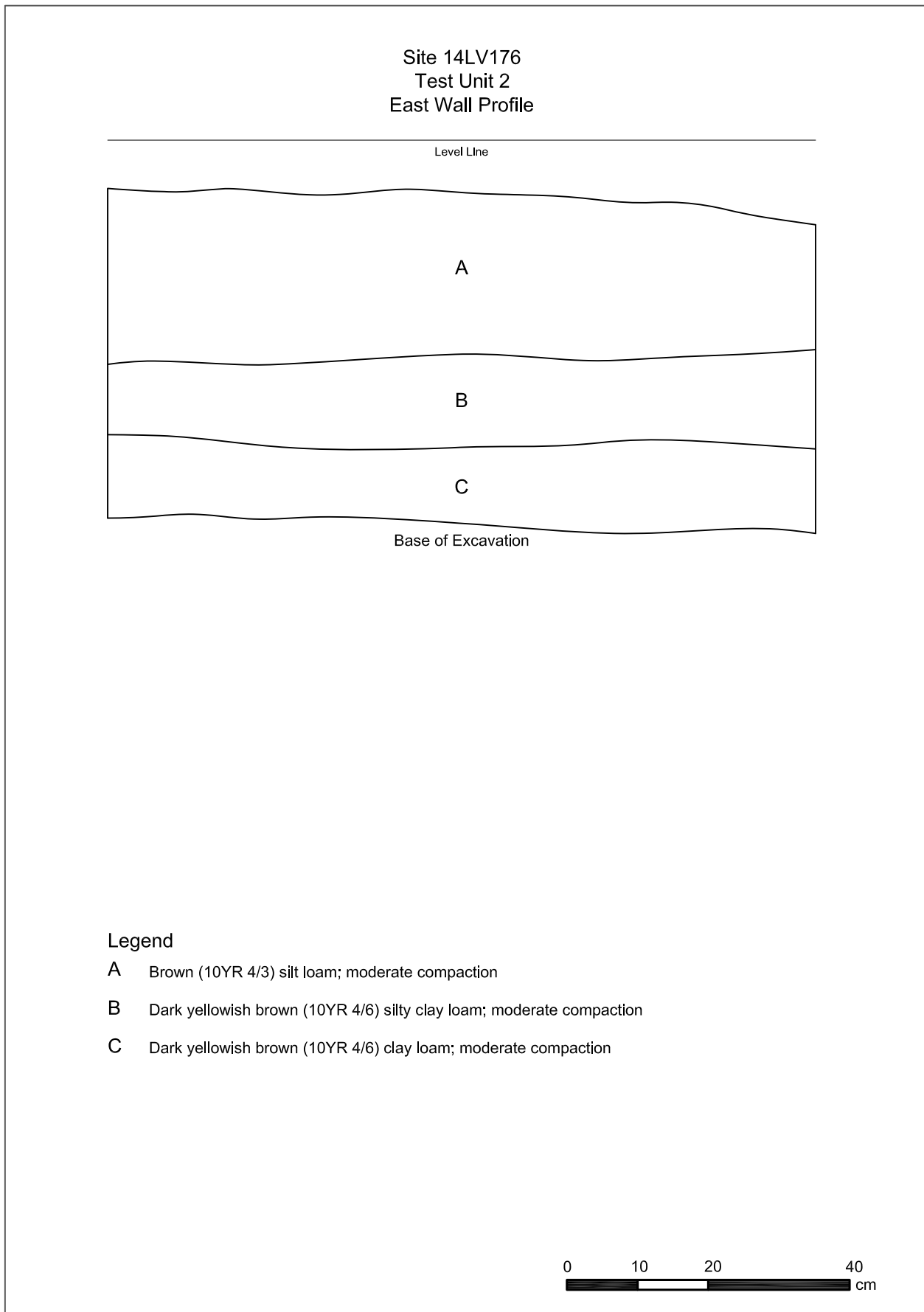


FIGURE 25: Profile of Test Unit 2 at Site 14LV176



PLATE 34: Profile of Test Unit 2 at Site 14LV176, View East.

In Test Unit 2, 13 prehistoric chipped stone artifacts were recovered from the Ap horizon: a core, four biface reduction flakes, seven flake fragments, and one piece of block shatter (Table 41). No artifacts of any kind were recovered from the Bt1 and Bt2 horizons. Four biface reduction flakes and two flake fragments are formed of Toronto chert, four flake fragments and one piece of shatter are of Plattsmouth chert, and one flake fragment is of Burlington chert. The core is made of Westerville chert. Five (38.5%) of the artifacts exhibit heat treatment: one biface reduction flake and two flake fragments of Toronto chert and a flake fragment and one piece of shatter of Portsmouth chert.

TABLE 41

ARTIFACT DISTRIBUTION BY EXCAVATION LEVEL IN TEST UNIT 2 AT SITE 14LV176

Artifact Type	1	2	3	4	5	TOTAL
Biface Reduction Flake	--	2	2	--	--	4
Flake Fragment	--	7	--	--	--	7
Block Shatter	--	1	--	--	--	1
Core	--	1	--	--	--	1
Total	0	11	2	0	0	13

c. *Test Unit 3*

Test Unit 3 was placed in the northern portion of the western half of the site at grid North 1001 to 1002, East 984 to 985 (see Figure 23). During the Phase II survey two positive shovel tests located within 5 meters of Test Unit 3 yielded a total of four chipped stone artifacts from the Ap horizon. Test Unit 3 was 1x1 meter in size and excavated in five arbitrary 10-centimeter levels to a maximum depth of 60 centimeters below datum (50 centimeters bgs). The unit datum was placed near the southwestern corner of the unit.

Two strata were observed (Figure 26; Plate 35). The Ap horizon was between 16 and 20 centimeters thick and consisted of dark yellowish brown (10YR 4/4) silty loam. Underlying the Ap horizon was a Bt horizon composed of yellowish brown (10YR 5/4) clayey loam. Excavation was halted at 50 centimeters bgs.

In Test Unit 3 prehistoric artifacts consisted entirely of chipped stone debitage including one decortication flake, five early reduction flakes, 25 biface reduction flakes, seven flake fragments, and two pieces of block shatter, and one core (Table 42). Of the 41 prehistoric artifacts, 33 were recovered from the 20-centimeter-thick Ap horizon. Six flakes, one piece of block shatter, and the core were recovered from the Bt horizon between 20 and 40 centimeters bgs. One fragment of colorless curved glass was also recovered from the Ap horizon.

TABLE 42

ARTIFACT DISTRIBUTION BY EXCAVATION LEVEL IN TEST UNIT 3 AT SITE 14LV176

ARTIFACT TYPE	1	2	3	4	5	TOTAL
Decortication Flake	--	1	--	--	--	1
Early Reduction Flake	1	4	--	--	--	5
Biface Reduction Flake	3	20	2	--	--	25
Flake Fragment	3	--	2	2	--	7
Block Shatter	1	--	--	1	--	2
Core	--	--	1	--	--	1
Curved Glass	--	1	--	--	--	1
Total	8	26	5	3	0	42

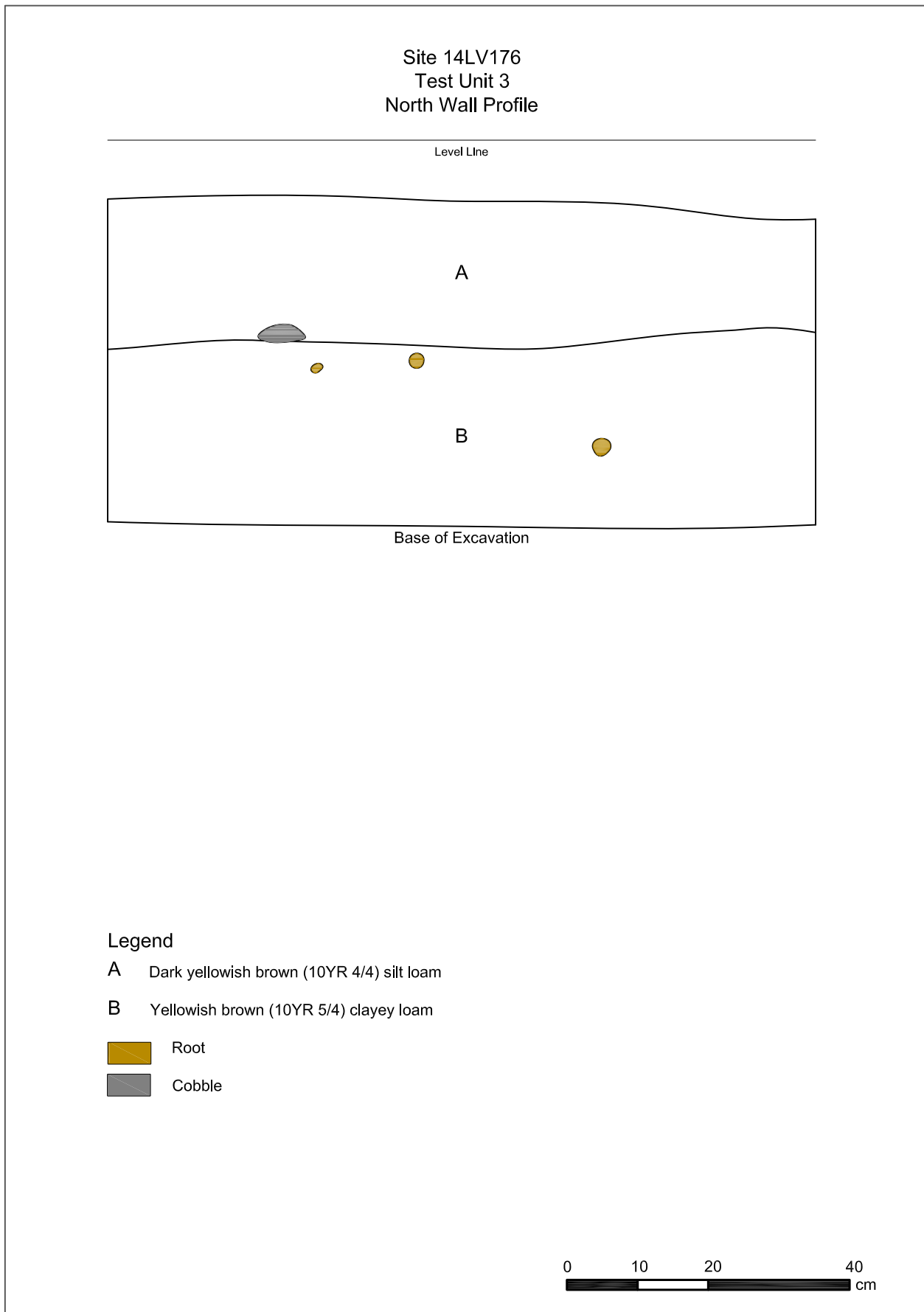


FIGURE 26: Profile of Test Unit 3 at Site 14LV176



PLATE 35: Profile of Test Unit 3 at Site 14LV176, View North.

The 41 pieces of lithic debitage include 27 artifacts (65.8%) of Plattsmouth chert (one core, one decortication flake, three early reduction flakes, 20 biface reduction flakes, and one flake fragment), five (12.2%) of Toronto chert (one early reduction flake, two biface reduction flakes, and two flake fragments), two (4.9%) biface reduction flakes of Westerville chert, one (2.4%) flake fragment of Winterset chert, and one biface reduction flake of Florence A chert. Five (12.2%) pieces were of unidentified chert, characterized as ranging from brown to white in color. Heat treatment is present on three early reduction flakes and nine biface reduction flakes of the Plattsmouth chert.

d. Test Unit 4

Test Unit 4 was located in the southeastern portion of the western half of the site at grid North 989 to 990, East 1000 to 1001 (see Figure 23). During the Phase II survey three positive shovel tests situated within 5 meters of Test Unit 4 had a combined total of 11 chipped stone artifacts recovered from the Ap horizon. Test Unit 4 was 1 meter square in size and excavated in five arbitrary 10-centimeter levels to maximum depth of 60 centimeters below datum (50 centimeters bgs). The unit datum was placed near the northwestern corner of the unit.

Two strata were observed in the unit (Figure 27; Plate 36). The Ap horizon was 38 centimeters thick and consisted of yellowish brown (10YR 5/4) silt loam. Beneath the Ap horizon, the Bt horizon was dark yellowish brown (10YR 3/4) silty clay loam. Excavation ceased at 50 centimeters bgs.

From Test Unit 4 recovered artifacts consist of 18 chipped stone debitage recovered from the Ap horizon above 30 centimeters bgs (Table 43). Eight (44.4%) of the debitage are of Toronto chert: one early reduction flake and seven flake fragments. Four (22.2%) specimens of Plattsmouth chert include two biface reduction flakes and two pieces of shatter. Two (11.1%) flake fragments are of Burlington chert. Four (22.2%) flake fragments of unidentified chert were characterized as ranging from light tan to white in color, fine grained texture, and small black inclusions. Heat treating is present on a majority (N=14, 78%) of the debitage, including one early reduction flake and six flake fragments of Toronto chert, the two biface reduction flakes and two pieces of shatter of Plattsmouth, one flake fragment of Burlington, and two flake fragments of the unidentified chert.

TABLE 43

ARTIFACT DISTRIBUTION BY EXCAVATION LEVEL IN TEST UNIT 4 AT SITE 14LV176

ARTIFACT TYPE	1	2	3	4	5	TOTAL
Early Reduction Flake	--	--	1	--	--	1
Biface Reduction Flake	--	--	2	--	--	2
Flake Fragment	1	4	8	--	--	13
Block Shatter	--	--	2	--	--	2
Total	1	4	13	0	0	18

e. Test Unit 5

Test Unit 5 was placed in the northeastern corner of the site at grid North 1025 to 1026, East 1047 to 1048 (see Figure 23). During the Phase II survey one shovel test that was located within 5 meters of Test Unit 5 produced two chipped stone artifacts from the Ap horizon. Test Unit 5 was 1x1 meter in size and excavated in five arbitrary 10-centimeter levels to a maximum depth of 60 centimeters below datum (50 centimeters bgs). The unit datum was placed near the southwestern corner of the unit.

Two strata were observed in the unit (Figure 28). The Ap horizon varied in thickness between 24 centimeters in the south and 34 centimeters in the northeast, and sloped down to the north and east both on the ground surface and, at a greater degree, at the interface of the Ap horizon with the underlying Bt

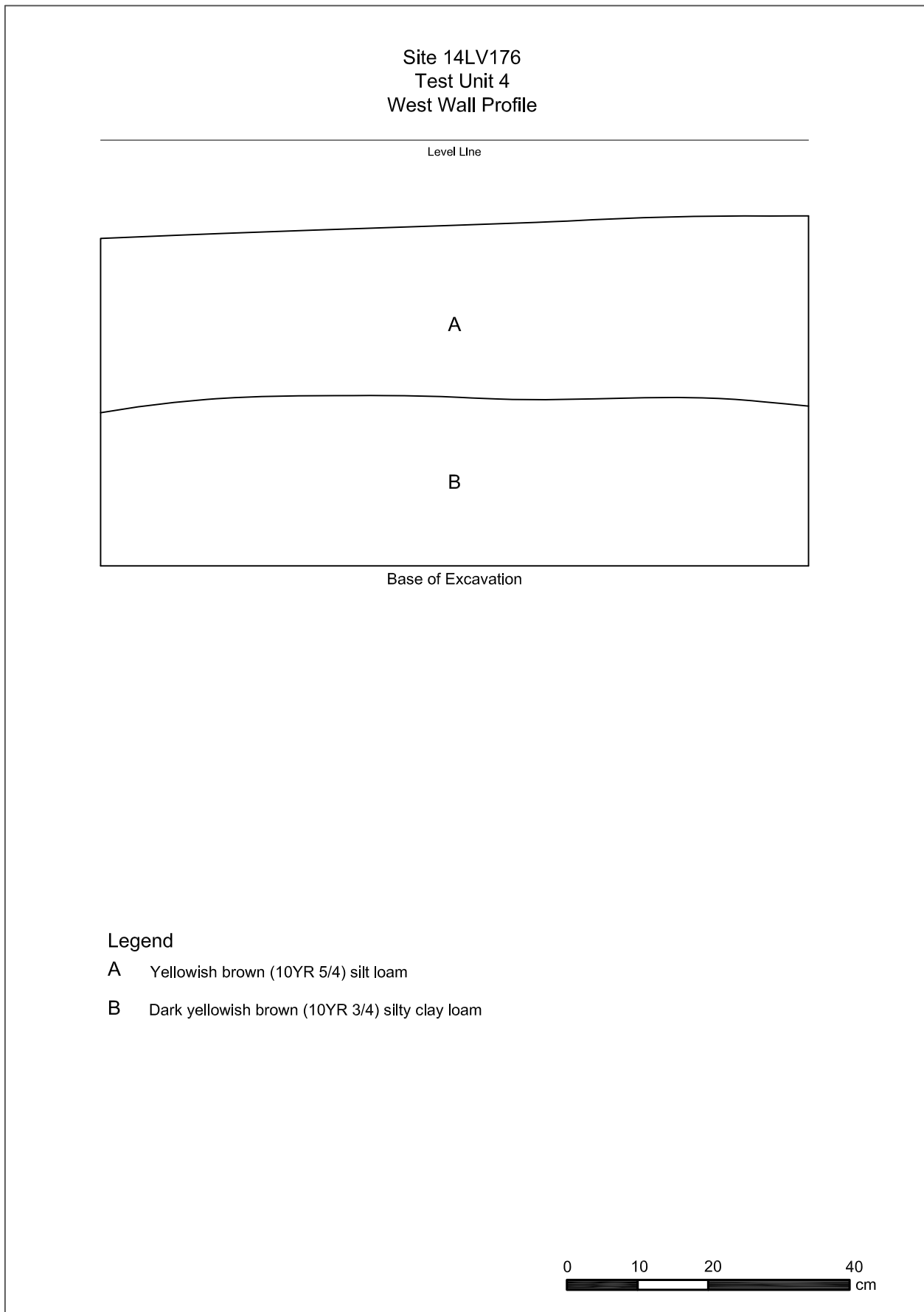


FIGURE 27: Profile of Test Unit 4 at Site 14LV176



PLATE 36: Profile of Test Unit 4 at Site 14LV176, View West.

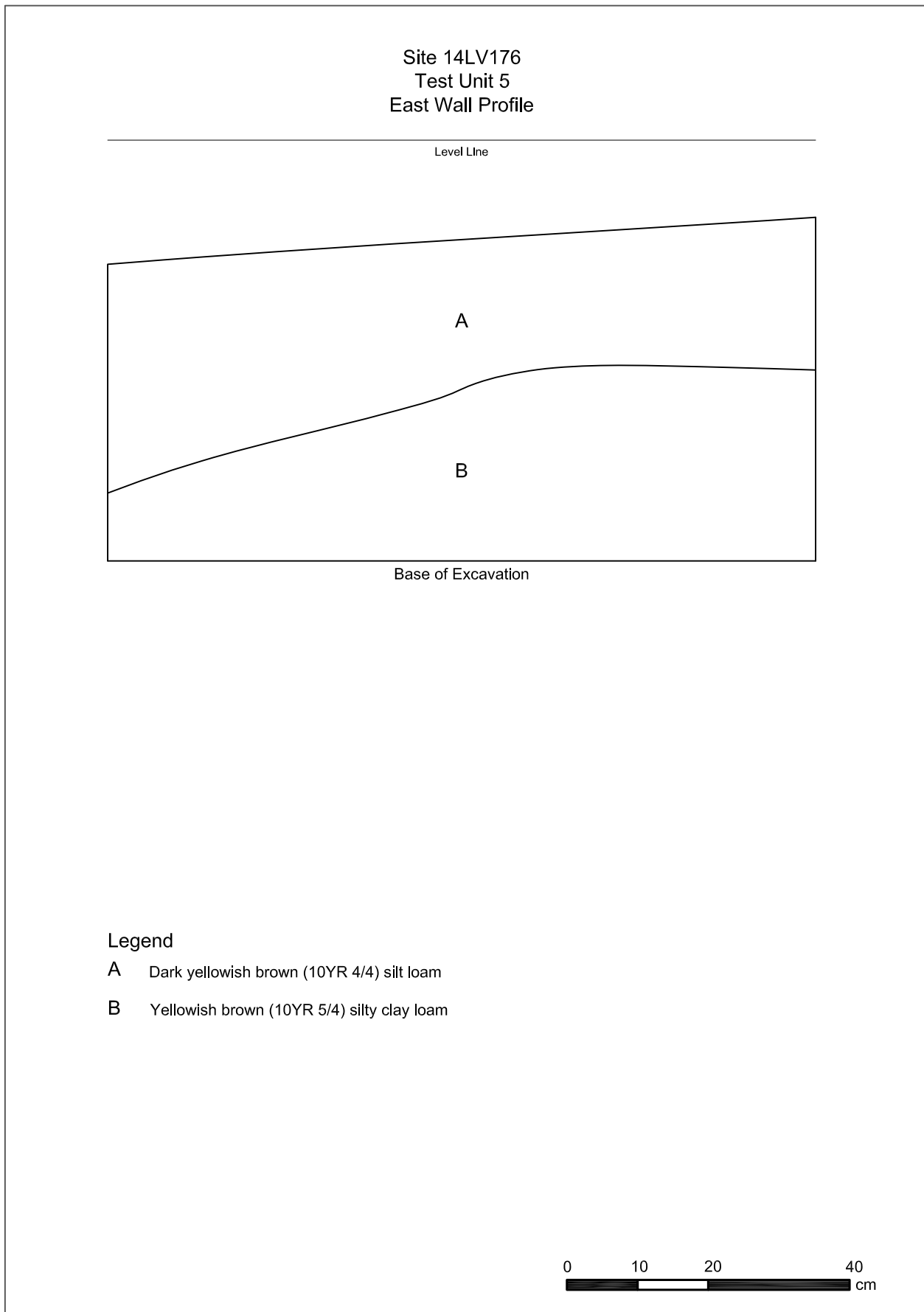


FIGURE 28: Profile of Test Unit 5 at Site 14LV176

horizon. The Ap horizon consisted of a dark yellowish brown (10YR 4/4) silt loam. The Bt horizon was yellowish brown (10YR 5/4) silty clay loam.

Fourteen prehistoric artifacts were recovered in Test Unit 5, all from above 30 centimeters bgs in the Ap horizon. No artifacts were recovered from the Bt horizon. Artifacts include one early reduction flake and six biface reduction flakes of Plattsmouth chert, one early reduction flake and one biface reduction flake of Toronto chert, one piece of shatter of Florence C chert, and four fragments of fire-cracked rock (Table 44). Heat treatment is present on three biface reduction flakes of Plattsmouth chert and the piece of Florence C chert shatter.

TABLE 44

ARTIFACT DISTRIBUTION BY EXCAVATION LEVEL IN TEST UNIT 5 AT SITE 14LV176

ARTIFACT TYPE	1	2	3	4	5	TOTAL
Early Reduction Flake	--	2	--	--	--	2
Biface Reduction Flake	--	4	1	2	--	7
Block Shatter	--	1	--	--	--	1
Fire-cracked Rock	--	--	--	4	--	4
Total	--	7	1	6	--	14

f. Discussion

Five 1-meter-square test units were excavated at Site 14LV176 during the Phase III site evaluation investigations. The units were spaced to test different portions of the site and were located where clusters of positive shovel tests were situated. The artifact assemblage at Site 14LV176 is dominated by chipped stone debitage (N=117, 94%) and includes no finished lithic tools (Table 45). Other prehistoric finds include four fire-cracked rocks, two unmodified sandstone fragments, and one hematite fragment. The only historic artifact recovered is a sherd of clear curved glass. The prehistoric debitage was highest in Test Unit 3 (N=41, 35%) and Test Unit 1 (N=35, 30%). These units are located in the southeastern portion of the site, approximately 10 meters east of the original positive shovel test of the site, TR 62-38. This area appeared to be the site core, an area of higher intensity or repetition of use by prehistoric occupants. Test Unit 2, situated at the western end of the site core, and Test Unit 4, in the southeastern part of the site core, contained a lower density of prehistoric finds, 13 specimens (10.5%) and 28 artifacts (22.6%), respectively. Only 14 artifacts (11.3%) were recovered in Test Unit 5, which was situated in the second loci at the far eastern end of the site. This area also appeared to be a lesser used portion of the site.

TABLE 45

ARTIFACT DISTRIBUTION BY TEST UNIT AT SITE 14LV176

ARTIFACT TYPE	TU 1	TU 2	TU 3	TU 4	TU 5	TOTAL
Decortication Flake	--	--	1	--	--	1
Early Reduction Flake	--	--	5	1	2	8
Biface Reduction Flake	19	4	25	2	7	57
Flake Fragment	13	7	7	13	--	40
Block Shatter	3	1	2	2	1	9
Core	--	1	1	--	--	2
Fire-cracked Rock	--	--	--	--	4	4
Hematite	1	--	--	--	--	1
Rock/Stone	2	--	--	--	--	2
Curved Glass	--	--	1	--	--	1
Total	38	13	42	18	14	125

The stratigraphic distribution of prehistoric materials at Site 14LV176 is largely restricted to the Ap horizon and to a depth of 30 centimeters bgs (Table 46). However, five of the chipped stone artifacts and four piece of fire-crack rock came from the interface of the Ap horizon with the Bt horizon at 30 to 40 centimeters bgs in Test Unit 3. This may be because the Bt horizon was slightly shallower in Test Unit 3 than in the other four units. The only modern intrusive artifact found on site is a single sherd of clear curved glass in the Ap horizon of Test Unit 3, indicating that Site 14LV176 has been only slightly impacted by modern deposition, probably because of its location away from the most active portions of the USP facility.

TABLE 46

ARTIFACT DISTRIBUTION BY EXCAVATION LEVEL AT SITE 14LV176

ARTIFACT TYPE	1	2	3	4	5	TOTAL
Decortication Flake	--	1	--	--	--	1
Early Reduction Flake	1	6	1	--	--	8
Biface Reduction Flake	3	39	13	2	--	57
Flake Fragment	5	18	15	2	--	40
Block Shatter	2	4	2	1	--	9
Core	--	1	1	--	--	2
Fire-cracked Rock	--	--	--	4	--	4
Hematite	--	--	1	--	--	1
Rock/Stone	1	1	--	--	--	2
Curved Glass	--	1	--	--	--	1
Total	12	71	33	9	0	125

The variety of stone material in the assemblage of prehistoric debitage at Site 14LV176 includes seven identified varieties of chert: Plattsmouth, Toronto, Florence A, Florence C, Burlington, Westerville, and Winterset (Table 47; Plate 37). Locally available materials dominate the assemblage, with Plattsmouth (N=49, 41.8%), Toronto (N=40, 34.1%), and Westerville (N=15, 12.8%) cherts comprising the bulk of the debitage assemblage. Florence A chert (N=1) and Florence C chert (N=1), originating farther west in central Kansas, each make up less than 1 percent of the lithic debitage. Burlington chert (N=6), likely originating in southeastern Iowa or central Missouri, comprises 5.1 percent of the assemblage, indicating a minor utilization of stone that would require long-range mobility or trade.

TABLE 47

LITHIC ARTIFACT CLASS/TYP E BY MATERIAL TYPE FROM TEST UNITS AT SITE 14LV176

	Decortication Flake	Early Reduct. Flake	Biface Reduct. Flake	Flake Fragment	Core	Block Shatter	Total
Burlington Chert	--	--	3	3	--	--	6
Florence A Chert	--	--	1	--	--	--	1
Florence C Chert	--	--	--	--	--	1	1
Plattsmouth Chert	1	5	30	8	1	4	49
Toronto Chert	--	2	19	19	--	--	40
Westerville Chert	--	--	2	--	1	--	3
Winterset Chert	--	--	--	1	--	--	1
Unidentified Chert	--	1	2	9	--	4	16
Total	1	8	57	40	2	9	117

Heat treatment was identified on 47 (40.2%) of the lithic assemblage at Site 14LV176 (Table 48). Of that total, 23 chipped stone artifacts each of Plattsmouth and Toronto cherts were are treated. Heating is present on one artifact each of the non-local Burlington and Florence C cherts.



PLATE 37: Chipped Stone Debitage from Site 14LV176.

TABLE 48

HEAT-TREATED LITHIC ARTIFACTS BY MATERIAL TYPE FROM TEST UNITS AT SITE 14LV176

	EARLY REDUCT. FLAKE	BIFACE REDUCT. FLAKE	FLAKE FRAGMENT	BLOCK SHATTER	TOTAL
Burlington Chert	--	--	1	--	1
Florence C Chert	--	--	--	1	1
Plattsmouth Chert	3	10	1	4	18
Toronto Chert	1	8	14	--	23
Unidentified Chert	--	2	1	1	4
Total	4	20	17	6	47

The lithic assemblage reflects diversity of stone tool types, but no finished points, bifaces, or other tools were recovered in the Phase III test unit excavations nor from shovel tests excavated during the Phase II survey (Schoen and Deiber 2011). Plate 38 shows examples of heat-altered chipped stone debitage found at Site 14LV176. No ceramics or diagnostic projectile points were recovered from the site, making assignment of a cultural affiliation to Site 14LV176 problematic. Although the recovery of a small number of artifacts from the base of the Ap horizon and top of the Bt horizon in Test Unit 3 indicates that minimally disturbed subsurface deposits might be present, no cultural features were identified in any test unit. An appreciable variety of lithic material was recovered, including a small amount of non-local cherts, although Site 14LV176 has fewer varieties and quantities of these non-local sites relative to Sites 14LV172 and 14LV181.

Phase III site evaluation investigation of Site 14LV176 has yielded 117 pieces of chipped stone debitage, four fire-cracked rocks, one piece of hematite, and two pieces of unmodified sandstone. The prehistoric assemblage from Phase II survey completed by Louis Berger (Schoen and Deiber 2011) contributed two utilized flakes and 37 debitage. No diagnostic artifacts of either stone or ceramic were recovered that could aid in temporal or cultural affiliation of the site. No charcoal suitable for radiocarbon dating was found.

No archaeological features were found that suggest the presence of a house or activity areas at Site 14LV176. No cultigens were discovered and no bone tools or bone from processing animals for food were recovered to enhance our knowledge of subsistence practices. The recovered assemblage lacks both volume and diversity of artifact types so that significant research questions cannot be meaningfully addressed. The absence of diagnostic artifacts and radiocarbon dates makes it impossible to attribute site to the any period or phase. With the exception of few pieces of debitage from the top of the Bt horizon in Test Unit 3, prehistoric materials are nearly all from the upper 30 centimeters of the site and predominantly from the plowzone and therefore are not situated in contexts with good integrity. Other than providing new information about lithic reduction activities and selection of lithic material for tools, the site has low potential for contributing important new information about the prehistory of Leavenworth or the broader region. For all these reasons, Louis Berger recommends that Site 14LV176 be considered not eligible for listing in the National Register under Criterion D.

F. SITE 14LV181

Map Source:	Leavenworth, KS, 7.5' Series USGS Topographic Quad (1982)
Site Type:	Camp or habitation
Cultural Affiliation:	Undetermined prehistoric
Site Size:	100 meters (328.1 feet) NE to SW by 30 meters (98.4 feet) NW to SE 3,000.0 square meters (32,291.7 square feet)
Phase II Methods:	Pedestrian survey and shovel testing
Phase III Methods:	Excavation of five 1 by 1 meter test units
Area Excavated:	93 Shovel tests and 5 test units (42.2 sq. meters/454.2 sq. feet)



PLATE 38: Heat-Altered Chipped Stone Debitage from Site 14LV176.

Cultural Materials Collected:	Phase II: 46 Lithic debitage and two fire-cracked rock Phase III: 1 Biface, 1 flake tool, 293 debitage, 72 fire-cracked rocks, 2 pipe stone, 2 burned clay, 1 fired clay, 1 red ochre, 1 hematite
Landform:	Ridge top
Elevation:	860 to 870 feet above mean sea level
Land Use/Surface Visibility:	Pasture (Less than 10% surface visibility)
Soil Type:	Ladoga silt loam, 3 to 8% slopes (7285)
Site Disturbance:	Previous cultivation and erosion
Relation to Project Limits:	100% within Alternative FCI East-1 and Alternative Hybrid
National Register Eligibility:	Not eligible
Recommendations:	No additional archaeological investigations

Site 14LV181 is the location of a large prehistoric camp or habitation site of unknown age or cultural group situated on a ridge top in the proposed East Site. A two-track trail was present on the western side of the ridge top on which the site is located (Plates 39 and 40).

1. Summary of Phase II Intensive Survey

During the Phase II intensive survey in 2011, a total of 93 shovel tests were excavated within a 30-meter grid. Shovel Tests TR 63-26, TR 64-26, and TR 64-27 each yielded chipped stone flaking debris from the Ap horizon. Radial shovel tests were excavated at 5- and 10-meter intervals from these two shovel tests to determine site boundaries, resulting in 18 additional shovel tests with artifacts recovered from the Ap horizon. The positive radial shovel tests were concentrated around Shovel Test TR 64-27 as well as in an area approximately 30 meters northeast of TR 64-27, at the end of the ridge. This shovel testing determined that Site 14LV181 measured 100.0 meters northeast to southwest by 30.0 meters northwest to southeast, covering an area of 3,000 square meters (32,291.7 square feet).

The soil profiles in the shovel tests showed an Ap horizon of silt loam that was usually very dark grayish brown (10YR 3/2) but varied sometimes to dark grayish brown (10YR 4/2) to dark brown (10YR 3/3) to brown (10YR 4/3) to dark yellowish brown (10YR 4/4). Below the surface soil was a Bt horizon of dark yellowish brown (10YR 4/4 or 10YR 4/6) to yellowish brown (10YR 5/4 or 10YR 5/6) silty clay loam. In 12 shovel tests the yellowish brown subsoil was mottled with 10 to 25 percent dark yellowish brown (10YR 4/4 or 10YR 4/6) silty clay loam. The soil boundary was clear to gradual. Shovel tests were excavated to between 28 and 60 centimeters bgs, with the usual depth about 40 centimeters bgs.

The collection from Phase II survey of Site 14LV181 consists of 46 debitage and two fire-cracked rocks from the Ap horizon (Tables 49 and 50). The material types include a majority of silicified sediment (N=25, 53.4% by weight), with lesser amounts of Florence chert (N=9, 28.3% by weight), jasper (N=6, 10.4% by weight), and unidentified chert (N=6, 7.9% by weight). Also present are one silicified sediment and one sandstone fire-cracked rock. Heat treatment is present on 18 flakes, including 11 silicified sediment flakes (42% by weight). The high percentage of heated silicified sediment flakes is likely a result of the difficulty in knapping the untreated material (Butler 1997:46). Cortex is present on one Florence chert flake and one silicified sediment flake.

TABLE 49
ARTIFACT CLASS/TYPE BY
STRATUM FOR SITE 14LV181

ARTIFACT CLASS/TYPE	Ap
Early Reduction Flake	2
Biface Reduction Flake	12
Finishing Flake	7
Flake Fragment	25
Fire-cracked Rock	2
Total	48



PLATE 39: Overview of Site 14LV181, View North.



PLATE 40: Overview of Site 14LV181, View East.

TABLE 50

ARTIFACT CLASS/TYPE BY MATERIAL TYPE FOR SITE 14LV181

ARTIFACT CLASS/TYPE	MATERIAL TYPE				Total
	Silicified Sediment	Florence Chert	Jasper	Chert	
Early Reduction Flake	1	1	.	.	2
Biface Reduction Flake	9	2	1	.	12
Finishing Flake	2	2	2	1	7
Flake Fragment	13	4	3	5	25
Total	25	9	6	6	46

Site 14LV181 was determined to be the location of a large prehistoric camp of undetermined cultural association situated on a ridge (Schoen and Deiber 2011). The types of artifacts recovered suggest a location where prehistoric people were reducing chert and jasper cobbles into biface preforms and shaping formal tools such as arrow points, knives, drills, and scrapers. Twenty-one (22.6%) of the 93 shovel tests excavated at the site yielded chipped stone artifacts, although no formal tools were recovered. Although the site had been disturbed to some degree by cultivation and erosion, the cluster of positive shovel tests in the center of the site and the presence of fire-cracked rock suggested the possibility that the site could contain more diagnostic artifacts and perhaps charred material suitable for radiocarbon dating. Like Sites 14LV169, 14LV171, 14LV172, and 14LV176, Site 14LV181 was considered to be another site of Late Prehistoric age that represented, with the other four sites, recurring occupation of the locale.

Based on the findings of the Phase II intensive survey, Louis Berger recommended that Site 14LV181 be considered potentially eligible for listing in the National Register under Criterion D. Louis Berger recommended avoidance of Site 14LV181 by any proposed construction or other ground disturbance activities. If the site could not be avoided, then Louis Berger recommended that Phase III site evaluation be performed to determine whether the site has sufficient integrity and potential to answer important research questions regarding the prehistory of the locality and/or region (Schoen and Deiber 2011).

2. *Phase III Site Evaluation*

At the time of site testing to evaluate the National Register eligibility of Site 14LV181 in July 2014, the site area was covered with tall prairie grass, with less than 10 percent ground surface visibility. The Trimble GPS unit was used to navigate to the location of Shovel Test TR 64-27. From this location a 5-meter grid was established over the site oriented to magnetic north. The location of Shovel Test TR 64-27 was arbitrarily identified as grid North 1000, East 1000 (Figure 29).

a. *Test Unit 1*

Test Unit 1 was placed in the western portion of the site at grid North 1000 to 1001, East 995 to 996 (see Figure 29). During the Phase II survey two positive shovel tests situated within 5 meters of Test Unit 1 yielded a combined total of nine chipped stone artifacts from the Ap horizon. Test Unit 1 was 1x1-meter in size and excavated in eight arbitrary 10-centimeter levels to a maximum depth of 90 centimeters below datum (80 centimeters bgs). The unit datum was placed near the southwestern corner of the unit.

Two strata were observed in the unit (Figure 30; Plate 41). The first stratum was an Ap horizon of dark yellowish brown (10YR 4/4) silty loam between 18 and 21 centimeters thick. Below the Ap horizon the Bt horizon consisted of yellowish brown (10YR 5/4) clay loam that extended from approximately 20 centimeters bgs to the bottom of excavation at 80 centimeters bgs.

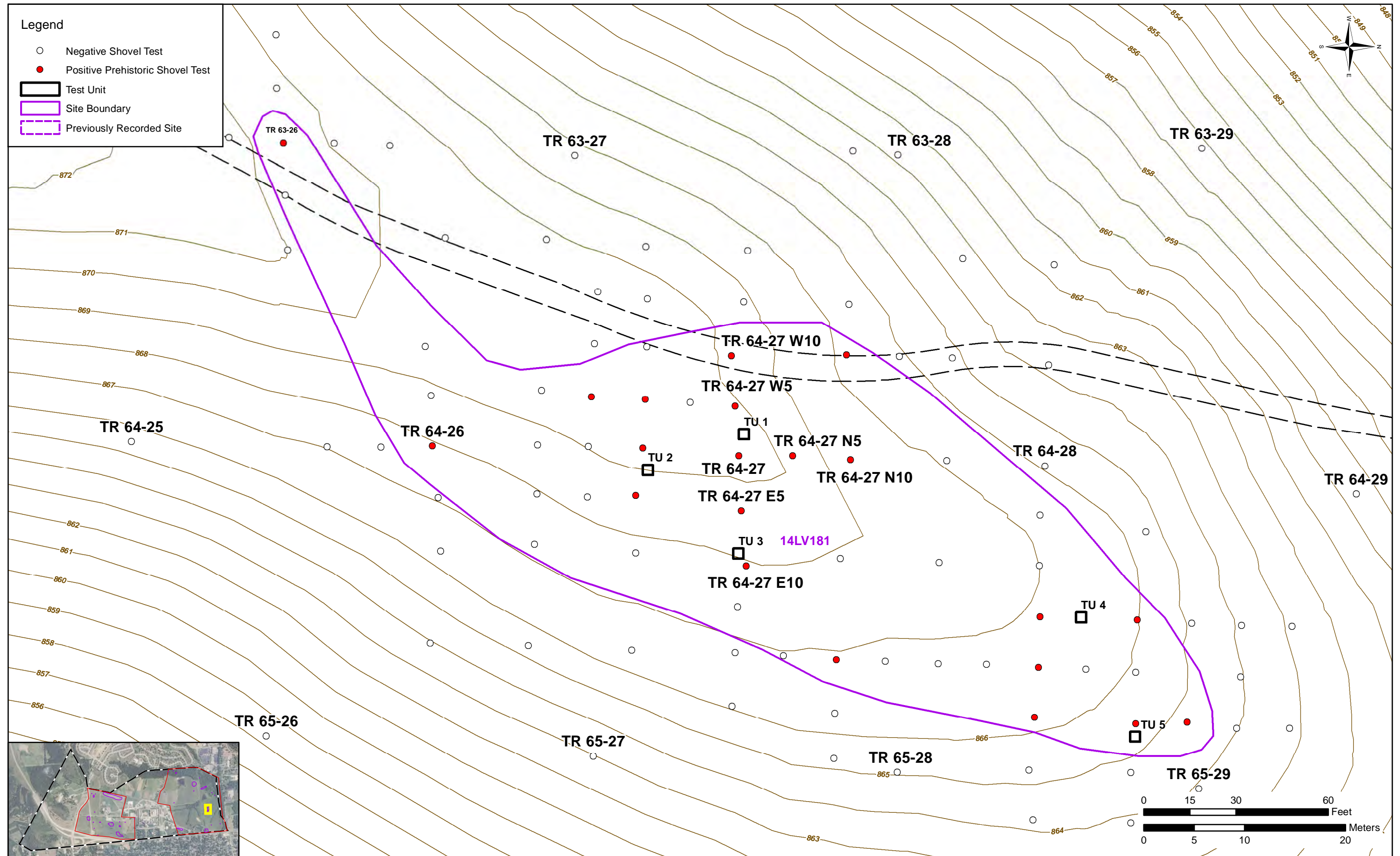


FIGURE 29: Site 14LV181

Figure 29 has been removed because it contains confidential information not for public distribution.

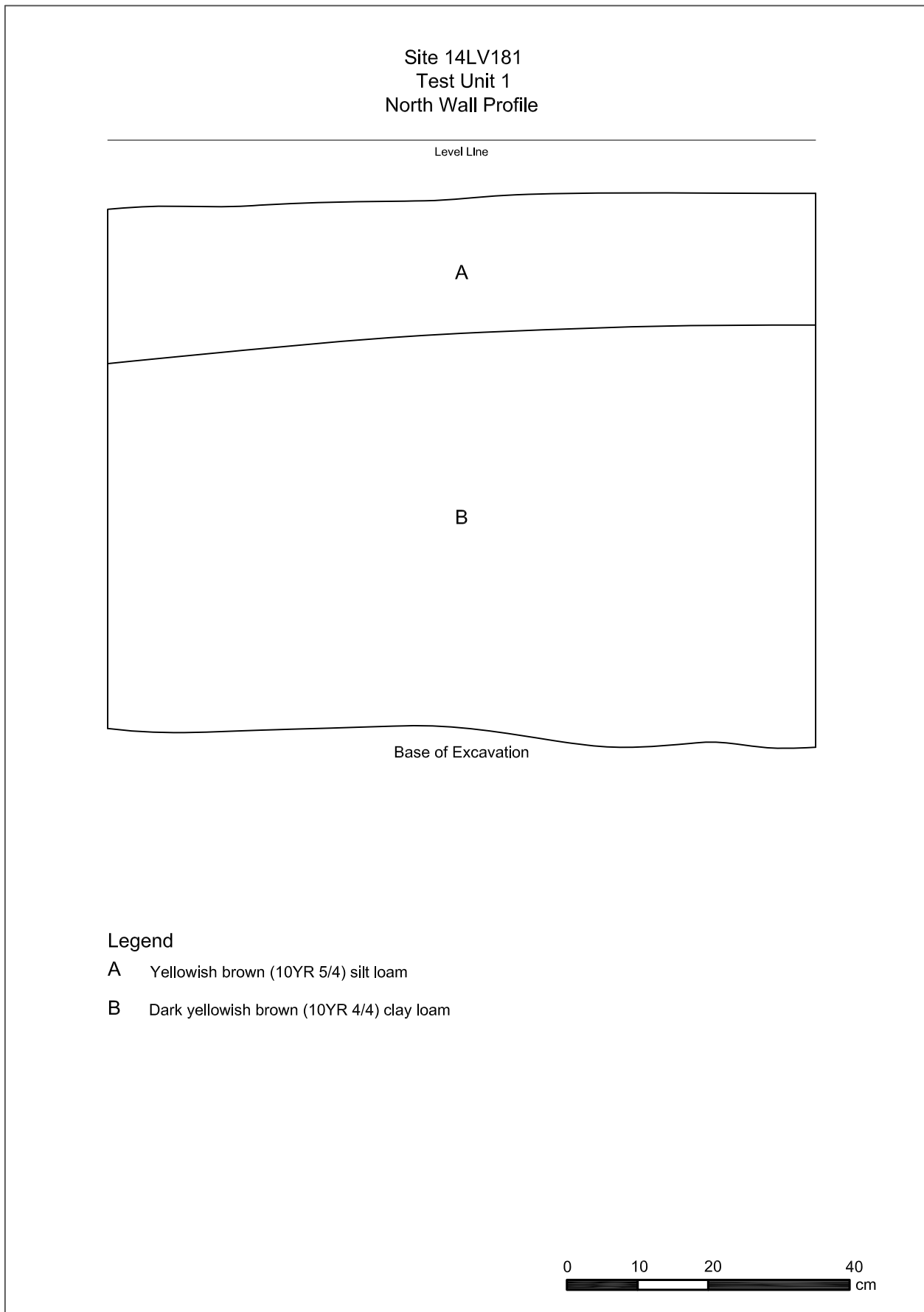


FIGURE 30: Profile of Test Unit 1 at Site 14LV181



PLATE 41: Profile of Test Unit 1 at Site 14LV181, View North.

In Test Unit 1 prehistoric artifacts recovered include 34 pieces of chipped stone debitage, 43 fragments of fire-cracked rock, one fragment of red pipestone, and one piece of fired clay with quartz grit temper (Table 51). Other finds include one cement fragment, one fragment of porcelain insulator, and three pieces of mortar. Over half of the fire-cracked rock (N=24, 55.8%) and 11 (32.4%) of the lithic debitage were found in the top of the Bt horizon and 13 (30.2%), and more fire-cracked rock fragments and four (11.8%) lithic debitage were recovered from the Bt horizon between 40 and 60 centimeters bgs.

TABLE 51

ARTIFACT DISTRIBUTION BY EXCAVATION LEVEL IN TEST UNIT 1 AT SITE 14LV181

ARTIFACT TYPE	1	2	3	4	5	6	7	8	TOTAL
Decortication Flake	--	--	1	--	--	--	--	--	1
Early Reduction Flake	--	2	3	--	--	--	--	--	5
Biface Reduction Flake	3	13	6	1	--	3	--	--	26
Flake Fragment	--	--	1	--	--	--	--	1	1
Block Shatter	--	1	--	--	--	--	--	--	1
Pipestone	1	--	--	--	--	--	--	--	1
Fire-cracked Rock	1	5	24	--	--	13	--	--	43
Fired Clay	1	--	--	--	--	--	--	--	1
Cement	1	--	--	--	--	--	--	--	1
Ceramic Insulator	--	1	--	--	--	--	--	--	1
Mortar	--	2	1	--	--	--	--	--	3
Total	7	24	36	1	--	16	0	0	84

The lithic assemblage from Test Unit 1 consists of 12 pieces (35.3%) of Toronto chert (one decortication flake, three early reduction flakes, and eight biface reduction flakes), 11 artifacts (32.4%) of Plattsmouth chert (two early reduction flakes and nine biface reduction flakes), one (2.9%) piece of shatter of Winterset chert, two (5.8%) biface reduction flakes of Florence C chert, two (5.8%) of Smoky Hill jasper (one biface reduction flake and one flake fragment), and five (14.7%) biface reduction flakes of unidentified chert. Heat treatment is present on one early reduction flake and three biface reduction flakes of Plattsmouth chert, three biface reduction flakes of Toronto chert, three biface reduction flakes of unidentified chert, one biface reduction flake of Florence C chert, and the one piece of Winterset chert shatter.

b. Test Unit 2

Test Unit 2 was placed in the southern portion of the site at grid North 990 to 991, East 1001 to 1002 (see Figure 29). During the Phase II survey two positive shovel tests located within 5 meters of Test Unit 2 produced a combined total of 10 chipped stone artifacts from the Ap horizon. Test Unit 2 was 1 meter square in size and excavated in six arbitrary 10-centimeter levels to a maximum depth of 70 centimeters below datum (60 centimeters bgs). The unit datum was placed near the northwestern corner of the unit.

Two strata were observed in Test Unit 2 (Figure 31; Plate 42). The first stratum was an Ap horizon of dark yellowish brown (10YR 4/4) silty clay loam, which varied between 30 and 40 centimeters thick. Beneath the Ap horizon the Bt horizon was yellowish brown (10YR 5/4) clay loam. Excavation was halted at 60 centimeters bgs as no cultural material was present below 40 centimeters bgs.

In Test Unit 2 the prehistoric artifacts recovered include one finished biface fragment and 62 pieces of chipped stone debitage from the 40-centimeter-thick Ap (Table 52). One fence staple and six fragments of mortar were also recovered from the Ap horizon. No artifacts were recovered from the Bt horizon.

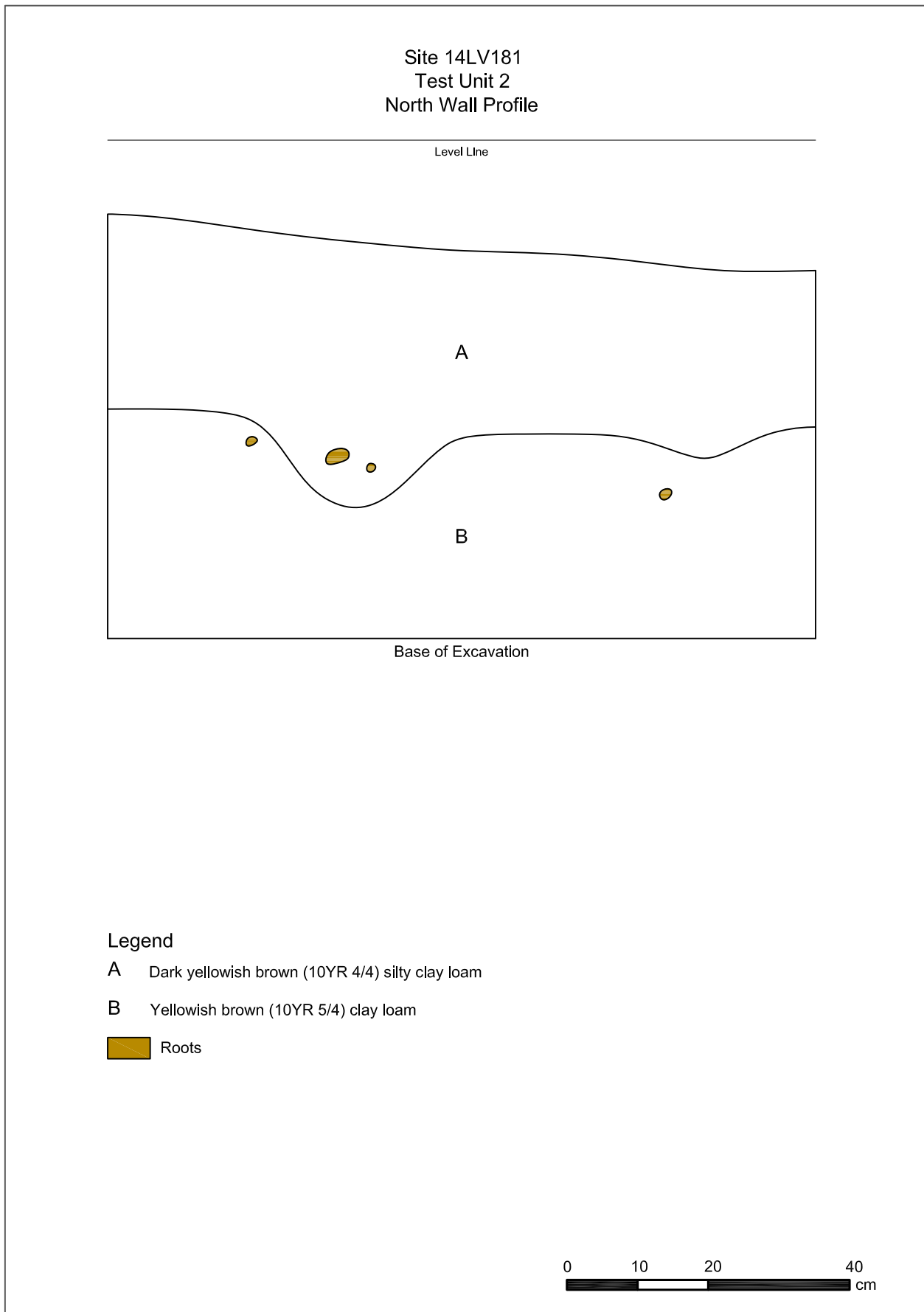


FIGURE 31: Profile of Test Unit 2 at Site 14LV181



PLATE 42: Profile of Test Unit 2 at Site 14LV181, View North.

TABLE 52

ARTIFACT DISTRIBUTION BY EXCAVATION LEVEL IN TEST UNIT 2 AT SITE 14LV181

ARTIFACT TYPE	1	2	3	4	5	6	TOTAL
Biface	--	--	1	--	--	--	1
Decortication Flake	--	--	1	--	--	--	1
Early Reduction Flake	--	4	4	2	--	--	10
Biface Reduction Flake	--	18	23	9	--	--	50
Flake Fragment	--	--	1	--	--	--	1
Fence Staple	--	--	1	--	--	--	1
Mortar	--	5	1	--	--	--	6
Total	0	27	32	11	0	0	70

The lithic assemblage of Test Unit 2 consists largely of artifacts made from Toronto chert (N=38, 60.3%) and consist of a finished biface fragment, one decortication flake, seven early reduction flakes, and 29 biface reduction flakes. Nine (14.3%) biface reduction flakes came from Florence C chert. Six (9.5%) artifacts are Plattsmouth chert: one early reduction flake and five biface reduction flakes. Six (9.5%) artifacts are unidentified cherts: five biface reduction flakes and one flake fragment. Two (3.2%) were early reduction flakes of Florence A chert, and one (1.6%) biface reduction flake was of Florence D chert. One (1.6%) was a biface reduction flake of Smoky Hill jasper. Heat treatment was observed on 31 (50.0%) of the 62 pieces of lithic debitage: one decortication flake, seven early reduction flakes and nine biface reduction flakes of Toronto chert, one early reduction flake and four biface reduction flakes of Plattsmouth chert, two early reduction flakes of Florence A chert, six biface reduction flakes of Florence C; and one flake fragment of unidentified chert.

c. *Test Unit 3*

Test Unit 3 was placed in the central portion of the site at grid North 1001 to 1002, East 1009 to 1010 (see Figure 29). During the Phase II survey two positive shovel tests located within 5 meters of Test Unit 3 produced a total of seven chipped stone artifacts from the Ap horizon. Test Unit 3 was 1x1 meter in size and excavated in six arbitrary 10-centimeter levels to a maximum depth of 70 centimeters below datum (60 centimeters bgs). The unit datum was placed near the northwestern corner of the unit.

Two strata were observed in Test Unit 3 (Figure 32; Plate 43). The Ap horizon was between 30 and 37 centimeters thick and consisted of brown (10YR 4/3) silty clay loam. Below the Ap horizon the Bt horizon consisted of yellowish brown (10YR 5/4) clay loam. Excavation halted at a depth of 60 centimeters bgs as no cultural materials were present below 40 centimeters bgs.

In Test Unit 3, 107 prehistoric artifacts were recovered from the Ap horizon above 37 centimeters bgs, consisting of one utilized flake tool, 94 pieces of lithic debitage, one pipestone fragment, nine fire-cracked rocks, one piece of hematite, and one piece of burned clay (Table 53). No historic artifacts were recovered from the unit, and no artifacts were recovered from the Bt horizon.

The lithic assemblage of Test Unit 3 consists largely of Toronto chert (N=72, 75.8%): the utilized flake tool, four early reduction flakes, 33 biface reduction flakes, and 34 flake fragments. The eight (8.4%) Smoky Hill jasper artifacts consist of two early reduction flakes, one biface reduction flake, and five flake fragments. Plattsmouth chert (N=3, 3.2%) items consist of two biface reduction flakes and one flake fragment. Three (3.2%) flake fragments are of Winterset chert. Two (2.1%) flake fragments are of Florence C chert. One (1.0%) is a Florence B chert flake fragment, and one (1.0%) is a Westerville chert biface reduction flake. Of the five (5.3%) unidentified chert artifacts, two are biface reduction flakes and three are flake fragments. The unidentified cherts include colors ranging from bluish-gray to dark gray with white streaks to red. Heat treatment is present on 44 (46.8%) of the 94 pieces of debitage and on the

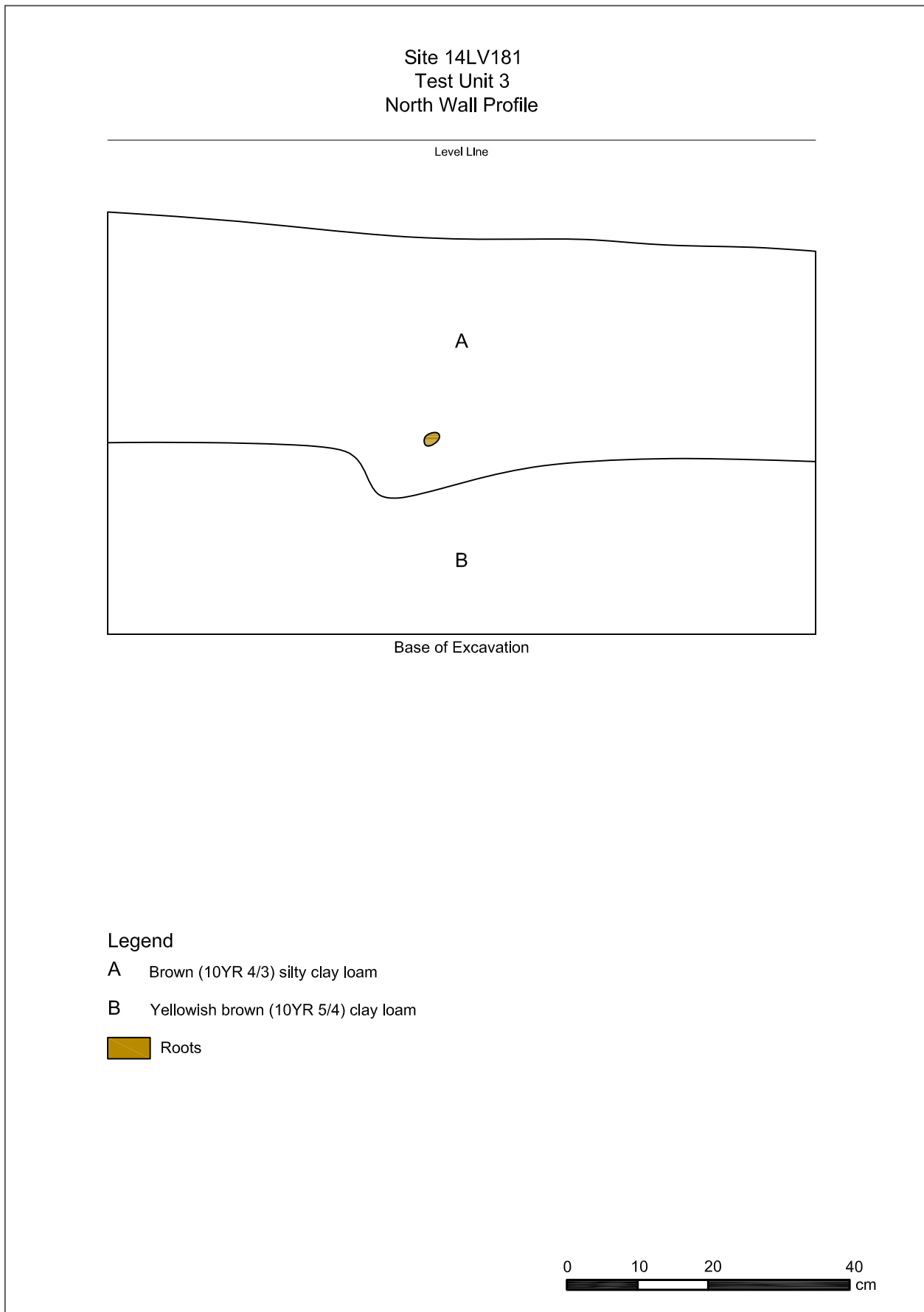


FIGURE 32: Profile of Test Unit 3 at Site 14LV181



PLATE 43: Profile of Test Unit 3 at Site 14LV181, View North.

TABLE 53

ARTIFACT DISTRIBUTION BY EXCAVATION LEVEL IN TEST UNIT 3 AT SITE 14LV181

ARTIFACT TYPE	1	2	3	4	5	6	TOTAL
Flake Tool	1	--	--	--	--	--	1
Early Reduction Flake	--	2	3	1	--	--	6
Biface Reduction Flake	3	10	19	7	--	--	39
Flake Fragment	2	26	18	3	--	--	49
Pipestone	--	1	--	--	--	--	1
Fire-cracked Rock	--	1	4	4	--	--	9
Hematite	--	--	--	1	--	--	1
Burned Clay	--	1	--	--	--	--	1
Total	6	41	44	16	0	0	107

Toronto chert flake tool. The heat-treated debitage includes 19 flake fragments and 17 biface reduction flakes of Toronto chert, two flake fragments and one biface reduction flake of Smoky Hill jasper, one flake fragment and one biface reduction flake of Plattsmouth chert, and two flake fragments and one biface reduction flake of unidentified chert

d. Test Unit 4

Test Unit 4 was placed in the northern portion of the site at grid North 1032 to 1033, East 1018 to 1019 (see Figure 29). During the Phase II survey two positive shovel tests situated within 5 meters of this location yielded a total of five prehistoric stone artifacts from the Ap horizon. Test Unit 4 was 1 meter square in size and excavated in six arbitrary 10-centimeter levels to a maximum depth of 70 centimeters below datum (60 centimeters bgs). The unit datum was placed near the southeastern corner of the unit.

Three strata were observed in Test Unit 4 (Figure 33; Plate 44). The first stratum was an Ap horizon 25 centimeters thick consisting of brown (10YR 4/3) silty loam. Beneath the Ap horizon a Bt1 horizon of dark yellowish brown (10YR 4/4) silty clay loam extended to 43 centimeters bgs. Finally, a Bt2 horizon was distinguished by a dark yellowish brown (10YR 4/6) clay loam that extended to the bottom of excavation at 60 centimeters bgs.

The 74 prehistoric artifacts recovered above 25 centimeters bgs from the Ap horizon in Test Unit 4 consist of two charcoal fragments, 43 biface reduction flakes, three decortication flakes, one early reduction flakes, 17 flake fragments, one core, six fire-cracked rocks, and a piece of burned clay (Table 54). The Bt horizon yielded one early reduction flake and 22 biface reduction flakes, 11 fire-cracked rocks, and one ochre fragment. One biface reduction flake was recovered from the Bt2 horizon. No historic artifacts were found in Test Unit 4.

TABLE 54

ARTIFACT DISTRIBUTION BY EXCAVATION LEVEL IN TEST UNIT 4 AT SITE 14LV181

ARTIFACT TYPE	1	2	3	4	5	6	TOTAL
Charcoal	--	1	1	--	--	--	2
Decortication Flake	--	2	1	--	--	--	3
Early Reduction Flake	--	--	1	1	--	--	2
Biface Reduction Flake	2	10	31	22	1	--	66
Flake Fragment	2	15	--	--	--	--	17
Core	--	--	1	--	--	--	1
Ochre	--	--	--	1	--	--	1
Fire-cracked Rock	--	1	5	11	--	--	17
Burned Clay	--	1	--	--	--	--	1
Total	4	30	40	35	1	0	110

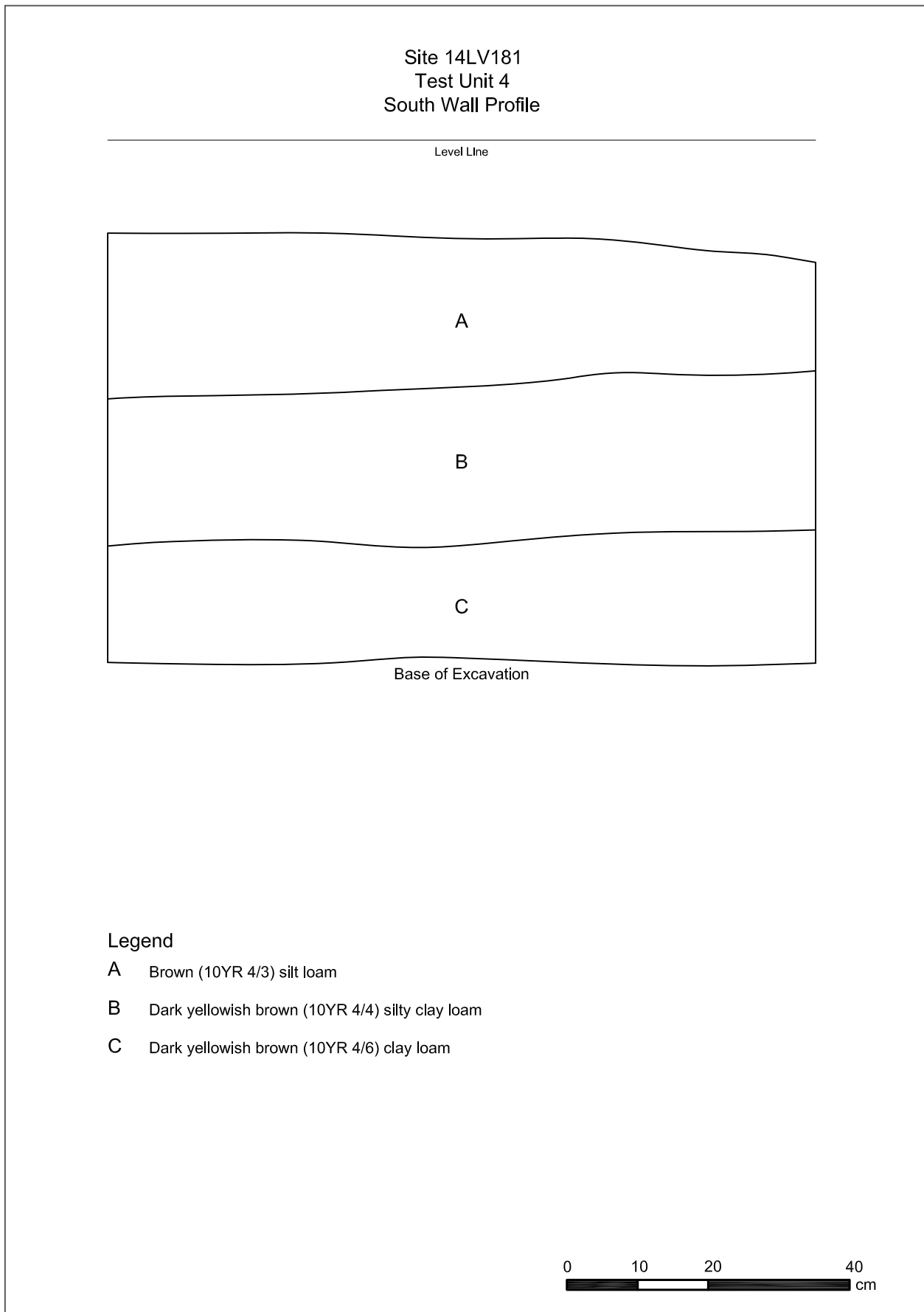


FIGURE 33: Profile of Test Unit 4 at Site 14LV181



PLATE 44: Profile of Test Unit 4 at Site 14LV181, View South.

Toronto chert (N=71, 78.0%) comprises the most common type in the lithic assemblage of Test Unit 4. One core, one decortication flake, two early reduction flakes, 55 biface reduction flakes, and 12 flake fragments are of Toronto chert. Seven (7.7%) biface reduction flakes are composed of Florence C chert. The five (5.5%) Smoky Hill jasper artifact consist of two decortication flakes, one biface reduction flake, and two flake fragments. The four (4.4%) items of Plattsmouth chert consist of one biface reduction flake and three flake fragments. Two (2.2%) biface reduction flakes are of Burlington chert. Heat treatment was identified on 34 (38.6%) of the 88 pieces of debitage: one decortication flake of jasper; three flake fragments of Plattsmouth chert; and 20 biface reduction flakes, eight flake fragments, and two early reduction flakes of Toronto chert.

e. Test Unit 5

Test Unit 5 was placed in the northeastern portion of the Site 14LV181 at grid North 1038 to 1039, East 1029 to 1030 (see Figure 29). One positive shovel test from the Phase II survey, which was situated within 5 meters of this location, yielded three prehistoric stone artifacts from the Ap horizon. Test Unit 5 was 1x1 meter in size and excavated in six arbitrary, 10-centimeter levels to a maximum depth of 70 centimeters below datum (60 centimeters bgs). The unit datum was placed near the southwestern corner.

Two strata were observed in the unit (Figure 34; Plate 45). The Ap horizon consisted of dark brown (10YR 3/3) silty clay loam 37 centimeters thick. Below the Ap horizon a Bt horizon of dark yellowish brown (10YR 4/3) mottled with yellowish brown (10YR 5/6) clay loam extended to the bottom of excavation at 60 centimeters bgs.

In Test Unit 5 one decortication flake, six biface reduction flake, six flake fragments, three fire-cracked rocks, one brick and one mortar fragment were recovered from the Ap horizon above 37 centimeters bgs (Table 55). No cultural material of any kind was recovered from the Bt horizon.

TABLE 55

ARTIFACT DISTRIBUTION BY EXCAVATION LEVEL IN TEST UNIT 5 AT SITE 14LV181

ARTIFACT TYPE	1	2	3	4	5	6	TOTAL
Decortication Flake	--	--	1	--	--	--	1
Biface Reduction Flake	1	2	3	--	--	--	6
Flake Fragment	--	--	6	--	--	--	6
Fire-cracked Rock	--	1	2	--	--	--	3
Brick	--	1	--	--	--	--	1
Mortar	--	1	--	--	--	--	1
Total	1	5	12	0	0	0	18

Jasper (N=6, 46.2%), Toronto chert (N=5, 38.5%), and silicified sediment (N=2, 15.4%) are the only stone types in the small lithic assemblage of Test Unit 5. Smoky Hill jasper artifacts include one decortication flake, two biface reduction flakes, and three flake fragments. Items of Toronto chert are two biface reduction flakes and three flake fragments. Both silicified sandstone items are biface reduction flakes. Heat treatment is present on three (23.1%) of the 13 pieces of lithic debitage: two biface reduction flakes of Toronto chert and one biface reduction flake of silicified sandstone. Heat treatment was undetermined on one decortication flake, two biface reduction flakes, and the three flake fragments of Smoky Hill jasper.

f. Discussion

Five 1-meter-square test units were excavated at Site 14LV181 during the Phase III site evaluation investigations. The units were spaced to test different portions of the site and were located where positive

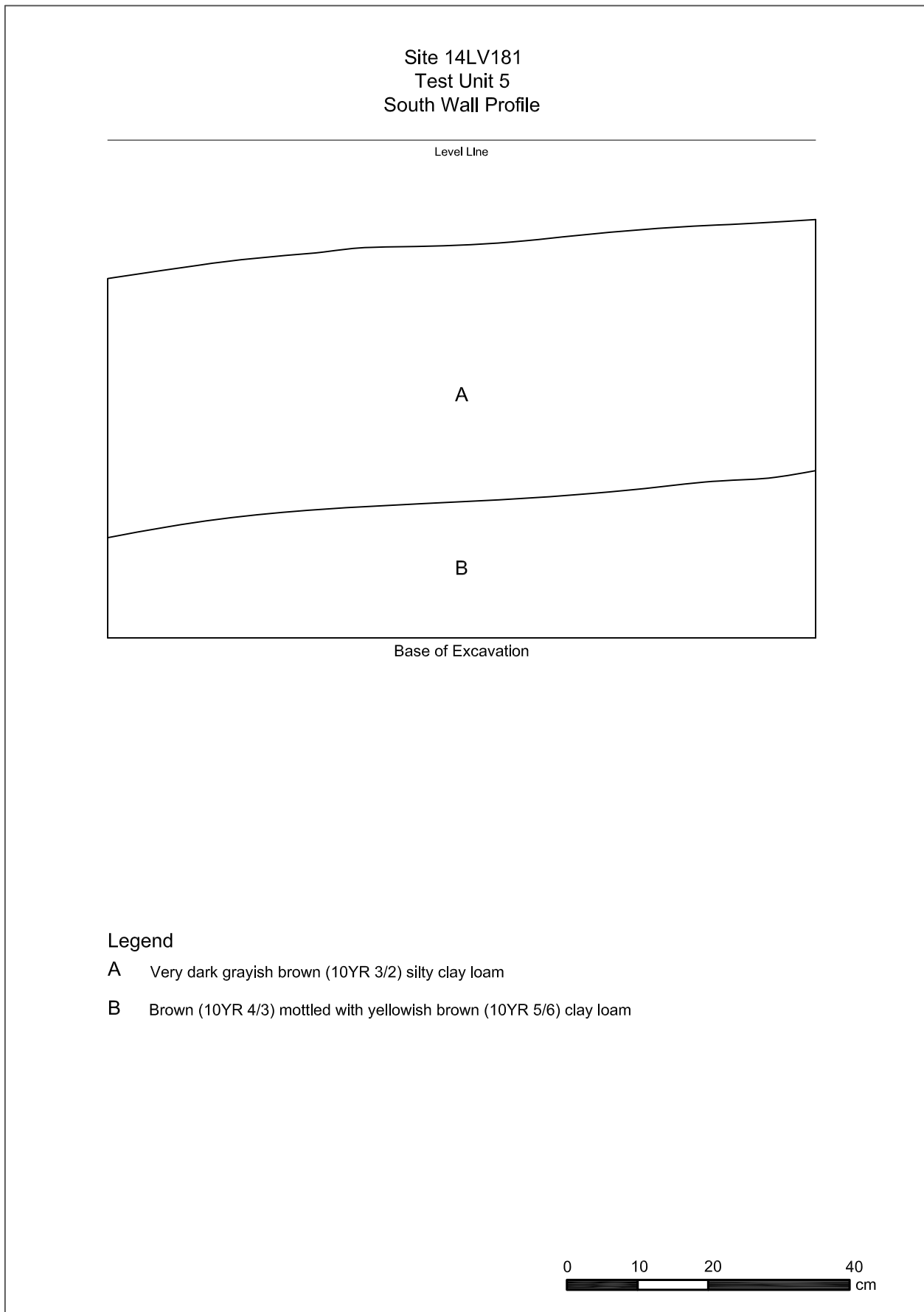


FIGURE 34: Profile of Test Unit 5 at Site 14LV181



PLATE 45: Profile of Test Unit 5 at Site 14LV181, View South.

shovel tests indicated the presence of prehistoric artifacts. The stratigraphy in all test units revealed an Ap horizon directly overlying at least one Bt horizon. The Ap horizon was between 20 and 40 centimeters thick.

The prehistoric artifact assemblage at Site 14LV181 includes two pipestone fragments, one piece of red ochre, one utilized flake tool, and a finished biface fragment, but it is dominated by 292 pieces of lithic debitage (75%) (Table 56). No identifiable ceramics were recovered, but two pieces of burned clay and one piece of fired tempered clay were found in the Ap horizon. Test Unit 3 and Test Unit 4 had the highest artifact densities at Site 14LV181, with 107 and 110 specimens, respectively. Test Unit 1 and Test Unit 2 had more moderate counts of 84 and 70 items, respectively. Test Unit 5 had the lowest density with only 18 artifacts. This distribution across space indicates a larger, more diffuse area of prehistoric artifacts in the center of the site around Test Unit 3. The northern portion of the site, around Test Unit 4, appears to be a smaller secondary loci of prehistoric activity.

TABLE 56
ARTIFACT DISTRIBUTION BY TEST UNIT AT SITE 14LV181

ARTIFACT TYPE	TU 1	TU 2	TU 3	TU 4	TU 5	TOTAL
Finished Biface	--	1	--	--	--	1
Flake Tool	--	--	1	--	--	1
Decortication Flake	1	1	--	3	1	6
Early Reduction Flake	5	10	6	2	--	23
Biface Reduction Flake	26	50	39	66	6	187
Flake Fragment	1	1	49	17	6	74
Block Shatter	1	--	--	--	--	1
Core	--	--	--	1	--	1
Pipestone	1	--	1	--	--	2
Fire-cracked Rock	43	--	9	17	3	72
Hematite	--	--	1	--	--	1
Ochre	--	--	--	1	--	1
Burned Clay	--	--	1	1	--	2
Fired Clay	1	--	--	--	--	1
Charcoal	--	--	--	2	--	2
Brick	--	--	--	--	1	1
Cement	1	--	--	--	--	1
Ceramic Insulator	1	--	--	--	--	1
Fence Staple	--	1	--	--	--	1
Mortar	3	6	--	--	1	10
Total	84	70	107	110	18	389

The vertical distribution of prehistoric and historic artifacts at Site 14LV181 shows that most (N=372, 95.6%) of the assemblage was recovered from the Ap horizon to a depth no more than 40 centimeters bgs (Table 57). However, 17 prehistoric artifacts were found as deep as 60 centimeters bgs in the Bt horizon deposits. All of the historic artifacts, including brick, cement, a ceramic insulator, a fence staple, and mortar fragments, were recovered from the Ap horizon above 30 centimeters bgs. There are no intact cultural features in any of the Phase III test units, and the small amount prehistoric cultural materials in the Bt horizons may very well be the result of natural forces, such as rodent burrowing and freeze and thaw cracking of the soil.

Table 58 shows the variety of raw material in the lithic assemblage. Toronto chert comprises the majority (N=196, 67.6%) of the debitage, and both the finished biface and flake tool are of this material. Other lithic varieties occur in smaller amounts, including Plattsmouth chert (N=24, 8.2%), Smoky Hill jasper (N=22, 7.5%), Florence C chert (N=20, 6.8%), unidentified chert (N=16, 5.5%), Winterset (N=4, 1.4%), Burlington chert (N=2, 0.7%), Florence A chert (N=2, 0.7%), Silicified Sediment (N=20.7%), Florence



PLATE 46: Chipped Stone Tools from Site 14LV181.

B chert (N=1, 0.3%), Florence D chert (N=1, 0.3%), and Westerville chert (N=1, 0.3%). Table 59 shows the numbers of artifacts altered by heat treatment by material and artifact type.

TABLE 57

ARTIFACT DISTRIBUTION BY EXCAVATION LEVEL AT SITE 14LV181

ARTIFACT TYPE	1	2	3	4	5	6	7	8	TOTAL
Charcoal	--	1	1	--	--	--	--	--	2
Finished Biface	--	--	1	--	--	--	--	--	1
Flake Tool	1	--	--	--	--	--	--	--	1
Decortication Flake	--	2	4	--	--	--	--	--	6
Early Reduction Flake	--	8	11	4	--	--	--	--	23
Biface Reduction Flake	9	53	82	39	1	3	--	--	187
Flake Fragment	4	41	26	3	--	--	--	--	74
Block Shatter	--	1	--	--	--	--	--	--	1
Core	--	--	1	--	--	--	--	--	1
Stone Pipe	1	1	--	--	--	--	--	--	2
Fire-cracked Rock	1	8	35	15	--	13	--	--	72
Hematite	--	--	--	1	--	--	--	--	1
Ochre	--	--	--	1	--	--	--	--	1
Burned Clay	--	2	--	--	--	--	--	--	2
Fired Clay	1	--	--	--	--	--	--	--	1
Brick	--	1	--	--	--	--	--	--	1
Cement	1	--	--	--	--	--	--	--	1
Ceramic Insulator	--	1	--	--	--	--	--	--	1
Fence Staple	--	--	1	--	--	--	--	--	1
Mortar	--	8	2	--	--	--	--	--	10
Total	18	127	164	63	1	16	0	0	389

TABLE 58

ARTIFACT CLASS/TYPE BY MATERIAL TYPE FROM TEST UNITS AT 14LV181

	Finished Biface	Flake Tool	Decort. Flake	Early Reduct. Flake	Biface Reduct. Flake	Flake Fragment	Core	Block Shatter	Total
Burlington Chert	--	--	--	--	2	--	--	--	2
Florence A Chert	--	--	--	2	--	--	--	--	2
Florence B Chert	--	--	--	--	--	1	--	--	1
Florence C Chert	--	--	--	--	18	2	--	--	20
Florence D Chert	--	--	--	--	1	--	--	--	1
Plattsmouth Chert	--	--	--	3	17	4	--	--	24
Toronto Chert	1	1	3	16	127	49	1	--	198
Westerville Chert	--	--	--	--	1	--	--	--	1
Winterset Chert	--	--	--	--	--	3	--	1	4
Smoky Hill Jasper	--	--	3	2	6	11	--	--	22
Silicified Sediment	--	--	--	--	2	--	--	--	2
Unidentified Chert	--	--	--	--	12	4	--	--	16
Total	1	1	6	23	186	74	1	1	293

The lithic assemblage at Site 14LV181 reflects a broad variety of resources being used but a heavy reliance on locally available Toronto chert. The material identified from the Phase II survey shows a preference for Silicified Sediment and Florence chert, although the discrepancy could be a result of the differential distribution of the material across the site. The lithic material from the Phase II survey was compared to the material from the Phase III site testing during analysis. Plate 46 shows examples of the

lithic tools recovered. Slightly less than half of the lithic materials have been heat-altered (N=123, 42%), including the finished biface and flake tool or Toronto chert. All stages of lithic reduction are represented, including examples of finished biface and flake tools.

TABLE 59

HEAT-TREATED ARTIFACT CLASS/TYPE BY MATERIAL TYPE FROM TEST UNITS AT SITE 14LV181

	FINISHED BIFACE	FLAKE TOOL	DECORT. FLAKE	EARLY REDUCT. FLAKE	BIFACE REDUCT. FLAKE	FLAKE FRAGMENT	TOTAL
Florence A Chert	--	--	--	2	--	--	2
Florence C Chert	--	--	--	--	7	--	7
Plattsmouth Chert	--	--	--	2	8	4	14
Toronto Chert	1	1	1	9	51	27	90
Smoky Hill Jasper	--	--	1	--	1	--	2
Silicified Sediment	--	--	--	--	1	--	1
Unidentified Chert	--	--	--	--	4	3	7
Total	1	1	2	10	72	34	123

Two burned clay fragments and one fired clay fragment were recovered from the site during the Phase III test unit excavations (Plate 47). The fired clay from test Unit 1 is tempered with quartz grit but does not have identifiable surfaces. The burned clay fragments are not tempered. All of the clay fragments are small, buff to orange in color, and exhibit no diagnostic features. These items do not appear to be pottery.

The Phase III site evaluation investigation of Site 14LV181 has yielded two fragments of charcoal, one biface fragment, one utilized flake tool, 293 pieces of chipped stone debitage, 72 fire-cracked rocks, two pipestone fragments, two pieces of burned clay, one piece of fired tempered clay, one piece of red ochre, and one fragment of hematite. The prehistoric assemblage from the Phase II survey completed by Louis Berger (Schoen and Deiber 2011) contributed 46 lithic debitage and two fire-cracked rocks.

No temporally diagnostic artifacts have been recovered from Site 14LV181, preventing the assignment of the site to a cultural affiliation. No archaeological features were found that suggest the presence of a house or activity areas. No cultigens were discovered and no bone tools or bone from processing animals for food were recovered to enhance our knowledge of subsistence practices. The prehistoric materials are nearly all from the upper 40 centimeters of the site and predominantly from the plowzone. However, there are few historic artifacts, and some prehistoric finds were recovered from the Bt horizon. More likely than not, the small number of deeper artifacts were transported by natural forces such as animal burrowing or freeze and thaw cracking from the Ap to the Bt horizon. Although the recovered chipped stone assemblage is considerable, the kinds of research questions that might be addressed appear to be limited to topics associated with raw material acquisition and selection, and lithic reduction technology.

The two pipestone fragments are interesting. Presumably they are Kansas pipestone, which outcrops in the medial Kansas drift of northeastern Kansas (Boszhardt and Gundersen 2003). Tobacco pipes are often found at sites dated to the Late Prehistoric. However, the research questions associated with the pipestone are likely to be directed to sourcing the material. For all these reasons, Louis Berger recommends that Site 14LV181 be considered not eligible for listing in the National Register of Historic Places under Criterion D.



PLATE 47: Pipestone Fragments from Site 14LV181.

VII. RECOMMENDATIONS OF ELIGIBILITY

A. SITE 14LV169

Site 14LV169 is the location of a prehistoric habitation tentatively attributed to the Central Plains Tradition, Middle Ceramic cultural period based on one Scallorn variety arrow point and its location in the vicinity of other sites also identified as Middle Ceramic in age (AD 900 to 1400). The types of artifacts recovered suggest a location where a group was reducing chert and jasper cobbles into biface preforms and shaping tools such as arrow points, knives, drills, and scrapers. It is likely that they were engaged in horticulture with gardens near the stream south and southeast of the site. They would have been hunting, fishing in the Missouri River, Corral Creek, and Threemile Creek, collecting a diversity of woodland and wetland plants, and harvesting walnuts, hickory nuts, and acorns.

During the Phase II survey of Site 14LV169, Louis Berger excavated 81 shovel tests across the site, many at 5-meter intervals around positive shovel tests. The five 1-meter-square test units excavated during the Phase III site testing were placed at locations where shovel testing suggested higher potential for archaeological features and intact subsurface deposits as well as to test different portions of the site. Although the combined shovel testing and test unit excavation account for only 37.4 square meters (1.27%) of the total site area (2,948.0 square meters), the two investigations appear adequate to assess the condition and potential of the site to contribute significant information to the archaeology of northeastern Kansas and northwestern Missouri.

No evidence of a house floor, hearth, storage pits, or other activity areas were discovered during the Phase II survey or Phase III site testing. The acidity of the soils at USP Leavenworth and erosion appear to have destroyed or removed evidence of plant and animal remains, as no cultigens were discovered and no bone tools or bone from processing animals for food were recovered. Sites of the Middle Ceramic period usually include many notched and unnotched triangular arrow points, triangular, ovoid and diamond-shaped knives, endscrapers, drills, celts, and utilized flakes (Roper 2006). These typical kinds of lithic artifacts appear to be absent at Site 14LV169, with the exception of the three tools found during the Phase II survey. Similarly, there is a notable absence of pottery. Only seven body sherds were recovered, none of them shell tempered or decorated. Ceramics are expected to be better represented at a site of this time period.

The recovered assemblage lacks both volume and diversity of artifact types so that significant research questions cannot be meaningfully addressed. The absence of diagnostic artifacts and radiocarbon dates makes it impossible to attribute the site to any specific Central Plains Tradition culture, such as the Steed-Kisker, Pomona, or Nebraska phase. It may also be possible that the site is associated with the unnamed Late Woodland Kansas City period (AD 700 to 900), which is defined by grit-tempered, cordmarked, globular pottery and Scallorn-like arrow points (O'Brien 1984). The prehistoric materials are nearly all from the upper 40 centimeters of the site and predominantly from the plowzone. They are mixed with historic artifacts and are not situated in contexts with good integrity. Other than providing new information about lithic reduction activities and selection of lithic material for tools, the site has low potential for contributing important new information about the prehistory of Leavenworth or the broader region. For all these reasons, Louis Berger recommends that Site 14LV169 be considered not eligible for listing in the National Register of Historic Places under Criterion D.

B. SITE 14LV171

Site 14LV171 is also interpreted to be the location of a prehistoric habitation tentatively attributed to the Central Plains Tradition, Middle Ceramic cultural period based on two weakly notched arrow points and three small ceramic sherds. The types of artifacts recovered suggest a location where a group was

reducing chert and jasper cobbles into biface preforms and shaping tools such as arrow points, knives, drills, and scrapers. As at nearby Sites 14LV169 and 14LV172, the site occupants were probably engaged in horticulture with gardens near the stream south and southeast of the site. They also would have been hunting, fishing in the Missouri River, Corral Creek, and Threemile Creek, collecting a diversity of woodland and wetland plants, and harvesting walnuts, hickory nuts, and acorns.

During the Phase II survey of Site 14LV171, Louis Berger excavated 124 shovel tests across the site, many at 5-meter intervals around positive shovel tests. The five 1-meter-square test units excavated during the Phase III site testing were placed at locations where shovel testing suggested higher potential for archaeological features and intact subsurface deposits as well as to test different portions of the site. Although the combined shovel testing and test unit excavation account for only 54.6 square meters of area and 1.27 percent of the total site area (4,300.0 square meters), the two investigations appear adequate to assess the condition and potential of the site to contribute significant information to the archaeology of northeast Kansas and northwest Missouri.

The two points recovered from the site are not classic examples of the arrow points found with Nebraska phase, Steed-Kisker phase, or Pomona phase sites. The ceramic sherds are not diagnostic, lacking surface decoration or treatment that might indicate cultural affiliation. As at Site 14LV169, the grit-tempered sherds suggest the possibility that the site may date earlier than the Middle Ceramic period and may be associated with the unnamed Kansas City culture. No carbonized material suitable for a radiocarbon date was found to elucidate cultural affiliation.

No cultural features were identified in the five test units at Site 14LV171 during Phase III excavations that would suggest the location of a house or activity area. The site in general can be characterized as a relatively low-density scatter of ceramic sherds and lithic materials over a large area, indicating a temporary camp site where people were engaged in the production and maintenance of stone tools or a seasonal habitation site. No cultigens were discovered and no bone tools or bone from processing animals for food were recovered. The recovered assemblage lacks both volume and diversity of artifact types so that significant research questions cannot be meaningfully addressed. The absence of diagnostic artifacts and radiocarbon dates makes it impossible to attribute the site to a particular cultural period. The prehistoric materials are nearly all from the upper 40 centimeters of the site and predominantly from the plowzone. They are mixed with historic artifacts and are not situated in contexts with good integrity. Other than providing new information about lithic reduction activities and selection of lithic material for tools, the site has low potential for contributing important new information about the prehistory of Leavenworth or the broader region. For all these reasons, Louis Berger recommends that Site 14LV171 be considered not eligible for listing in the National Register of Historic Places under Criterion D.

C. SITE 14LV172

Site 14LV 172 is interpreted to be the location of a prehistoric habitation that has been tentatively attributed to the Central Plains Tradition, Middle Ceramic cultural period. The types of artifacts recovered from this site suggest another location where a group was reducing chert and jasper cobbles into biface preforms and shaping tools such as arrow points, knives, drills, and scrapers. As at nearby Sites 14LV169 and 14LV171, the site occupants were probably engaged in horticulture with gardens near the stream south and southeast of the site. They also would have been hunting, fishing in the Missouri River, Corral Creek, and Threemile Creek, collecting a diversity of woodland and wetland plants, and harvesting walnuts, hickory nuts, and acorns.

During the Phase II survey of Site 14LV172, Louis Berger excavated 143 shovel tests across the site, many at 5-meter intervals around positive shovel tests. The five 1-meter-square test units excavated during the Phase III site testing were placed at locations where shovel testing suggested higher potential for archaeological features and intact subsurface deposits as well as to test different portions of the site.

Although the combined shovel testing and test unit excavation account for only 62.4 square meters (1.28%) of the total site area (4,876.0 square meters), the two investigations appear adequate to assess the condition and potential of the site to contribute significant information to the archaeology of northeastern Kansas and northwestern Missouri.

The lithic assemblage is modest, including over 220 piece of debitage, but also three arrow points, three biface fragments, five utilized flakes, and three cores. Three burned clay fragments and four fire cracked rocks were also recovered. The three projectile points are the only temporally diagnostic artifacts recovered. Reed points have been found across eastern Great Plains from Oklahoma to Iowa and were used from about AD 500 to 1500 (Morrow 1984:82). Koster arrow points are common Late Woodland types throughout the Upper Mississippi River valley and eastern Iowa between AD 600 and 900 (Morrow 1984:78), so this identification is tentative. However, as has been suggested for Site 14LV169 and 14LV171, very few ceramic sherds have been found at these three sites—none at Site 14LV172—which seems peculiar for a Middle Ceramic period occupation. Site 14LV172 may be associated with the Early Ceramic period unnamed Kansas City culture.

No archaeological features were found that suggest the presence of a house or activity areas at Site 14LV172. No cultigens were discovered and no bone tools or bone from processing animals for food were recovered. The recovered assemblage lacks both volume and diversity of artifact types so that significant research questions cannot be meaningfully addressed. The absence of radiocarbon dates makes it impossible to attribute the site to any particular cultural phase with confidence.

Despite the recovery of several lithic artifacts from below the depth of 40 centimeters bgs in Test Unit 3, prehistoric material in the other test units are mixed with historic artifacts and are not situated in contexts with good integrity. Other than providing new information about lithic reduction activities and selection of lithic material for tools, the site has low potential for contributing important new information about the prehistory of Leavenworth or the broader region. For all these reasons, Louis Berger recommends that Site 14LV172 be considered not eligible for listing in the National Register of Historic Places under Criterion D.

D. SITE 14LV176

Site 14LV176 is the location of a prehistoric camp of undetermined age and cultural affiliation. The types of artifacts recovered from this site suggest another location where a group was reducing chert and jasper cobbles into biface preforms and shaping tools such as arrow points, knives, drills, and scrapers. They also would have been hunting, fishing in the Missouri River, Corral Creek, and Threemile Creek, collecting a diversity of woodland and wetland plants, and harvesting walnuts, hickory nuts, and acorns. It is possible they also engaged in horticulture along Corral Creek or other nearby streams.

During the Phase II survey of Site 14LV176, Louis Berger excavated 72 shovel tests across the site, many at 5-meter intervals around positive shovel tests. The five 1-meter-square test units excavated during the Phase III site testing were placed at locations where shovel testing suggested higher potential for archaeological features and intact subsurface deposits as well as to test different portions of the site. Although the combined shovel testing and test unit excavation account for only 33.8 square meters (1.84%) of the total site area (1,836.0 square meters), the two investigations appear adequate to assess the condition and potential of the site to contribute significant information to the archaeology of northeastern Kansas and northwestern Missouri.

The lithic assemblage reflects diversity of stone tool types, but no finished points, bifaces, or other tools were recovered from the Phase III test unit excavations or from shovel tests excavated during the Phase II survey (Schoen and Deiber 2011). No ceramics or diagnostic projectile points were recovered from the site, making assignment of a cultural affiliation to Site 14LV176 problematic. Although the recovery of a

small number of artifacts from the Bt horizon of Test Unit 3 indicates that minimally disturbed subsurface deposits might be present, no cultural features were identified in any test unit. The deeper materials may be the result of natural forces such as animal burrowing or freeze and thaw cracking. An appreciable variety of chipped stone was recovered, including a small amount of non-local materials, although Site 14LV176 has fewer varieties and quantities of these non-local items relative to Sites 14LV172 and 14LV181.

No archaeological features were found that suggest the presence of a house or activity areas at Site 14LV176. No cultigens were discovered and no bone tools or bone from processing animals for food were recovered. The recovered assemblage lacks both volume and diversity of artifact types so that significant research questions cannot be meaningfully addressed. The absence of diagnostic artifacts and radiocarbon dates makes it impossible to attribute site to the any period or phase. Other than a few pieces of debitage in Test Unit 3, prehistoric materials are nearly all from the upper 40 centimeters of the site and predominantly from the plowzone, and therefore are not situated in contexts with good integrity. Other than providing new information about lithic reduction activities and selection of lithic material for tools, the site has low potential for contributing important new information about the prehistory of Leavenworth or the broader region. For all these reasons, Louis Berger recommends that Site 14LV176 be considered not eligible for listing in the National Register of Historic Places under Criterion D.

E. SITE 14LV181

Site 14LV818 is interpreted to be a habitation site of undetermined age or cultural affiliation. Once again, the types of artifacts recovered from this site suggest another location where a group was reducing chert and jasper cobbles into biface preforms and shaping tools such as arrow points, knives, drills, and scrapers. As at the other sites in this study, the occupants of Site 14LV181 would have been hunting, fishing in the Missouri River, Corral Creek, and Threemile Creek, collecting a diversity of woodland and wetland plants, and harvesting walnuts, hickory nuts, and acorns. It is also possible that they engaged in horticulture along Corral Creek or other nearby streams.

During the Phase II survey of Site 14LV181, Louis Berger excavated 93 shovel tests across the site, many at 5-meter intervals around positive shovel tests. The five 1-meter-square test units excavated during the Phase III site testing were placed at locations where shovel testing suggested higher potential for archaeological features and intact subsurface deposits as well as to test different portions of the site. Although the combined shovel testing and test unit excavation account for only 42.2 square meters (1.41%) of the total site area (3,000.0 square meters), the two investigations appear adequate to assess the condition and potential of the site to contribute significant information to the archaeology of northeastern Kansas and northwestern Missouri.

The chipped stone assemblage from the site is moderate, including over 300 debitage, one biface fragment, and one utilized flake. Also recovered were 74 fire-cracked rocks, two pipestone fragments, two pieces of burned clay, one piece of fired tempered clay, one piece of red ochre, and one fragment of hematite.

No temporally diagnostic artifacts have been recovered from Site 14LV181, preventing the assignment of the site to a specific cultural group. No archaeological features were found that suggest the presence of a house or activity areas. No cultigens were discovered and no bone tools or bone from processing animals for food were recovered. The prehistoric materials are nearly all from the upper 40 centimeters of the site and predominantly from the plowzone. However, there are few historic artifacts, and some finds were recovered from the Bt horizon, suggesting there may be a low potential for some artifacts to be situated in contexts with good integrity. More likely the materials moved down into the Bt horizon from the Ap horizon as a result of natural forces such as animal burrowing or freeze and thaw cracking. Although the recovered chipped stone assemblage is considerable (N=293), the kinds of research questions that might

be addressed appear to be limited to topics associated with raw material acquisition and selection, and lithic reduction technology. The two pipestone fragments are interesting. Presumably they are Kansas pipestone, which outcrops in the medial Kansas drift of northeastern Kansas (Boszhardt and Gundersen 2003). Tobacco pipes are often found at sites dated to the Late Prehistoric. Research questions associated with the pipestone, however, are likely to be primarily directed to sourcing the material. For all these reasons, Louis Berger recommends that Site 14LV181 be considered not eligible for listing in the National Register of Historic Places under Criterion D.

VIII. STATEMENT OF SIGNIFICANCE

On behalf of the United States Department of Justice, BOP, Louis Berger has completed Phase III site evaluations of five archaeological sites that will be adversely impacted by the proposed expansion at the Leavenworth USP. The purpose of this investigation was to collect information to make recommendations regarding the eligibility of Sites 14LV169, 14LV171, 14LV172, 14LV176, and 14LV181 for listing in the National Register under Criterion D.

A. SITE 14LV169

Site 14LV169 is recommended as not eligible for listing in the National Register under Criterion D. Phase III testing at the site, combined with the Phase II survey completed by Louis Berger in 2011, has concluded that the amount of previous disturbance by erosion and grading, the absence of archaeological features, the lack of charcoal suitable for radiocarbon assay to obtain a date of occupation, and the lack of amount and diversity of the cultural material characteristic of Middle Ceramic sites or other cultural phases recorded elsewhere in Leavenworth County and the surrounding region strongly suggest that Site 14LV169 cannot contribute important new information about the prehistory of Leavenworth or the broader region.

B. SITE 14LV171

Site 14LV171 is recommended as not eligible for listing in the National Register under Criterion D. Phase III testing at the site, combined with the Phase II survey completed by Louis Berger in 2011, has concluded that the amount of previous disturbance by erosion and grading, the absence of archaeological features, the lack of charcoal suitable for radiocarbon assay to obtain a date of occupation, and the lack of amount and diversity of the cultural material characteristic of Middle Ceramic sites or other cultural phases recorded elsewhere in Leavenworth County and the surrounding region strongly suggest that Site 14LV171 cannot contribute important new information about the prehistory of Leavenworth or the broader region.

C. SITE 14LV172

Site 14LV172 is recommended as not eligible for listing in the National Register under Criterion D. Phase III testing at the site, combined with the Phase II survey completed by Louis Berger in 2011, has concluded that the amount of previous disturbance by erosion and grading, the absence of archaeological features, the lack of charcoal suitable for radiocarbon assay to obtain a date of occupation, and the lack of quantity and diversity of the cultural material characteristic of Middle Ceramic sites or other cultural phases recorded elsewhere in Leavenworth County and the surrounding region strongly suggest that Site 14LV172 cannot contribute important new information about the prehistory of Leavenworth or the broader region.

D. SITE 14LV176

Site 14LV176 is recommended as not eligible for listing in the National Register under Criterion D. Phase III testing at the site, combined with the Phase II survey completed by Louis Berger in 2011, has concluded that the amount of previous disturbance by erosion and grading, the absence of archaeological features, the lack of charcoal suitable for radiocarbon assay to obtain a date of occupation, and the lack of quantity and diversity of the cultural material characteristic of Middle Ceramic sites or other cultural phases recorded elsewhere in Leavenworth County and the surrounding region strongly suggest that Site 14LV176 cannot contribute important new information about the prehistory of Leavenworth or the broader region.

E. SITE 14LV181

Site 14LV181 is recommended as not eligible for listing in the National Register under Criterion D. Phase III testing at the site, combined with the Phase II survey completed by Louis Berger in 2011, has concluded that the amount of previous disturbance by erosion and grading, the absence of archaeological features, the lack of charcoal suitable for radiocarbon assay to obtain a date of occupation, and the lack of amount and diversity of the cultural material characteristic of Middle Ceramic sites or other cultural phases recorded elsewhere in Leavenworth County and the surrounding region strongly suggest that Site 14LV181 cannot contribute important new information about the prehistory of Leavenworth or the broader region.

Pending concurrence with these findings and recommendations by the BOP and the Kansas SHPO, Louis Berger recommends that Sites 14LV169, 14LV171, 14LV172, 14LV176, and 14LV181 be considered not eligible for listing in the National Register and that no additional archaeological investigations be performed for this project in the areas to be directly impacted by the proposed project.

It should be noted that because archaeological surveys are designed to sample subsurface deposits, no survey technique is adequate to identify every potential archaeological resource that may be located in a given project area. Therefore, should artifacts or other evidence of unrecorded cultural resources be discovered during the course of project construction, the Kansas SHPO must be notified so that the potential significance and National Register eligibility of such resources can be adequately evaluated.

REFERENCES CITED

- Bailey, Berkley B.
1993 *Archaeological Mitigation of the US Army Signal Corps Stable, Guard House, Crematory & Water Purification Plant (Bldg 268) and Associated Garbage Dumps and Burn Piles Uncovered during Construction of Eisenhower Hall at Fort Leavenworth, Kansas*. Contract No. DACA 41-93-P-0175. Prepared for the U.S. Army Corps of Engineers, Kansas City District, Kansas City, Missouri, by the Department of Anthropology, University of Oklahoma, Norman.
- Bailey, Garrick A., and Gloria B. Young
2001 *Kansa*. In *Handbook of North American Indians*, vol. 13 (1), edited by Raymond J. DeMallie and William C. Sturtevant, pp. 462-475. Smithsonian Institution, Washington, D.C.
- Banks, William E.
1999 *Kansas Historical Society Inventory Form, 14LV391*. Prepared by William E. Banks, Kansas State Historical Society, Topeka.
- Barr, Thomas P., and Donald D. Rowison
1977 *Archeological Inventory of the Fort Leavenworth Military Reservation, Leavenworth County*. Prepared for the United States Corps of Engineers, Kansas City District, Contract No. DACA41-76-C-0030, by the Archeology Department, Kansas State Historical Society, Topeka.
- Baughner-Perlin, Sherene
1982 Analyzing Glass Bottles for Chronology, Function, and Trade Networks. In *Archaeology of Urban America: The Search for Pattern and Process*, edited by Roy S. Dickens, pp. 259-290. *Studies in Historical Archaeology*, Academic Press, New York.
- Boszhardt, Robert F., and James N. Gundersen
2003 X-Ray Powder Diffraction Analysis of Early and Middle Woodland Red Pipes from Wisconsin. *Midcontinental Journal of Archaeology* 28(1):33-48.
- Buchanan, Rex
1984 *Kansas Geology*. University of Kansas Press, Lawrence.
- Butler, Todd L.
1997 Lithic Material Availability, Quality and Selection in the Protohistoric High Plains as Seen from the Scott Pueblo. Unpublished Master's Thesis, University of Kansas, Lawrence.
- Chapman, Carl H.
1980 *The Archaeology of Missouri II*. University of Missouri Press, Columbia.
- Cope, Jack
1987 *1300 Metropolitan Avenue, A History of the United States Penitentiary*. Manuscript on file, Leavenworth Public Library, Leavenworth, Kansas.
- Davis, Clay R., Frederick B. Stangl, and Lynn W. Robbins
2005 Mammals of Fort Leavenworth, Kansas: a 60-Year Followup to Brumwell (1951). *The Prairie Naturalist* 37(2):101-116.
- Epperson, Jennifer, William Banks, and Martin Stein
2004 *Kansas SHPO Guide to Archeological Survey, Assessment and Reports*. Kansas State Historical Society, State Historic Preservation Office, Topeka.

Fenneman, Nevin M.

1931 *Physiography of Western United States*. McGraw-Hill, New York.

Fox, Richard A., Brian L. Molyneaux, and Todd Kapler

2000 *Phase III (Kansas) Archaeological Investigations and National Register Testing at 14LV114 and 14LV118, Fort Leavenworth, Kansas*. Contract No. DACW 41-99-P-0319. Prepared for the U.S. Army Corps of Engineers, Kansas City District, Kansas City, Missouri, by the Archaeology Laboratory, University of South Dakota, Vermillion.

Gundersen, James N.

1993 "Catlinite" and the Spread of the Calumet Ceremony. *American Antiquity* 58:560-562.

Gundersen, James N., and Joseph A. Tiffany

1986 Nature and Provenance of Red Pipestone from the Wittrock Site (13OB4), Northwest Iowa. *North American Archaeologist* 7:45-67.

Henning, Dale R., and Shirley J. Shermer

2004 Artifact Analysis. In *Dhegihan and Chiwere Siouans in the Plains: Historical and Archaeological Perspectives, part II: Central Siouans in the Northeastern Plains: Oneota Archaeology and the Blood Run Site*, edited by Dale R. Henning and Thomas D. Theissen, pp. 345-625. *Plains Anthropologist Memoir* 36, vol. 49(192), Part 2.

Hoard, Robert J., and William E. Banks

2006 *Kansas Archaeology*. University Press of Kansas, Lawrence.

Johnson, Alfred E.

1974 Settlement Pattern Variability in Brush Creek Valley, Platte County, Missouri. *Plains Anthropologist* 19(64):107-122.

Jones, Olive R., and Catherine Sullivan

1985 *The Parks Canada Glass Glossary for the Description of Containers, Tableware, Flat Glass, and Closures*. National Historic Parks and Sites Branch, Parks Canada, Ottawa.

Kansas Ornithological Society

2014 Birds. Website accessed online September 22, 2014 at <http://www.gpnc.org/birds>.

Kuchler, A.W.

1974 A New Vegetation Map of Kansas. *Ecology* 55(3):586-604.

Latham, Mark A., and Rolfe D. Mandel

2002 *Archaeological Investigation of Phase I Housing Sites 1, 2, and 3: Including Evaluation and Geomorphological Investigation of a Kansas City Hopewell Site (14LV120) at Fort Leavenworth, Kansas*. Contract No. DACA 41-02-F-0004. Prepared for the U.S. Army Corps of Engineers, Kansas City District, Kansas City, Missouri, by Burns & McDonnell, Kansas City, Missouri.

Logan, Brad

1988 Lithic Resources, Terrain Variation, and Prehistoric Site Distribution in the Kansas City Locality. *Plains Anthropologist* 33(121):321-336.

1990 *Archaeological Investigations in the Plains village Frontier, Northeastern Kansas*. Project Report Series Number 70. Museum of Anthropology, University of Kansas, Lawrence, Kansas.

- 1995 *Phasing in White Rock: Archaeological Investigation of the Warne and White Rock Sites, Lowell Reservoir, Kansas – 1994-1995*. Project Report Series No. 90. Prepared for the Bureau of Reclamation, Nebraska-Kansas Area Office by the University of Kansas, Museum of Anthropology, Lawrence.
- 2004 *Archaeological Investigations at the Evans Locality, Stanger Creek Valley, Northeastern Kansas – 2003*. Submitted to the Cultural Resource Division, Kansas State Historical Society, Topeka.
- 2006 *Archaeological Investigations at the Johns Creek and Warne Sites, Lowell Reservoir, Jewell County, Kansas – 2003*. Prepared for the Bureau of Reclamation, Nebraska-Kansas Area Office by the Department of Sociology, Anthropology, and Social Work, Kansas State University, Manhattan.
- 2010 A Matter of Time: The Temporal Relationship of Oneota and Central Plains Traditions. *Plains Anthropology* 55(216):277-292.

The Louis Berger Group, Inc. (Louis Berger)

- 2011 *Final Environmental Impact Statement, Proposed Federal Correctional Institution and Federal Prison Camp, Leavenworth, Kansas*. Prepared for the U.S. Department of Justice, Federal Bureau of Prisons, Washington, D.C. by The Louis Berger Group, Inc., Washington, D.C.

Lucido, Mary

- 2002 *Kansas Historical Society Archeological Inventory, Site 14LV167*. Prepared by the U.S. Army Corps of Engineers, Kansas City District, Kansas City, Missouri.

McLean, Janice A.

- 1998 Lithic Raw Material Use at the DB Site. In *Prehistoric Settlement of the Lower Missouri Uplands: the View from DB Ridge, Fort Leavenworth, Kansas*, edited by Brad Logan, pp. 167-197. Project Report Series No. 98. University of Kansas, Lawrence.

McLean, Janice A., and James Rust

- 2004 *An Intensive Cultural Resources Survey of the Proposed Leavenworth United States Army Reserve Center (USARC), Leavenworth County, Kansas*. Prepared for the 89th Regional Readiness Command by 4G Consulting, LLG, St. Paul, Minnesota.

Mandel, Rolfe D.

- 1987 Late-Quaternary Environments of the Great Plains: Implications for Cultural Resource Management. In *Kansas Prehistoric Archaeological Preservation Plan*, edited by Kenneth Brown L. and Alan H. Simmons, pp. IV-1–IV-28. Office of Archaeological Research, Museum of Anthropology and the Center for Public Affairs, University of Kansas, Lawrence.
- 2006 Late Quaternary and Modern Environments in Kansas. In *Kansas Archeology*, edited by Robert J. Hoard and William E. Banks, pp. 28-45. University of Kansas Press, Lawrence.

Mandel, Rolfe D., John D. Reynolds, Barry G. Williams, and Virginia A. Wulfkuhle

- 1991 *Upper Delaware River and Tributaries Watershed: Results of Geomorphological and Archeological Studies in Atchison, Brown, Jackson, and Nemaha Counties, Kansas*. Kansas State Historical Society Contract Publication No. 9, Kansas State Historical Society, Topeka.

Moore, Raymond C.

- 1949 *Divisions of the Pennsylvanian System in Kansas*. Kansas Geological Survey Bulletin 83. University of Kansas, Lawrence.

Morrow, Toby

1984 *Iowa Projectile Points*. Office of the State Archaeologist, University of Iowa, Iowa City.

O'Brien, Patricia J.

1993 Steed-Kisker: the Western Periphery of the Mississippi Tradition. *Midcontinental Journal of Archaeology* 18(1):61-96

Perino, Gregory

1985 *Selected Preforms, Points, and Knives of the North American Indians, Vol. I*. Points and Barbs Press, Idabel, Oklahoma.

Pritchard, James C.

2005 *Final Report of Findings: Intensive Archaeological Survey in Support of Proposed Residential Communities Initiative Developments (Areas O through S) at Fort Leavenworth, Leavenworth County, Kansas*. Prepared for Tetra Tech, Inc., by Brockington and Associates, Inc., Norcross, Georgia.

Reid, Kenneth C.

1984 *Nebo Hill and Late Archaic Prehistory on the Southern Prairie Peninsula*. Publications in Anthropology No. 15. University of Kansas, Lawrence.

Reynolds, John D., and William B. Lees

2004 *The Archeological Heritage of Kansas: A Synopsis of the Kansas Preservation Plan*. Edited by Marilyn Holt, Robert J. Hoard, and Virginia Wulfkuhle. Cultural Resources Division, Kansas State Historical Society, Topeka.

Ritterbush, Lauren W.

2006 Late Prehistoric Oneota in the Central Plains. In *Kansas Archaeology*, edited by Robert J. Hoard and William E. Banks, pp. 151-164. University Press of Kansas, Lawrence.

Roper, Donna C.

2006 The Central Plains Tradition. In *Kansas Archaeology*. Edited by Robert J. Hoard and William E. Banks, pp. 105-132. University Press of Kansas, Lawrence.

Rowlison, Donald D., and John D. Reynolds

1974 *Report of Phase II Archeological Survey on Projects: 73-3 F 081-2(25), Atchison County and 73-52 F 081-2(24), Leavenworth County*. Prepared for the Kansas Department of Transportation, Topeka, Kansas by the Archeology Office, Kansas State Historical Society, Topeka.

Schoen, Christopher M., and Camilla R. Deiber

2011 *Proposed Federal Correction Institution and Federal Prison Camp, Leavenworth, Kansas Final Cultural Resources Survey Report, Vol. I and II*. Prepared for the U.S. Department of Justice, Federal Bureau of Prisons, Washington, D.C., by The Louis Berger Group, Inc., Washington, D.C.

Schoeneberger, P.J., Wysocki, D.A., Benham, E.C., and Broderson, W.D. (editors)

2002 *Field Book for Describing and Sampling Soils*. Version 2.0. Natural Resources Conservation Service, National Soil Survey Center, Lincoln, Nebraska.

Schoewe, W.E.

1949 The Geography of Kansas, Part II, Physical Geography. *Transactions of the Kansas Academy of Science* 52(3):261-333.

Stein, C. Martin

2006 Kansas Lithic Resources. In *Kansas Archaeology*, edited by Robert J. Hoard and William E. Banks, pp. 264-282. University Press of Kansas, Lawrence.

TEC Inc.

2009a Site Reconnaissance Report for USP Leavenworth, North Site, South Site, and Camp Site. Prepared for the Federal Bureau of Prisons, Washington, D.C., by TEC Inc., York, Pennsylvania.

2009b *The Cultural Resources Action Plan for USP Leavenworth*. Prepared for Federal Bureau of Prisons, Washington, D.C., by TEC Inc., York, Pennsylvania.

Thies, Randall M.

1984 *Four Sites Along the New US-73 Highway Alignment: Results of a Phase III Investigation of Highway Project K-1875, Leavenworth County, Kansas*. Prepared for the Kansas Department of Transportation, Topeka, Kansas by the Archeology Office, Kansas State Historical Society, Topeka.

2006 *Archeological Survey of KDOT Project K-8003-01, Leavenworth County, Kansas*. Prepared for the Kansas Department of Transportation, Topeka, Kansas by the Archeology Office, Kansas State Historical Society, Topeka.

Trabert, Sarah

2009 Steed-Kisker Ceramics: Analysis of the Scott Site (14LV1082) Assemblage. *Plains Anthropologist* 54(212):289-299.

United States Department of Agriculture-Natural Resources Conservation Service [USDA-NRCS]

2014 *Web Soil Survey*. United States Department of Agriculture-Natural Resources Conservation Service, Washington, D.C. Accessed online July 3, 2014, at <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>.

United States [U.S.] Department of the Interior

1983 Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines. *Federal Register*, Part IV, 48(2):44716-44742. Accessed 2005. Annotated version showing later technical and officially adopted revisions available from the National Park Service's preservation laws, regulations, and standards webpage at http://www.cr.nps.gov/local-law/arch_stnds_0.htm.

United States Geological Survey [USGS]

1982 *Leavenworth, Kansas*. 7.5-Minute Topographic Quadrangle. United States Geological Survey, Washington, D.C.

Wagner, Mark J., Mary R. McCorvie, Terrance J. Martin and Kathryn E. Parker

1989 *Phase I, II, and III Archaeological Investigations at Fort Leavenworth, Kansas*. Prepared for the United States Corps of Engineers, Kansas City District, Contract No. DACA41-86-D-0064, by the American Resources Group, Ltd., Carbondale, Illinois.

Walz, Gregory R., Christopher Flynn, and Michael E. Smith

2009 *National Register of Historic Places (NRHP) Eligibility Assessment of Fort Sully (14LV165): A United States Army Civil War Era Fortification Constructed at Fort Leavenworth, Leavenworth County, Kansas*. Research Report No. 143. Prepared for the Engineer Research and Development Center.

Wedel, Waldo R.

1943 *Archaeological Investigations in Platte and Clay Counties, Missouri*. United States National Museum Bulletin 183, Smithsonian Institution, Washington, D.C.

1959 *An Introduction to Kansas Archeology*. Bulletin 174. Smithsonian Institution, Bureau of American Ethnology, Washington, D.C.

Williams, Barry G.

1986 *Early and Middle Ceramic Remains at 14AT2: A Grasshopper Falls Phase House and Pomona Focus Storage Pits in Northeastern Kansas*. Contract Archeology Publication Number 4. Kansas State Historical Society, Topeka.

Zavesky, L.D., and W.C. Boatright

1977 *Soil Survey of Leavenworth County, Kansas*. United States Department of Agriculture in Cooperation with Kansas Agricultural Experiment Station. U.S. Government Printing Office, Washington, D.C.

APPENDIX A

Methods of Artifact Cataloging and Analysis Artifact Inventory

METHODS OF ARTIFACT CATALOGING AND ANALYSIS

A. LABORATORY PROCESSING

All artifacts were transported from the field to The Louis Berger Group, Inc. (Louis Berger) laboratory. In the field, artifacts were bagged in 4-mil, resealable polyethylene bags. Artifact cards bearing provenience information were included in the plastic bags. A Field Number was assigned to each unique provenience in the field. This number appears with all the provenience information and is used throughout processing and analysis to track artifacts.

Prehistoric lithics and most historic artifacts were washed in water with a soft toothbrush. Prehistoric ceramics, faunal material, and fragile artifacts were wet-brushed with a soft natural-bristle paintbrush or were simply dry-brushed. Metal objects were cleaned using a dry toothbrush or stainless steel wire brush. All artifacts were laid out to air-dry in preparation for analysis.

During analysis, individual Specimen Numbers were assigned to artifacts. After analysis, the artifacts were re-bagged into clean, perforated 4-mil resealable polyethylene bags. Artifacts are organized sequentially first by Site Number, then Field Number and finally by Specimen Number.

B. ANALYTICAL METHODS

All artifact analyses were conducted by the Laboratory Supervisor and/or Material Specialist(s). Louis Berger maintains an extensive comparative collection and laboratory research library to contribute to the completeness and accuracy of the analyses.

Louis Berger has developed a flexible analytical database system that fully integrates all artifacts in one database for use in data manipulation and interpretation. The computerized data management system is written using Microsoft Access, a relational database development package that runs on a Windows® platform. Each class of artifacts (historic ceramics, curved (vessel) glass, small finds/architectural, historic tobacco pipes, and faunal) has a series of attributes, sometimes unique to that class, that are recorded to describe each artifact under analysis. Artifact information (characteristics) was entered into the system during the process of analysis. The system was then used to enhance the artifact records with the addition of provenience information. Louis Berger maintains a complete type and attribute coding maintained in the database.

The artifact coding system employs a Type/SubType system developed by Louis Berger's Cultural Resources Division. The format for the historic artifacts is based on the South/Noël Hume typology (South 1977), as modified for use in a computerized system (Louis Berger 2013). Pattern (group and class) codes, based on form or material type, were assigned to each artifact entry. The pattern categories used follow the work of South (1977), as modified by Louis Berger (2013).

C. HISTORIC CERAMIC ANALYSIS

The ceramic tabulation provides the following information: identification of ware types and techniques of surface decoration; dates based on manufacturing and decorative techniques and, if present, maker's marks; identification of vessel forms and functions; and descriptions of decoration motifs.

D. SMALL FINDS/ARCHITECTURAL ANALYSIS

For the small finds/architectural analysis, each artifact was identified by its group and class, Material Type and Part/Portion, and received a count and/or weight. Additional information, including Characteristic, Maker's Marks, Backmark, Color, and Decoration, is recorded as identified for the individual artifacts if present or needed.

E. CURVED (VESSEL) GLASS ANALYSIS

The glass artifacts from the collection were broken down, for analytical purposes, into functionally distinct groupings based on Bottle, Table, Lighting, and Other use-categories. All artifacts identified as to specific function and form were coded as such regardless of the degree of fragmentation. Window glass, considered more functionally inclusive under an architectural group of artifacts, was subsumed for analysis under Small Finds/Architectural materials.

F. LITHIC ARTIFACT ANALYSIS

The analytical approach to stone tool production and use that was used in this analysis can be described as technomorphological; that is, artifacts were grouped into general classes and then further divided into specific types based upon key morphological attributes, which are linked to or indicative of particular stone tool production (reduction) strategies. Function was inferred from morphology as well as from use-wear. Data derived from experimental and ethnoarchaeological research were relied upon in the identification and interpretation of artifact types. The works of Callahan (1979), Clark (1986), Crabtree (1972), and Flenniken (1981) were drawn upon most heavily.

G. FAUNAL ANALYSIS

The analysis of the faunal material allowed for the identification of species, Element, and completeness of the specimen. Identifications were made with the aid of a comparative faunal type collection and the use of reference materials, which include but are not limited to Gilbert (1973) and Olsen (1964).

H. FLORAL ANALYSIS

The floral analysis provides for identification of species, element, and any modifications to the specimen, e.g., Burning.

I. PREHISTORIC CERAMIC ANALYSIS

The analytical approach applied to the study of the ceramic assemblage was designed primarily to facilitate comparisons with ceramic assemblages recovered from other sites. Toward this end, observations were recorded for a series of metric and non-metric attributes related to vessel form, paste, surface treatment, and decoration. All artifacts were counted and weighed (in grams). Vessel thickness was measured in millimeters. When possible, ceramics vessel sherds were classified according to ware and type following definitions presented in previous regional ceramic, which include but are not limited to Dent (1995), Egloff and Potter (1982), Stewart (1982)

REFERENCES CITED

- The Louis Berger Group, Inc. [Louis Berger]
2013 *Analytical Coding System for Historic and Prehistoric Artifacts*. Prepared by Prepared by Camilla Deiber and the Archaeology Lab, the Cultural Resource Group, The Louis Berger Group, Inc., Morristown, New Jersey.
- Callahan, Errett
1979 *The Basics of Biface Knapping in the Eastern Fluted Point Tradition: A Manual for Flintknappers and Lithic Analysts*. *Archaeology of Eastern North America* 7:1-180.
- Clark, John E.
1986 *Another Look at Small Debitage and Microdebitage*. *Lithic Technology* 15:21-23.
- Crabtree, Donald E.
1972 *An Introduction to Flintworking*. Occasional Papers No. 28. Idaho State Museum, Pocatello.
- Egloff, Keith T., and Steven R. Potter
1982 *Indian Ceramics from Coastal Plain Virginia*. *Archaeology of Eastern North America* 10:95-117.
- Flenniken, J. Jeffery
1981 *Replicative Systems Analysis: A Model Applied to the Vein Quartz Artifacts from the Hoko River Site*. Laboratory of Anthropology Reports of Investigation No. 59. Washington State University, Pullman.
- Gilbert, Miles
1973 *Mammalian Osteo-Archaeology*. The Missouri Archaeological Society, Inc., Columbia.
- Gurcke, Karl
1987 *Bricks and Brickmaking: A Handbook for Historical Archaeology*. The University of Idaho Press, Moscow, Idaho.
- Justice, Noel
1987 *Stone Age Spear and Arrow Points of the Midcontinental and Eastern United States*. Indiana University Press, Bloomington and Indianapolis.
- Olsen, Stanley J.
1979 *Osteology for the Archaeologist*. Papers of the Peabody Museum of Archaeology and Ethnology 56(3, 4, and 5). Harvard University, Cambridge, Massachusetts.
- Society for Historical Archaeology [SHA]
2009 *Society for Historical Archaeology. Historic Glass Bottle Identification & Information Website*. Society for Historical Archaeology and Bureau of Land Management. Accessed online at <http://www.sha.org/bottle/index.htm>.
- South, Stanley
1972 *Evolution and Horizon as Revealed in Ceramic Analysis in Historical Archaeology*. *The Conference on Historic Site Archaeology, Papers* 6:71-116.
- 1977 *Method and Theory in Historical Archaeology*. Academic Press, New York.

BOP LEAVENWORTH 200810.003 ARTIFACT CATALOG

Site No:	Unit	Stratu	Level	Field #	Specimen	Class	Artifact Description:	Count	Weight:	Comments
14LV169	1	1	1	3301	1	Small Finds/Architectural	Brick	1	0.3	Brick fragment
14LV169	1	1	2	3302	1	Lithics	Biface Reduction Flake	1	0.1	Non-heat treated Winterset chert
14LV169	1	1	2	3302	2	Lithics	Shatter	1	1.6	Heat treated Plattsmouth chert
14LV169	1	1	2	3302	3	Lithics	Early Reduction Flake	2	1.4	Non-heat treated Plattsmouth chert
14LV169	1	1	2	3302	4	Lithics	Flake Fragment	1	0.5	Non-heat treated Plattsmouth chert
14LV169	1	1	2	3302	5	Lithics	Biface Reduction Flake	1	0.2	Unknown chert, non-heat treated, light gray with banding, no inclusions, fine grain medium luster
14LV169	1	1	2	3302	6	Small Finds/Architectural	Rock/Stone	2	91.5	Possibly heated limestone
14LV169	1	1	2	3302	7	Small Finds/Architectural	Rock/Stone	19	126.3	unmodified limestone
14LV169	1	1	2	3302	8	Glass	Unidentified Container	1		Body shard; colorless
14LV169	1	1	2	3302	9	Glass	Unidentified Container	1		Body shard; amber
14LV169	1	1	2	3302	10	Small Finds/Architectural	Brick	4	58.7	Fragments
14LV169	1	1	2	3302	11	Small Finds/Architectural	Mortar	3	22.2	Fragments
14LV169	1	1	3	3303	1	Lithics	Biface Reduction Flake	1	1	Non-heat treated Toronto chert
14LV169	1	1	3	3303	2	Lithics	Biface Reduction Flake	1	1.1	Heat treated Plattsmouth chert
14LV169	1	1	3	3303	3	Lithics	Biface Reduction Flake	4	1.4	Non-heat treated Plattsmouth chert
14LV169	1	1	3	3303	4	Lithics	Biface Reduction Flake	1	0.1	Non-heat treated Plattsmouth chert
14LV169	1	1	3	3303	5	Lithics	Flake Fragment	1	0.1	Non-heat treated Plattsmouth chert
14LV169	1	1	3	3303	6	Lithics	Flake Fragment	3	0.4	Unidentified non-heat treated chert, light gray in color no inclusions
14LV169	1	1	3	3303	7	Small Finds/Architectural	Rock/Stone	2	6.3	Fine grained sandstone with mica flecking
14LV169	1	1	3	3303	8	Small Finds/Architectural	Rock/Stone	20	19.5	unmodified limestone
14LV169	1	1	3	3303	9	Prehistoric Ceramic	Body Sherd	1	0.7	Grit tempered sherd, low clay content

Site No:	Unit	Stratu	Level	Field #	Specimen	Class	Artifact Description:	Count	Weight	Comments
14LV169	1	1	3	3303	10	Small Finds/Architectural	Mortar	3	9.3	Fragments
14LV169	1	1	4	3304	1	Small Finds/Architectural	Rock/Stone	11	48.7	Fine grained sandstone with mica flecking
14LV169	1	1	4	3304	2	Small Finds/Architectural	Rock/Stone	1	0.2	unmodified limestone
14LV169	1	1	4	3304	3	Lithics	Flake Fragment	1	0.7	Non-heat treated Winterset chert
14LV169	1	1	4	3304	4	Lithics	Early Reduction Flake	1	0.9	Non-heat treated Plattsmouth chert. Some cortex is visible
14LV169	1	1	4	3304	5	Lithics	Flake Fragment	1	0.2	Non-heat treated Toronto chert
14LV169	1	1	4	3304	6	Prehistoric Ceramic	Body Sherd	5	13.1	Quartz tempered, smoothed both surfaces, low clay content
14LV169	1	1	5	3305	1	Lithics	Biface Reduction Flake	1	0.6	Red and yellow Smoky Hill Jasper
14LV169	1	1	5	3305	2	Floral	Charcoal	1	0.1	
14LV169	2	1	2	3306	1	Lithics	Biface Reduction Flake	2	0.3	Heat treated Plattsmouth chert
14LV169	2	1	2	3306	2	Lithics	Flake Fragment	2	0.6	Heat treated Plattsmouth chert
14LV169	2	1	2	3306	3	Lithics	Biface Reduction Flake	5	2.6	Non-heat treated Plattsmouth chert
14LV169	2	1	2	3306	4	Lithics	Flake Fragment	1	0.2	Non-heat treated Plattsmouth chert
14LV169	2	1	2	3306	5	Lithics	Biface Reduction Flake	1	0.2	Non-heat treated Toronto chert
14LV169	2	1	2	3306	6	Glass	Unidentified Container	1		Body shard; colorless
14LV169	2	1	2	3306	7	Small Finds/Architectural	Bolt	1	35.6	Whole, square head
14LV169	2	1	2	3306	8	Floral	Charcoal	4	0.3	
14LV169	2	1	3	3307	1	Glass	Unidentified Container	1		Body shard; colorless
14LV169	2	1	3	3307	2	Small Finds/Architectural	Miscellaneous Hardware	1	33.2	Looks like an iron bull ring
14LV169	2	1	3	3307	3	Small Finds/Architectural	Brick	1	1.5	Fragment
14LV169	2	1	3	3307	4	Small Finds/Architectural	Slag	1	5.7	fragment
14LV169	3	1	1	3308	1	Lithics	Early Reduction Flake	1	0.3	Non-heat treated Smokey Hill Jasper

Site No:	Unit	Stratu	Level	Field #	Specimen	Class	Artifact Description:	Count	Weight	Comments
14LV169	3	1	1	3308	2	Lithics	Early Reduction Flake	1	1	Heat treated Plattsmouth chert
14LV169	3	1	1	3308	3	Prehistoric Ceramic	Body Sherd	1	0.8	Quartz tempered, smoothed both surfaces, low clay content
14LV169	3	1	1	3308	4	Glass	Unidentified Container	1		Body shard; colorless
14LV169	3	1	1	3308	5	Small Finds/Architectural	Brick	4	9.2	Fragments
14LV169	3	1	1	3308	6	Small Finds/Architectural	Mortar	3	4.6	Fragments
14LV169	3	1	1	3308	7	Small Finds/Architectural	Slag	1	5.6	Fragment
14LV169	3	1	1	3308	8	Small Finds/Architectural	Rock/Stone	4	27.9	unmodified limestone
14LV169	3	1	2	3309	1	Lithics	Biface Reduction Flake	3	4.7	Heat treated chert, type unknown
14LV169	3	1	2	3309	2	Lithics	Shatter	1	0.1	Heat treated Toronto chert
14LV169	3	1	2	3309	3	Small Finds/Architectural	Rock/Stone	8	41.1	unmodified limestone
14LV169	3	1	2	3309	4	Small Finds/Architectural	Coal	1	0.5	Coal fragment
14LV169	3	1	2	3309	5	Small Finds/Architectural	Unidentified Metal	2	12.7	Fragments
14LV169	3	1	2	3309	6	Small Finds/Architectural	Brick	3	17.3	Fragments
14LV169	3	1	2	3309	7	Small Finds/Architectural	Mortar	3	47.9	Fragments
14LV169	3	1	2	3309	8	Lithics	Biface Reduction Flake	1	0.9	Heat treated Toronto chert
14LV169	3	1	2	3309	9	Lithics	Early Reduction Flake	1	2.2	Heat treated chert, possibly Peoria chert
14LV169	3	1	3	3310	1	Lithics	Biface Reduction Flake	2	0.8	Heat treated Plattsmouth chert
14LV169	3	1	3	3310	2	Lithics	Biface Reduction Flake	2	0.4	Non-heat treated Plattsmouth chert
14LV169	3	1	3	3310	3	Lithics	Shatter	1	0.2	Non-heat treated Toronto chert, Light tan to white in color, semi-translucent, medium grained, medium luster, non-fossiliferous
14LV169	3	1	3	3310	4	Lithics	Finishing Flake	1	0.1	Non-heat treated Toronto chert
14LV169	3	1	3	3310	5	Small Finds/Architectural	Rock/Stone	33	333.5	unmodified limestone
14LV169	3	1	3	3310	6	Small Finds/Architectural	Coal	1	2.1	Coal fragment

Site No:	Unit	Stratu	Level	Field #	Specimen	Class	Artifact Description:	Count	Weight	Comments
14LV169	3	1	3	3310	7	Small Finds/Architectural	Brick	11	12.9	Fragments
14LV169	3	1	4	3311	1	Lithics	Shatter	1	0.2	Non-heat treated Toronto chert
14LV169	3	1	4	3311	2	Lithics	Early Reduction Flake	1	2.4	Non-heat treated Smokey Hill Jasper, cortex is present
14LV169	3	1	4	3311	3	Small Finds/Architectural	Rock/Stone	1	4.9	unmodified limestone
14LV169	3	1	4	3311	4	Small Finds/Architectural	Mortar	4	54.9	Fragments
14LV169	3	1	5	3312	1	Lithics	Biface Reduction Flake	1	1.3	Non-heat treated Toronto chert
14LV169	3	1	5	3312	2	Small Finds/Architectural	Brick	1	0.3	fragment
14LV169	3	1/2	6	3313	1	Lithics	Biface Reduction Flake	1	0.2	Non-heat treated material, resembles a Florence C chert
14LV169	3	1/2	6	3313	2	Lithics	Biface Reduction Flake	1	0.2	Unknown non-heat treated material, possible chalcedony, white to translucent in color
14LV169	3	2	8	3314	1	Lithics	Biface Reduction Flake	1	0.1	Non-heat treated Toronto chert
14LV169	3	2	8	3314	2	Lithics	Biface Reduction Flake	1	0.2	Non-heat treated Smoky Hill Jasper, white to translucent in color,
14LV169	4	1	2	3315	1	Lithics	Shatter	1	3.7	Heat treated plattsmouth chert
14LV169	4	1	2	3315	2	Lithics	Finishing Flake	1	0.1	Non-heat treated Winterset chert
14LV169	4	1	2	3315	3	Small Finds/Architectural	Brick	2	0.3	Fragments
14LV169	4	1	3	3316	1	Small Finds/Architectural	Brick	4	1.4	Fragments
14LV169	4	1	3	3316	2	Small Finds/Architectural	Rock/Stone	6	5	unmodified limestone
14LV169	4	1	4	3317	1	Small Finds/Architectural	Brick	9	259.8	Fragments
14LV169	4	1	4	3317	2	Small Finds/Architectural	Mortar	1	1.6	Fragments
14LV169	5	1	1	3318	1	Lithics	Flake Fragment	1	1.6	Heat treated Plattsmouth chert difficult to distinguish
14LV169	5	1	1	3318	2	Small Finds/Architectural	Brick	11	41.4	fragments
14LV169	5	1	2	3319	1	Lithics	Early Reduction Flake	1	0.7	Non-heat treated Toronto chert
14LV169	5	1	2	3319	2	Lithics	Shatter	2	0.3	Heat treated Plattsmouth

Site No:	Unit	Stratu	Level	Field #	Specimen	Class	Artifact Description:	Count	Weight	Comments
14LV169	5	1	2	3319	3	Lithics	Biface Reduction Flake	1	0.4	Heat treated unknown material, large grained material with medium luster, resemble a solificied sand
14LV169	5	1	2	3319	4	Small Finds/Architectural	Roofing Slate	1	0.8	fragment
14LV169	5	1	2	3319	5	Glass	Unidentified Container	2		Body shards; colorless
14LV169	5	1	2	3319	6	Small Finds/Architectural	Window Glass	1	0.4	Fragment, colorless
14LV169	5	1	2	3319	7	Small Finds/Architectural	Brick	8	26.1	Fragment
14LV169	5	1	2	3319	8	Small Finds/Architectural	Unidentified Nail	1		Fragment
14LV169	5	1	3	3320	1	Lithics	Possible Ochre	1	0.1	Orange color
14LV169	5	1	3	3320	2	Small Finds/Architectural	Rock/Stone	1	0.2	Burnt shale fragment
14LV169	5	1	3	3320	3	Small Finds/Architectural	Brick	1	0.3	fragment
14LV169	5	1/2	4	3321	1	Lithics	Biface Reduction Flake	1	0.2	Heat treated Plattsmouth
14LV171	2	1	1	5501	1	Faunal	Bison	1	7.8	Bison tooth
14LV171	1	1/2	3	5502	1	Lithics	Biface Reduction Flake	1	0.4	Non-heat treated Toronto chert
14LV171	1	1/2	3	5502	2	Lithics	Finishing Flake	1	0.1	Non-heat treated Toronto chert
14LV171	1	1/2	3	5502	3	Lithics	Biface Reduction Flake	1	1.6	Non-heat treated Plattsmouth
14LV171	1	1/2	3	5502	4	Lithics	Finished Biface	1	1.1	Possible projectile point tip; Heat treated Plattsmouth
14LV171	1	1/2	3	5502	5	Small Finds/Architectural	Brick	1	9.5	Fragment
14LV171	1	1/2	3	5502	6	Small Finds/Architectural	Bolt	1	17	Whole
14LV171	1	1/2	3	5502	7	Small Finds/Architectural	Comb	1	1.6	Plastic
14LV171	1	1/2	3	5502	8	Small Finds/Architectural	Unidentified Metal	9	79.5	Wire fragments
14LV171	1	1/2	3	5502	9	Small Finds/Architectural	Wire Nail	31		Whole
14LV171	1	1/2	3	5502	10	Small Finds/Architectural	Wire Nail	34		Fragments
14LV171	1	1/2	3	5502	11	Small Finds/Architectural	Roofing Nail	6		Whole

Site No:	Unit	Stratu	Level	Field #	Specimen	Class	Artifact Description:	Count	Weight	Comments
14LV171	1	1/2	3	5502	12	Small Finds/Architectural	Fence Staple	6		fragments
14LV171	1	2	4	5503	1	Lithics	Drill	1	4.3	Drill base; non- heat treated Toronto chert or solificied chalk
14LV171	1	2	4	5503	2	Lithics	Shatter	2	2.4	Heat treated Plattsmouth chert
14LV171	1	2	4	5503	3	Lithics	Biface Reduction Flake	1	0.3	Heat treated Plattsmouth chert
14LV171	1	2	4	5503	4	Small Finds/Architectural	Brick	4	1.6	Fragments
14LV171	1	2	4	5503	5	Small Finds/Architectural	Unidentified Metal	11	5.3	Fragments
14LV171	1	2	5	5504	1	Lithics	Biface Reduction Flake	1	0.4	Reddish-purple (heated) Plattsmouth chert, no cortex; has platform and bulb of percussion.
14LV171	1	2	5	5504	2	Lithics	Biface Reduction Flake	1	2.6	Gray Plattsmouth fossiliferous chert, with slight red/purple heat staining; no cortex, partial bulb of percussion.
14LV171	1	2	5	5504	3	Lithics	Biface Reduction Flake	1	0.4	Small fragment of black, fossiliferous Winterset chert; no cortex, no sign obeing heated; partial bulb of percussion.
14LV171	1	2	5	5504	4	Lithics	Biface Reduction Flake	1	1	Honey colored Toronto chert, not heated; no cortex present; partial bulb of percussion present.
14LV171	1	2	5	5504	5	Lithics	Early Reduction Flake	1	0.5	Brown/tan chert, possibly Toronto; has very small amount of cortex present; no evidence of being heated; missing platform and bulb of percussion.
14LV171	1	2	5	5504	6	Small Finds/Architectural	Brick	1	0.2	Small crumb of red brick.
14LV171	2	1	2	5505	1	Lithics	Shatter	1	0.7	Pale gray chert, possible Madison variant; no cortex, no sign of being heated; no platform or bulb of percussion; irregular in shape.
14LV171	2	1	2	5505	2	Lithics	Biface Reduction Flake	1	1	Gray fossiliferous Plattsmouth chert, no cortex, no sign of being heated; missing platform and bulb of percussion.
14LV171	2	1	2	5505	3	Small Finds/Architectural	Brick	4	24.4	Red brick fragments.
14LV171	2	1	2	5505	4	Small Finds/Architectural	Unidentified Material	1	4.9	Brown colored material (probable non-synthetic); fragment has a curved shape, with smoothed/polished (?) surfaces, and one intentional edge.
14LV171	2	2	3	5506	1	Small Finds/Architectural	Brick	3	13.1	Fragments of red brick.
14LV171	2	2	3	5506	2	Small Finds/Architectural	Window Glass	1	2	Flat, colorless glass fragment.
14LV171	2	2	4	5507	1	Small Finds/Architectural	Coal	1	0.3	Small fragment of coal.

Site No:	Unit	Stratu	Level	Field #	Specimen	Class	Artifact Description:	Count	Weight	Comments
14LV171	2	2	5	5508	1	Small Finds/Architectural	Brick	4	7.4	Red brick fragments.
14LV171	2	2	5	5508	2	Small Finds/Architectural	Mortar	1	42.8	Mortar chunk with two remaining surfaces (corner).
14LV171	2	2	5	5508	3	Small Finds/Architectural	Cement/Concrete	2	71.1	Fragments of cement/concrete.
14LV171	2	2	5	5508	4	Small Finds/Architectural	Slag	1	17.8	Lump of slag with ferrous staining.
14LV171	3	1	2	5509	1	Small Finds/Architectural	Brick	1	7	Orange-red brick fragment.
14LV171	3	1	2	5509	2	Small Finds/Architectural	Brick	1	86.5	Red brick fragment with cement adhered to surface.
14LV171	3	1	2	5509	3	Small Finds/Architectural	Cement/Concrete	1	27.2	Chunk of cement.
14LV171	3	1	3	5510	1	Small Finds/Architectural	Rock/Stone	2	59.9	Unmodified limestone chunks.
14LV171	3	1	3	5510	2	Small Finds/Architectural	Brick	3	4.6	Red brick crumbs.
14LV171	4	1	2	5511	1	Glass	Beer Bottle	7	8.5	Brown beer bottle fragments.
14LV171	4	1	2	5511	2	Small Finds/Architectural	Brick	1	0.2	Small crumb of brick.
14LV171	4	1	2	5511	3	Small Finds/Architectural	Cement/Concrete	1	0.3	Cement crumb.
14LV171	4	1	3	5512	1	Small Finds/Architectural	Mortar	1	2.8	Mortar fragment.
14LV171	4	1	4	5513	1	Prehistoric Ceramic	Body Sherd	2	2.6	Small sherds, with quartz/grit temper, surfaces eroded, no decoration visible.
14LV171	4	1	4	5513	2	Glass	Beer Bottle	1	0.5	Small fragment of brown beer bottle glass.
14LV171	4	1	5	5514	1	Small Finds/Architectural	Brick	1	0.1	Fragment
14LV171	4	1	6	5515	1	Lithics	Early Reduction Flake	1	2.1	Pale gray chert, possibly Florence A variant; possible small amount of cortex present, no sign of heating.
14LV171	4	1	6	5515	2	Prehistoric Ceramic	Body Sherd	1	1.9	Body sherd, with smoothed surfaces; low amount of grit or crushed rock in temper.
14LV171	4	1	6	5515	3	Glass	Unidentified Curved/Vessel Glass	1	0.5	Slightly curving fragment of colorless glass.
14LV171	5	1	1	5516	1	Small Finds/Architectural	Brick	2	1	Small brick crumbs.
14LV171	5	1	2	5517	1	Lithics	Biface Reduction Flake	1	1	Heat treated Plattsmouth chert
14LV171	5	1	2	5517	2	Lithics	Biface Reduction Flake	1	0.2	Non-heat treated Plattsmouth chert

Site No:	Unit	Stratu	Level	Field #	Specimen	Class	Artifact Description:	Count	Weight	Comments
14LV171	5	1	2	5517	3	Lithics	Shatter	1	0.2	Heat treated Plattsmouth chert
14LV171	5	1	2	5517	4	Small Finds/Architectural	Rock/Stone	2	0.9	Non-heat treated quartz fragments
14LV171	5	1	2	5517	5	Prehistoric Ceramic	Burned Clay	1	0.4	Fragment
14LV171	5	1	2	5517	6	Small Finds/Architectural	Brick	2	2.6	Fragment
14LV171	5	1	2	5517	7	Small Finds/Architectural	Rock/Stone	9	12.5	Unmodified limestone chunks.
14LV171	5	1	3	5518	1	Lithics	Biface Reduction Flake	1	0.5	Heat treated Plattsmouth chert
14LV171	5	1	3	5518	2	Lithics	Flake Fragment	2	0.3	Heat treated Plattsmouth chert
14LV171	5	1	3	5518	3	Small Finds/Architectural	Brick	1	0.3	Fragment
14LV171	5	1	3	5518	4	Small Finds/Architectural	Rock/Stone	3	29.6	Unmodified limestone chunks.
14LV171	5	2	5	5519	1	Lithics	Shatter	2	0.7	Non-heat treated Plattsmouth chert
14LV172	1	1	2	6601	1	Lithics	Shatter	1	0.9	Small fragment of pale gray fossiliferous Plattsmouth chert, possible cortex present, not heated.
14LV172	1	1	2	6601	2	Lithics	Biface Reduction Flake	1	0.7	Plattsmouth chert, reddish (heated) in color.
14LV172	1	1	2	6601	3	Lithics	Biface Reduction Flake	1	0.7	Toronto chert, tan with dark brown mineral inclusions, no sign of being heated.
14LV172	1	1	2	6601	4	Lithics	Biface Reduction Flake	1	0.3	Tan/brown Plattsmouth chert, not heated.
14LV172	1	1	2	6601	5	Lithics	Biface Reduction Flake	1	0.3	Dark gray chert, possible Argentine chert; not heated.
14LV172	1	1	2	6601	6	Small Finds/Architectural	Rock/Stone	2	14.5	Unmodified limestone fragments.
14LV172	1	1	2	6601	7	Small Finds/Architectural	Soft Paste Porcelain	1	1.1	Fragment of porcelain with two surfaces (corner); non-vessel; possible insulator.
14LV172	1	1	2	6601	8	Small Finds/Architectural	Brick	3	162.6	Red brick fragments.
14LV172	1	1	2	6601	9	Small Finds/Architectural	Cement/Concrete	1	1.6	Cement with limestone adhered.
14LV172	1	1	2	6601	10	Small Finds/Architectural	Unidentified Rubber	1	0.1	Black rubber fragment.
14LV172	1	1	2	6601	11	Small Finds/Architectural	Slag	1	3.7	Fragment of slag.
14LV172	1	1	3	6602	1	Lithics	Decortication Flake	1	0.8	Tan Toronto chert; one large surface of cortex, no sign of heating.

Site No:	Unit	Stratu	Level	Field #	Specimen	Class	Artifact Description:	Count	Weight	Comments
14LV172	1	1	3	6602	2	Lithics	Early Reduction Flake	1	3.7	Gray and brown Plattsmouth chert, with pink/red heat staining present; small amount of cortex present.
14LV172	1	1	3	6602	3	Small Finds/Architectural	Rock/Stone	1	26.2	Sandstone chunk, with angular fractures, heating indeterminate.
14LV172	1	1	3	6602	4	Small Finds/Architectural	Brick	1	0.5	Red brick crumb.
14LV172	1	1	3	6602	5	Small Finds/Architectural	Slag	2	12.9	Fragments of slag.
14LV172	1	1	4	6603	1	Lithics	Shatter	1	0.3	Dark gray/black fossiliferous Plattsmouth chert with cortex.
14LV172	1	1	4	6603	2	Lithics	Biface Reduction Flake	1	0.8	Brown-gray chert (indeterminate type), appears not heated.
14LV172	1	1	4	6603	3	Lithics	Biface Reduction Flake	1	0.5	Chert, Plattsmouth variety; possibly heated (has pinkish color) .
14LV172	1	1	4	6603	4	Lithics	Flake Fragment	1	0.5	Fragment of heated Florence (probable Type C) chert, edges snapped off.
14LV172	1	1	4	6603	5	Prehistoric Ceramic	Burned Clay	1	1.6	Irregular shaped lump of burned clay.
14LV172	2	1	2	6604	1	Lithics	Decortication Flake	1	0.5	Fragment of cortex; material is heated (red) brown chert, indeterminate type.
14LV172	2	1	2	6604	2	Small Finds/Architectural	Cement/Concrete	1	20.7	Chunk of cement.
14LV172	2	1	2	6604	3	Small Finds/Architectural	Mortar	1	6.9	Chunk of mortar.
14LV172	2	1	2	6604	4	Small Finds/Architectural	Brick	1	1.6	Brick with cement.
14LV172	2	2	3	6605	1	Lithics	Biface Reduction Flake	1	0.5	Florence chert (possible C), pink colored (heated).
14LV172	2	2	3	6605	2	Lithics	Early Reduction Flake	1	0.8	Green chert (possible Flint Hills Green or Smoky Hills variant) with small amount of cortex present; no sign of being heated.
14LV172	2	2	3	6605	3	Small Finds/Architectural	Brick	1	0.4	Small red brick crumb.
14LV172	2	2	3	6605	4	Small Finds/Architectural	Mortar	1	1.2	Small chunk of mortar.
14LV172	2	2	3	6605	5	Small Finds/Architectural	Nut	1	6.4	Hexagonal nut.
14LV172	3	1	1	6606	1	Lithics	Biface Reduction Flake	1	0.2	Small, thin, purple-red flake of jasper; heating indeterminate.
14LV172	3	1	2	6607	1	Lithics	Biface Reduction Flake	1	1.1	Tan chert, heavily colored pink (heated).
14LV172	3	1	2	6607	2	Small Finds/Architectural	Cement/Concrete	1	167.1	Fragment of cement with small fleck of red brick attached.

Site No:	Unit	Stratu	Level	Field #	Specimen	Class	Artifact Description:	Count	Weight	Comments
14LV172	3	1	3	6608	1	Lithics	Shatter	1	1.4	Brown Plattsmouth chert fragment with cortex, no sign of being heated.
14LV172	3	1	3	6608	2	Lithics	Decortication Flake	2	1.6	Tan/brown chert Toronto, with cortex; has slight pink (heated) sections.
14LV172	3	1	3	6608	3	Lithics	Decortication Flake	1	0.5	Brown (varying shades) Plattsmouth chert, with cortex.
14LV172	3	1	3	6608	4	Lithics	Early Reduction Flake	1	1.9	Pale gray Florence C chert, thick in section; no cortex, no sign of heating.
14LV172	3	1	3	6608	5	Lithics	Early Reduction Flake	1	2.4	Gray Plattsmouth chert, with very small amount of cortex, and one edge slightly pink from heat treatment.
14LV172	3	1	3	6608	6	Lithics	Early Reduction Flake	1	1.1	Gray Plattsmouth chert, small amount of cortex present; no sign of being heated.
14LV172	3	1	3	6608	7	Lithics	Early Reduction Flake	1	3.6	Dark gray Plattsmouth chert, not heated, with small amount of possible cortex present.
14LV172	3	1	3	6608	8	Lithics	Biface Reduction Flake	1	0.5	Pale gray, possible Florence C, chert; not heated.
14LV172	3	1	3	6608	9	Lithics	Biface Reduction Flake	1	0.2	Pale gray chert, possible Florence C; one edge pink from heating; no cortex.
14LV172	3	1	3	6608	10	Lithics	Biface Reduction Flake	1	0.2	Tan Plattsmouth chert, one edge has heat staining.
14LV172	3	1	3	6608	11	Lithics	Biface Reduction Flake	2	0.8	Gray chert Plattsmouth, stained pink from heat, no cortex.
14LV172	3	1	3	6608	12	Lithics	Biface Reduction Flake	1	0.5	Gray, slightly pink (possibly heated) Plattsmouth chert flake.
14LV172	3	1	3	6608	13	Lithics	Biface Reduction Flake	1	0.1	Tan/gray-brown chert, Toronto chert; not heated.
14LV172	3	1	3	6608	14	Lithics	Biface Reduction Flake	1	0.1	Dark gray chert, not heated.
14LV172	3	1	3	6608	15	Lithics	Finishing Flake	2	0.1	Light gray chert, Plattsmouth variety; so sign of being heated.
14LV172	3	1	3	6608	16	Lithics	Finishing Flake	1	0.1	Gray Plattsmouth chert, not heated; weight is < 0.1 gram.
14LV172	3	1	3	6608	17	Lithics	Finishing Flake	1	0.1	Dark gray chert Florence D, not heated; weight is < 0.1 gram.
14LV172	3	1	3	6608	18	Lithics	Flake Fragment	1	0.1	Small fragment of platform and upper portion of bulb of percussion; tan chert with slight pink edge (heated); Toronto variety.
14LV172	3	1	3	6608	19	Lithics	Fire-cracked Rock	1	57.9	Fragment of quartzite cobble with cortex, angular fractures, and pinkish color (heated) along cortex.
14LV172	3	1	3	6608	20	Small Finds/Architectural	Coal	2	0.1	Small fragments of possible coal.

Site No:	Unit	Stratu	Level	Field #	Specimen	Class	Artifact Description:	Count	Weight	Comments
14LV172	3	1	3	6608	21	Floral	Charcoal	2	2.6	Carbonized wood.
14LV172	3	1	4	6609	1	Lithics	Cracked Rock	1	45.2	Non-heat treated Plattsmouth
14LV172	3	1	4	6609	2	Lithics	Biface / General	1	4.7	Heat treated Plattsmouth biface fragment
14LV172	3	1	4	6609	3	Lithics	Cracked Rock	1	41.5	Non- heat treated quartzite, cortex is present
14LV172	3	1	5	6610	1	Lithics	Core / General	1	77.3	Non-heat treated Plattsmouth chert core with chopper like blade on one end, cortex is present
14LV172	3	1	5	6610	2	Lithics	Shatter	1	18	Non-heat treated Plattsmouth chert, cortex is present
14LV172	3	1	5	6610	3	Lithics	Flake Tool / General	1	2.9	Unidentified chert, heat indeterminate, possible spokeshave with multiple worked edges
14LV172	3	1	5	6610	4	Lithics	Finished Biface	1	3.3	Possible knife tip, non-heat treated westerville chert
14LV172	3	1	5	6610	5	Lithics	Finished Biface	1	3.7	Base fragment, non-heat treated westerville chert
14LV172	3	1	5	6610	6	Lithics	Biface Reduction Flake	1	0.6	Unidentified chert, heat indeterminate
14LV172	3	1	5	6610	7	Lithics	Biface Reduction Flake	1	0.3	Non-heat treated westerville chert
14LV172	3	1	5	6610	8	Lithics	Decortication Flake	1	1.8	Non-heat treated unidentified chert, Mottled brown color, some cortex is present and appears river worn.
14LV172	3	1	5	6610	9	Lithics	Early Reduction Flake	1	0.4	Smoky Hill Jasper, heating indeterminate, cortex is visible
14LV172	3	1	5	6610	10	Lithics	Biface Reduction Flake	1	0.3	Smoky Hill Jasper, heating indeterminate
14LV172	3	1	5	6610	11	Lithics	Fire-cracked Rock	3	138.6	Quartzite Heated
14LV172	3	1	5	6610	12	Small Finds/Architectural	Rock/Stone	6	81.3	Non-heat treated sandstone with mica flecking
14LV172	3	2	6	6611	1	Lithics	Decortication Flake	1	5.6	Non-heat treated chert, Toronto chert, cortex is present and appears to be river worn
14LV172	3	2	7	6612	1	Lithics	Decortication Flake	1	8.8	Heat treated Plattsmouth chert
14LV172	3	2	7	6612	2	Lithics	Shatter	1	9.7	Non-heat treated Plattsmouth chert
14LV172	3	2	8	6613	1	Lithics	Biface Reduction Flake	1	0.8	Non-heat treated chert, Toronto chert, medium grained, medium luster, very few inclusions.
14LV172	4	1	2	6614	1	Lithics	Projectile Point	1	2	Brown chert Scallorn; has side notches but is snapped off below; base is partial.

Site No:	Unit	Stratu	Level	Field #	Specimen	Class	Artifact Description:	Count	Weight	Comments
14LV172	4	1	2	6614	2	Lithics	Decortication Flake	1	1	Brown and gray chert, with large surface of waterworn cortex, not heated.
14LV172	4	1	2	6614	3	Lithics	Early Reduction Flake	5	4.5	Gray Plattsmouth chert, all with small amount of cortex; not heated.
14LV172	4	1	2	6614	4	Lithics	Early Reduction Flake	2	1.2	Gray Plattsmouth chert, with very slight pink tinge (heated) on one edge on each.
14LV172	4	1	2	6614	5	Lithics	Biface Reduction Flake	2	1.4	Tan/brown Toronto chert, with red and pink heat staining.
14LV172	4	1	2	6614	6	Lithics	Biface Reduction Flake	1	0.3	Heat-colored pink Toronto chert.
14LV172	4	1	2	6614	7	Lithics	Biface Reduction Flake	3	1.6	Brown and tan Toronto chert, not heated.
14LV172	4	1	2	6614	8	Lithics	Biface Reduction Flake	3	0.8	Gray-tan Toronto chert flakes, not heated.
14LV172	4	1	2	6614	9	Lithics	Biface Reduction Flake	1	0.3	Tan-gray Plattsmouth chert, not heated.
14LV172	4	1	2	6614	10	Lithics	Biface Reduction Flake	1	0.1	Brown and gray chert with white streaking, not heated.
14LV172	4	1	2	6614	11	Lithics	Biface Reduction Flake	1	0.1	Gray chert, Plattsmouth; not heated.
14LV172	4	1	2	6614	12	Lithics	Finishing Flake	1	0.1	Pale gray Burlington; not heated; weight is <0.1 gram.
14LV172	4	1	2	6614	13	Lithics	Flake Fragment	1	0.1	Pale gray Burlington, with very slight pink tinge (possibly heat treated).
14LV172	4	1	2	6614	14	Lithics	Flake Fragment	2	0.1	Tan Plattsmouth chert, not heated; combined wieght is <0.1 gram.
14LV172	4	1	2	6614	15	Lithics	Flake Fragment	1	0.2	Small fragment of brown and white possible chalcedony; not heated, no cortex.
14LV172	4	1	2	6614	16	Lithics	Shatter	1	0.4	Dark gray Plattsmouth chert fragment, no cortex, not heated.
14LV172	4	1	2	6614	17	Lithics	Shatter	1	4.8	Gray Plattsmouth chert, not heated, no cortex.
14LV172	4	1	2	6614	18	Small Finds/Architectural	Brick	1	0.3	Red brick crumb.
14LV172	4	1/2	3	6615	1	Lithics	Decortication Flake	2	0.3	Gray Plattsmouth; large amount of cortex on one surface, not heated.
14LV172	4	1/2	3	6615	2	Lithics	Early Reduction Flake	2	1.6	Gray Plattsmouth chert, with cortex; both possibly heated.
14LV172	4	1/2	3	6615	3	Lithics	Biface Reduction Flake	3	0.4	Dark gray Winterset, not heated, with cortex on both.
14LV172	4	1/2	3	6615	4	Lithics	Biface Reduction Flake	1	0.5	Dark, blue-gray chert with white streaking; Florence D chert, no cortex, not heated.

Site No:	Unit	Stratu	Level	Field #	Specimen	Class	Artifact Description:	Count	Weight	Comments
14LV172	4	1/2	3	6615	5	Lithics	Biface Reduction Flake	1	0.4	Pale gray Florence C chert; not heated.
14LV172	4	1/2	3	6615	6	Lithics	Biface Reduction Flake	1	0.1	Light gray indeterminate chert, no cortex, not heated.
14LV172	4	1/2	3	6615	7	Lithics	Biface Reduction Flake	1	0.1	Heat treated tan Toronto chert
14LV172	4	1/2	3	6615	8	Lithics	Biface Reduction Flake	5	0.1	Dark gray Plattsmouth chert, with small portion of heat staining visible.
14LV172	4	1/2	3	6615	9	Lithics	Biface Reduction Flake	2	1.2	Pale gray Florence C chert, not heated.
14LV172	4	1/2	3	6615	10	Lithics	Biface Reduction Flake	2	0.3	Brown Plattsmouth chert, not heated.
14LV172	4	1/2	3	6615	11	Lithics	Biface Reduction Flake	4	0.2	Gray Plattsmouth, not heated.
14LV172	4	1/2	3	6615	12	Lithics	Biface Reduction Flake	3	1.2	Gray Plattsmouth not heated.
14LV172	4	1/2	3	6615	13	Lithics	Biface Reduction Flake	2	0.8	Chert, heat stained reddish-purple, Plattsmouth.
14LV172	4	1/2	3	6615	14	Lithics	Biface Reduction Flake	1	0.3	Brown Toronto, not heated.
14LV172	4	1/2	3	6615	15	Lithics	Flake Fragment	1	0.1	Dark purple-gray chert, heated; type indeterminate.
14LV172	4	1/2	3	6615	16	Lithics	Flake Fragment	1	0.1	Very dark gray chert, small fragment, heating indeterminate; weight is <0.1 gram.
14LV172	4	1/2	3	6615	17	Lithics	Shatter	1	0.5	Dark gray Plattsmouth chert, not heated.
14LV172	4	1/2	3	6615	18	Lithics	Shatter	1	1.6	Fragment of purple-brown indeterminate chert, with angular fractures, possibly heated.
14LV172	5	1	1	6616	1	Lithics	Shatter	1	0.4	Non-heat treated Plattsmouth
14LV172	5	1	2	6617	1	Lithics	Biface Reduction Flake	1	0.3	Non-heat treated Plattsmouth
14LV172	5	1	2	6617	2	Prehistoric Ceramic	Burned Clay	2	1	Heated fragments
14LV172	5	1	2	6617	3	Historic Ceramic	Soft Paste Porcelain	1		Small fragment body sherd
14LV172	5	1	2	6617	4	Small Finds/Architectural	Brick	2	3.6	Fragments
14LV172	5	1/2	3	6618	1	Lithics	Flake Fragment	1	0.7	Heat treated Toronto chert
14LV172	5	1/2	3	6618	2	Small Finds/Architectural	Rock/Stone	1	5.5	Quartzite, heat indeterminate
14LV172	5	1/2	3	6618	3	Small Finds/Architectural	Window Glass	1	0.8	Aqua colored fragment

Site No:	Unit	Stratu	Level	Field #	Specimen	Class	Artifact Description:	Count	Weight	Comments
14LV172	5	1/2	3	6618	4	Small Finds/Architectural	Brick	2	2.1	fragments
14LV172	5	1/2	4	6619	1	Lithics	Shatter	1	0.2	Non-heat treated Plattsmouth
14LV172	5	1/2	4	6619	2	Small Finds/Architectural	Window Glass	1	0.3	Colorless fragment
14LV176	1	1	1	1019	1	Lithics	Flake Fragment	1	0.1	Non-heat treated Plattsmouth
14LV176	1	1	1	1019	2	Lithics	Shatter	1	0.5	Heat treated Plattsmouth chert
14LV176	1	1	1	1019	3	Small Finds/Architectural	Rock/Stone	1	0.3	Burned sandstone
14LV176	1	1	2	1020	1	Lithics	Flake Fragment	6	1.8	Heat treated Toronto chert
14LV176	1	1	2	1020	2	Lithics	Biface Reduction Flake	7	2.8	Heat treated Toronto chert
14LV176	1	1	2	1020	3	Lithics	Biface Reduction Flake	4	0.8	Non-heat treated Toronto chert
14LV176	1	1	2	1020	4	Lithics	Flake Fragment	1	1.3	Non-heat treated Toronto chert
14LV176	1	1	2	1020	5	Lithics	Biface Reduction Flake	1	0.2	non-heat treated Burlington chert
14LV176	1	1	2	1020	6	Lithics	Biface Reduction Flake	1	0.3	Non-heat treated Plattsmouth
14LV176	1	1	2	1020	7	Lithics	Shatter	1	0.7	Unidentified heat treated chert, river worn cortex is present
14LV176	1	1	2	1020	8	Lithics	Shatter	1	0.5	Unidentified non-heat treated chert
14LV176	1	1	2	1020	9	Small Finds/Architectural	Rock/Stone	1	0.4	Burned sandstone
14LV176	1	1	3	1021	1	Lithics	Flake Fragment	1	0.2	Unidentified heat treated chert, reddened, large grained coarse, no sheen
14LV176	1	1	3	1021	2	Lithics	Biface Reduction Flake	1	0.9	Unidentified heat treated chert, reddened, large grained coarse, no sheen
14LV176	1	1	3	1021	3	Lithics	Biface Reduction Flake	1	1.9	Unidentified heat treated chert, purplish, large grained coarse, no sheen
14LV176	1	1	3	1021	4	Lithics	Biface Reduction Flake	1	0.2	Non-heat treated toronto chert
14LV176	1	1	3	1021	5	Lithics	Biface Reduction Flake	2	1.8	Refit; non-heat treated Burlington chert
14LV176	1	1	3	1021	6	Lithics	Flake Fragment	2	0.4	Non-heat treated Plattsmouth
14LV176	1	1	3	1021	7	Lithics	Biface Reduction Flake	1	1	Heat treated Plattsmouth chert

Site No:	Unit	Stratu	Level	Field #	Specimen	Class	Artifact Description:	Count	Weight	Comments
14LV176	1	1	3	1021	8	Lithics	Flake Fragment	2	0.7	unidentified non-heat treated chert, Gray and white agatized color non native to Kansas.
14LV176	1	1	3	1021	9	Lithics	Possible Ochre	1	1.3	Orange colored fragment
14LV176	2	1	2	1022	1	Lithics	Core / General	1	14.5	Fragment; non-heat treated westerville chert
14LV176	2	1	2	1022	2	Lithics	Flake Fragment	1	1.3	Heat treated Plattsmouth chert
14LV176	2	1	2	1022	3	Lithics	Biface Reduction Flake	2	0.4	Non-heat treated toronto chert
14LV176	2	1	2	1022	4	Lithics	Flake Fragment	1	0.6	Heat treated Toronto chert
14LV176	2	1	2	1022	5	Lithics	Flake Fragment	3	0.8	Non-heat treated Plattsmouth
14LV176	2	1	2	1022	6	Lithics	Shatter	1	0.4	Heat treated Plattsmouth chert
14LV176	2	1	2	1022	7	Lithics	Flake Fragment	1	0.9	non-heat treated Burlington chert
14LV176	2	1	2	1022	8	Lithics	Flake Fragment	1	0.6	heat treated Toronto chert
14LV176	2	2	3	1023	1	Lithics	Biface Reduction Flake	1	0.6	Heat treated Toronto chert
14LV176	2	2	3	1023	2	Lithics	Biface Reduction Flake	1	0.3	Non-heat treated Toronto chert
14LV176	3	1	1	1024	1	Lithics	Biface Reduction Flake	2	0.5	Non-heat treated Westerville chert
14LV176	3	1	1	1024	2	Lithics	Flake Fragment	1	0.2	Unidentified white and light gray non-heat treated chert
14LV176	3	1	1	1024	3	Lithics	Flake Fragment	2	1.1	non-heat treated Toronto chert
14LV176	3	1	1	1024	4	Lithics	Biface Reduction Flake	1	0.2	non-heat treated Toronto chert, cortex is visible
14LV176	3	1	1	1024	5	Lithics	Shatter	1	2.9	Unidentified non-heat treated chert, Brown and gray colors, cortex is visible and looks riverworn
14LV176	3	1	1	1024	6	Lithics	Early Reduction Flake	1	0.8	Unidentified non-heat treated chert, Brown and gray colors, cortex is visible and looks riverworn
14LV176	3	1	2	1025	1	Lithics	Decortication Flake	1	1.4	Gray Plattsmouth chert, not heated, with cortex.
14LV176	3	1	2	1025	2	Lithics	Early Reduction Flake	1	1	Gray-brown Plattsmouth chert, with small amount of cortex, not heated.
14LV176	3	1	2	1025	3	Lithics	Early Reduction Flake	2	2.3	Plattsmouth chert, heat stained pink, no cortex.

Site No:	Unit	Stratu	Level	Field #	Specimen	Class	Artifact Description:	Count	Weight	Comments
14LV176	3	1	2	1025	4	Lithics	Early Reduction Flake	1	0.9	Tan Plattsmouth chert, with pink heat staining along one edge.
14LV176	3	1	2	1025	5	Lithics	Biface Reduction Flake	1	0.3	Pale gray Florence A chert, not heated.
14LV176	3	1	2	1025	6	Lithics	Biface Reduction Flake	1	0.2	Gray Plattsmouth chert, no cortex, no sign of being heated.
14LV176	3	1	2	1025	7	Lithics	Biface Reduction Flake	2	0.3	Dark gray Plattsmouth chert, no cortex, heating indeterminate.
14LV176	3	1	2	1025	8	Lithics	Biface Reduction Flake	7	1.6	Tan Plattsmouth chert, not heated.
14LV176	3	1	2	1025	9	Lithics	Biface Reduction Flake	4	1.1	Tan Plattsmouth chert, heat-tinged pink along edges.
14LV176	3	1	2	1025	10	Lithics	Biface Reduction Flake	5	1.9	Plattsmouth chert, heat-stained pink throughout.
14LV176	3	1	2	1025	11	Glass	Unidentified Curved/Vessel Glass	1	0.8	Colorless, undecorated, very slightly curving shard of glass.
14LV176	3	2	3	1026	1	Lithics	Flake Fragment	1	0.4	Non-heat treated Toronto chert
14LV176	3	2	3	1026	2	Lithics	Biface Reduction Flake	1	0.2	Non-heat treated Toronto chert
14LV176	3	2	3	1026	3	Lithics	Flake Fragment	1	0.2	Non-heat treated winterset chert
14LV176	3	2	3	1026	4	Lithics	Biface Reduction Flake	1	0.3	Non-heat treated Plattsmouth
14LV176	3	2	3	1026	5	Lithics	Core / General	1	66.7	Non-heat treated Plattsmouth
14LV176	3	2	4	1027	1	Lithics	Shatter	1	0.5	Unknown non-heat treated chert
14LV176	3	2	4	1027	2	Lithics	Flake Fragment	1	0.2	Unknown non-heat treated chert, white color with black specks
14LV176	3	2	4	1027	3	Lithics	Flake Fragment	1	1.8	Non-heat treated Plattsmouth
14LV176	4	1	1	1028	1	Lithics	Flake Fragment	1	0.1	Heat treated Toronto chert
14LV176	4	1	2	1029	1	Lithics	Flake Fragment	1	0.3	Non-heat treated Toronto chert
14LV176	4	1	2	1029	2	Lithics	Flake Fragment	1	0.1	Heat treated Toronto chert
14LV176	4	1	2	1029	3	Lithics	Flake Fragment	1	0.7	Unknown non-heat treated chert, white color with black specks, cortex is present
14LV176	4	1	2	1029	4	Lithics	Flake Fragment	1	0.4	Unknown non-heat treated chert, light tan in color high quality material fine grain, medium to high luster
14LV176	4	1	3	1030	1	Lithics	Flake Fragment	4	2.4	Heat treated Toronto chert

Site No:	Unit	Stratu	Level	Field #	Specimen	Class	Artifact Description:	Count	Weight	Comments
14LV176	4	1	3	1030	2	Lithics	Early Reduction Flake	1	0.7	Heat treated Toronto chert, cortex is visible
14LV176	4	1	3	1030	3	Lithics	Flake Fragment	2	1.2	unidentified heat treated chert
14LV176	4	1	3	1030	4	Lithics	Shatter	2	1.8	Heat treated Plattsmouth chert
14LV176	4	1	3	1030	5	Lithics	Biface Reduction Flake	1	0.6	Heat treated Plattsmouth chert
14LV176	4	1	3	1030	6	Lithics	Flake Fragment	1	0.2	Heat treated Burlington chert
14LV176	4	1	3	1030	7	Lithics	Flake Fragment	1	0.5	non-heat treated Burlington chert
14LV176	4	1	3	1030	8	Lithics	Biface Reduction Flake	1	0.2	Heat treated Plattsmouth chert
14LV176	5	1	2	1031	1	Lithics	Shatter	1	1.1	Florence C chert, heated pink color, indeterminate if cortex is present.
14LV176	5	1	2	1031	2	Lithics	Early Reduction Flake	1	1.1	Tan/brown Toronto chert flake, not heated.
14LV176	5	1	2	1031	3	Lithics	Early Reduction Flake	1	0.6	Gray Plattsmouth chert, with small amount of cortex present; not heated.
14LV176	5	1	2	1031	4	Lithics	Biface Reduction Flake	1	0.2	Gray Plattsmouth chert, with slight pink (heated) tinge along one edge; no cortex.
14LV176	5	1	2	1031	5	Lithics	Biface Reduction Flake	1	0.1	Gray Plattsmouth, not heated.
14LV176	5	1	2	1031	6	Lithics	Biface Reduction Flake	1	0.2	Gray Plattsmouth chert with mineral inclusions; not heated.
14LV176	5	1	2	1031	7	Lithics	Biface Reduction Flake	1	0.1	Tan Toronto chert, not heated.
14LV176	5	1	3	1032	1	Lithics	Biface Reduction Flake	1	4	Heat treated Plattsmouth chert
14LV176	5	1	4	1033	1	Lithics	Biface Reduction Flake	1	0.4	Non-heat treated Plattsmouth
14LV176	5	1	4	1033	2	Lithics	Biface Reduction Flake	1	0.9	Heat treated Plattsmouth chert
14LV176	5	1	4	1033	3	Lithics	Fire-cracked Rock	4	11.9	Burned Sandstone
14LV181	1	1	1	3021	1	Lithics	Biface Reduction Flake	1	0.7	Pale gray Plattsmouth chert, not heated.
14LV181	1	1	1	3021	2	Lithics	Biface Reduction Flake	1	0.3	Tan/brown Plattsmouth chert, heat stained pink/red on one end.
14LV181	1	1	1	3021	3	Lithics	Biface Reduction Flake	1	0.2	Plattsmouth chert, heat stained pink.

Site No:	Unit	Stratu	Level	Field #	Specimen	Class	Artifact Description:	Count	Weight	Comments
14LV181	1	1	1	3021	4	Lithics	Stone Pipe	1	0.8	Flat fragment of red Kansas Pipestone with striations along one broad surface.
14LV181	1	1	1	3021	5	Lithics	Fire-cracked Rock	1	1.8	Heated sandstone, small fragment.
14LV181	1	1	1	3021	6	Prehistoric Ceramic	Amorphous Fired Clay	1	4.5	Fragment of tempered clay; does not seem to have surfaces, is rather thick (10.84 mm) and has quartz grit temper along with linear, square, and amorphous voids.
14LV181	1	1	1	3021	7	Small Finds/Architectural	Cement/Concrete	1	14.2	Chunk of cement.
14LV181	1	1	2	3022	1	Lithics	Shatter	1	2.7	Gray banded Winterset chert; has cortex, possibly heated; angular fractures.
14LV181	1	1	2	3022	2	Lithics	Early Reduction Flake	1	6.1	Tan/brown Toronto variety, with cortex, not heated.
14LV181	1	1	2	3022	3	Lithics	Early Reduction Flake	1	1	Tan Toronto, not heated.
14LV181	1	1	2	3022	4	Lithics	Biface Reduction Flake	1	0.5	Tan-gray Plattsmouth chert, not heated.
14LV181	1	1	2	3022	5	Lithics	Biface Reduction Flake	1	0.1	Dark gray indeterminate chert, not heated.
14LV181	1	1	2	3022	6	Lithics	Biface Reduction Flake	1	0.1	Small red Smoky Hill Jasper; weight is <0.1 gram.
14LV181	1	1	2	3022	7	Lithics	Biface Reduction Flake	4	1.1	Tan Toronto chert, not heated.
14LV181	1	1	2	3022	8	Lithics	Biface Reduction Flake	1	0.7	tan Toronto chert, slight pink (heated) edge.
14LV181	1	1	2	3022	9	Lithics	Biface Reduction Flake	1	1.1	Heated pink Florence C chert.
14LV181	1	1	2	3022	10	Lithics	Biface Reduction Flake	3	1.4	Indeterminate chert, heated pink.
14LV181	1	1	2	3022	11	Lithics	Fire-cracked Rock	5	33.5	Sandstone fragments, heated red.
14LV181	1	1	2	3022	12	Small Finds/Architectural	Insulator	1	0.8	Fragment of porcelain, has curving edge as a disk, probable insulator.
14LV181	1	1	2	3022	13	Small Finds/Architectural	Mortar	2	6.6	Fragments of mortar.
14LV181	1	2	3	3023	1	Lithics	Decortication Flake	1	2.8	Brown Toronto chert with cortex, not heated.
14LV181	1	2	3	3023	2	Lithics	Early Reduction Flake	1	0.2	Brown Toronto; small amount of cortex present, not heated.
14LV181	1	2	3	3023	3	Lithics	Early Reduction Flake	1	4.1	Brown-gray Plattsmouth chert, one small trace of pink (heating) along an edge; no cortex.
14LV181	1	2	3	3023	4	Lithics	Early Reduction Flake	1	1.1	Tan Plattsmouth chert, not heated.

Site No:	Unit	Stratu	Level	Field #	Specimen	Class	Artifact Description:	Count	Weight	Comments
14LV181	1	2	3	3023	5	Lithics	Biface Reduction Flake	1	0.1	Bluish-gray indeterminate chert, not heated.
14LV181	1	2	3	3023	6	Lithics	Biface Reduction Flake	3	0.3	Tan Plattsmouth chert, not heated.
14LV181	1	2	3	3023	7	Lithics	Biface Reduction Flake	1	0.1	Gray Plattsmouth chert, not heated.
14LV181	1	2	3	3023	8	Lithics	Biface Reduction Flake	1	0.3	Tan Toronto chert, heat treated - has slight pink tinge along one edge.
14LV181	1	2	3	3023	9	Lithics	Flake Fragment	1	0.1	Smoky Hill Jasper, no cortex.
14LV181	1	2	3	3023	10	Lithics	Fire-cracked Rock	24	40.6	Sandstone fragments, red (heat stained) color.
14LV181	1	2	3	3023	11	Small Finds/Architectural	Mortar	1	1	Small fragment of mortar.
14LV181	1	2	4	3024	1	Lithics	Biface Reduction Flake	1	1.5	Tan Toronto chert, not heated.
14LV181	1	2	6	3025	1	Lithics	Biface Reduction Flake	1	0.7	Pink (heated) overall; Toronto chert.
14LV181	1	2	6	3025	2	Lithics	Biface Reduction Flake	1	0.5	Dark gray Florence C chert, not heated.
14LV181	1	2	6	3025	3	Lithics	Biface Reduction Flake	1	0.1	Gray Plattsmouth variety, partially heat stained pink; weight is <0.1 gram.
14LV181	1	2	6	3025	4	Lithics	Fire-cracked Rock	13	14.9	Red (heated) sandstone fragments, small.
14LV181	2	1	2	3026	1	Lithics	Early Reduction Flake	1	1.1	Red (heated) throughout, Plattsmouth chert.
14LV181	2	1	2	3026	2	Lithics	Early Reduction Flake	1	0.8	Heat stained pink in parts, brown chert, Toronto, with small amount of cortex present.
14LV181	2	1	2	3026	3	Lithics	Early Reduction Flake	2	4.7	Tan Florence A chert, with pink heat staining in parts, no cortex present.
14LV181	2	1	2	3026	4	Lithics	Biface Reduction Flake	1	0.6	Brown Toronto chert, not heated.
14LV181	2	1	2	3026	5	Lithics	Biface Reduction Flake	3	0.3	Blue-gray indeterminate chert, not heat treated.
14LV181	2	1	2	3026	6	Lithics	Biface Reduction Flake	3	0.5	Tan Toronto chert, not heated.
14LV181	2	1	2	3026	7	Lithics	Biface Reduction Flake	1	0.1	Pale gray Florence C chert, not heat treated.
14LV181	2	1	2	3026	8	Lithics	Biface Reduction Flake	1	0.3	Pale gray Florence C chert, with slight pink heat staining.
14LV181	2	1	2	3026	9	Lithics	Biface Reduction Flake	2	0.7	Pale gray chert, possible Florence C chert, with pink heat staining.

Site No:	Unit	Stratu	Level	Field #	Specimen	Class	Artifact Description:	Count	Weight	Comments
14LV181	2	1	2	3026	10	Lithics	Biface Reduction Flake	1	0.4	Tan/brown, mostly heat stained pink, Plattsmouth chert.
14LV181	2	1	2	3026	11	Lithics	Biface Reduction Flake	4	1	Pink to red overall heat stained, Toronto chert.
14LV181	2	1	2	3026	12	Lithics	Biface Reduction Flake	1	0.3	Heat stained pink, Plattsmouth chert.
14LV181	2	1	2	3026	13	Lithics	Biface Reduction Flake	1	0.2	Smoky Hill Jasper no heating.
14LV181	2	1	2	3026	14	Small Finds/Architectural	Mortar	5	14	Small chunks of mortar.
14LV181	2	1	3	3027	1	Lithics	Finished Biface	1	5.3	Brown Toronto chert; tip and medial section, missing base; tip has heat staining.
14LV181	2	1	3	3027	2	Lithics	Decortication Flake	1	0.3	Fragment of heat-stained cortex, Toronto chert.
14LV181	2	1	3	3027	3	Lithics	Early Reduction Flake	2	5.1	Toronto chert, possibly discolored from heat treatment.
14LV181	2	1	3	3027	4	Lithics	Early Reduction Flake	2	8.5	Heat-stained pink Toronto chert.
14LV181	2	1	3	3027	5	Lithics	Biface Reduction Flake	11	4	Brown Toronto chert, not heated.
14LV181	2	1	3	3027	6	Lithics	Biface Reduction Flake	2	0.7	Blue-gray Florence C chert, not heated.
14LV181	2	1	3	3027	7	Lithics	Biface Reduction Flake	2	0.2	Brownish Toronto variety, not heated.
14LV181	2	1	3	3027	8	Lithics	Biface Reduction Flake	1	1	Tan Toronto chert, partially heated at one end.
14LV181	2	1	3	3027	9	Lithics	Biface Reduction Flake	3	0.7	Tan-gray Toronto, with minor heat staining.
14LV181	2	1	3	3027	10	Lithics	Biface Reduction Flake	1	0.5	Brown Toronto chert, partially red from heat treatment.
14LV181	2	1	3	3027	11	Lithics	Biface Reduction Flake	1	0.1	Florence C chert, with some pink heat staining.
14LV181	2	1	3	3027	12	Lithics	Biface Reduction Flake	1	0.1	Heat stained chert, Florence C variety; weight is <0.1 gram.
14LV181	2	1	3	3027	13	Lithics	Biface Reduction Flake	1	0.6	Heated pink and red, Florence C chert.
14LV181	2	1	3	3027	14	Lithics	Flake Fragment	1	0.4	Indeterminate type chert, heat stained red.
14LV181	2	1	3	3027	15	Small Finds/Architectural	Mortar	1	0.8	Small lump of mortar.
14LV181	2	1	3	3027	16	Small Finds/Architectural	Fence Staple	1	1.2	Ferrous metal fence staple.
14LV181	2	1/2	4	3028	1	Lithics	Early Reduction Flake	1	0.9	Brown Toronto chert, with some red heat staining; has small amount of cortex.

Site No:	Unit	Stratu	Level	Field #	Specimen	Class	Artifact Description:	Count	Weight	Comments
14LV181	2	1/2	4	3028	2	Lithics	Early Reduction Flake	1	1.3	Tan/brown chert, Toronto chert; possible heat discoloration along one edge.
14LV181	2	1/2	4	3028	3	Lithics	Biface Reduction Flake	1	0.7	Gray and black Florence D chert, not heated.
14LV181	2	1/2	4	3028	4	Lithics	Biface Reduction Flake	1	0.1	Indeterminate dark gray chert, Plattsmouth variety, not heated.
14LV181	2	1/2	4	3028	5	Lithics	Biface Reduction Flake	1	0.1	Brown Toronto chert, not heated.
14LV181	2	1/2	4	3028	6	Lithics	Biface Reduction Flake	2	0.1	Tan-brown Toronto variety, not heated.
14LV181	2	1/2	4	3028	7	Lithics	Biface Reduction Flake	1	0.2	Tan and gray chert, indeterminate type, not heated.
14LV181	2	1/2	4	3028	8	Lithics	Biface Reduction Flake	1	0.1	Gray-brown chert, indeterminate type, not heated; weight is <0.1 gram.
14LV181	2	1/2	4	3028	9	Lithics	Biface Reduction Flake	1	0.1	Tan Plattsmouth chert, with heat staining.
14LV181	2	1/2	4	3028	10	Lithics	Biface Reduction Flake	1	0.3	Plattsmouth chert, heat treated pink throughout.
14LV181	3	1	1	3029	1	Lithics	Flake Fragment	1	0.3	Heat indeterminate, possible Smoky Hill Jasper
14LV181	3	1	1	3029	2	Lithics	Flake Fragment	1	0.2	non-heat treated, possible Smoky Hill Jasper
14LV181	3	1	1	3029	3	Lithics	Biface Reduction Flake	1	0.2	Heat treated, possible Smoky Hill Jasper
14LV181	3	1	1	3029	4	Lithics	Flake Tool / General	1	0.9	utilised on two edges, Heat treated Toronto chert
14LV181	3	1	1	3029	5	Lithics	Biface Reduction Flake	1	0.2	Heat treated Toronto chert
14LV181	3	1	1	3029	6	Lithics	Biface Reduction Flake	1	0.2	Non-heat treated Toronto chert
14LV181	3	1	2	3030	1	Lithics	Flake Fragment	1	0.5	Non-heat treated Florence B chert
14LV181	3	1	2	3030	2	Lithics	Early Reduction Flake	2	1.8	Non-heat treated smoky Hill Jasper, river worn cortex is present
14LV181	3	1	2	3030	3	Lithics	Flake Fragment	2	0.4	Non-heat treated smoky Hill Jasper
14LV181	3	1	2	3030	4	Lithics	Biface Reduction Flake	4	1.7	Non-heat treated Toronto chert
14LV181	3	1	2	3030	5	Lithics	Flake Fragment	8	1.6	Non-heat treated Toronto chert
14LV181	3	1	2	3030	6	Lithics	Biface Reduction Flake	4	0.5	Heat treated Toronto chert
14LV181	3	1	2	3030	7	Lithics	Flake Fragment	10	3.4	Heat treated Toronto chert

Site No:	Unit	Stratu	Level	Field #	Specimen	Class	Artifact Description:	Count	Weight	Comments
14LV181	3	1	2	3030	8	Lithics	Flake Fragment	3	0.9	Non-heat treated Winterset chert
14LV181	3	1	2	3030	9	Lithics	Flake Fragment	1	0.2	Heat indeterminant, Smoky Hill Jasper
14LV181	3	1	2	3030	10	Lithics	Biface Reduction Flake	1	0.4	Non-heat treated Plattsmouth
14LV181	3	1	2	3030	11	Lithics	Biface Reduction Flake	1	0.1	Heat treated Plattsmouth chert
14LV181	3	1	2	3030	12	Lithics	Flake Fragment	1	0.7	Heat treated Plattsmouth chert
14LV181	3	1	2	3030	13	Lithics	Stone Pipe	1	1.9	Non- heat treated red pipestone with scratch marks on two sides
14LV181	3	1	2	3030	14	Lithics	Fire-cracked Rock	1	1.3	Heated sandstone
14LV181	3	1	2	3030	15	Prehistoric Ceramic	Burned Clay	1	5.1	no temper present
14LV181	3	1	3	3031	1	Lithics	Biface Reduction Flake	1	1.6	Non-heat treated westerville chert
14LV181	3	1	3	3031	2	Lithics	Flake Fragment	5	1.5	Non-heat treated Toronto chert
14LV181	3	1	3	3031	3	Lithics	Early Reduction Flake	3	1.7	Non-heat treated Toronto chert, cortex present
14LV181	3	1	3	3031	4	Lithics	Biface Reduction Flake	6	1.8	Non-heat treated Toronto chert
14LV181	3	1	3	3031	5	Lithics	Flake Fragment	9	4.5	Heat treated Toronto chert
14LV181	3	1	3	3031	6	Lithics	Biface Reduction Flake	12	4.6	Heat treated Toronto chert
14LV181	3	1	3	3031	7	Lithics	Flake Fragment	2	0.3	Non-heat treated florence C chert
14LV181	3	1	3	3031	8	Lithics	Flake Fragment	2	0.4	Unidentified heat treated chert, red colored with potlids present
14LV181	3	1	3	3031	9	Lithics	Fire-cracked Rock	4	7.2	heated sandstone
14LV181	3	1	4	3032	1	Lithics	Early Reduction Flake	1	0.4	Non-heat treated toronto chert, cortex is present
14LV181	3	1	4	3032	2	Lithics	Biface Reduction Flake	5	0.9	Non-heat treated toronto chert
14LV181	3	1	4	3032	3	Lithics	Flake Fragment	2	1	Non-heat treated toronto chert
14LV181	3	1	4	3032	4	Lithics	Biface Reduction Flake	1	0.4	Unknown heat treated chert
14LV181	3	1	4	3032	5	Lithics	Flake Fragment	1	0.4	Unknown non-heat treated chert, Thinly banded shades of bluish gray

Site No:	Unit	Stratu	Level	Field #	Specimen	Class	Artifact Description:	Count	Weight	Comments
14LV181	3	1	4	3032	6	Lithics	Biface Reduction Flake	1	0.2	Unknown non-heat treated chert, Dark gray chert with white agotized white streaks
14LV181	3	1	4	3032	7	Lithics	Fire-cracked Rock	4	2.8	Heated sandstone
14LV181	3	1	4	3032	8	Small Finds/Architectural	Rock/Stone	1	1.3	iron nodule, hematite
14LV181	4	1	1	3033	1	Lithics	Flake Fragment	2	2.4	Non-heat treated Toronto chert
14LV181	4	1	1	3033	2	Lithics	Biface Reduction Flake	2	0.6	Non-heat treated Toronto chert
14LV181	4	1	2	3034	1	Lithics	Flake Fragment	2	0.8	non-heat treated, Smoky Hill Jasper
14LV181	4	1	2	3034	2	Lithics	Decortication Flake	1	2	non-heat treated, Smoky Hill Jasper, river worn cortex is present
14LV181	4	1	2	3034	3	Lithics	Decortication Flake	1	0.2	Heat treated Smoky Hill Jasper, cortex is heated and present
14LV181	4	1	2	3034	4	Lithics	Flake Fragment	2	0.2	Non-heat treated Toronto chert
14LV181	4	1	2	3034	5	Lithics	Biface Reduction Flake	2	1.3	Non-heat treated Toronto chert
14LV181	4	1	2	3034	6	Lithics	Biface Reduction Flake	2	1.3	Non-heat treated chert, resembles Burlington chert
14LV181	4	1	2	3034	7	Lithics	Flake Fragment	8	2.6	Heat treated Toronto chert
14LV181	4	1	2	3034	8	Lithics	Biface Reduction Flake	4	1.2	Heat treated Toronto chert
14LV181	4	1	2	3034	9	Lithics	Flake Fragment	3	0.6	Heat treated Plattsmouth chert
14LV181	4	1	2	3034	10	Lithics	Biface Reduction Flake	1	0.3	Non-heat treated Plattsmouth
14LV181	4	1	2	3034	11	Lithics	Biface Reduction Flake	1	0.6	Unidentified non-heat treated chert, dark gray in color, medium grained medium luster, no fossil inclusions, possible Florence C chert
14LV181	4	1	2	3034	12	Lithics	Fire-cracked Rock	1	11.1	Heated quartzite
14LV181	4	1	2	3034	13	Prehistoric Ceramic	Burned Clay	1	2.3	no temper, just heated clay
14LV181	4	1	2	3034	14	Floral	Charcoal	1	0.1	Possible burnt seed.
14LV181	4	1	3	3035	1	Lithics	Core / General	1	5.5	Tan Toronto chert core fragment, not heated.
14LV181	4	1	3	3035	2	Lithics	Decortication Flake	1	0.7	Gray-brown Toronto chert, not heated, with cortex.
14LV181	4	1	3	3035	3	Lithics	Early Reduction Flake	1	0.9	Pink (heated) chert, Toronto chert.

Site No:	Unit	Stratu	Level	Field #	Specimen	Class	Artifact Description:	Count	Weight	Comments
14LV181	4	1	3	3035	4	Lithics	Biface Reduction Flake	1	0.2	Gray-brown chert, Toronto chert not heated.
14LV181	4	1	3	3035	5	Lithics	Biface Reduction Flake	1	0.1	Blue-gray Florence C chert, not heated; weight is <0.1 gram.
14LV181	4	1	3	3035	6	Lithics	Biface Reduction Flake	1	0.1	Jasper, weight is < 0.1 gram.
14LV181	4	1	3	3035	7	Lithics	Biface Reduction Flake	5	1.4	Pale gray chert, Florence C chert, not heated.
14LV181	4	1	3	3035	8	Lithics	Biface Reduction Flake	14	3.3	Tan Toronto chert, not heated.
14LV181	4	1	3	3035	9	Lithics	Biface Reduction Flake	9	1.3	Toronto chert, heated pink.
14LV181	4	1	3	3035	10	Lithics	Fire-cracked Rock	5	12.8	Heated sandstone fragments.
14LV181	4	1	3	3035	11	Floral	Charcoal	1	0.1	Carbonized fragment, possible nut shell or seed.
14LV181	4	2	4	3036	1	Lithics	Early Reduction Flake	1	1.4	Toronto chert, pinkish-red (from heating) colored.
14LV181	4	2	4	3036	2	Lithics	Biface Reduction Flake	16	3.9	Pale tan Toronto chert, not heated.
14LV181	4	2	4	3036	3	Lithics	Biface Reduction Flake	6	1.2	Toronto chert, discolored pink and red from heating.
14LV181	4	2	4	3036	4	Lithics	Possible Ochre	1	0.1	Red ochre.
14LV181	4	2	4	3036	5	Lithics	Fire-cracked Rock	1	4.8	Quartzite, discolored pink from heating, with angular fractures.
14LV181	4	2	4	3036	6	Lithics	Fire-cracked Rock	10	25.7	Red (heated) sandstone fragments.
14LV181	4	3	5	3037	1	Lithics	Biface Reduction Flake	1	0.8	Tan Toronto chert, heat treated staining present.
14LV181	5	1	1	3038	1	Lithics	Biface Reduction Flake	1	1	Tan Toronto chert, with slight pink heat staining on one edge.
14LV181	5	1	2	3039	1	Lithics	Biface Reduction Flake	1	0.3	Toronto chert, heated pink.
14LV181	5	1	2	3039	2	Lithics	Biface Reduction Flake	1	0.2	Dark gray silicified sediment, does not appear to be heat treated.
14LV181	5	1	2	3039	3	Lithics	Fire-cracked Rock	1	0.6	Small fragment of heat-stained (red) sandstone.
14LV181	5	1	2	3039	4	Small Finds/Architectural	Brick	1	0.3	Small crumb of brick.
14LV181	5	1	2	3039	5	Small Finds/Architectural	Mortar	1	1.1	Small fragment of mortar.
14LV181	5	1	3	3040	1	Lithics	Decortication Flake	1	0.6	Heat indeterminate, Smoky Hill Jasper, river worn cortex present

Site No:	Unit	Stratu	Level	Field #	Specimen	Class	Artifact Description:	Count	Weight	Comments
14LV181	5	1	3	3040	2	Lithics	Biface Reduction Flake	2	0.6	Heat indeterminate, Smoky Hill Jasper
14LV181	5	1	3	3040	3	Lithics	Flake Fragment	3	0.6	Heat indeterminate, Smoky Hill Jasper
14LV181	5	1	3	3040	4	Lithics	Flake Fragment	3	0.8	Non-heat treated Toronto chert
14LV181	5	1	3	3040	5	Lithics	Biface Reduction Flake	1	0.6	Unidentified heat treated solificied sand
14LV181	5	1	3	3040	6	Lithics	Fire-cracked Rock	2	0.8	Heated sandstone

APPENDIX B

Project Correspondence

Kansas Historical Society

Agreement of Intent to Curate

The Archeology Office of the Kansas Historical Society (KSHS) hereby shows intent to curate archeological materials and associated records according to the attached Standards for the Curation of Archeological Materials resulting from the following project(s) undertaken in Kansas:

Proposed New Correctional Institution (FCI) and
Federal Prison Camp at the United States
Penitentiary (USP) in Leavenworth, Kansas
Berger REF # CXE 4756 / 2000810.03

Upon recovery of artifacts, the Collecting Organization must request an Archeological Curation Agreement and must specify the type, quantity, and size of materials to be curated. The state archeologist reserves the right to accept or reject specific materials offered for curation prior to signing an Archeological Curation Agreement. A one-time curation fee of \$350 per cubic foot will be assessed. Additional charges will be made for oversized objects or if specimens require work to make them compatible with KSHS curation standards. Curation boxes will be provided by KSHS upon request.

For the Collecting Organization:

Signature [Signature] Title Archaeologist
Date Oct. 31, 2014 Organization Louis Berger
Address 1100 Baltimore Ave Suite 100
Kansas City MO 64108

In accordance with the following Contracting Entity (collection owner):

Contact person Issac J. Gaston
Organization Federal Bureau of Prisons
Address 320 First Street NW, Washington D.C. 20534

For the Kansas Historical Society:

Signature [Signature] Title Archeologist
Date 11/4/2014 This agreement is valid until 11/4/2017



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Kansas Historical Society

Archeological Curation Agreement

The Archeology Office of the Kansas Historical Society (KSHS) agrees to curate the following archeological materials and associated records:

Proposed New Correctional Institution (FCI) and
Federal Prison Camp at the United States
Penitentiary (USP) in Leavenworth, Kansas
Berger Ref # CXE 4756 / 2000810.03

A one-time curation fee of \$350 per cubic foot will be assessed. Additional charges will be made for oversized objects or if specimens require work to make them compatible with KSHS curation standards. Curation boxes will be provided by KSHS upon request.

Approximate date that the material will be transferred to KSHS 05/01/2015

Mode of transfer: Shipped by UPS or US mail
 Hand delivered
 Other

For the Collecting Organization:

Signature Kathleen [unclear] Title Archaeologist

Date Oct. 31, 2014 Organization Louis Berger

Address 11000 Baltimore Ave Suite 100 Kansas City MO 64108

In accordance with the following Contracting Entity (collection owner):

Contact person Issac J. Gaston

Organization Federal Bureau of Prisons

Address 320 First Street, NW Washington D.C. 20534

For the Kansas Historical Society:

Signature Christine [unclear] Title Archeologist

Date 1/4/2014



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Kansas Historical Society

Sam Brownback, Governor
Jennie Chinn, Executive Director

KSR&C No. 11-01-098

November 6, 2014

Issac Gaston
Site Selection Specialist
Capacity Planning and Site Selection Branch
U.S. Department of Justice
Federal Bureau of Prisons
320 First Street, NW
Washington, DC 20534

Via E-Mail

RE: Federal Prison Expansion
United States Penitentiary, Leavenworth
Leavenworth County

Dear Mr. Gaston:

In accordance with 36 CFR 800, the Kansas State Historic Preservation Office has reviewed a report entitled *Phase III Evaluations of Five Archaeological Sites at the United States Penitentiary, Leavenworth, Leavenworth County, Kansas*, by Christopher M. Schoen, RPA of The Louis Berger Group, Inc., dated September, 2014. We find the report to be acceptable. Given the excavation findings, our office concurs that the five archeological sites (14LV169, 14LV171, 14LV172, 14LV176 and 14LV181) are not eligible for listing in the National Register of Historic Places.

This information is provided at your request to assist you in identifying historic properties, as specified in 36 CFR 800 for Section 106 consultation procedures. If you have questions or need additional information regarding these comments, please contact Tim Weston at 785-272-8681 (ext. 214) or Patrick Zollner at 785-272-8681 (ext. 217).

Sincerely,

Jennie Chinn, Executive Director and
State Historic Preservation Officer

Patrick Zollner
Deputy SHPO



Louis Berger