

6.0 ARCHAEOLOGICAL FINDINGS

This section discusses the excavation strategy employed at the Blackbird Creek site (7NC-J-195D) during site evaluation (Phase II) and data recovery (Phase III), and presents findings and analyses associated with the pre-Contact American Indian presence at the site. Features and artifacts encountered during the field investigations are described here, as are special analyses—including the spatial distributions of major artifact classes and features.

Historical artifacts and features indicative of the early-19th-to-early-20th century farmstead were encountered during site evaluation and data recovery, although in small quantities. The historical component at the Blackbird Creek site was determined not eligible for inclusion in the NRHP. Detailed analysis of the historical data from the site is presented in a separate section (Appendix C) of this report, in an arrangement resulting from consultation with DelDOT and DE SHPO. In the absence of a separate evaluation report, a summary of the historical findings is also included in the Site Evaluation section of the report that follows, in order to support the NRHP eligibility recommendations made following the evaluation portion of the project.

6.1 Site Evaluation (Phase II): Field Strategy and Findings

In consultation with the DE SHPO and DelDOT, the CR Division developed a testing strategy in order to determine the NRHP eligibility of both the historical and prehistoric components present at the Blackbird Creek site. The strategy included the excavation of close interval shovel tests, test units, and mechanical plow zone stripping (Figure 6-1). Shovel testing refined the site boundary and identified discrete activity areas and artifact concentrations. Vertically controlled test unit excavation provided information regarding site integrity and exposed cultural features. Mechanical stripping of the plow zone allowed for greater sub-plow zone exposure in order to identify cultural features. Collectively, these elements determined the site's potential to yield information important to understanding of regional history and prehistory under NRHP Criterion D.

6.1.1 Shovel Testing

Shovel testing served three purposes. First, close-interval testing, at 10-m intervals, further delineated site boundaries as previously determined during the archaeological survey. Secondly, additional artifacts provided more concise temporal data for site components. Lastly, an analysis of the distribution of artifacts identified areas of greatest archaeological potential and provided some indication of feature locations within the site. In total, 193 shovel tests were excavated, 69 containing prehistoric artifacts (n=115) and 80 containing historical artifacts (n=159). The site measured 50 m north-to-south and 70 m east-to-west, at its broadest points; it comprised an area of just under 2,800 square meters.

Shovel test data were plotted to provide a preliminary analysis of artifact distribution across the site (Figures 6-2 and 6-3). The analyses showed prehistoric artifacts (primarily flaking debris and thermally altered stone) appeared to be concentrated in the northern portion of the site along the edge of the landform overlooking Blackbird Creek. Likewise, a concentration of historical artifacts was noted. The greatest frequency of historical artifacts occurred in the western portion of the site. These data were considered prior to test unit placement.

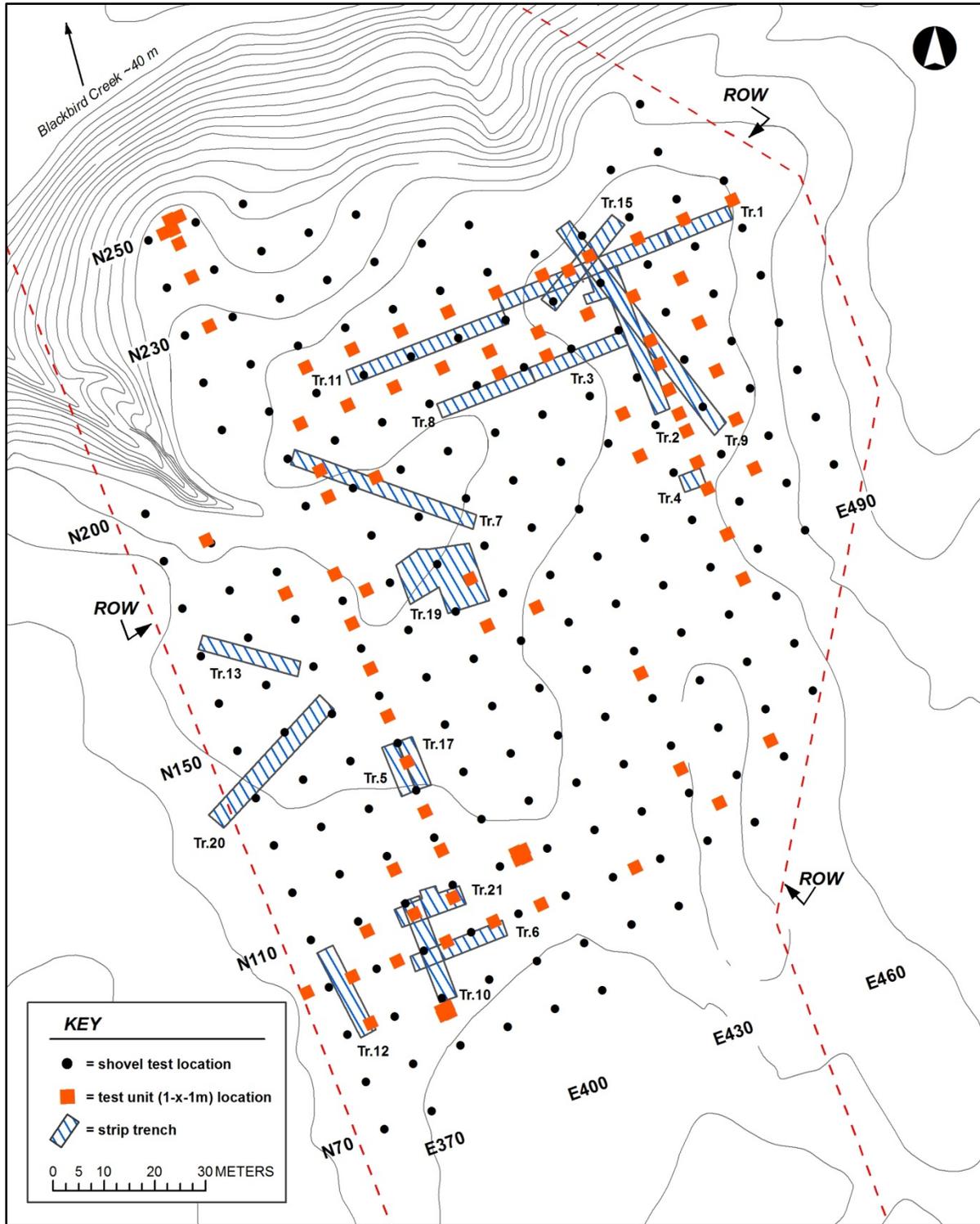


Figure 6-1. Location of Shovel Tests, Test Units, and Trenches Excavated During the Site Evaluation.

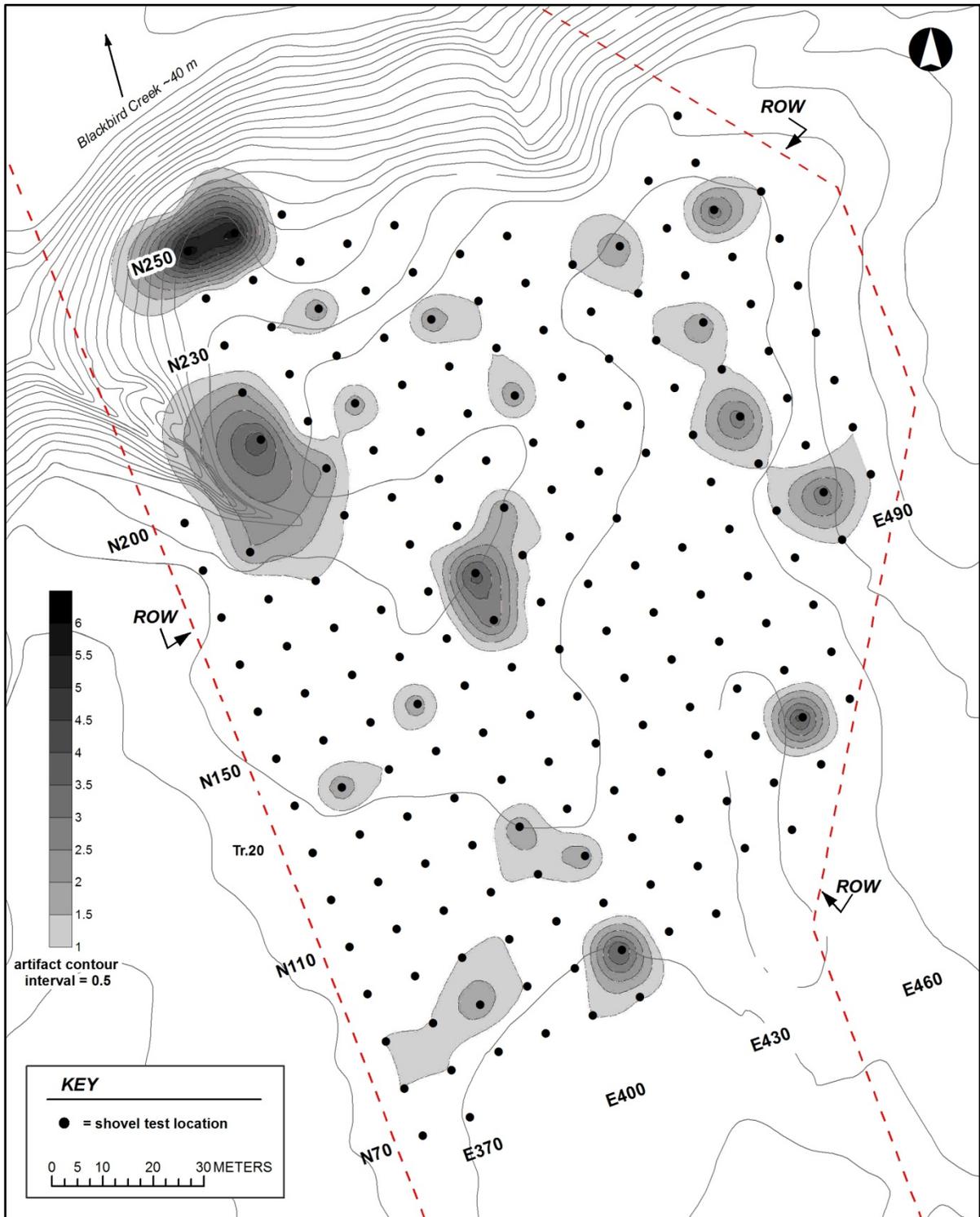


Figure 6-2. Spatial Analysis of Prehistoric Artifact Distribution Based on Shovel Testing.

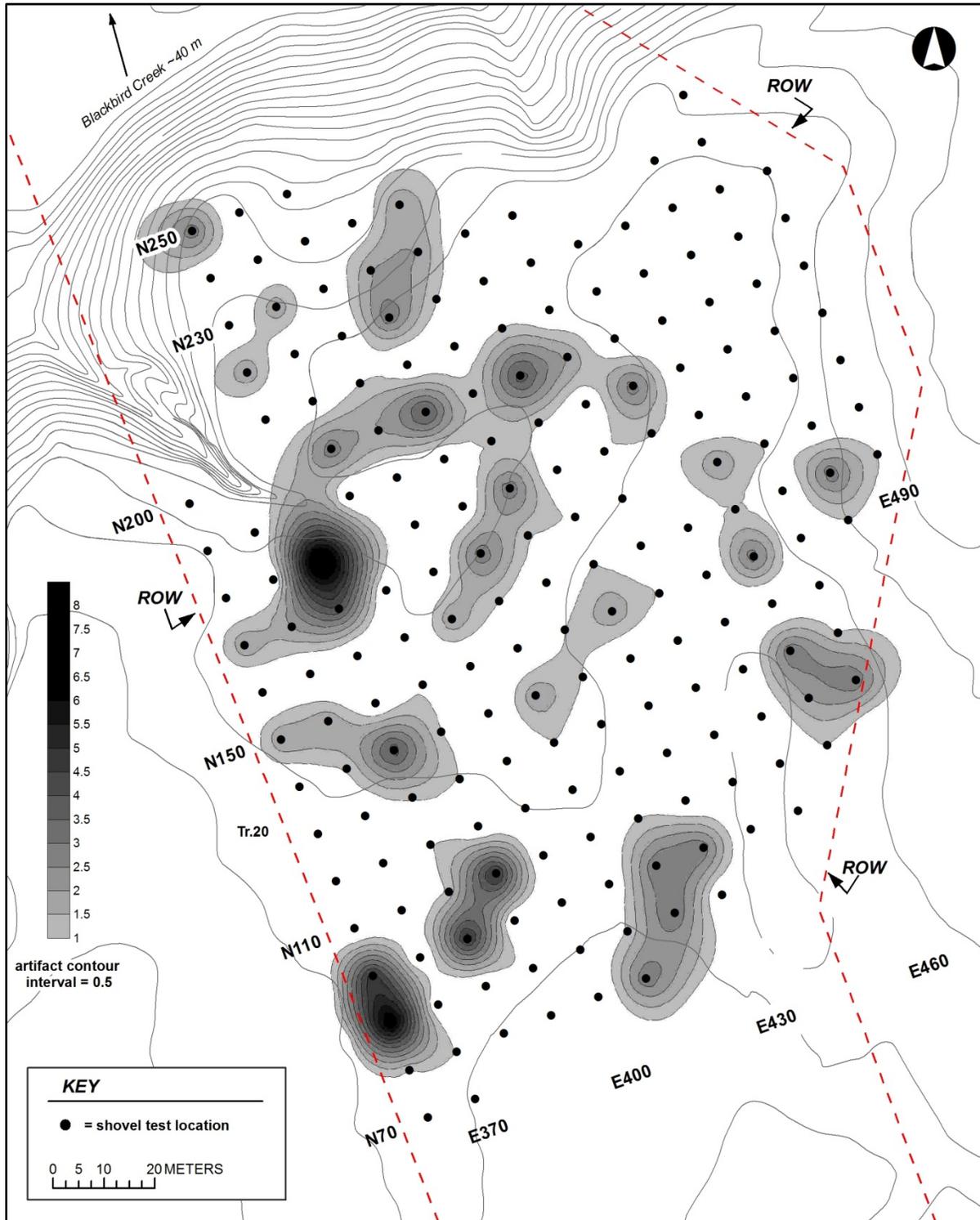


Figure 6-3. Spatial Analysis of Historical Artifact Distribution Based on Shovel Testing.

6.1.2 Test Units and Stratigraphy

Following analysis of shovel test data, thirty 1-x-1 m test units were excavated to evaluate stratigraphic integrity and artifact concentrations, and to locate subsurface cultural features. Initial test unit excavation resulted in the identification of several cultural features and yielded a significant number of historical and prehistoric artifacts. Based on these results, and additional 55 test units were excavated to further expose features and document artifact concentrations.

Soils encountered in the test unit excavations exhibited a high degree of uniformity. The normal stratigraphic profile consisted of silty loam plow zone overlying a silty loam or silty clay subsoil. The plow zone typically measured between 20 and 30 cm deep. The test unit at N175/E455 typified this sequence:

Test Unit N175/E455

0-22 cm	10YR4/3	silty loam	(Stratum A, plow zone)
22 cm+	10YR4/6	silty clay	(Stratum B, subsoil)

Peripheral test units often recorded modern overburden and humus atop the recognized sequence. A buried plow zone occurred sporadically across the site area. When encountered, this layer generally occurred between 20-to-30 cm below ground surface and consisted of a compact silty loam. The test unit at N205/E445 typified this sequence:

Test Unit N205/E445

0-20 cm	10YR4/4	silty loam	(Stratum A, plow zone)
20-34 cm	10YR5/4	silty loam	(Stratum B, buried plow zone)
34 cm+	10YR5/6-6/3	mottled silty clay	(Stratum C, subsoil)

6.1.3 Mechanical Stripping

Following excavation of the 83 test units, the plow zone was mechanically stripped with the use of a backhoe in 19 linear trenches, each measuring 3 m wide. The purpose of plow zone removal was two-fold: to maximize site coverage in order to expose additional cultural features possibly associated with those already recorded (i.e., postholes aligning to suggest a fenceline); and to more closely determine the presence and extent of potentially intact sub-plow zone strata, which could not be accomplished through excavation of test units only. The trenches varied in length from 5-to-45 m, for a collective total of 418 meters. All exposed cultural features were mapped in plan, and all cultural features were sectioned and documented, with the remaining portions left intact pending additional DelDOT and DE SHPO consultation.

6.1.4 Features

Nine prehistoric features were identified during the site evaluation. The features consisted of seven round, flat-bottomed pits or basins and two irregular pits. The round, flat-bottomed pit features were clustered within Trench 11 in the northwestern portion of the site overlooking Blackbird Creek, while the irregular pits were widely distributed across the eastern portion of the site in Trenches 1 and 3 (see Figure 6-1). Artifacts recovered from the features consisted primarily of flaking debris and thermally altered stone. Three of the round, flat-bottomed pit features (52, 95, and 96) contained

ceramic sherds consisting of Dames Quarter ware, a single mended sherd of Marcey Creek, and fragments of untyped wares.

Historical features consisted of 34 round and square postholes and/or postmolds (most postmolds measured approximately 4 inches in diameter), two modern pipe trenches, and six cultivation-related features (plow zone, plow scars). Most of the historical features were identified within the controlled backhoe trench excavations. Historical artifacts were recovered from only two postholes: one fragment of vessel glass within Feature 50 and 11 unidentifiable nails and metal objects within Feature 72.

6.1.5 Artifacts

In total, 2,518 artifacts were recovered during evaluation testing (Phase II) of the site, as detailed in Table 6-1. A complete artifact inventory is included in Appendix D.

Table 6-1. Artifact Frequency Totals from Site Evaluation Testing.

<i>Group</i>	<i>Count</i>
Prehistoric	940
Historical	1,578
Total	2,518

Prehistoric artifact types primarily consisted of flaking debris and thermally altered stone fragments (Table 6-2). Consisting of mostly small (<3 cm) jasper (43 percent) and quartz (29 percent) flakes, the flaking debris exhibited a relatively high cortex frequency of 37 percent, suggesting that locally available pebbles and cobbles were being utilized in stone tool production. However, the relatively low frequency of flaking debris and stone tools recovered from the numerous excavation units suggests that lithic reduction was not the primary focus of the site occupants. The second-most frequent artifact type, thermally altered stone, suggested the presence of thermal features. The thermally altered stone consisted of nearly even amounts of quartzite and quartz with lesser amounts of sandstone, siltstone, and jasper. Ceramic artifacts consisted of Dames Quarter (n=12), Marcey Creek (n=2), and a few small unidentifiable sherds (n=5). All of the ceramic artifacts were recovered from feature contexts (Features 52, 95, and 96).

Table 6-2. Prehistoric Artifact Frequency Totals from Site Evaluation Testing.

<i>Artifact Type</i>	<i>Count</i>	<i>Freq.</i>
Flaking Debris	542	58%
Thermally Altered Stone	356	38%
Ceramic	19	2%
Point	11	1%
Cobble Tool	7	1%
Biface	5	>1%
	940	

Eleven points were recovered during the site evaluation. In general, the points were heavily reworked or broken, and were small to medium in size. Corner-notched, side-notched, contracting stemmed, and foliate points were represented. The points were reworked or damaged to the degree that they could not be specifically typed with confidence but had general forms characteristic of the

Late Archaic through Late Woodland periods. The points were made of jasper (n=6), argillite (n=2), chert (n=1), rhyolite (n=1), and quartz (n=1). All were recovered from the plow zone.

Historical artifacts recovered during site evaluation (Phase II) testing consisted primarily of domestic and architectural items (Table 6-3). Over one-half of the artifacts recovered (52 percent) was domestic debris including glass and ceramic food containers, food storage or food serving items. Thirty-nine percent of the assemblage was architectural materials consisting of brick, window glass, and hardware (i.e., nails and screws). The rest of the assemblage represented artifacts associated with specific activities such as arms and ammunition (shotgun shell, gunflint); clothing (buttons); personal items such as a Mexican-minted silver Spanish reale piece dated 1810 and tobacco pipe fragments; and unidentified materials of cupreous and ferrous alloy. All of the historical artifacts were recovered from the plow zone. A thorough discussion of the historical component of the Blackbird Creek site is presented in Appendix C.

Table 6-3. Historical Artifact Frequency Totals from Site Evaluation Testing.

<i>Artifact Type</i>	<i>Count</i>	<i>Freq.</i>
Domestic	812	52%
Architectural	611	39%
Activity	7	<1%
Personal	6	<1%
Other	142	9%
	1,578	

6.1.6 Summary and NRHP Recommendations

Following the completion of site evaluation testing and data analysis, recommendations were made with regard to the eligibility of the site for inclusion in the NRHP.

Although the historical component consisted of over 1,500 artifacts, they were contained within the plow zone or other secondary contexts. Analysis of the distribution of these artifacts did not identify concentrations or patterns that were meaningful in terms of site structure. The artifacts included mostly 19th through 20th century architectural and domestic artifacts. Historical features were limited to post holes and molds likely related to agricultural fence lines or corrals.

The historical component at the Blackbird Creek site was recommended not eligible for listing in the NRHP. The component was not associated with specific events, and was not behaviorally or culturally indicative of broad patterns of history in Delaware (Criterion A), nor was it associated with locally or regionally prominent individuals (Criterion B). No structural remains were encountered that might embody distinctive construction or artistic characteristics (Criterion C). The limitations of the historical component at the site suggested low potential for contributing substantive information to an understanding of the historical development of Delaware (Criterion D). No further archaeological investigation was recommended.

The prehistoric features and associated artifacts documented during site evaluation (Phase II) investigations suggested that people living at the Blackbird Creek site made and used stone tools, conducted some fire-related activities, and may have constructed features to store and/or process surplus goods for future use. The presence of intact features with datable material suggested that

additional features could be present to offer chronological and subsistence data important to answering questions about Delaware prehistory.

Based on the results of the site evaluation, the CR Division concluded that the prehistoric component of the Blackbird Creek site retained sufficient integrity and information potential to meet eligibility criterion D for listing in the NRHP. The site had the potential to address research topics concerning the chronology of periods in Delaware ranging from the Late Archaic to the Early Woodland, as well as providing information about settlement patterns, ceramic technologies, and intra-site patterning. The site further satisfied the contributing aspect of uniqueness, since few small upland sites of this nature, particularly from earlier Woodland subperiods, have been investigated, either as part of the Smyrna-to-Pine Tree Corners segment of the SR 1 corridor, or during other archaeological work in the state. The site was thus recommended eligible for nomination to the NRHP. It was further recommended that, in accordance with the MOA of 1987, data recovery (Phase III) be undertaken to mitigate the adverse effects to the site resulting from construction of the Smyrna-to-Pine Tree Corners segment of SR 1. It was anticipated that data recovery would contribute to the prehistoric research priorities established for Delaware. Specifically, data recovery investigations were expected to provide valuable data for inter-site comparison regarding site occupation chronology, intra-site spatial patterning, subsistence, lithic tool technology, and lithic raw material procurement. The DE SHPO concurred with the recommendations for both the prehistoric and historical components in a letter dated November 24, 1999 (Appendix A).

6.2 Data Recovery (Phase III)

Data recovery at the Blackbird Creek site consisted of 1) additional backhoe stripping to obtain information regarding the horizontal distribution of features to address the question of intra-site patterning and 2) feature excavation to relate to chronology, ceramic technology, and provide data on intra-site variability. The following sections describe the features and artifacts along with relevant comparative and spatial analyses of the cultural materials. Intra- and inter-site comparisons and analyses are presented in Section 7.0.

6.2.1 Features

During the course of the site evaluation and data recovery investigations, 208 soil anomalies were identified with characteristics suggesting that they were cultural features. The anomalies were assigned feature numbers and many were further investigated by means of sectioning, using procedures described in Section 5.1. Ultimately, 26 features were considered to be potentially of American Indian origin (Table 6-4). These features consisted of plow-truncated pit or basin features of two general types: round pits with straight-to-steeply sloping sides and flat bottoms; and irregular pits of variable, size, sidewall, and base morphology. The remaining anomalies were determined to be either historical features or the result of natural processes (e.g. rodent or tree root activity). As mentioned in the summary of the site evaluation above, the round, flat-bottomed pits were clustered in a small area exposed by Trench 11 (Figure 6-4). Given similarities in morphology, spatial proximity, and the presence of Early Woodland ceramics, the round, flat-bottomed features became a primary focus of the data recovery investigations, and further mechanical stripping was conducted in this area to investigate their distribution. The following section provides descriptive information including morphology and dimensions, and a brief summary of contents. The general morphology of the features was considered potentially significant for differentiating feature functions, particularly for the round, flat-bottomed features. Thus the descriptive summaries that follow are

presented by feature morphology. Photographs of the round, flat-bottomed pit features are included with the descriptions. Photographs of the irregular pit features are not included.

Table 6-4. List of Pit/Basin Features Investigated at the Blackbird Creek Site.

<i>Feature</i>	<i>Provenience</i>	<i>Feature</i>	<i>Provenience</i>
Round, Flat-Bottomed		Irregular	
52	N211.1 E414.84	30	N212.3 E474.75
53	N211.46 E413	39	N198.68 E442.68
95	N212.55 E418.6	145	N207.56 E458.90
96	N210.06 E413	150	N202.84 E442.65
112	N210.14 E410.58	156	N207.82 E412.25
136	N211.15 E422.3	158	N212.07 E405.96
140	N211.1 E421.2	162	N199.08 E389.23
159	N210.00 E406.31	165	N207.25 E387.75
167	N210.09 E403.55	179	N218.51 E456.75
169	N212.15 E424.55	188	N192.80 E461.10
170	N214.47 E431.30	192	N216.40 E483.60
171	N214.25 E433.61	193	N214.30 E487.70
191	N214.30 E428.53	204	N214.00 E399.00

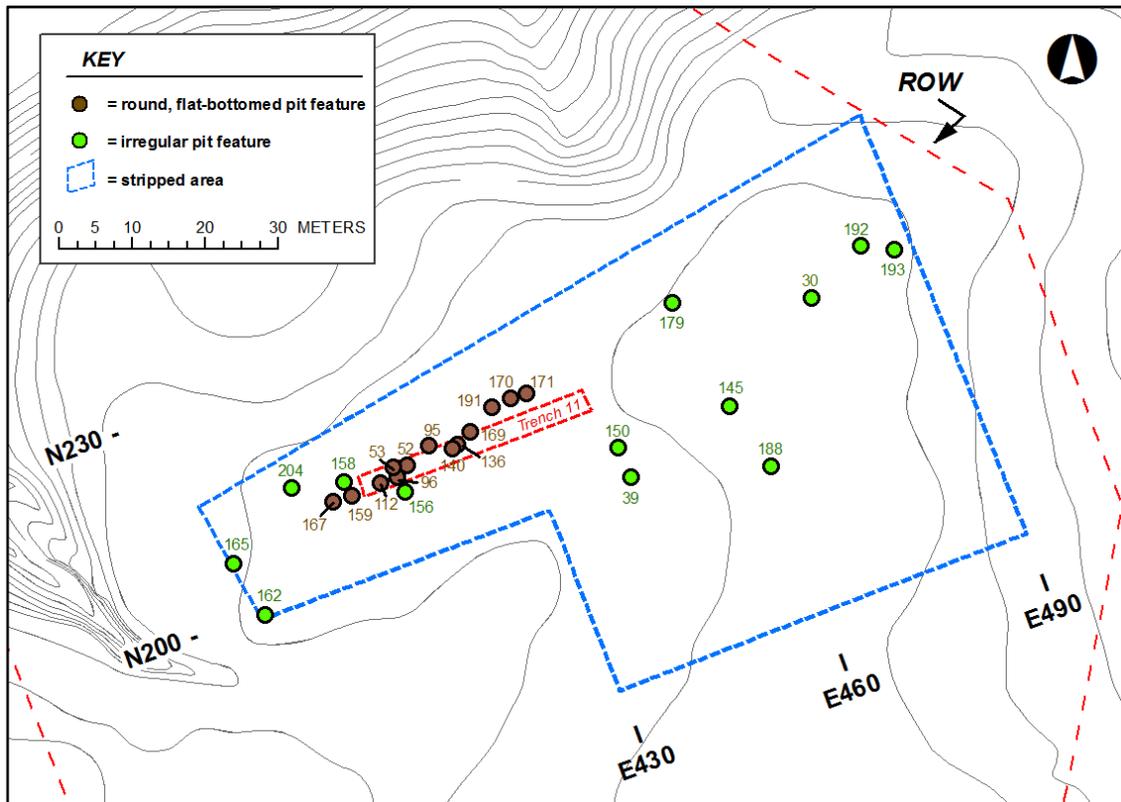


Figure 6-4. Feature Distribution Showing the Clustering of Round Pits.

Feature 52

Centerpoint

N211.10 E414.84

Morphology

Plan: Round

Profile: Steep Sided, Flat Base

Elevation

13.41 m AMSL

(Base of Plow Zone)

Dimensions

Length: 85 cm

Width: 80 cm

Depth: 55 cm

Volume: 195.9 liters

Soil Classification

Stratum I: 2.5Y4/3 Olive Brown

Silt Loam

Stratum II: 10YR5/6 Yellowish Brown Silt
Loam

Stratum III: 2.5Y6/6 Olive Yellow Silt
Clay Mottled w/ Yellowish Brown Silt
Clay

Artifacts

70 Dames Quarter Ceramic Vessel

Fragments

3 Untyped Ceramic Vessel Fragments

1 Early Stage Biface

1 Hammerstone

14 Flakes

2 Chips

6 Thermally Altered Stone

Ecofacts

Total: 0.5 g (2L. Flot.)

1 *Quercus sp.* (red oak group) Charcoal

3 *Quercus sp.* Charcoal

6 Deciduous Taxa Charcoal

4 Unidentifiable Charcoal

8 *Fagus grandifolia* (American Beech)

Nutshell

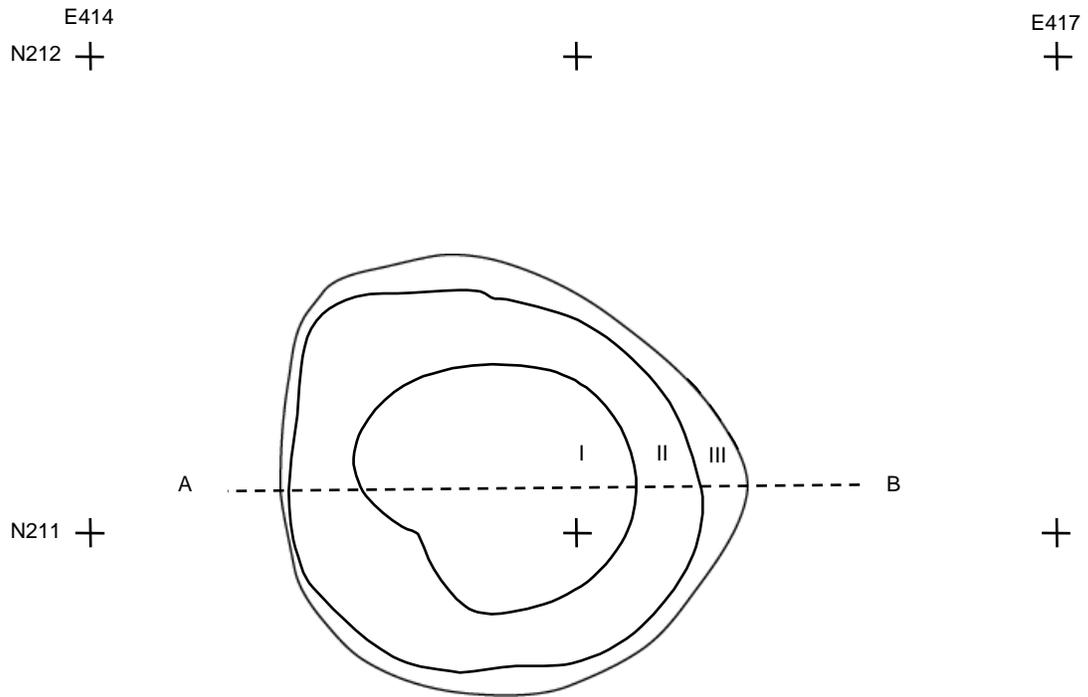
Radiocarbon Assay

3020 ± 40 B.P.

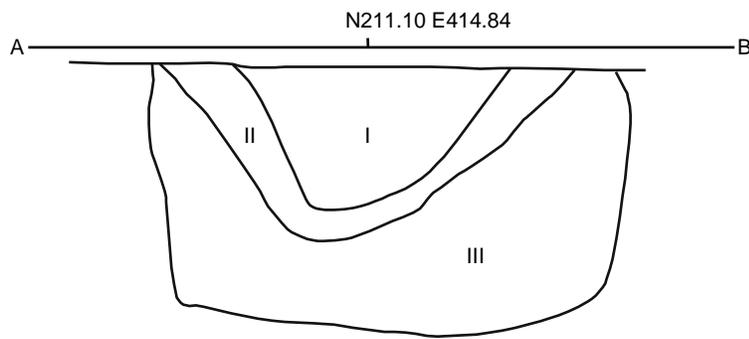
Description

Feature 52 was a pit identified at the base of the plow zone, bearing a round shape in plan view. Feature fill consisted of three strata. Stratum I, comprised the center of the feature, was darkest in soil color and contained the heaviest concentration of charcoal flecking. Stratum II, lighter in soil color, formed a ring around Stratum I in plan and surrounded Stratum I in profile. Stratum III, not initially identified in plan view, was evident in profile. Stratum III consisted of mottled silty clay that comprised the sides and bottom of Feature 52. The excavated profile of Strata I and II exhibited a bowl shape. All but three flakes were recovered from Strata I and II and included; Dames Quarter ceramic sherds, flaking debris, and thermally altered stone. The Dames Quarter fragments were recovered from Stratum I (n=47) and Stratum II (n=23).

Plan:



Profile:



Feature 52

Photographs:



Fully Excavated.



Sectioned.

Feature 52

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Feature 53

Centerpoint

N211.46 E413.00

Morphology

Plan: Round

Profile: Steep Sided, Flat Base

Elevation

13.39 m AMSL

(Base of Plow Zone)

Dimensions

Length: 90 cm

Width: 88 cm

Depth: 38 cm

Volume: 157.6 liters

Soil Classification

Stratum I: 10YR4/4 Dark Yellowish Brown, Clay Loam

Stratum II: Dark Yellowish Brown Mottled w/ 10YR5/6 Yellowish Brown, Clay Loam

Stratum III: 7.5YR5/6 Strong Brown, Silt Clay Mottled w/ 7.5YR7/1 Light Gray, Silty Clay

Artifacts

2 Thermally Altered Stones

2 Chips

1 Flake

Ecofacts

Not Collected

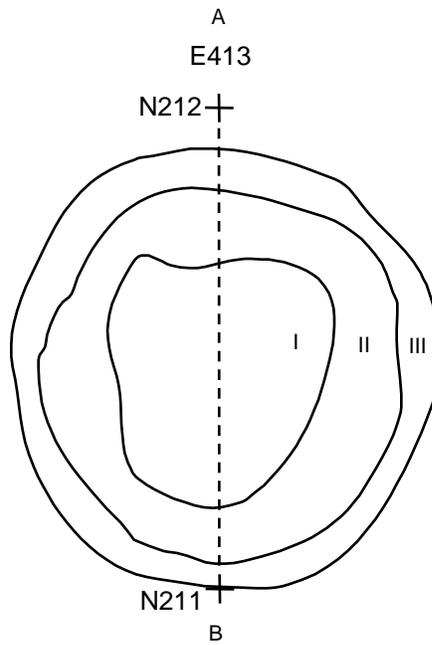
Radiocarbon Assay

Not Dated

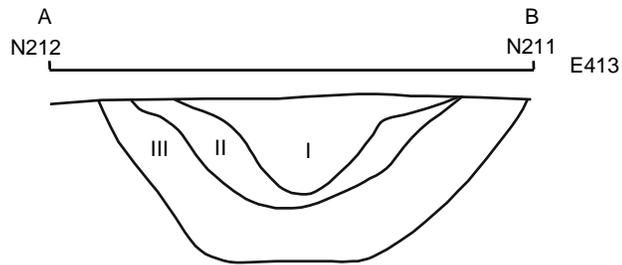
Description

Feature 53 was a pit identified at the base of the plow zone. The feature was round in plan view. The excavated profile exhibited steep sides and a flat base. Feature fill consisted of three strata. Stratum I, comprised the center of the feature, was darkest in soil color and contained the heaviest concentration of charcoal flecking. Stratum II, lighter in soil color, formed a ring around Stratum I in plan and surrounded Stratum I in profile. Stratum III consisted of mottled silty clay that comprised the sides and bottom of Feature 53. Artifact density was low, with all but one artifact recovered from Strata I and II.

Plan:



Profile:



Feature 53

Photographs:



Fully Excavated.



Sectioned.

Feature 53

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Feature 95

Centerpoint

N212.55 E418.60

Morphology

Plan: Round

Profile: Steep Sided, Flat Base

Bell Shaped (Flare at Top)

Elevation

13.51m AMSL

(Base of Plow Zone)

Dimensions

Length: 110 cm

Width: 106 cm

Depth: 74 cm

Volume: 451.9 liters

Soil Classification

Stratum I: 10YR4/4 Dark Yellowish

Brown, Silt Loam

Stratum II: 10YR5/6 Yellowish Brown,
Silt Clay Loam

Stratum III: 2.5Y6/3 Light Yellowish
Brown, Silt Clay

Artifacts

2 Marcey Creek Ceramic Vessel
Fragments (mend)

2 Dames Quarter Ceramic Vessel
Fragments

5 Unidentified Ceramic Vessel Fragments
35 Flakes; 1 Chip

16 Thermally Altered Stones

Ecofacts

Total: 0.02 g (2 L. Flot.)

1 *Carya sp.* (hickory) Charcoal

1 *Quercus sp.* (white oak group) Charcoal

4 Ring Porous Charcoal

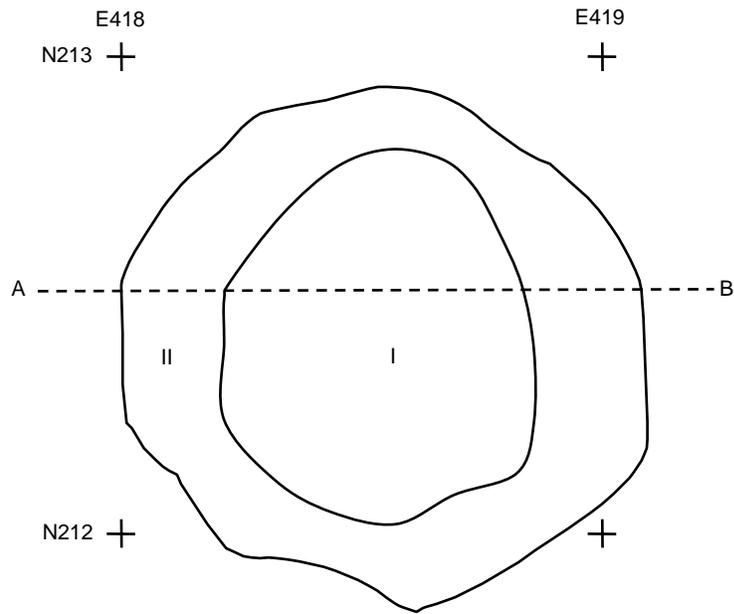
Radiocarbon Assay

2980 ± 40 B.P.

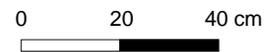
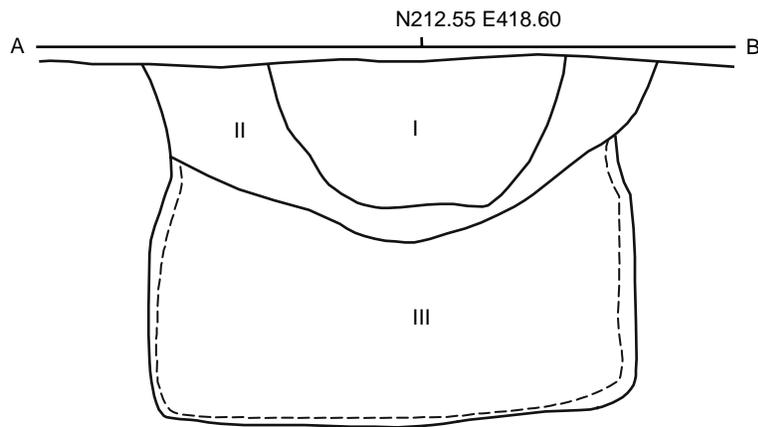
Description

Feature 95 was a pit identified at the base of the plow zone. The feature was round in plan view. The excavated profile exhibited steep sides and a flat base. Feature fill consisted of three strata. Stratum I comprised the center of the feature and was darkest in soil color. Stratum II, lighter in soil color, formed a ring around Stratum I in plan and surrounded Stratum I in profile. Strata I and II were bowl-shaped in profile. In profile, the top of Stratum III followed the bowl-shaped base of Stratum II and originated 18 to 20 cm below the plow zone. A 2 to 4 cm band of soil along the sides and base of Stratum III was mottled with subsoil and had a sandier texture than the adjacent soils. The majority of the artifacts (n=39) were recovered Stratum II. Strata I and III contained 14 and eight artifacts respectively. All nine ceramic vessel fragments were recovered from Stratum II.

Plan:



Profile:



Feature 95

Photographs:



Fully Excavated.



Sectioned.

Feature 95

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Feature 96

Centerpoint

N210.06 E413.00

Morphology

Plan: Round

Profile: Bowl-Shaped

Elevation

13.43 m AMSL

(Base of Plow Zone)

Dimensions

Length: 70 cm

Width: 70 cm

Depth: 27 cm

Volume: 69.3 liters

Soil Classification

Stratum I: 10YR4/4 Dark Yellowish
Brown, Sandy Clay Loam

Stratum II: 2.5Y6/3 Light Yellowish Brown, Silty
Clay Mottled w/ 7.5YR5/8 Strong Brown, Silty
Clay

Artifacts

19 Dames Quarter Ceramic Vessel Fragments

1 Abrader

1 Flake; 1 Chip

3 Thermally Altered Stones

Ecofacts

Total: 0.48 g (2L. Flot.)

6 *Carya sp.* (Hickory) Charcoal

2 *Liriodendron tulipifera* (Tulip Poplar) Charcoal

2 *Quercus sp.* (red oak group) Charcoal

3 Deciduous Taxa Charcoal

1 Diffuse Porous Charcoal

6 Unidentifiable Charcoal

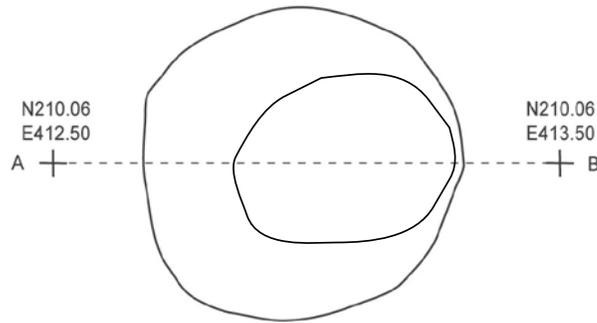
Radiocarbon Assay

3020 ± 60 B.P.

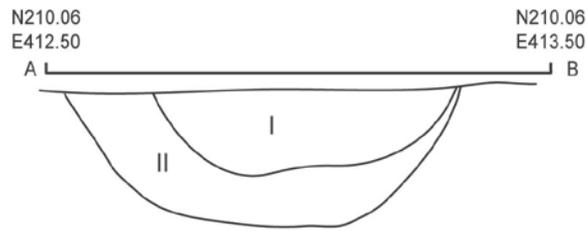
Description

Feature 96 was a pit identified at the base of the plow zone. The feature was round in plan view. The profile exhibited gradually sloping sides and a rounded base. Feature fill consisted of two strata. Stratum II comprised a 2 to 15 cm band that surrounded Stratum I. Both strata contained charcoal flecking. All of the artifacts were recovered from Stratum I. The Dames Quarter fragments were recovered from Level 1 (n=16) and Level 2 (n=3) of Stratum I.

Plan:



Profile:



Feature 96

Photographs:



Fully Excavated.



Sectioned.

Feature 96

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Feature 112

Centerpoint

N210.14 E410.58

Morphology

Plan: Round

Profile: Steep-Sided, Flat Base

Elevation

13.32 m AMSL

(Base of Plow Zone)

Dimensions

Length: 110 cm

Width: 100 cm

Depth: 55 cm

Volume: 316.9 liters

Soil Classification

Stratum I: 10YR4/6 Dark Yellowish Brown, Silty Clay Loam

Stratum II: 10YR5/4 Yellowish Brown, Silt Loam

Stratum III: 2.5Y6/4 Light Yellowish Brown, Clay Loam Mottled w/ 10YR6/2 Light Brownish Gray, and 7.5YR5/6 Strong Brown, Clay Loam

Stratum IV: Light Brownish Gray Mottled w/ Strong Brown Sandy Clay Loam

Artifacts

1 Hammerstone

6 Flakes; 3 Chips

7 Thermally Altered Stones

2 Potlids

Ecofacts

Total: 0.53 g (2L. Flot.)

1 *Castanea dentata* (American Chestnut) Charcoal

3 *Liriodendron tulipifera* (Tulip Poplar) Charcoal

2 *Fagus grandifolia* (American Beech) Charcoal

5 *Quercus* sp. (white oak group) Charcoal

2 Juglanaceae Charcoal

3 Deciduous Taxa Charcoal

4 Unidentifiable Charcoal

1 *Fagus grandifolia* Nutshell

Radiocarbon Assay

2980 ± 40 B.P.

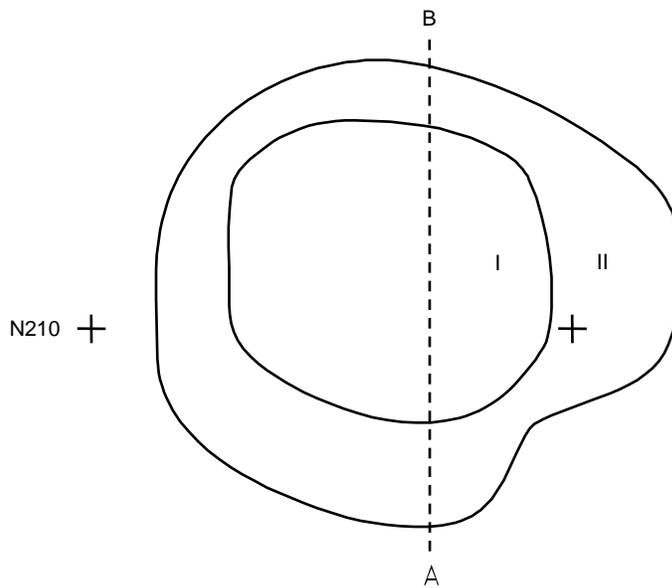
Description

Feature 112 was a pit identified at the base of the plow zone. The feature was round in plan view. The profile exhibited steep sides and a flat base. Feature fill consisted of four strata. Strata I, II, and III contained charcoal flecking. Stratum II formed a ring around Stratum I in plan view and surrounded the sides and base of Stratum I in profile. Excavated, Strata I and II left a bowl shaped profile. Stratum III surrounded Strata I and II and undercut the subsoil 5 to 10 cm at 12 cm below the plow zone. Stratum IV was distinguished from Stratum III by lighter color and sandier texture. Stratum IV formed a 5-to -5 cm band below Stratum III forming the flat feature base. Artifacts were evenly distributed between Strata I, II, and III.

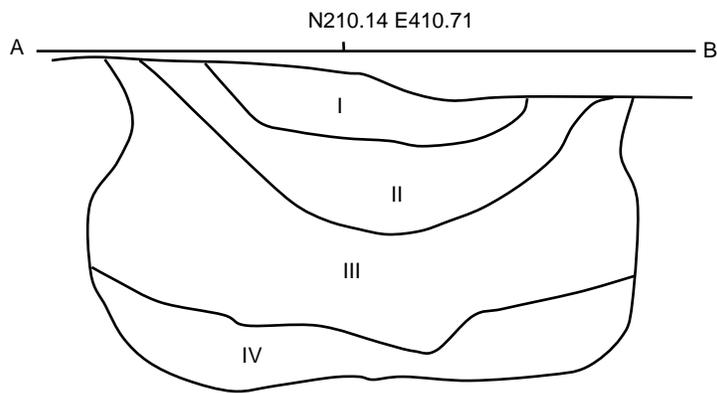
E410
N211 +

E411
+

Plan:



Profile:



Feature 112

Photographs:



Fully Excavated.



Sectioned.

Feature 112

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Feature 136

Centerpoint

N211.15 E422.30

Morphology

Plan: Round

Profile: Steep-Sided, Flat Base

Elevation

13.50 m AMSL

(Base of Plow Zone)

Dimensions

Length: 105 cm

Width: 90 cm

Depth: 50 cm

Volume: 247.5 liters

Soil Classification

Stratum I: 2.5Y5/3 Light Olive Brown, Silt Loam

Stratum II: 2.5Y6/2 Light Brownish Gray,

Mottled w/

10YR6/8 Brownish Yellow,

Silt Clay

Artifacts

2 Abraders; 2 Hammerstones

1 Core

4 Flakes; 1 Chip

26 Thermally Altered Stones

Ecofacts

Total: 0.1 g (2L. Flot.)

2 *Quercus* sp. (white oak group) Charcoal

10 Deciduous Taxa Charcoal

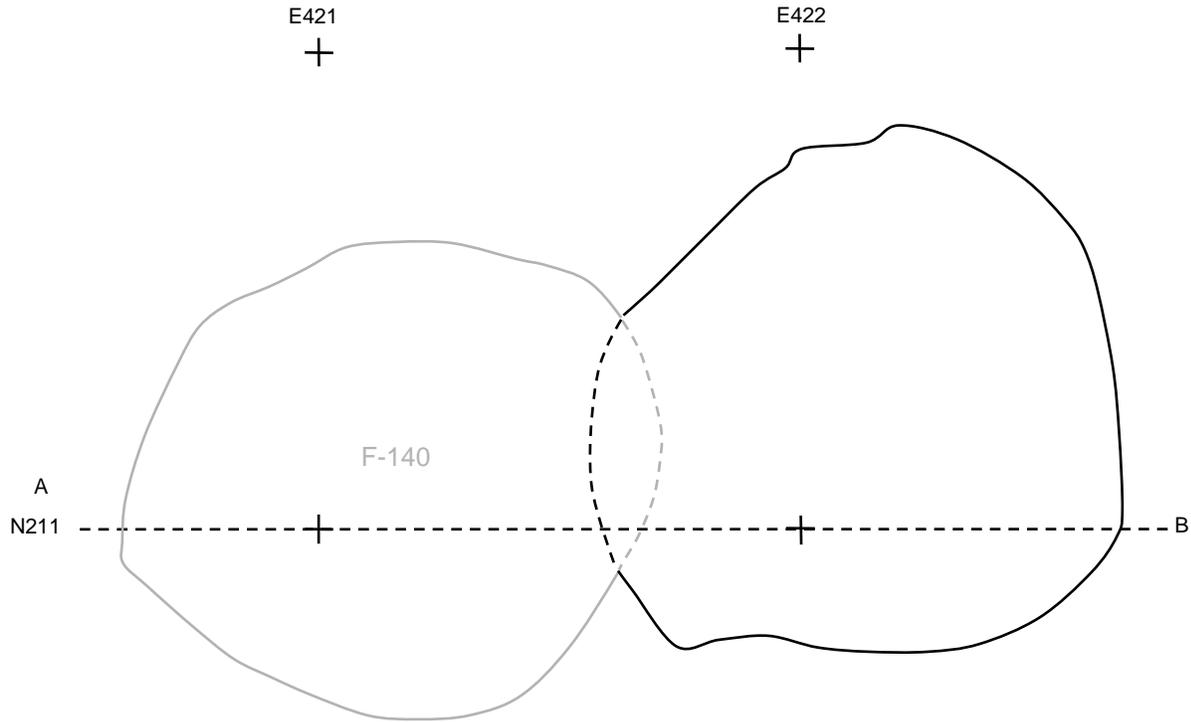
Radiocarbon Assay

2970 ± 40 B.P.

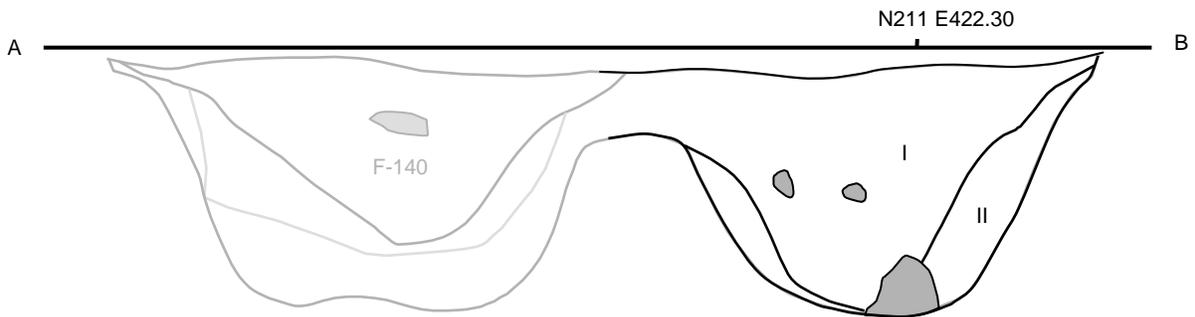
Description

Feature 136 was a pit identified at the base of the plow zone. The feature was round in plan view. In profile, the basin exhibited steep sides and a flat base. Feature 136 intersected another pit (Feature 140) to the west, overlapping 5-to-10 cm. Feature fill consisted of two strata. Stratum I comprised the center of the basin and consisted of a light olive brown silt loam with charcoal flecking. Excavated, Stratum I left a bowl-shaped profile. Stratum II surrounded Stratum I and consisted of light brownish gray silty mottled with brownish yellow silty clay. A cluster of unaltered pebbles and thermally altered stones was encountered between 40 and 50 cm below the plow zone at the base of Stratum I. One thermally altered stone within the cluster, measuring 10-x-20 cm, extended into Stratum II and rested on subsoil. All artifacts, including four groundstone tools, were recovered from Stratum I.

Plan:



Profile:



Key

 thermally altered stone

0 20 40 cm



Feature 136

Photographs:



Fully Excavated.



Sectioned.

Features 136 & 140

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Feature 140

Centerpoint

N211.10 E421.20

Morphology

Plan: Round

Profile: Steep-Sided, Flat Base

Elevation

13.50 m AMSL

(Base of Plow Zone)

Dimensions

Length: 100 cm

Width: 90 cm

Depth: 52 cm

Volume: 245.1 liters

Soil Classification

Stratum I: 2.5Y5/3 Light Olive Brown, Silt Loam

Stratum II: 10YR5/6 Yellowish Brown, Silty Clay

Stratum III: 2.5Y6/2 Light Brownish Gray, Mottled w/ 10YR6/8 Brownish Yellow, Silty Clay

Artifacts

2 Flakes

5 Thermally Altered Stones

Ecofacts

Total: 0.03 g (2L. Flot.)

4 Deciduous Taxa Charcoal

1 Unidentifiable Charcoal

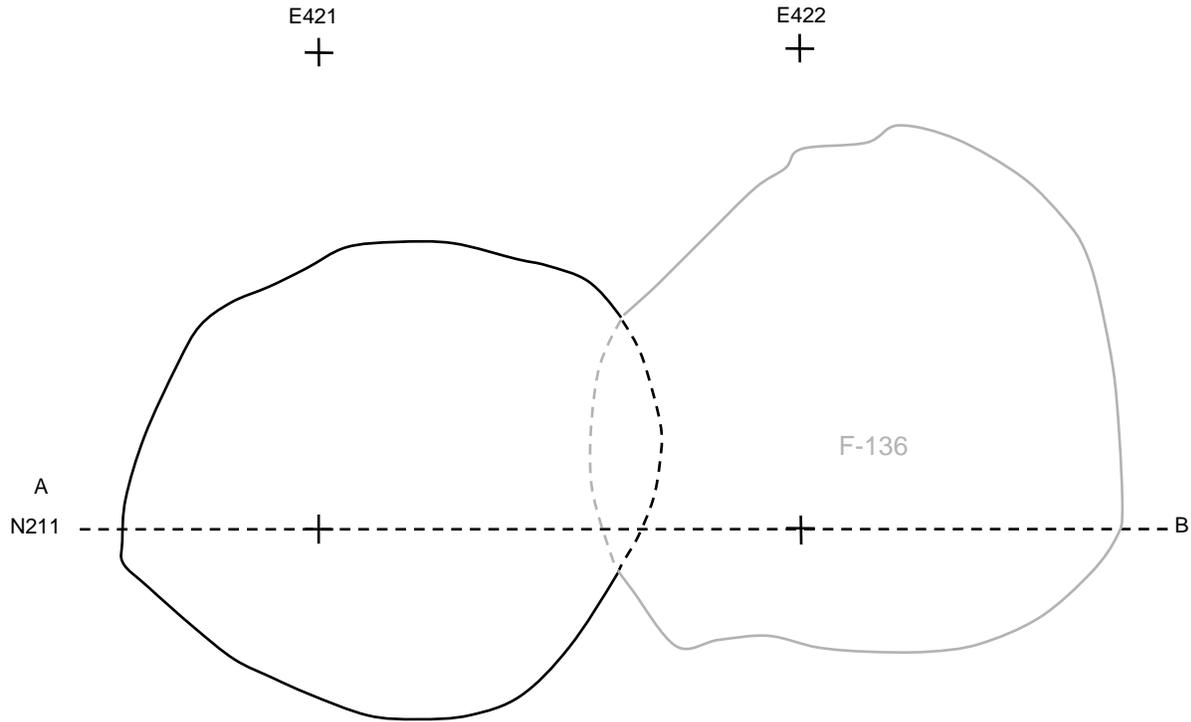
Radiocarbon Assay

3090 ± 40 B.P.

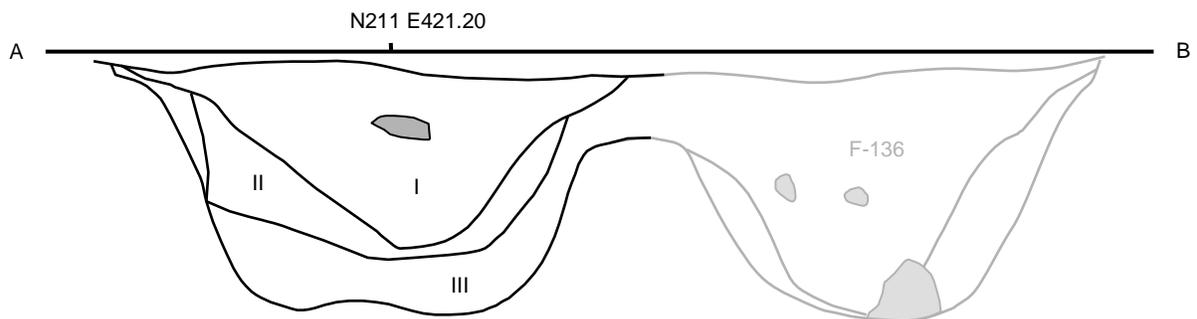
Description

Feature 140 was a pit identified at the base of the plow zone. The feature was round in plan view. In profile, the basin exhibited steep sides and a flat base. Feature 140 intersected another pit (Feature 136) to the east, overlapping 5-to-10 cm. Feature fill consisted of three strata. Stratum I comprised the center of the basin and consisted of a light olive brown silt loam with charcoal flecking. Excavated, Stratum I left a bowl-shaped profile. Stratum II surrounded Stratum I from 4-to-10 cm below the plow zone. Stratum II consisted of yellowish brown silty clay. Stratum III surrounded Strata I and II and consisted of light brownish gray silty clay mottled with brownish yellow silty clay. All artifacts were recovered from Strata I and II.

Plan:



Profile:



Key

 thermally altered stone



Feature 140

Feature 159

Centerpoint

N210.00 E406.31

Morphology

Plan: Round

Profile: Steep Sided, Flat Base

Elevation

13.13 m AMSL
(Base of Plow Zone)

Dimensions

Length: 125 cm
Width: 120 cm
Depth: 70 cm
Volume: 550.0 liters

Soil Classification

Stratum I: 10YR5/6 Yellowish Brown,
Clay Loam
Stratum II: Mottled 10YR5/4-6 Yellowish
Brown, Sandy Clay Loam

Stratum III: Yellowish Brown Mottled w/
10YR6/2 Light Brownish Gray and
7.5YR5/6 Strong Brown, Sandy Clay
Loam

Stratum IV: Light Brownish Gray Mottled
w/ Strong Brown and Yellowish Brown
Sandy Clay Loam

Artifacts

1 Anvil
13 Flakes; 3 Chips
8 Thermally Altered Stones

Ecofacts

Total: 1.13 g (2L. Flot)
11 *Acer sp.* (Maple) Charcoal
3 *Quercus sp.* (red oak group) Charcoal
4 Deciduous Taxa Charcoal
2 Diffuse Porous Charcoal

Radiocarbon Assay

3020 ± 40 B.P.

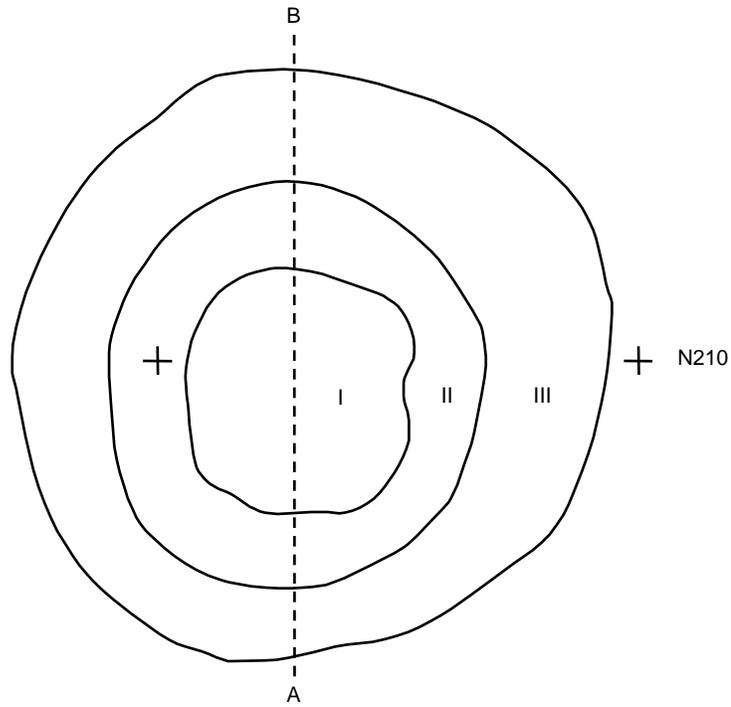
Description

Feature 159 was a pit identified at the base of the plow zone. The feature was round in plan view. The profile exhibited steep sides and a flat base. Feature fill consisted of four strata. Strata I-III were visible in plan view whereas Stratum IV was identified at 10 to 14 cm below the plow zone along the sides and base. Stratum I was darkest in color and contained the heaviest concentration of charcoal flecking. Stratum II surrounded Stratum I in plan and profile and was distinguished by less charcoal flecking and sandier texture. Stratum III surrounded Strata I and II and consisted of mottled soils with a higher clay content and less charcoal flecking. Stratum IV was distinguished from Stratum III by lighter soil color and less charcoal flecking. The majority of the artifacts (n=19) were evenly distributed between Strata I and II. Stratum III contained five artifacts and the single artifact recovered from Stratum IV consisted of a tabular quartzite cobble showing evidence of battering and abrasion suggesting use as an anvil.

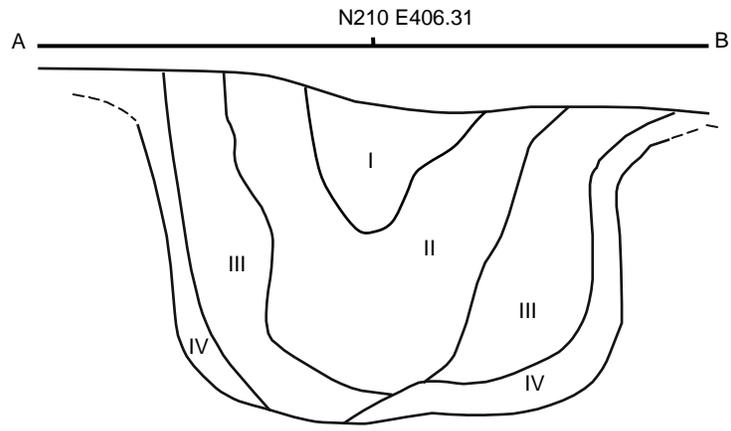
Plan:

E406
+

E407
+ N211



Profile:



0 20 40 cm

Feature 159

Photographs:



Fully Excavated.



Sectioned.

Feature 159

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Feature 167

Centerpoint

N210.38 E403.55

Morphology

Plan: Round

Profile: Steep Sided, Flat Base

Elevation

13.28 m AMSL

(Base of Plow Zone)

Dimensions

Length: 98 cm

Width: 97 cm

Depth: 45 cm

Volume: 224.1 liters

Soil Classification

Stratum I: 10YR4/4 Dark Yellowish
Brown, Sandy Loam

Stratum II: Dark Yellowish Brown
Mottled w/ 10YR7/2 Light Gray, Silt
Loam

Stratum III: 10YR4/6 Dark Yellowish
Brown, Mottled w/

Light Gray, Silty Clay Loam

Stratum IV: Mottled 10YR4/6 Dark

Yellowish Brown, 10YR5/8 Yellowish

Brown and Light Gray Sandy Clay Loam

Artifacts

19 Flakes; 1 Chip

7 Thermally Altered Stones

Ecofacts

Total: 0.72 g (2 L Flot.)

20 *Quercus sp.* (white oak group)

3 *Fagus grandifolia* (American Beech)

Nutshell

1 Unidentified Faunal Bone

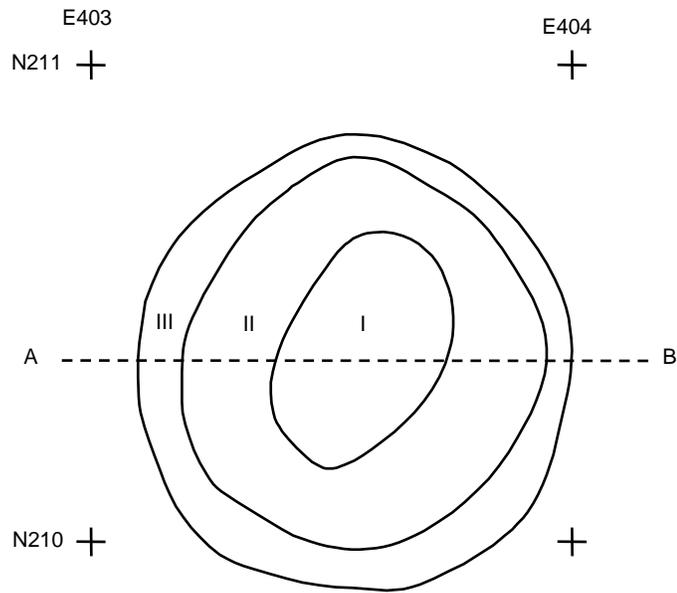
Radiocarbon Assay

3010 ± 40 B.P.

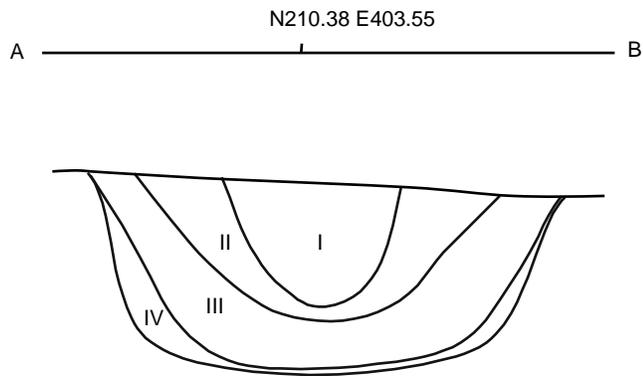
Description

Feature 167 was a pit identified at the base of the plow zone. The feature was round in plan view. The profile exhibited steep sides and a flat base. Feature fill consisted of four strata. Strata I-III were visible in plan view whereas Stratum IV was identified at 30 cm below the plow zone along the sides and base. Stratum I was darkest in color and contained charcoal flecking. Stratum II surrounded Stratum I in plan and profile and was distinguished by less charcoal flecking and sandier texture. Stratum III surrounded Strata I and II and consisted of mottled soils with higher clay content. Stratum IV was distinguished from Stratum III by more compacted matrix and ferrous staining and concretions. The majority of the artifacts (n=24) were evenly distributed within Strata I and II. The remaining three artifacts were recovered from Stratum III.

Plan:



Profile:

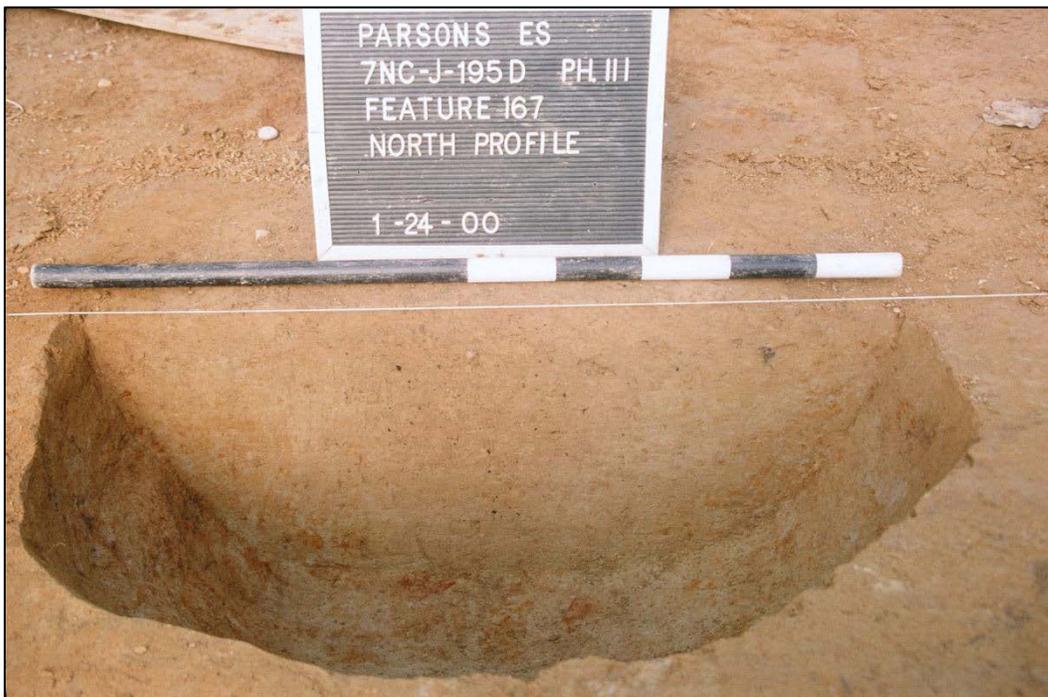


Feature 167

Photographs:



Fully Excavated.



Sectioned.

Feature 167

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Feature 169

Centerpoint

N212.15 E424.55

Morphology

Plan: Round

Profile: Steep Sided, Undulated Base

Elevation

13.58 m AMSL

(Base of Plow Zone)

Dimensions

Length: 84 cm

Width: 80 cm

Depth: 32 cm

Volume: 112.6 liters

Soil Classification

10YR5/4 Yellowish Brown

Clay Loam

Artifacts

3 Flakes; 1 Chip

7 Thermally Altered Stones

Ecofacts

Not Collected

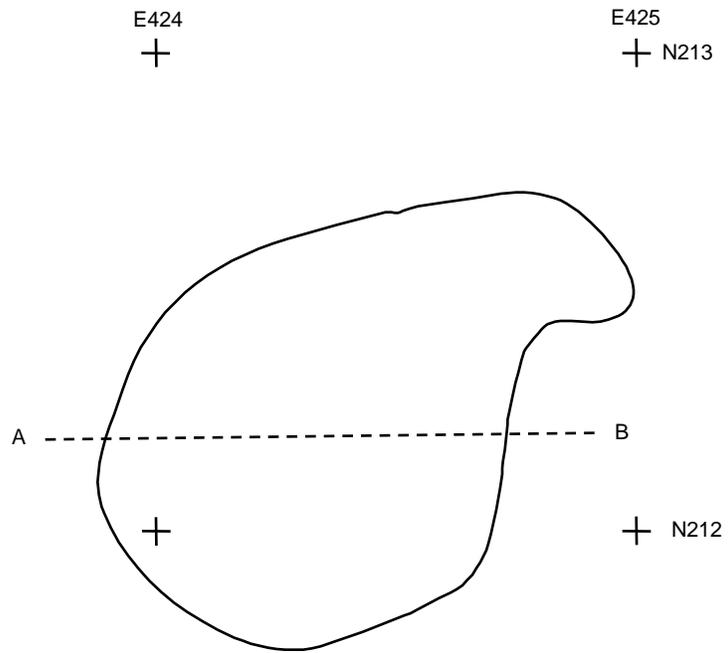
Radiocarbon Assay

Not Dated

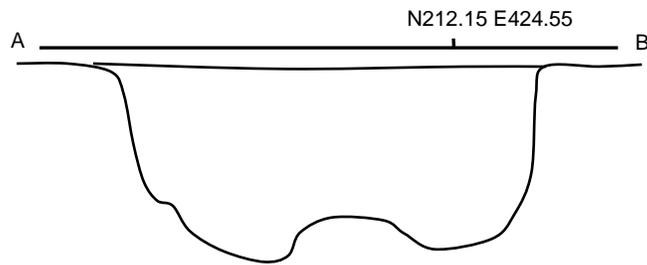
Description

Feature 169 was a pit identified at the base of the plow zone. The feature was round in plan view with evidence of limited disturbance in the northeast portion of the feature. The excavated profile of Feature 169 showed an undulating to rounded base. Feature fill consisted of a single stratum and was distinguished from surrounding subsoil by slightly darker soil color, siltier texture, and charcoal flecking. The soil within the disturbance was slightly lighter in soil color and exhibited a finer texture than the remainder of the feature fill and subsoil.

Plan:



Profile:



Feature 169

Photographs:



Fully Excavated.



Sectioned.

Feature 169

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Feature 170

Centerpoint

N214.47 E431.30

Morphology

Plan: Round

Profile: Steep Sided, Flat Base

Elevation

13.69 m AMSL

(Base of Plow Zone)

Dimensions

Length: 110 cm

Width: 100 cm

Depth: 60 cm

Volume: 345.7 liters

Soil Classification

10YR5/6 Yellowish Brown Silty Clay

Artifacts

1 Dames Quarter Ceramic Vessel

Fragment

2 Hammerstones

15 Flakes

10 Thermally Altered Stones

1 Potlid

Ecofacts

Total: 0.2 g (2L Flot)

1 *Juglans nigra* (Black Walnut) Charcoal

16 *Quercus sp.* (white oak group)

Charcoal

1 Diffuse Porous Charcoal

1 *Quercus sp.* Nutshell

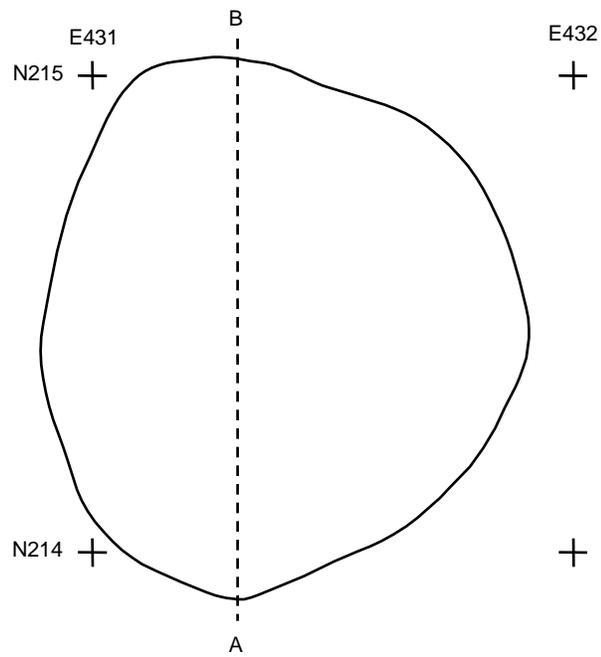
Radiocarbon Assay

2930 ± 40 B.P.

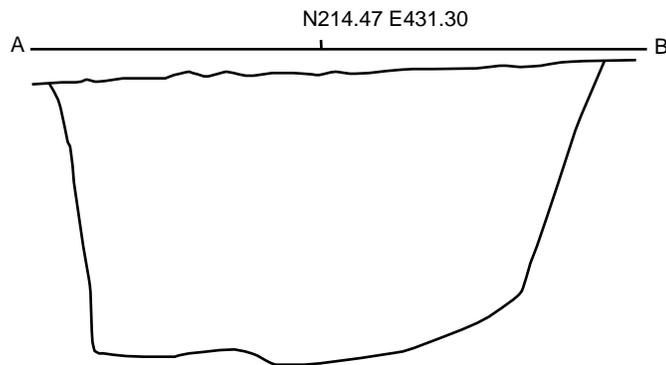
Description

Feature 170 was a pit identified at the base of the plow zone. The feature was round in plan view. The profile exhibited steep sides and a flat base. Feature fill consisted of a single stratum with moderate charcoal flecking. A sandy crescent-shaped lens was present along the edge of the south half of Feature 170 sloping from edge to base between 29 and 55 cm below the plow zone. The Dames Quarter ceramic vessel fragment was recovered from the fourth arbitrary level below the plow zone. Artifacts were evenly distributed throughout the feature.

Plan:



Profile:



Feature 170

Photographs:



Fully Excavated.



Sectioned.

Feature 170

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Feature 171

Centerpoint

N214.25 E433.61

Morphology

Plan: Round

Profile: Steep Sided, Flat Base

Elevation

13.73 m AMSL

(Base of Plow Zone)

Dimensions

Length: 89 cm

Width: 89 cm

Depth: 59 cm

Volume: 244.8 liters

Soil Classification

Gray

7.5YR6/1

Silt Loam

Artifacts

5 Flakes; 1 Chip

2 Thermally Altered Stones

Ecofacts

Not Collected

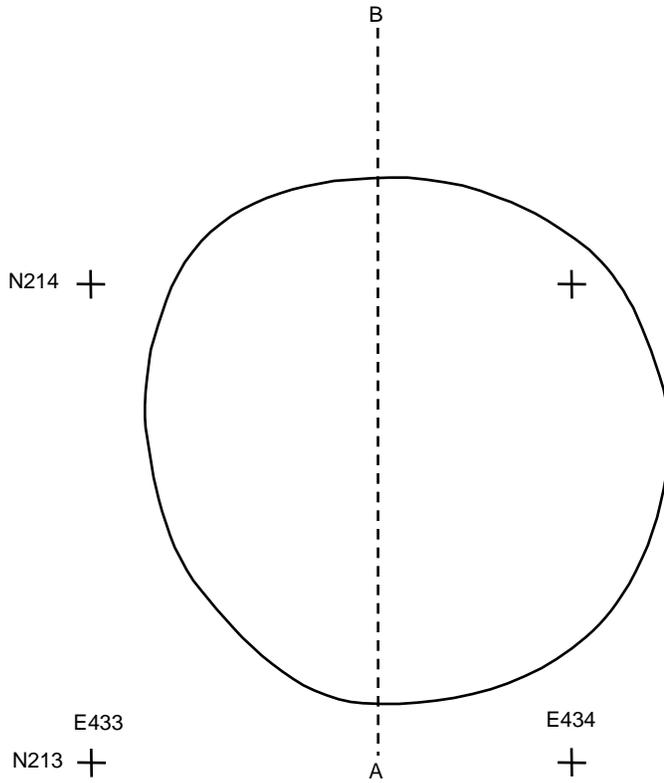
Radiocarbon Assay

Not Dated

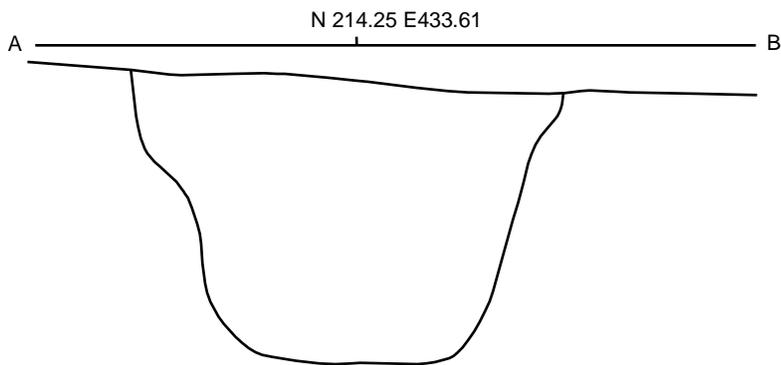
Description

Feature 171 was a pit identified at the base of the plow zone. The feature is round in plan view. The profile showed steep sides and a flat base. Feature fill contained charcoal flecking and was lighter in color than surrounding subsoil. Soil texture became sandier with depth. Artifacts were evenly distributed throughout the feature

Plan:



Profile:



0 20 40 cm

Feature 171

Photographs:



Fully Excavated.



Sectioned.

Feature 171

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Feature 191

Centerpoint

N214.30 E428.53

Morphology

Plan: Round

Profile: Steep Sided, Flat Base

Elevation

13.60 m AMSL

(Base of Plow Zone)

Dimensions

Length: 110 cm

Width: 106cm

Depth: 60 cm

Volume: 366.4 liters

Soil Classification

10YR5/4 Yellowish Brown

Silty Clay

Artifacts

2 Cores

85 Flakes; 1 Chip

3 Thermally Altered Stones

Ecofacts

Total: 0.15 g (2L. Flot.)

2 *Carya sp.* (Hickory) Charcoal

10 Deciduous Taxa Charcoal

3 Ring Porous Charcoal

5 Unidentifiable Charcoal

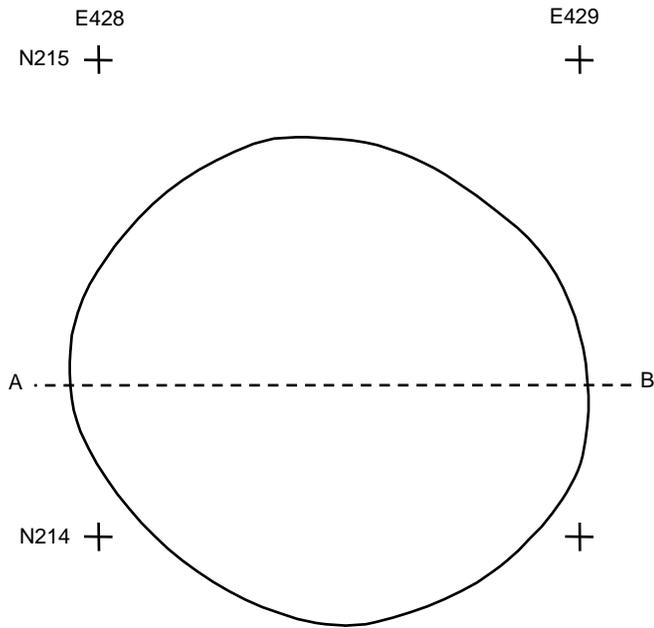
Radiocarbon Assay

3010 ± 40 B.P.

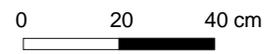
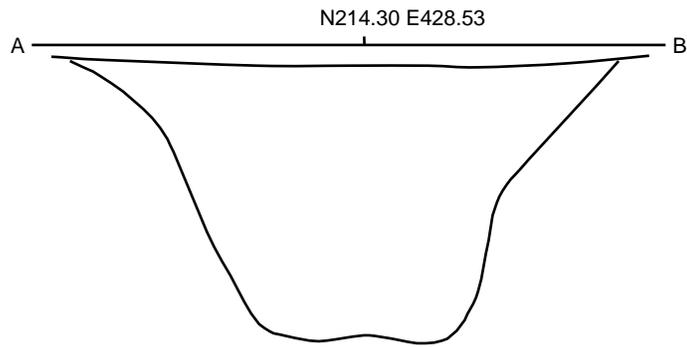
Description

Feature 191 was a pit identified at the base of the plow zone. The feature was round in plan view. The profile shows the sides to slope gradually for the 10-to-20 cm before dropping steeply to a base diameter of 40 cm. Feature fill contained charcoal flecking and was lighter in color and siltier in texture than surrounding subsoil. Artifact density was greatest within the top 30 cm of the feature.

Plan:



Profile:



Feature 191

Photographs:



Fully Excavated.



Sectioned.

Feature 191

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Feature 30

Centerpoint

N212.30 E474.75

Morphology

Plan: Irregular

Profile: Bowl-Shaped

Elevation

13.52 m AMSL

(Base of Plow Zone)

Dimensions

Length: 210 cm

Width: 95 cm

Depth: 49 cm

Volume: 512.1 liters

Soil Classification

10YR5/4 Yellowish Brown

Sandy Silt

Artifacts

1 Chip

20 Flakes; 1 Utilized Flake

2 Thermally Altered Stone

Ecofacts

Not Collected

Radiocarbon Assay

Not Dated

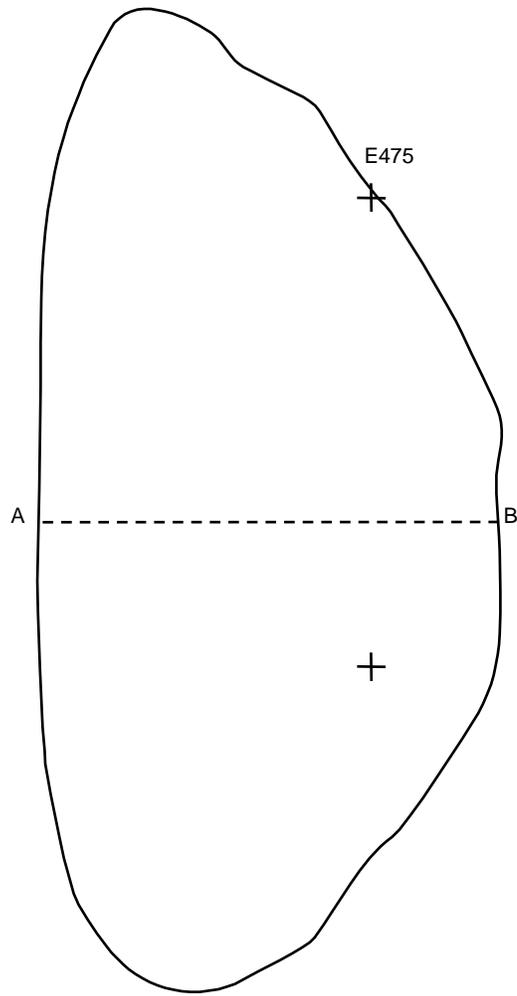
Description

This pit feature was D-shaped in plan with the excavated profile exhibiting sloping sides and a rounded bottom. Feature fill was distinguished from subsoil by darker soil color and charcoal flecking. The profile also showed a 2-to-4 cm band of brownish yellow (10YR6/6) soil along the edge of the feature. Artifact frequency decreased with depth.

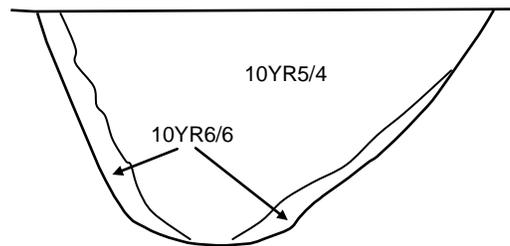
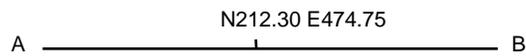
Plan:

E474
N213 +

N212 +



Profile:



Feature 30

Feature 39

Centerpoint

N198.68 E442.68

Morphology

Plan: Irregular

Profile: Bowl-Shaped

Elevation

m AMSL

(Base of Plow Zone)

Dimensions (as excavated)

Length: 138 cm

Width: 100 cm

Depth: 44 cm

Volume: 318.1 liters

Soil Classification

10YR6/3 Pale Brown,

Silty Sand

Mottled w/ Brownish Yellow

Silty Sand

Artifacts

2 Flakes

2 Potlids

Ecofacts

Total: 0.12 g (2L. Flot.)

1 *Carya sp.* (Hickory) Charcoal

3 *Quercus sp.* Charcoal

4 Diffuse Porous Charcoal

5 Ring Porous Charcoal

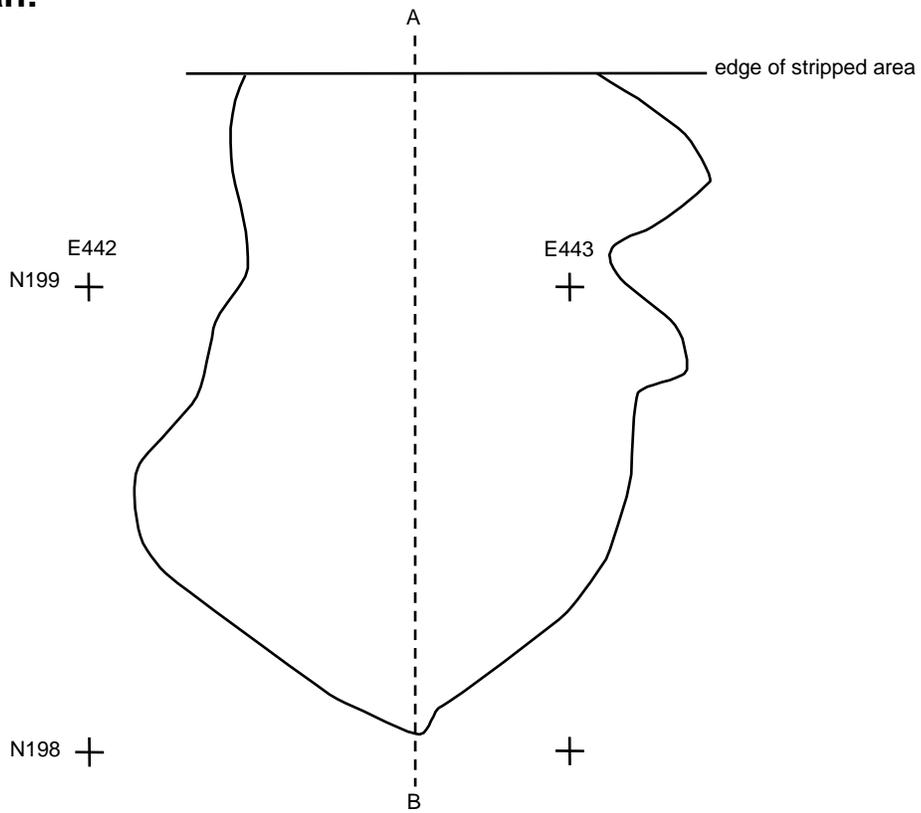
Radiocarbon Assay

1770 ± 40 B.P.

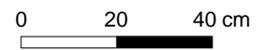
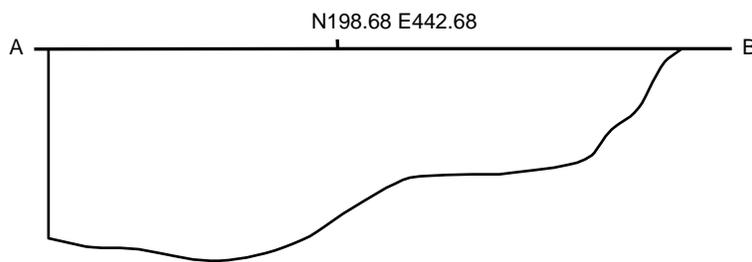
Description

Feature 39 was a pit identified at the base of the plow zone. This feature extended from the northern wall of the excavation trench. The feature was irregular in plan. The long axis profile revealed a gradually sloped base that increased in depth from south to north. Feature fill was lighter in color than surrounding sub-plow zone soil. Artifact frequency was low.

Plan:



Profile:



Feature 39

Feature 145

Centerpoint

N202.56 E458.90

Morphology

Plan: Irregular

Profile: Bowl-Shaped

Elevation

14.06 m AMSL

(Base of Plow Zone)

Dimensions

Length: 145 cm

Width: 110 cm

Depth: 30 cm

Volume: 250.6 liters

Soil Classification

10YR5/3 Brown, Mottled w/ 5YR5/8

Yellowish Red and 10YR3/3 Dark Brown,

Sandy Loam

Artifacts

1 Flake

1 Thermally Altered Stone

Ecofacts

Total: 0.16 g (2L. Flot.)

3 *Quercus Sp.* Charcoal

8 Deciduous Taxa Charcoal

4 Ring Porous Charcoal

5 Unidentifiable Charcoal

1 *Fagus grandifolia* Nutshell

1 Poaceae Carbonized Large Grass

Fragment

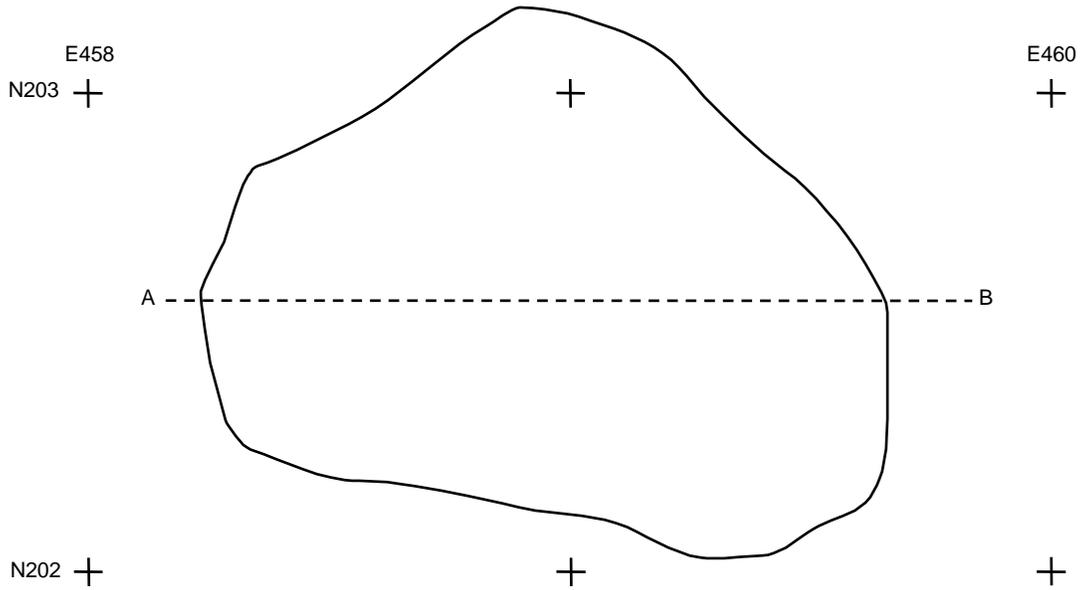
Radiocarbon Assay

970 ± 40 B.P.

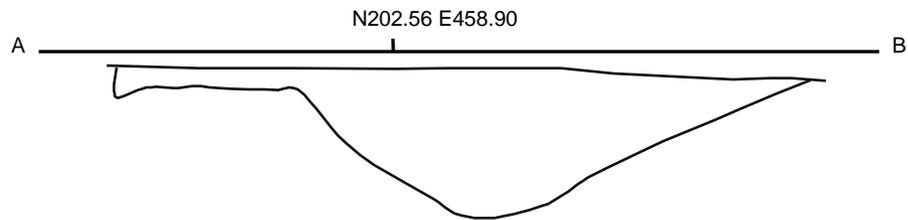
Description

Feature 145 was a pit identified at the base of the plow zone. The feature was irregular in plan. The profile exhibited gradually sloped sides and a rounded base. A round concentration of charcoal and oxidized soil, measuring 30 cm in diameter, was present in plan view in the north central portion of the feature. Feature fill was darker in color than surrounding subsoil. Artifact frequency was very low.

Plan:



Profile:



Feature 145

Feature 150

Centerpoint

N202.74 E442.76

Morphology

Plan: Irregular

Profile: Steep Sided, Undulated Base

Elevation

13.76 m AMSL

(Base of Plow Zone)

Dimensions

Length: 336 cm

Width: 200 cm

Depth: 42 cm

Volume: 1,290.6 liters

Soil Classification

10YR5/3 Brown

Sandy Clay Loam

Artifacts

1 Hammerstone

2 Flakes; 1 Chip

1 Potlid

Ecofacts

Not Collected

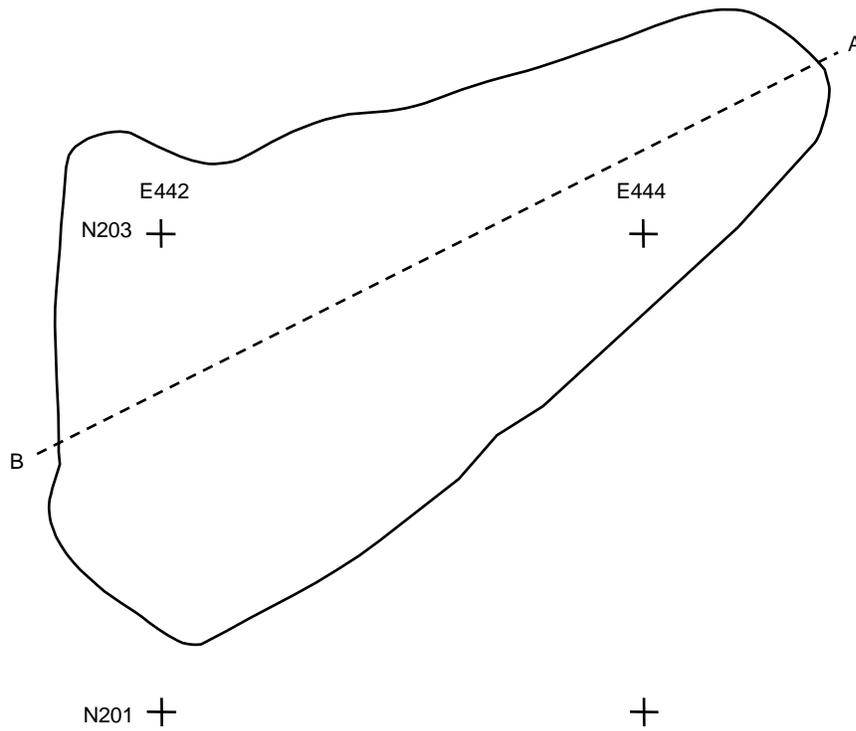
Radiocarbon Assay

Not Dated

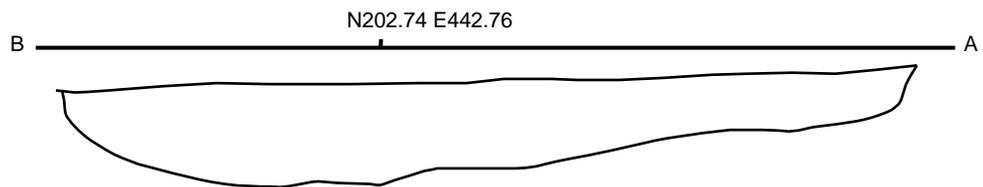
Description

Feature 150 was a pit identified at the base of the plow zone. The feature was irregular in plan and tapered in width from west to east from a maximum of 200-to-80 cm. Feature fill was distinguished from subsoil by darker color, sandier texture, and charcoal flecking. The fill texture graded to yellowish brown (10YR5/6) silty clay with depth. Charcoal flecking also decreased with depth.

Plan:



Profile:



0 40 80 cm



Feature 150

Feature 156

Centerpoint

N207.82 E413.25

Morphology

Plan: Irregular

Profile: Bowl-Shaped

Elevation

13.42 m AMSL

(Base of Plow Zone)

Dimensions

Length: 250 cm

Width: 115 cm

Depth: 48 cm

Volume: 359.5 liters

Soil Classification

Stratum I: 2.5Y5/4 Light Olive Brown

Mottled w/ 10YR5/3 Brown, Silt Loam

Stratum II: 10YR5/6 Yellowish Brown

Artifacts

1 Dames Quarter Ceramic Vessel

Fragment

3 Flakes

2 Thermally Altered Stones

Ecofacts

Not Collected

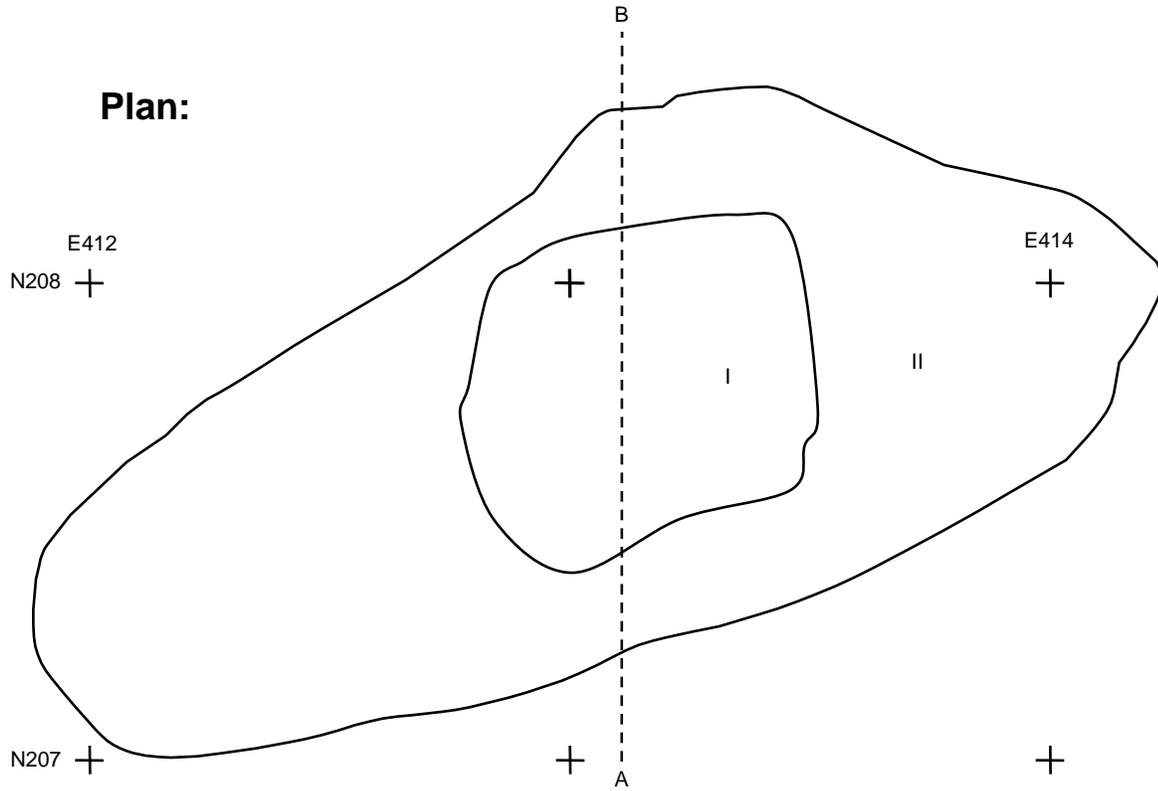
Radiocarbon Assay

Not Dated

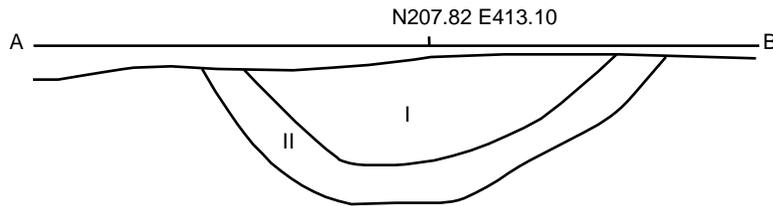
Description

Feature 156 was a pit identified at the base of the plow zone. This feature was irregular in plan. Excavated, Feature 156 exhibited undulating sides that tapered with depth toward the center of the basin. The sides were gradually sloped in long axis profile and steeply sloped in short axis profile. Feature fill consisted of two strata. Stratum I comprised the center of the feature, contained charcoal flecking, and was darker in color than Stratum II and the surrounding subsoil. Stratum II surrounded Stratum I and comprised the majority of the feature. Stratum II was less clayey and mottled than the subsoil. Rodent and root disturbance was noted throughout Stratum II. All of the artifacts were recovered from Stratum I. The single Dames Quarter ceramic vessel fragment was recovered from the second arbitrary level below the plow zone.

Plan:



Profile:



0 20 40 cm



Feature 156

Feature 158

Centerpoint

N212.07 E405.96

Morphology

Plan: Irregular

Profile: Bowl-Shaped

Elevation

13.12 m AMSL

(Base of Plow Zone)

Dimensions

Length: 160 cm

Width: 78 cm

Depth: 35 cm

Volume: 228.8 liters

Soil Classification

Stratum I: 10YR5/6 Yellowish Brown, Silt Loam

Stratum II: 10YR6/3 Pale Brown, Mottled w/ 10YR7/2 Light Gray, Sandy Loam

Artifacts

12 Flakes

2 Thermally Altered Stones

Ecofacts

Not Collected

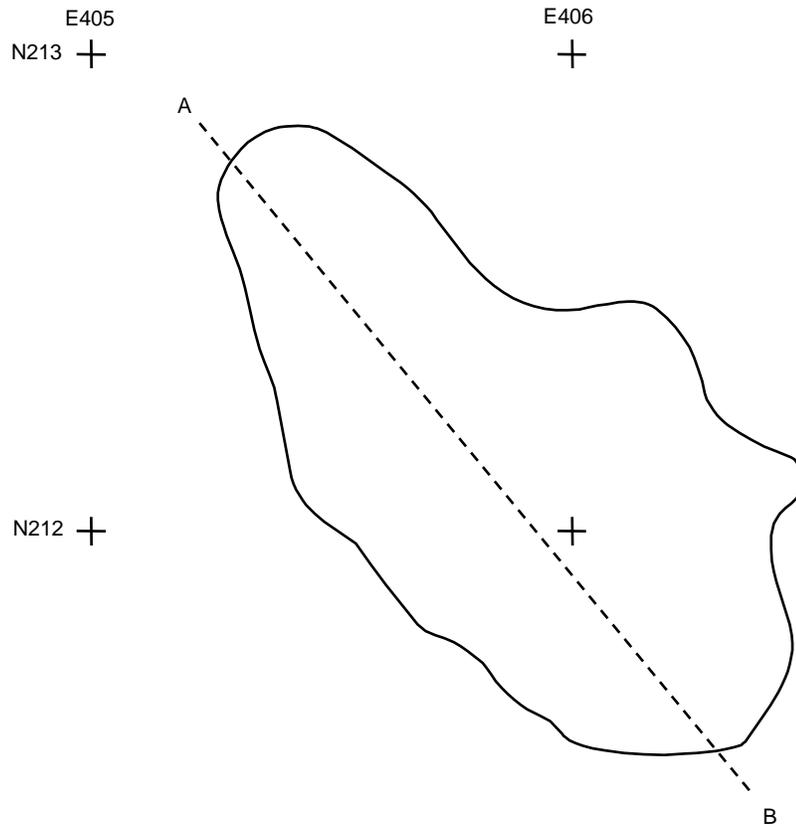
Radiocarbon Assay

Not Dated

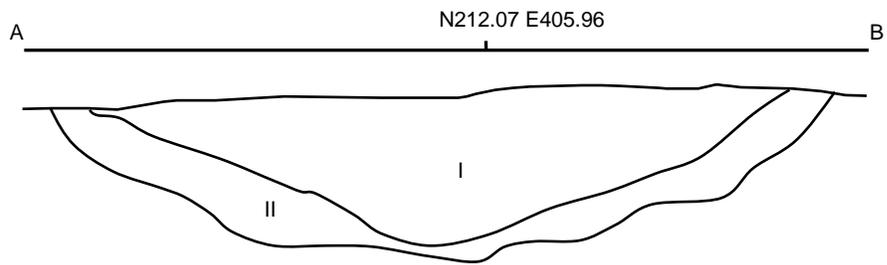
Description

Feature 158 was a pit identified at the base of the plow zone. The feature was irregular in plan view. The profile exhibited gradually sloping sides and an undulating base. Feature 158 contained two strata. Stratum I comprised the majority of the feature. Stratum II was lighter in soil color and comprised a 5-to-10 cm band surrounding Stratum I. Feature fill was lighter in color and sandier in texture than surrounding subsoil. Bioturbation from plant roots and rodents was documented within both feature strata and adjacent subsoil. Five flakes were recovered from Stratum II.

Plan:



Profile:



Feature 158

Feature 162

Centerpoint

N200.54 E389.62

Morphology

Plan: Irregular

Profile: Gradual to Steep Sides, Rounded Base

Elevation

13.18 m AMSL
(Base of Plow Zone)

Dimensions

Length: 160 cm
Width: 90 cm
Depth: 42 cm
Volume: 316.8 liters

Soil Classification

10YR5/6 Yellowish Brown
Silt Loam

Artifacts

6 Flakes; 1 Chip
1 Thermally Altered Stone

Ecofacts

Not Collected

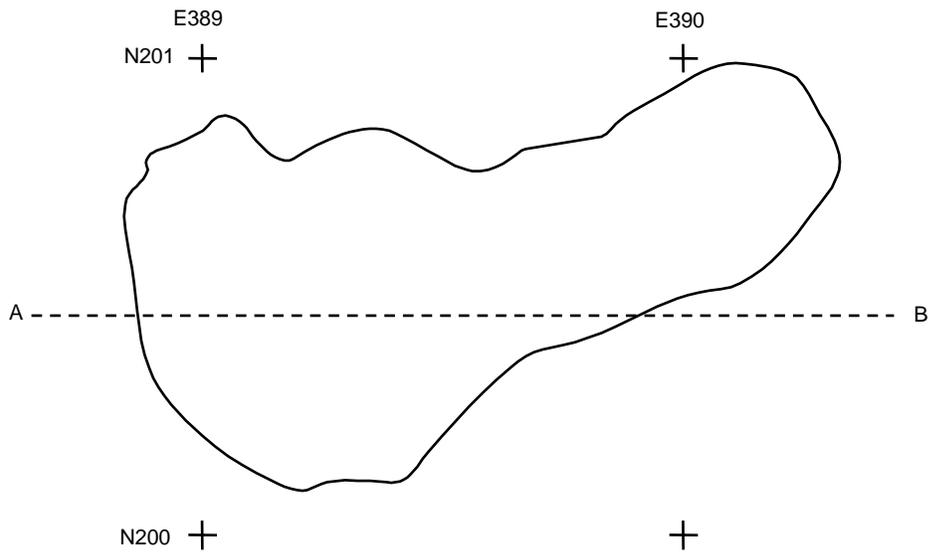
Radiocarbon Assay

Not Dated

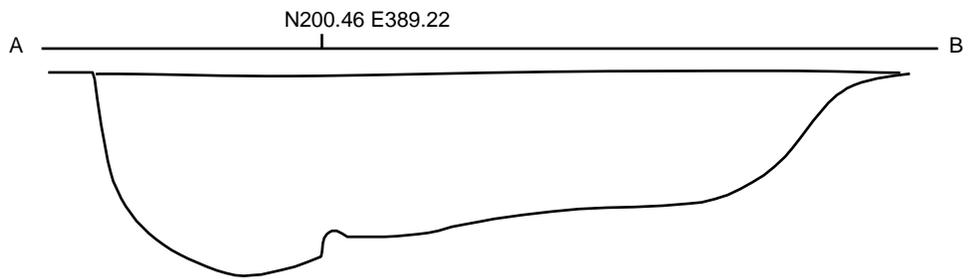
Description

Feature 162 was a pit identified at the base of the plow zone. The feature was amorphous in opening plan and became ovoid with depth. Feature 162 had gradually sloped to steep sides with an undulating rounded base. The short-axis profile showed the south wall to undercut the edge of the feature. Feature fill consisted of a single stratum, which contained charcoal flecking.

Plan:



Profile:



Feature 162

Feature 165

Centerpoint

N207.25 E387.75

Morphology

Plan: Irregular

Profile: Gradually Sloped to Steep Sided,
Flat Base

Elevation

13.14 m AMSL
(Base of Plow Zone)

Dimensions

Length: 180 cm
Width: 150cm
Depth: 40 cm
Volume: 565.7 liters

Soil Classification

Stratum I: 10YR6/4 Light Yellowish
Brown, Clay Loam
Stratum II: 10YR5/6 Yellowish Brown,
Clay Loam

Artifacts

43 Flakes; 4 Chips
2 Thermally Altered Stones

Ecofacts

Not Collected

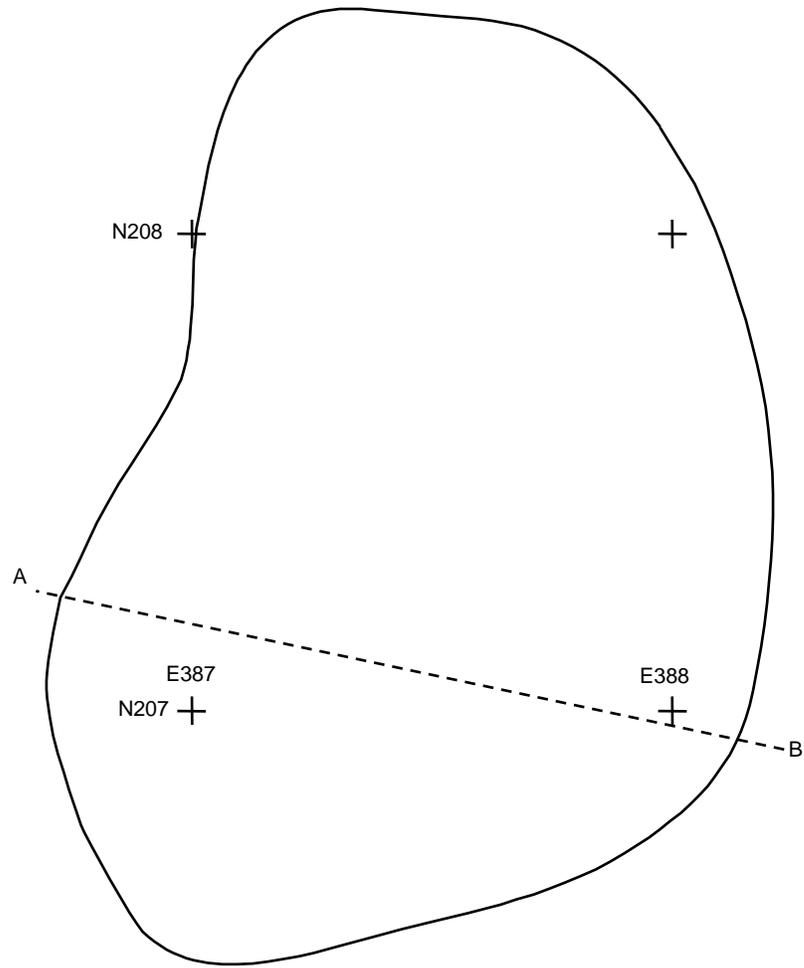
Radiocarbon Assay

Not Dated

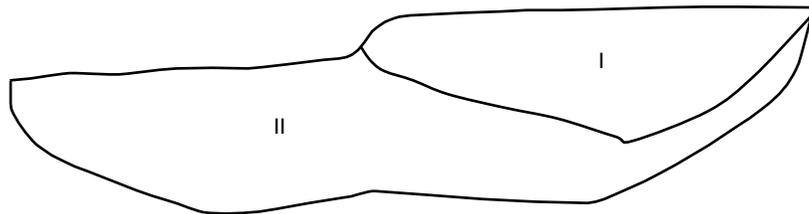
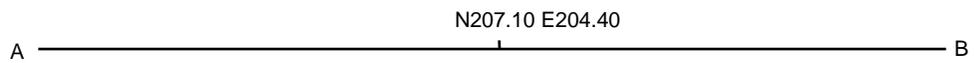
Description

Feature 165 was a basin identified at the base of the plow zone. The feature was irregular in plan view. The profile exhibited gradually sloping to steep sides and a flat base. Feature fill consisted of two strata. Stratum I was lighter in soil color than the surrounding subsoil and was contained within the east half of the feature overlying Stratum II. Stratum I was not visible in opening plan view. Stratum II was distinguished from Stratum I in profile by darker soil color. The majority (n=47) of the artifacts were recovered from Stratum I.

Plan:



Profile:



0 20 40 cm

Feature 165

Feature 179

Centerpoint

N218.51 E456.75

Morphology

Plan: Irregular

Profile: Steep-Sided, Rounded Base

Elevation

13.74 m AMSL

(Base of Plow Zone)

Dimensions

Length: 408 cm

Width: 156 cm

Depth: 60 cm

Volume: 2,000.3 liters

Soil Classification

Stratum I: 10YR5/3 Brown,
Silty Clay

Stratum II: 10YR4/6 Dark Yellowish Brown,
Silty Clay Mottled with 10YR5/8 Yellowish
Brown, Silty Clay

Artifacts

1 Late Stage Biface

184 Flakes; 3 Chips

15 Thermally Altered Stones

1 Potlid

Ecofacts

1 Unidentified Nutshell

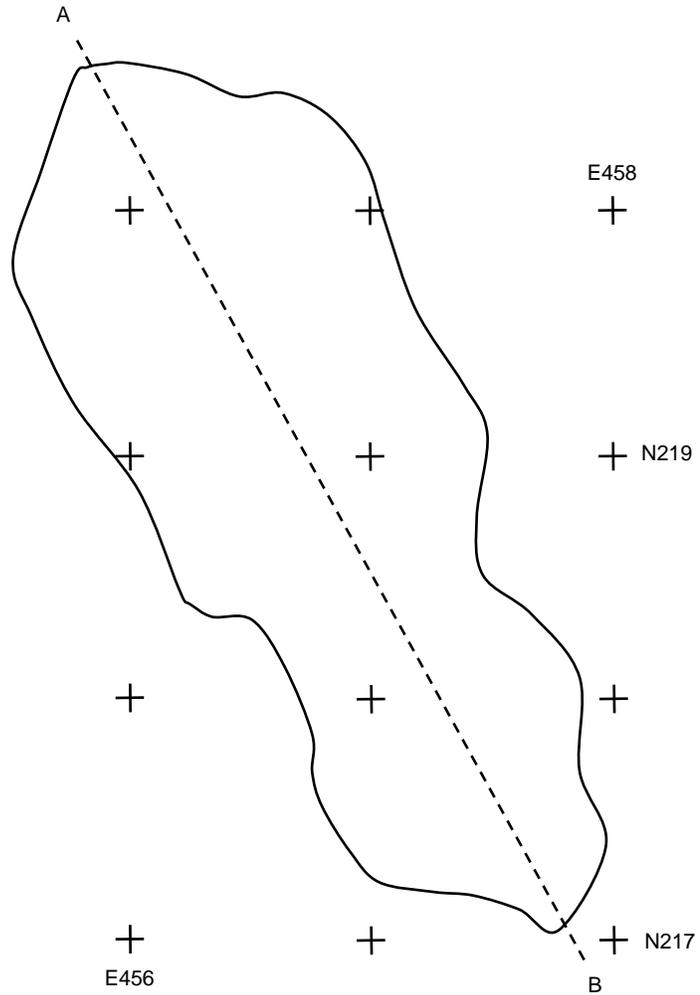
Radiocarbon Assay

Not Dated

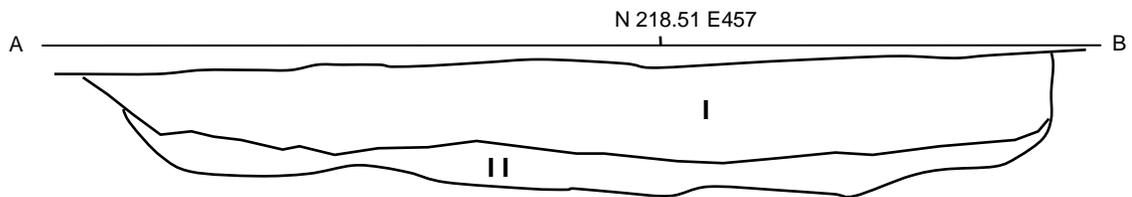
Description

Feature 179 was a pit identified at the base of the plow zone. This feature was irregular in plan view. In profile, Feature 179 exhibited steep sides and a rounded base. Feature fill consisted of two strata. In plan view Stratum II was not visible. An inclusion of slightly darker soil (7.5YR4/4) with charcoal flecking measuring 35 mm in diameter was identified within Stratum I, in the center of the eastern half of the feature. Stratum II comprised the bottom third of the feature. Most (n=189) of the artifacts were recovered from Stratum I.

Plan:



Profile:



Feature 179

Feature 188

Centerpoint

N192.80 E461.10

Morphology

Plan: Irregular

Profile: Gradually Sloped, Irregular Base

Elevation

14.01 m AMSL

(Base of Plow Zone)

Dimensions

Length: 210 cm

Width: 78 cm

Depth: 40 cm

Volume: 343.2 liters

Soil Classification

10YR5/6 Yellowish Brown

Clay Loam

Artifacts

11 Flakes

Ecofacts

Not Collected

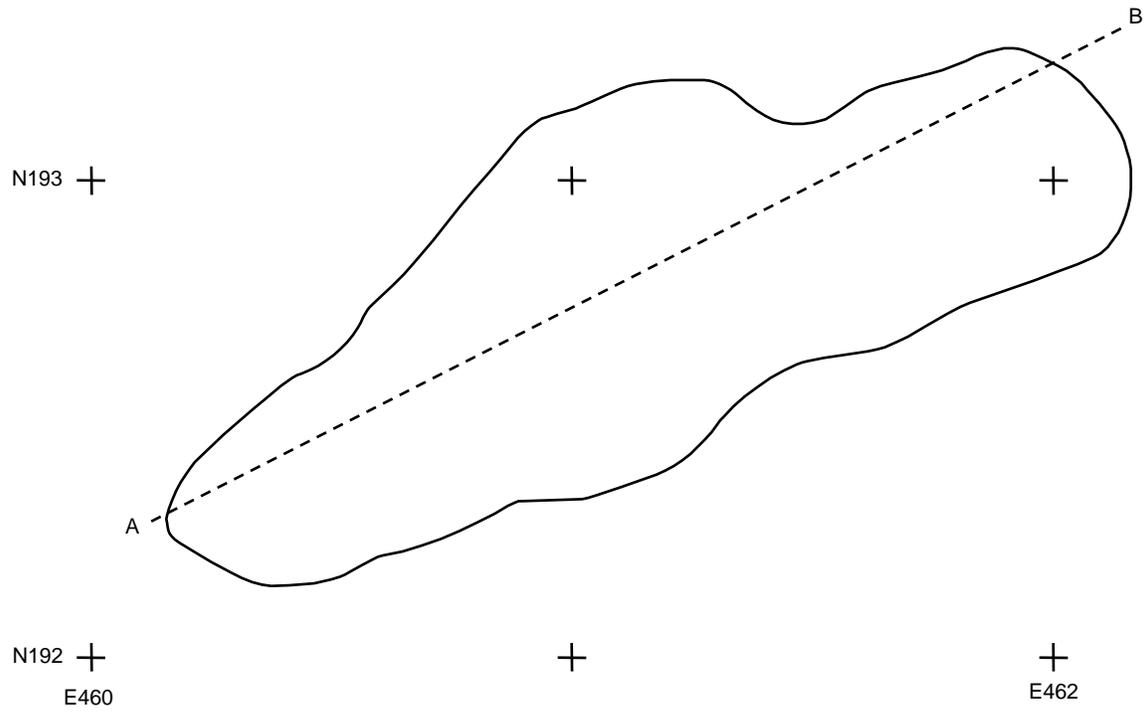
Radiocarbon Assay

Not Dated

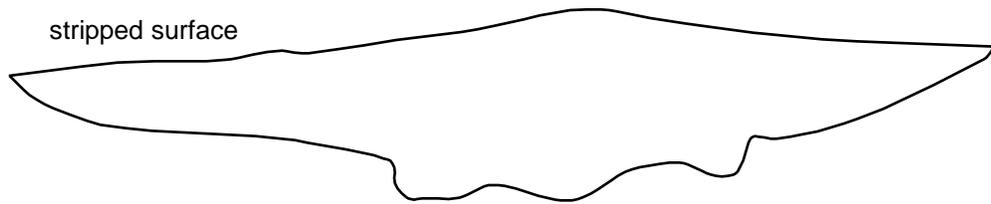
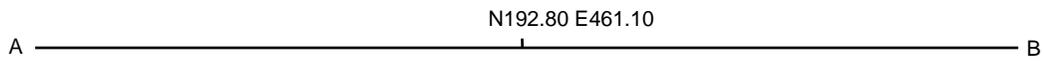
Description

Feature 188 was a pit identified at the base of the plow zone. The feature was a long irregular oval in plan view. The long-axis profile exhibited gradually sloped sides and an undulating base, whereas, the short-axis profile showed steep sides and a rounded base. Feature fill was lighter in color than the surrounding subsoil. Eleven flakes were recovered from the first three arbitrary levels.

Plan:



Profile:



Feature 188

Feature 192

Centerpoint

N216.40 E483.60

Morphology

Plan: Irregular

Profile: Gradually Sloped to Steep Sided,

Rounded Base

Elevation

13.91 m AMSL

(Base of Plow Zone)

Dimensions

Length: 130 cm

Width: 80 cm

Depth: 43 cm

Volume: 234.2 liters

Soil Classification

10YR5/4 Yellowish Brown

Sandy Loam Mottled with 10YR6/4 Light

Yellowish Brown Sandy Loam

Artifacts

19 Flakes; 3 Chips

5 Thermally Altered Stones

Ecofacts

Not Collected

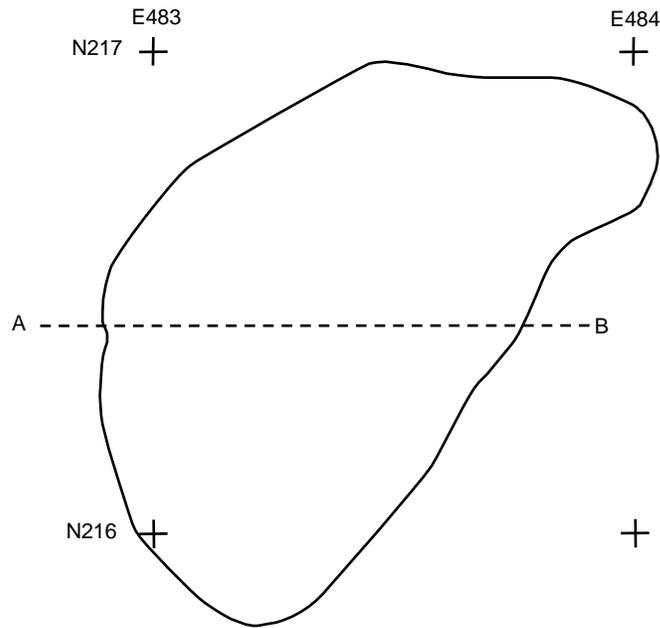
Radiocarbon Assay

Not Dated

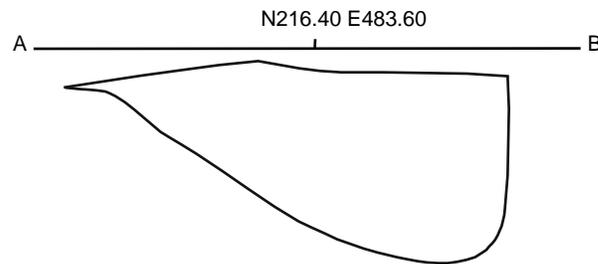
Description

Feature 192 was a pit identified at the base of the plow zone. The feature was an irregular oval in plan. The short-axis profile exhibited an asymmetrical bowl shape. The short-axis profile exhibited an asymmetrical bowl shape. Feature fill was mottled in the extreme northern and southern portions of the feature. Feature 192 contained charcoal flecking.

Plan:



Profile:



Feature 192

Feature 193

Centerpoint

N214.30 E487.70

Morphology

Plan: Irregular

Profile: Bowl-Shaped

Elevation

13.71 m AMSL

(Base of Plow Zone)

Dimensions

Length: 125cm

Width: 102 cm

Depth: 34 cm

Volume: 227.1 liters

Soil Classification

7.5YR5/4 Brown

Silt Loam

Artifacts

23 Flakes

Ecofacts

Not Collected

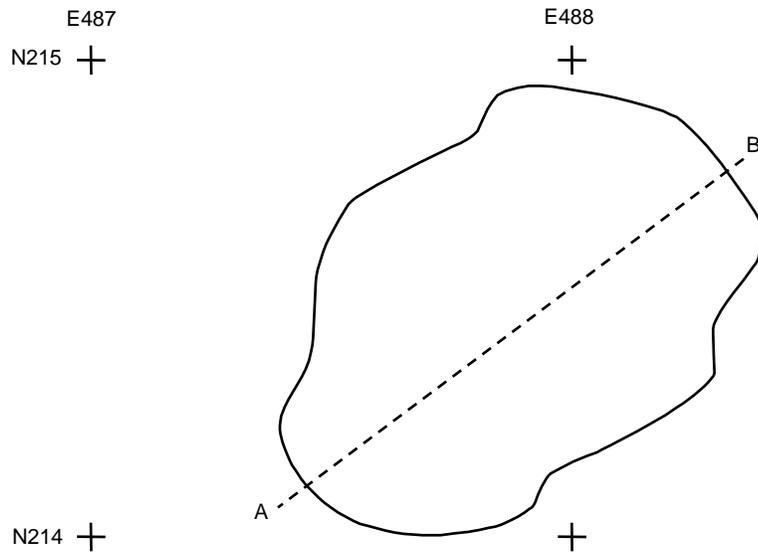
Radiocarbon Assay

Not Dated

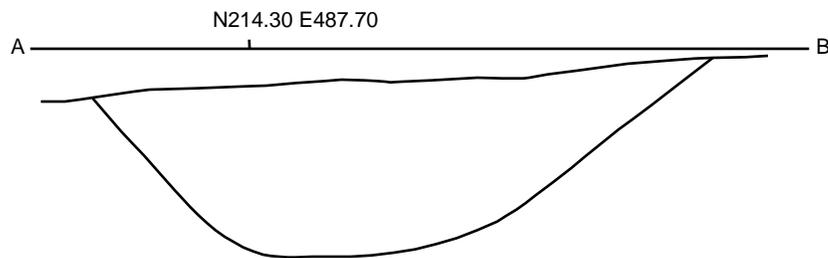
Description

Feature 193 was a pit identified at the base of the plow zone. The feature was irregular in plan view. The profile of Feature 193 exhibited gradually sloped sides and a rounded base. Feature fill was slightly lighter in color than the surrounding subsoil and contained charcoal flecking. Recovered cultural material consisted entirely of chert, quartz, and jasper flaking debris.

Plan:



Profile:



Feature 193

Feature 204

Centerpoint

N213.92 E398.60

Morphology

Plan: Irregular

Profile: Bowl-Shaped

Elevation

13.09 m AMSL

(Base of Plow Zone)

Dimensions

Length: 240 cm

Width: 100 cm

Depth: 60 cm

Volume: 754.2 liters

Soil Classification

10YR5/4 Yellowish Brown

Silt Loam

Artifacts

2 Cores

17 Flakes; 1 Chip

1 Thermally Altered Stone

1 Potlid

Ecofacts

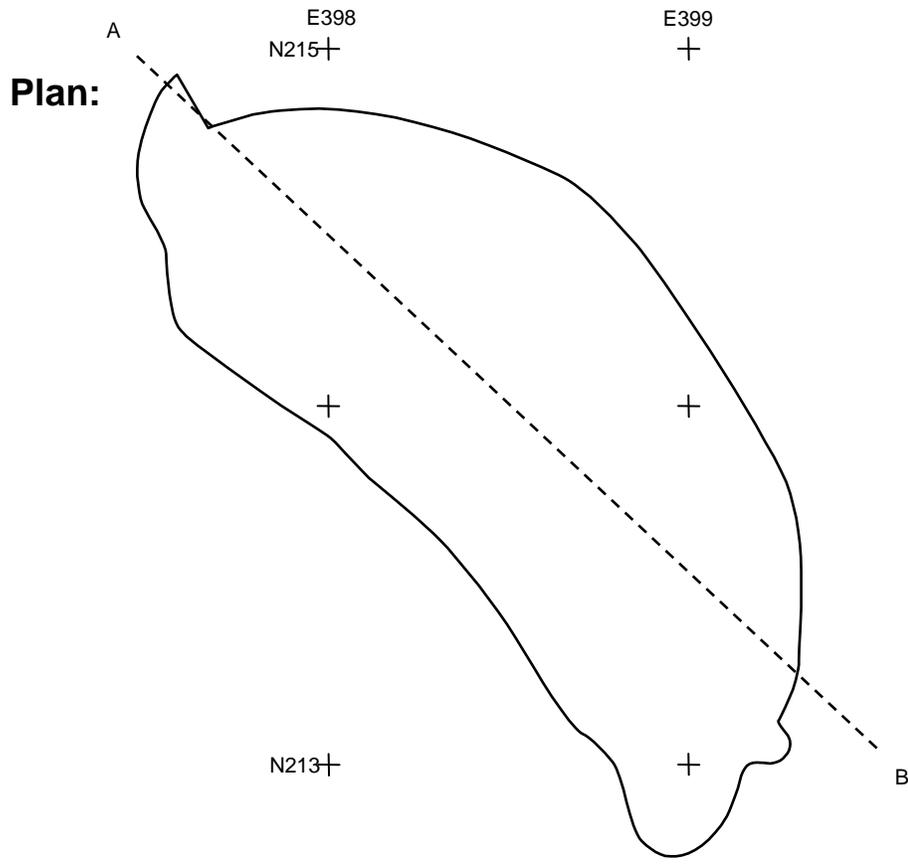
Not Collected

Radiocarbon Assay

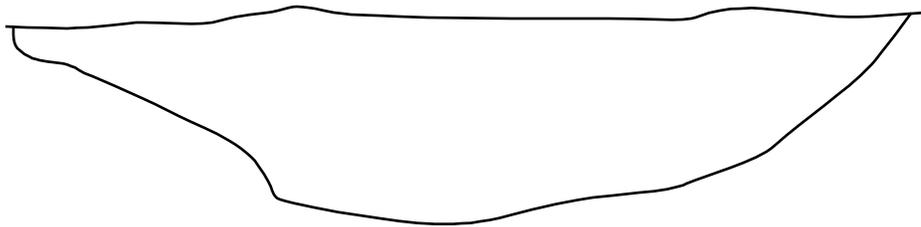
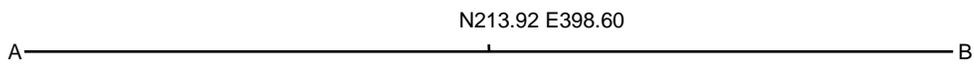
Not Dated

Description

Feature 204 was a pit identified at the base of the plow zone. The feature was irregular in plan view. The long-axis profile of the feature exhibited gradually sloping sides and a rounded base, whereas, the short-axis profile showed steep sides with a flat base. Feature fill contained charcoal flecking and was darker in color than the surrounding sub-plow zone soil. Artifact density was consistent throughout the feature fill.



Profile:



0 25 50 cm

Feature 204

Dimensional Attributes of the Pit Features

As described above, the site contained two general feature types: round, flat bottomed pit features with similar morphology and contents; and irregular pit features differing in form and, to a lesser degree, in contents. All of the features exhibited low artifact densities at a mean of 0.09 artifacts per liter. Tables 6-5 and 6-6 summarize the dimensional attributes for both feature types. Feature volume was calculated using a formula ($v = 4/3\pi(a/2*b/2*c)/2$) that calculates one-half of an ellipsoid, where **a** is the length of the feature opening, **b** is the width, and **c** is the depth of the feature. Another statistic, the ratio depth, provided a standardized means of describing the relative depths of the features (Hatch and Stevenson 1980). The ratio depth statistic was computed as the average dimension of the feature opening divided by its depth:

$$(L+W/2)/D$$

The larger the resulting figure, the shallower the depth in relation to the size of the opening. Ratio depths below 5.0 are comparatively deep in appearance (Hatch and Stevenson 1980; Knepper and Petraglia 1993).

Table 6-5. Dimensional Attributes of Round, Flat-Bottomed Pit Features.

<i>Feature</i>	<i>Length (cm)</i>	<i>Width (cm)</i>	<i>Depth (cm)</i>	<i>Ratio Depth</i>	<i>L:W</i>	<i>Volume (l)</i>	<i>Artifact Density</i>
52	85	80	55	1.50	1.1	195.9	0.50
53	90	88	38	2.34	1.0	157.6	0.03
95	110	106	74	1.46	1.0	451.9	0.13
96	70	70	27	2.59	1.0	69.3	0.36
112	110	100	55	1.91	1.1	316.9	0.06
136	105	90	50	1.95	1.2	247.5	0.15
140	100	90	52	1.83	1.1	245.1	0.03
159	125	120	70	1.75	1.0	550.0	0.05
167	98	97	45	2.17	1.0	224.0	0.12
169	84	80	32	2.56	1.1	112.6	0.10
170	110	100	60	1.75	1.1	345.7	0.08
171	89	89	59	1.51	1.0	244.8	0.03
191	110	106	60	1.80	1.0	366.4	0.25

The round, flat-bottomed features were classified by having an opening plan length within 10 cm of the width, as shown by the length:width ratios in the tables above - a ratio of 1.0 depicts a circular opening, with length and width nearly equal, while a ratio of 2.0 describes an ellipse that is twice as long as it is wide. The maximum opening dimension of the round, flat-bottomed features ranged from 70-to-125 cm and depth ranged from 27-to-74 cm with a mean depth of 52 cm. The round, flat-bottomed features were further distinguished from the group of irregular features as having straight to steeply sloping sides, and higher artifact density (mean of 0.15 vs. 0.05 artifacts per liter). Volume ranged from 69 to 550 liters with a mean volume of 271 liters.

Table 6-6. Dimensional Attributes of the Irregular Pit Features.

<i>Feature</i>	<i>Length (cm)</i>	<i>Width (cm)</i>	<i>Depth (cm)</i>	<i>Ratio Depth</i>	<i>L:W</i>	<i>Volume (l)</i>	<i>Artifact Density</i>
30	210	95	49	3.11	2.2	512.0	0.05
39	138	100	44	2.70	1.4	318.0	0.01
145	145	110	30	4.25	1.3	250.6	0.01
150	280	200	44	5.45	1.4	1,290.6	0.00
156	260	120	22	8.64	2.2	359.5	0.02
158	160	78	35	3.40	2.1	228.8	0.06
162	160	90	42	2.98	1.8	316.8	0.03
165	180	150	40	4.13	1.2	565.7	0.09
179	408	156	60	4.70	2.6	2,000.3	0.10
188	210	78	40	3.60	2.7	343.2	0.03
192	130	80	43	2.44	1.6	234.2	0.12
193	125	102	34	3.34	1.2	227.0	0.10
204	240	100	60	2.83	2.4	754.2	0.03

The irregular pit feature classification served as a catch-all since these features varied in form and had less in common with each other than did the group of round, flat-bottomed features. Opening plan lengths ranged from 125 cm to over 400 cm. This size difference was also expressed in the feature volumes which ranged from 227-to-2,000 liters. Depths were fairly shallow and ranged from 22-to-60 cm with an average of 41 cm. Profile shapes also varied, with steep to gradually sloping sides and irregular undulating to bowl-shaped bases. With the exception of Feature 179, which contained mostly jasper flaking debris (n=204), artifact counts were, low ranging from 2-to-49 artifacts, and had little correlation to feature volume.

6.2.2 Artifacts

In total, 1,785 prehistoric artifacts were recovered during the site evaluation and data recovery investigations at the site (Table 6-7). Most of the artifacts were recovered from two general contexts: the plow zone (shovel tests, test units, and surface collection) and the plow-truncated pit features described above. In addition, a small number of prehistoric artifacts were recovered from either historical features or natural subsurface disturbances. A complete artifact inventory is included in Appendix D.

Table 6-7. Prehistoric Artifact Frequency by Site Context.

<i>Artifact Type</i>	<i>Plow Zone</i>	<i>Features</i>	<i>Disturb.</i>
Flaking Debris	58%	69%	73%
Thermally Altered Stone	39%	17%	23%
Ceramic	--	12%	--
Cobble Tool	1%	1%	2%
Point	1%	--	2%
Biface	1%	--	1%
total artifact count	825	840	120

The following artifact descriptions and discussion will deal primarily with artifacts from the pit features since they were the most secure and discrete contexts within the site in terms of chronology and a lack of modern disturbances. Overall comparison of the plow zone and feature deposits, as presented in Table 6-7, shows the two samples to be fairly proportional in terms of artifact types, with a few noteworthy exceptions. All of the points, consisting of heavily reworked and damaged specimens in a variety of forms (e.g. contracting-stemmed, side/corner notched, unstemmed), were recovered from the plow zone, suggesting a mixed context for the deposits as a whole. In contrast, all of the ceramic fragments, conforming to descriptions of Early Woodland wares, were recovered from feature contexts. With respect to other stone tools, the plow zone sample had a higher frequency of early and late stage bifaces while the round, flat-bottomed pit features contained a larger number of cobble tools (e.g., hammerstones). Thermally altered stone also was more frequent by count in the plow zone, but the stones were smaller and more fragmented (mean weight of 48 g) than those within the features (mean weight of 278 g). A single fragment of steatite also was recovered from the plow zone in a test unit located approximately 50 m from the cluster of round, flat-bottomed pits. The specimen was slightly curved suggesting that it had been part of a vessel rim.

Tables 6-8 and 6-9 list artifact types recovered from the pit features by type. Flaking debris, consisting of flakes, chips, and cores, was the most frequent artifact type within both feature categories followed by thermally altered stone. Overall, the variety of artifacts was greater within the round, flat-bottomed pits which, as noted, also contained numerous ceramic vessel fragments and groundstone tools.

Table 6-8. Artifacts Recovered from the Round, Flat-Bottomed Pit Features.

<i>Artifact Type</i>	<i>Feature</i>													<i>Total</i>
	<i>52</i>	<i>53</i>	<i>95</i>	<i>96</i>	<i>112</i>	<i>136</i>	<i>140</i>	<i>159</i>	<i>167</i>	<i>169</i>	<i>170</i>	<i>171</i>	<i>191</i>	
Flake	14	1	35	1	6	4	2	13	19	3	15	5	85	203
Thermally Altered Stone	6	2	16	3	7	26	5	8	7	7	10	2	3	102
Ceramic	73	--	9	19	--	--	--	--	--	--	1	--	--	102
Chip	2	2	1	1	3	1	--	3	1	1		1	1	17
Hammerstone	1	--	--	--	--	3	--	--	--	--	2	--	--	6
Abrader	--	--	--	1	1	1	--	--	--	--	--	--	--	3
Core	--	--	--	--	--	1	--	--	--	--	--	--	2	3
Potlid	--	--	--	--	2	--	--	--	--	--	1	--	--	3
Anvil	--	--	--	--	--	--	--	1	--	--	--	--	--	1
Biface	1	--	--	--	--	--	--	--	--	--	--	--	--	1
Total	97	5	61	25	19	36	7	25	27	11	29	8	91	441

Table 6-9. Artifacts Recovered from the Irregular Pit Features.

<i>Artifact Type</i>	<i>Feature</i>													<i>Total</i>
	<i>30</i>	<i>39</i>	<i>145</i>	<i>150</i>	<i>156</i>	<i>158</i>	<i>162</i>	<i>165</i>	<i>179</i>	<i>188</i>	<i>192</i>	<i>193</i>	<i>204</i>	
Flake	21	2	1	2	3	12	6	43	184	11	19	23	17	344
Thermally Altered Stone	2	--	1	--	2	2	1	2	15	--	5	--	1	31
Chip	1	--	--	1	--	--	1	4	3	--	3	--	1	14
Potlid	--	2	--	1	--	--	--	--	1	--	--	--	1	5
Core	--	--	--	--	--	--	--	--	--	--	--	--	2	2
Hammerstone	--	--	--	1	--	--	--	--	--	--	--	--	--	1
Biface	--	--	--	--	--	--	--	--	1	--	--	--	--	1
Ceramic	--	--	--	--	1	--	--	--	--	--	--	--	--	1
Total	24	4	2	5	6	14	8	49	204	11	27	23	22	399

Points

The point sample was small (n=14), and the individual points were in poor condition. Several of the specimens showed tip and base breaks and others exhibited asymmetrical blades suggesting alteration from damage, use, or reworking. None of the points could be confidently placed within traditional typologies and were therefore grouped by their basic morphological design (Table 6-10). The whole or nearly whole points fell into three categories: corner/side-notched (n=5), contracting-stemmed (n=5), and unstemmed (n=2) (Figure 6-5). All of the points were recovered from either the plow zone or disturbances, such as tree molds or plow scars, and none could be associated with non-diagnostic artifacts within those contexts nor could they be associated with the temporal component represented by the round, flat-bottomed pit features. The points are summarized here and full descriptions including an image of each point are presented in Appendix G.

Table 6-10. Recovered Points by Morphology, Lithic Material, and Site Context.

<i>Morphological Type</i>	<i>Material</i>	<i>Location</i>	<i>Context</i>	<i>Artifact #</i>
contracting-stemmed	jasper	N120/E460	plow zone	30-2
	argillite	N108/E380	plow zone	189-20
	rhyolite	N191/E465	plow zone	227-1
	quartzite	N213/E404	plow zone	382-10
	chalcedony	N217.3/E451.95	natural disturbance	651-1
corner/side-notched	chert	N110/E440	plow zone	25-1
	argillite	N200/E390	plow zone	86-4
	jasper	N250/E380	plow zone	117-2
	jasper	N252/E385	plow zone	256-3
	jasper	N190/E475	plow zone	460-1
triangular	jasper	N190/E405	plow zone	224-7
	jasper	N215/E490	plow zone	248-5
distal fragment	jasper	N180/E470	plow zone	79-1
	quartz	N108/E380	historical feature	273-1

The corner/side-notched points were small ranging between 23 and 27 mm in length. As a group, they shared the hafting element feature by which the category is named, formed by relatively wide and shallow notches emanating from the blade edges and typically resulting in distinct shoulders. Lithic materials among this group included mostly jasper, with single specimens of argillite and chert.

The contracting -stemmed group consisted of a series of both narrow and wide bladed points that shared a characteristic stem shape, wide at the neck and contracting to a rounded or straight base. Blades were typically isosceles triangles, with straight to convex edges. A variety of lithic materials were represented in this group including argillite, rhyolite, jasper, chalcedony, and quartzite.

The unstemmed category consisted of points where the blade and base met without producing a formal stem, and the hafting element consisted of the base and the lower portion of the blade. The smaller of the two specimens (19 mm in length) had convex blade edges and base. Its small size may indicate reworking or heavy use. The second point appeared triangular although the asymmetrical blade form suggested reworking of a larger point. The base was concave with prominent basal tangs. Both were made from jasper.

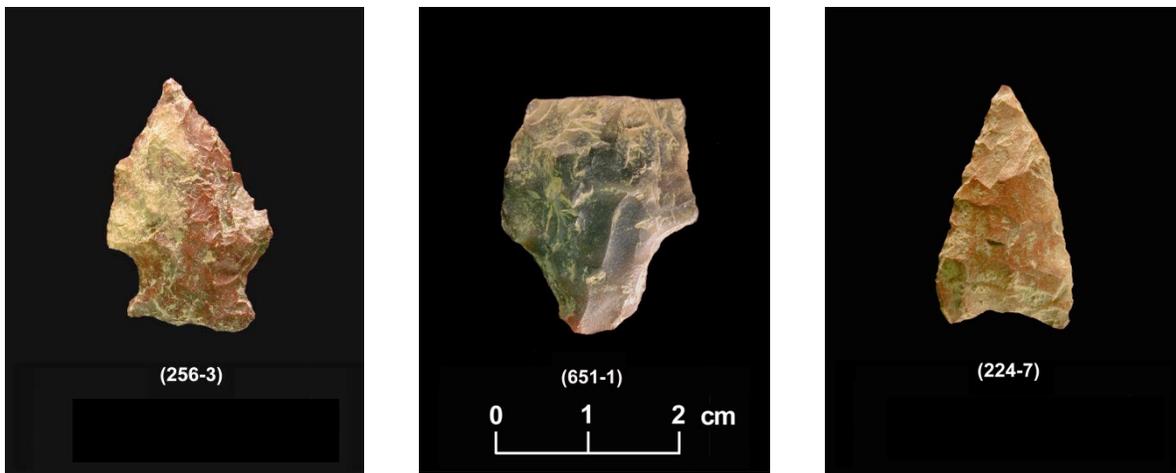


Figure 6-5. Representative Points Recovered from the Blackbird Creek Site.
[left to right: side-notched, contracting-stem, unstemmed]

Ceramics

In total, 103 ceramic fragments or sherds were recovered from the Blackbird Creek site. Ninety percent (n=93) of the sherds were typed as Early Woodland Dames Quarter ware (Wise 1975, Artusy 1976). Two sherds were typed as Marcey Creek ware (Manson 1948, Custer et al. 1986), also of the Early Woodland period. Although the pastes of the Dames Quarter and the Marcey Creek sherds appeared similar, the two wares were easily distinguished macroscopically, with the Marcey Creek sherds containing grey steatite fragments and the Dames Quarter sherds containing black and white crushed stone fragments (Figure 6-6). Eight sherds from the site were untyped because they were small crumbs of ceramic paste without obvious temper. These did not appear to represent another ware, but likely were spalls from either Dames Quarter or Marcey Creek vessels.

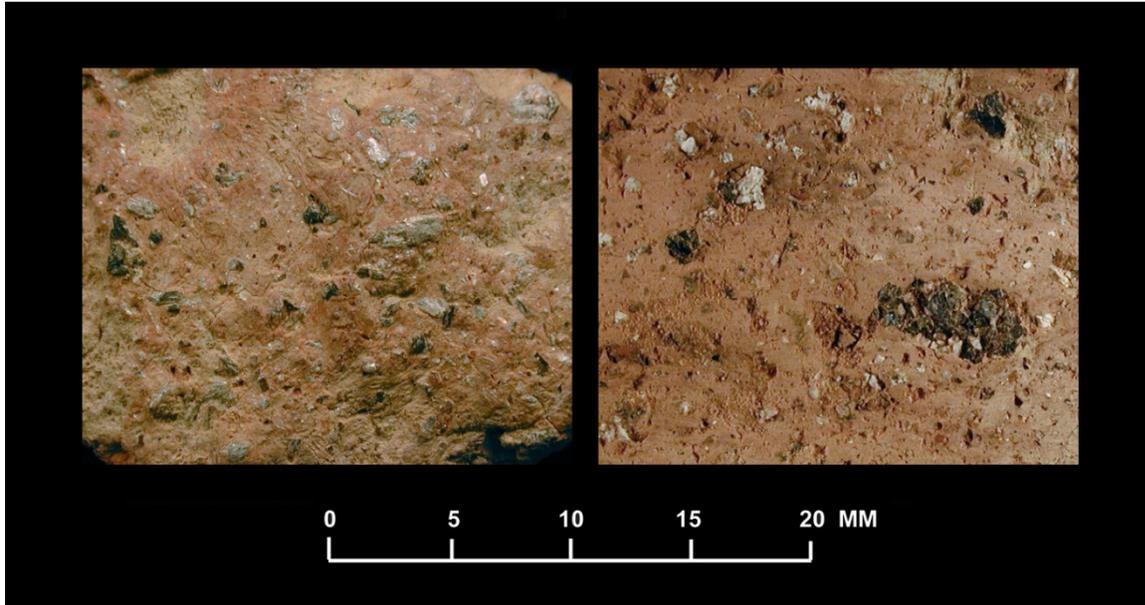


Figure 6-6. Macroscopic View of the Sherd Surfaces.
 [Left, Marcey Creek 336-1; Right, Dames Quarter 409-3]

All of the ceramic sherds were recovered from feature contexts, primarily from the round, flat-bottomed features (Table 6-11) that had been exposed by Trench 11 on the terrace in the western portion of the site. They were concentrated most heavily in Feature 52 which contained 71 percent (n=73) of the ceramics found at the site, and in the adjacent Feature 96 which contained 18 percent (n=19) of the ceramics found at the site.

Table 6-11. Ceramic Counts by Ware and Provenience

Ceramic Ware	Provenience	Feature Shape	Count
Dames Quarter	Feature 52	Round, Flat-Bottomed	70
	Feature 95	Round, Flat-Bottomed	2
	Feature 96	Round, Flat-Bottomed	19
	Feature 156	Irregular	1
	Feature 170	Round, Flat-Bottomed	1
Marcey Creek	Feature 95	Round, Flat-Bottomed	2
Untyped	Feature 52	Round, Flat-Bottomed	3
	Feature 95	Round, Flat-Bottomed	5
Total			103

Ceramic mends were recorded between levels and the mends are listed individually below with the ware descriptions. No ceramic mends were found between features. For the two features containing the most sherds, Features 52 and 96, the highest concentration of ceramics by count and weight occurred in the uppermost level of the features. Forty-seven percent (n=34) of the 73 sherds from Feature 52 were in Stratum I-1, and eighty-four percent (n=16) of the 19 sherds from Feature 96 were in Stratum I-1. The remaining features had less than ten sherds each and the sherds were found at various depths.

Marcey Creek Ceramic Sherds. Two sherds, both from Feature 95, were typed as Marcey Creek ware based on the steatite temper and the smooth surface treatment (Figure 6-7). They were found in association with two Dames Quarter sherds and five untyped sherd spalls. The Marcey Creek ware name was used loosely, as the sample size was small and the other diagnostic feature of the ware, the flat-based form, was not evident since no base sherds were recovered.



Figure 6-7. Marcey Creek Sherds.

Surface Treatment: The interior and exterior sherd surfaces appeared smooth.

Temper/Inclusions: The sherds were steatite tempered. One of the two sherds (338-1) was thin-sectioned. The petrographic thin section analysis indicated that the sherd body was comprised of 21 percent steatite temper by volume and the mean temper size index was 2.8 mm, in the range of coarse sand. The sherd had relatively few natural inclusions. The full petrographic description of the thin section is found in Section 7.2.1 and Appendix H.

Form: Form was not determined based on the sample of two body sherds. Sherd thickness was 10 mm.

Color: The color of the sherds ranged from 5YR6/8 reddish yellow to 5YR5/6 yellowish red. Occasional iron-rich, red (2.5YR4/8) specks were visible in the paste. No color variation was noted between the core and the interior and exterior surfaces.

Mends: The two sherds from adjacent levels in Feature 95 (II-2 and II-3) mended and were recorded as Group J.

Use/Damage: One of the sherds (338-1) was spalled on a portion of the exterior surface.

Dames Quarter Ceramic Sherds. Ninety-three sherds were typed as Dames Quarter ware based on the flat-bottomed vessel form and the dark stone temper (Figure 6-8). The sherds were recovered from five features (Features 52, 95, 96, 156, and 170), but were especially concentrated in Feature 52, which contained 70 of the sherds, and Feature 96, which contained 19 of the sherds. Dames Quarter was the only identified ware found in Features 52, 96, 156, and 170, and Dames Quarter sherds were found with two Marcey Creek sherds in Feature 95 (see Table 6-10). The Dames Quarter sherds from all of the features appeared relatively uniform. They could have been part of a single vessel or, more likely based on their distribution, a few vessels that had been made and used at the same time. The irregular breakage pattern and absence of coil breaks indicated that the vessel(s) had been manufactured using a slab and modeling technique.



Figure 6-8. Dames Quarter Sherds.

[rim sherds are at top of image and base and heel sherds are at bottom of image]

Surface Treatment: The interior and exterior body sherd surfaces were smooth. While most of the body sherds appeared equally smoothed on the interior and exterior surfaces, the heel and base sherds were less smoothed on the exterior surfaces than on the interior surfaces. In addition, the exterior surfaces of at least four of the flat base sherds retained impressions of a

textile mat that exhibited approximately 1.7-cm-spaced parallel elements (Figure 6-9). The twist direction of the cordage was not discernible.



Figure 6-9. Exterior Surface of Dames Quarter Base Sherds Showing Textile Impressions.

Temper/Inclusions: Thin section analysis of a representative sherd of the Dames Quarter ware (artifact 409-2) indicated that the temper was metamorphic, derived from a plutonic igneous rock. The light specks were principally composed of the mineral plagioclase, and the black specks were hornblende. The rock temper also contained lesser amounts of quartz. Together, the components indicated that the temper derived from an altered, intermediate igneous rock of dioritic composition, possibly quartz diorite. The volume of temper was 36 percent and the mean temper size was 3.25 mm (Section 7.2.1 and Appendix H).

Form: The lip sherds, those from the edge of the vessel opening, were smoothed flat with gentle indentations in some areas (Figure 6-10). Lip width ranged from 8-to-10 mm. One mended rim segment measured 11.4 cm in height, providing a minimum vessel wall height. For that mended rim, the thickness was 10 mm at the lip, 9 mm at 1 cm below the lip, 9 mm at 3cm below the lip, and 8 mm at 10 cm below the lip, indicating that the lip was slightly thicker than the lower portion of the wall. All rims sherds were straight, and the angles of the flat lip surfaces to the vessel walls suggested that the upper portion of the walls were very slightly outleaning. Body sherds ranged from 7-to-10 mm thick.



Figure 6-10. Dames Quarter Vessel Rim Sherd Showing Flattened Lip.
[Artifact# 416-1]

Seven heel fragments were recovered. The heels had been formed when the body segments were pushed down and then feathered over the flat base. This created a sloping surface from the base to the vessel wall, and was the thickest portion of the vessel, up to 16mm. The pressure also pushed out some clay creating a slight bulge at the heel (Figure 6-11). The angle of the wall of the vessel to the base on the most intact heel sherd (artifact 367-1) was 107 degrees, indicating that the vessel wall was outleaning 17 degrees. In addition, a mended heel segment included a corner that demonstrated that the vessel was not round but more likely a quadrangle form, a form also common for steatite and Marcey Creek vessels. The flat base sherds ranged from 8-10 mm thick.

Exterior Color: Walls: light brown to orange/red to gray, 7.5YR6/6 reddish yellow, to 5YR6/8 reddish yellow, to 5YR4/2 dark reddish gray. Base: orange/red, 5YR6/8 reddish yellow to 5YR5/8 yellowish red.

Interior Color: Walls: pink/brown to gray, 7.5YR6/3 light brown to 7.5YR4/1 dark gray. Base: dark gray to black, 7.5YR4/1 dark gray to 7.5YR2.5/1 black. Core: light brown, 7.5YR6/6 reddish yellow, or gray interior 7.5YR4/1 dark gray with a thin layer of light brown on the interior and exterior surfaces. Base: red/orange, 5YR 6/8 reddish yellow on the exterior blending to dark gray or black, 7.5YR4/1 dark gray to 7.5YR2.5/1 black on the interior.

Mends: Nine groups of mends were recorded for two features containing Dames Quarter sherds. The individual mends are listed below.

Feature 52 Ceramic Mends:

Group A: 8 sherds: 6 Stratum I-1, 2 Stratum II-1

Group B: 9 sherds: all Stratum I-1

Group D: 3 sherds: 1 Stratum II-3, 2 Stratum II-4

Group E: 2 sherds: both Stratum I-1

Group F: 3 sherds, 2 Stratum I-2, 1 Stratum II-2

Group G: 2 sherds, both Stratum I-1

Group H: 2 sherds, 1 Stratum I-1, 1 Stratum I-2

Group I: 2 sherds, both Stratum I-1

Feature 96 Ceramic Mends:

Group C, 8 sherds, 7 Stratum I-1, 1 Stratum I-2



Figure 6-11. Dames Quarter Ceramic Vessel, Heel Portion, Feature 52.

[top view shows exterior surface, bottom view shows interior surface of same sherds]

Use/Damage: The heel was a point of weakness, as breaks were common at the juncture of the vessel wall to the base. The base sherds were reddened on the exterior (see Figure 6-9) and

darkened on the interior. These extreme differences did not extend to the upper body, where the sherds interior and exterior surfaces were more equally colored. At least two types of residues were present (Figure 6-12). One was a rust-colored substance that was found over different sherds, including along vessel breaks, and appeared to be a postdepositional mineral deposit. The second was a black residue found in greatest amount on the interior surface of three of the flat base sherds. A small amount of black residue also was found on the interior of one of the rim sherds. The residue was scraped from the four sherds before handling and was stored in foil. The samples were very small and were not analyzed as part of the current study, but have been curated for future analysis. The base sherds' reddened exterior and blackened interior with residues suggested that the vessel(s) had been used over high heat.

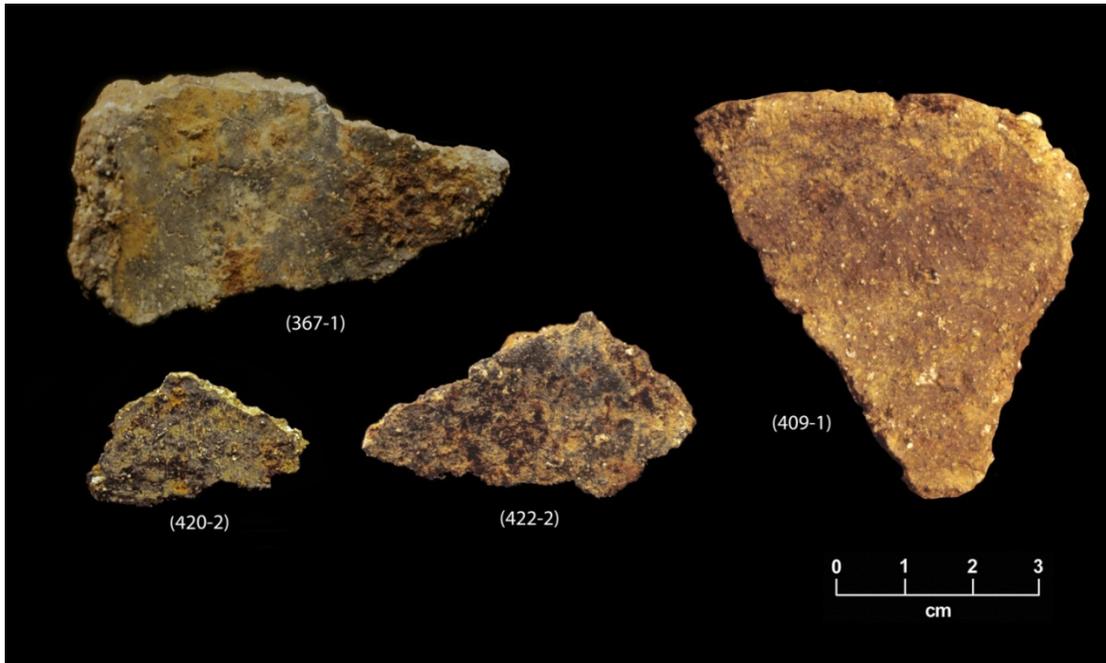


Figure 6-12. Dames Quarter Sherds with Interior Surface Residues.

Other Chipped Stone Tools and Flaking Debris

Bifaces. Two bifaces were recovered from feature contexts at the site. One was a quartzite early stage biface (421-1) from a round, flat-bottomed pit (Feature 52), found in association with Dames Quarter ceramics. This specimen had cortex on both faces and exhibited rounding on one beveled edge as a result of grinding related platform preparation. The second specimen was a jasper late stage biface from Feature 179, one of the large irregular pits containing a relatively large amount of jasper flaking debris (n=128). This artifact also retained some cobble cortex and exhibited potlid fractures suggesting either incidental heating or that it had been heat altered in order to improve the material's knapping qualities.

Flaking Debris. In total, 223 flakes (n=203), chips (n=17), and cores (n=3) were recovered from the round, flat-bottomed features. All of the features contained some flaking debris with the most (n=88) recovered from Feature 191 and the least (n=2) from Feature 96. A wide variety of lithic materials was present; however jasper, quartz, and chert were the most frequent comprising

93 percent of the debris (Figure 6-13). Analysis of the sizes of the flakes and chips showed that the majority of the debris fell within size-grade 2 or the 1-to-2 cm range (Figure 6-14). Overall cortex frequency among the flaking debris was 32 percent with the highest frequency occurring within size grade 2. The occurrence of cortex-bearing flaking debris among all size grades suggested the use of small cobbles and pebbles as a source material for the production of stone tools. Recently, as part of the Sandom Branch site complex (7NC-J227/228) site investigations, the chipped stone artifact assemblage was compared to a sample of locally available gravels from the Sandom Branch and Blackbird Creek watersheds. The study found that clasts of the materials most selected for by American Indian knappers was present in the local gravel deposits in sufficient numbers and sizes to be a significant lithic source (Versar 2011a). The study also posited that lithic assemblages with high frequencies of small-sized cortical flakes and tested pebbles and bifaces and points with remnant cortex were evidence for the use of local gravels.

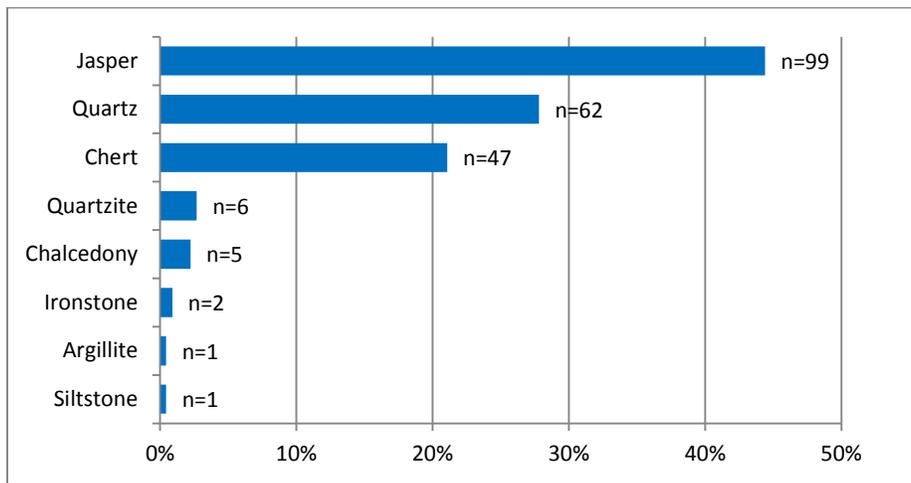


Figure 6-13. Flaking Debris Lithic Material Distribution within the Round Flat-Bottomed Pit Features.

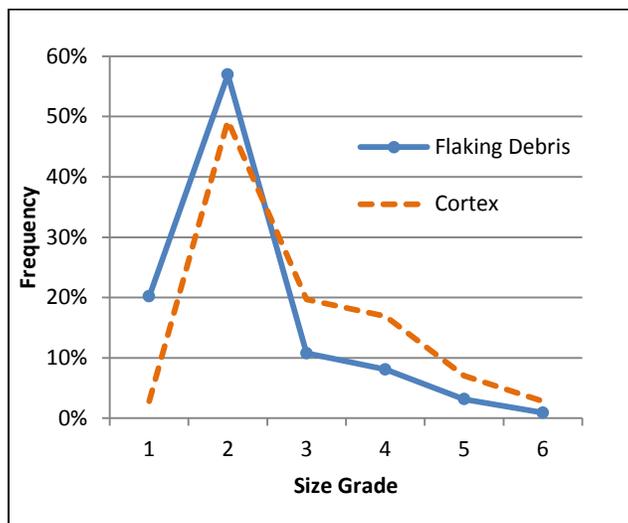


Figure 6-14. Size Grade Distribution of Flaking Debris and Cortex Frequency by Size Grade within the Round, Flat-Bottomed Pit Features.

Flaking debris recovered from the group of irregular pit features (n=360) also contained a variety of lithic materials with jasper, quartz, and chert accounting for 92 percent of the debris. A high frequency of small flakes (size grade 2) with cortex and an overall cortex frequency of 24 percent suggests that this debris also was derived from locally available gravel sources.

Four larger flakes (size-grades 4-6) from three of the irregular features (30, 158, and 179) and one round, flat-bottomed feature (Feature 159) exhibited evidence of retouch or use wear suggesting that they were utilized as expedient tools, possibly for cutting or scraping (Table 6-12). Usewear was indicated by the presence of various types of edge degradation or modification, such as microflake removal and rounding.

Table 6-12. Flake Tools Recovered from Features.

<i>Context</i>	<i>Artifact</i>	<i>Flake Type</i>	<i>Material</i>	<i>Comments</i>
F-30	583-1	utilized	jasper	bifacial microflaking
F-158	553-1	retouched	quartzite	unifacial flaking, rounding
F-159	529-1	utilized	chert	unifacial microflaking
F-179	656-1	retouched	jasper	unifacial flaking

Cobble Tools

A number of cobble tools, also referred to as groundstone or pecked stone tools, were recovered from seven pit features (Table 6-13). These tools typically consisted of unmodified, rounded cobbles procured locally from stream beds or other exposed gravel deposits. In the current analysis, three functional categories were recognized: hammerstones, abraders, and anvils. Wear on the cobble tools typically consisted of pecking and battering on the ends, edges, or on flat areas. Smoothed or polished surfaces were present on a several specimens. All of the recovered specimens were quartzite cobbles.

Table 6-13. Cobble Tools Recovered from Features.

<i>Context</i>	<i>Artifact</i>	<i>Primary Use</i>	<i>Secondary/Other Use</i>	<i>Comments</i>
F-52*	313-3	hammerstone	abrader	battered, pitted, abraded
F-96*	285-2	abrader	--	abraded
F-112*	446-1	abrader	--	abraded
F-136*	302-4	abrader	hammerstone	abraded , battered, fractured
	302-5	hammerstone	--	battered
	377-1	hammerstone	pestle	battered
	403-1	hammerstone	abrader	battered, abraded
F-150^	476-1	hammerstone	pestle	battered, fractured, pitted
F-159*	546-1	anvil	abrader, hammerstone	battered, abraded
F-170*	617-1	hammerstone	pestle, abrader	battered, pitted, abraded
	621-1	hammerstone	--	battered

*round, flat-bottomed pit / ^ irregular pit

The primary use wear among the cobbles classified as abraders was smoothing or polishing on multiple surfaces. One specimen exhibited battering and fractures that suggested secondary use as a hammerstone. All of the abraders were whole cobbles (Figure 6-15). The anvil was a tabular cobble that exhibited battering on one face (Figure 6-16). All of the identified

hammerstones exhibited battering on at least one edge or end. In addition, some exhibited fractures, pitted recesses, and abraded or polished surfaces suggesting additional function as an anvil, pestle, or abrader. With the exception of #476-1, which showed evidence of heat fracture, all of the specimens were considered whole cobbles (Figure 6-17).



Figure 6-15. Abraders Recovered from Features.

[left to right: #302-4, 285-2, and #364-1]



Figure 6-16. Anvil Recovered from Feature 159.

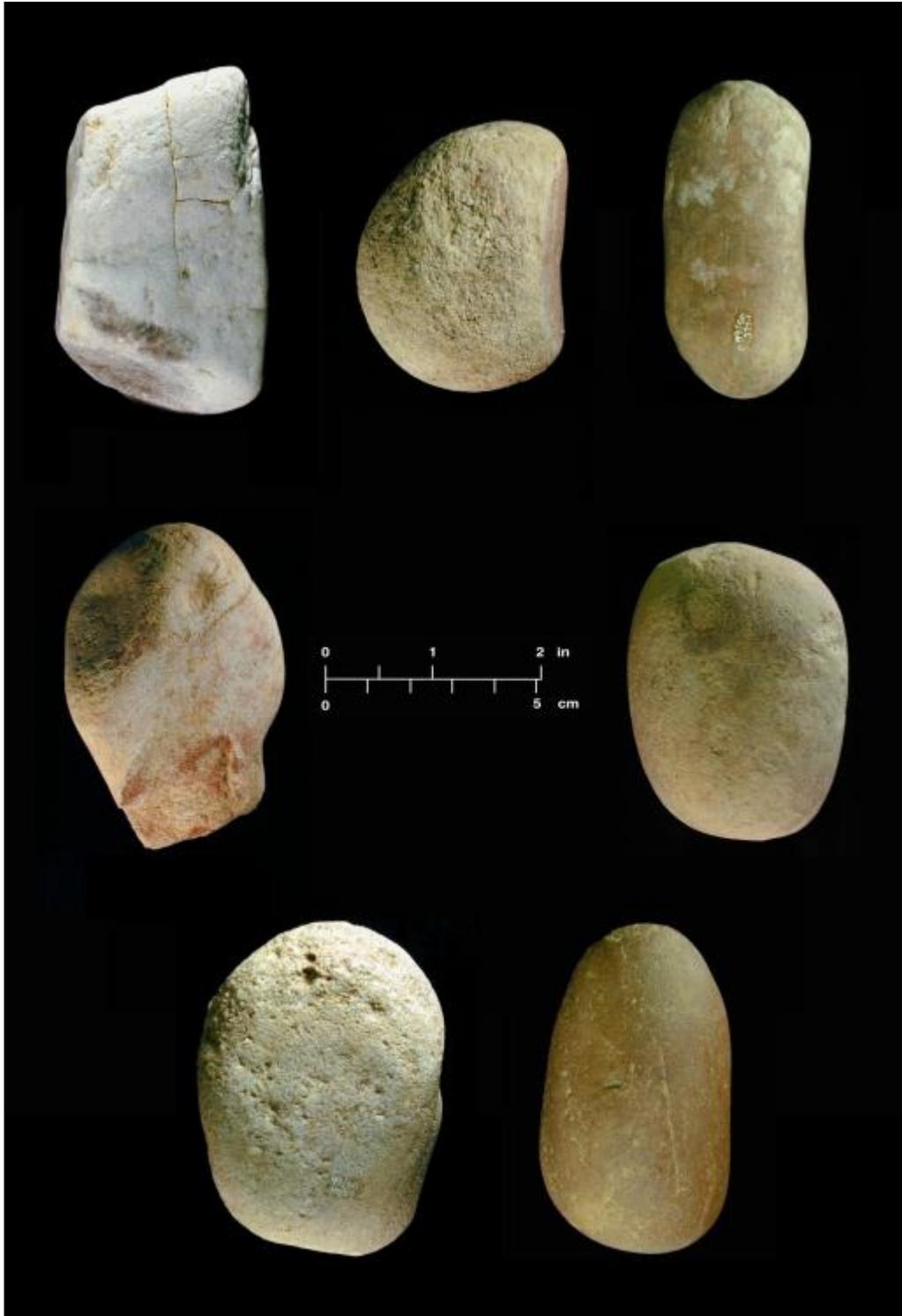


Figure 6-17. Hammerstones Recovered from Features.

[top row, left to right: #302-5, #313-3, #377-1;
middle row, left to right: #476-1, #617-1,
bottom row, left to right: #403-1, #621-1]

Thermally Altered Stone

Thermally altered stones were identified on the basis of color (blackening or reddening), fracture patterns, and surface crazing. All of the round, flat bottomed pits contained thermally altered stones consisting of whole cobbles and fragments ranging in total weight from 96 g to just over 18 kilograms (kg) per feature (Table 6-14). Sandstone was the most frequent lithic material by weight and count within the round, flat-bottomed pits followed by quartzite at about half the amount of sandstone with lesser amounts of quartz, jasper, siltstone, and chert (Figure 6-18). The sandstone and quartzite specimens were larger on average than the other materials with mean weights of 504 g and 563 g, respectively as compared to the next most frequent material, quartz with a mean weight of 131 g. Three features (95, 96, and 136) contained individual sandstone and quartzite fragments weighing between 1-to-6 kg each. Only one feature contained no sandstone or quartzite.

Table 6-14. Thermally Altered Stone Recovered from the Round, Flat-Bottomed Pits.

<i>Feature</i>	<i>Weight (g)</i>	<i>Mean Wt. (g)</i>	<i>Count</i>	<i>Sandst.</i>	<i>Qtzite</i>	<i>Quartz</i>	<i>Jasper</i>	<i>Chert</i>	<i>Siltst.</i>
52	96.3	16.1	6	50%	17%	17%	17%	--	--
53	228.6	114.3	2	50%	50%	--	--	--	--
95	3,249.1	203.1	16	69%	13%	19%	--	--	--
96	3,599.6	1,199.9	3	33%	67%	--	--	--	--
112	916.1	130.9	7	71%	14%	14%	--	--	--
136	18,573.4	714.4	26	38%	38%	23%	--	--	--
140	3,488.3	697.7	5	80%	--	20%	--	--	--
159	582.5	72.8	8	63%	13%	13%	--	13%	--
167	2,855.5	407.9	7	43%	29%	14%	14%	--	--
169	1,070.1	152.9	7	86%	14%	--	--	--	--
170	1,135.4	113.5	10	70%	10%	20%	--	--	--
171	951.8	475.9	2	--	100%	--	--	--	--
191	129.7	43.2	3	--	--	67%	--	--	33%
Total	36,876.4	361.5	102						

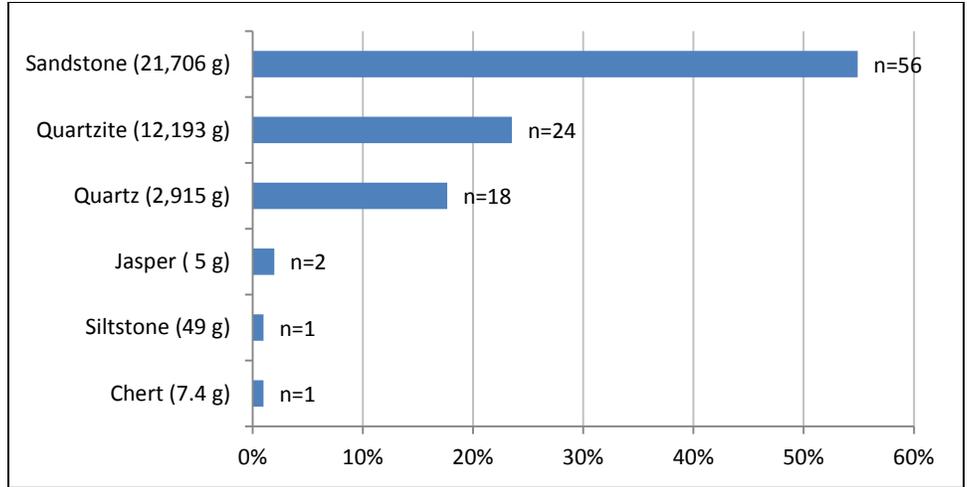


Figure 6-18. Thermally Altered Stone Lithic Material Frequency within the Round, Flat-Bottomed Pits.

Nine of the irregular pit features contained thermally altered stone (n=31) ranging in total weight per feature from 22 g to 719 g. Mean fragment weight within the features ranged from 4 g to 119 g. Quartzite was the most frequent lithic material by weight (888 g) and count (n=11) followed by sandstone, quartz, jasper, siltstone, and chert. The quartzite fragments had a mean weight of 86 g. Most of the features contained one or two fragments with Feature 179 containing the most at 15 fragments.

One small concentration of thermally altered stone, from a non-feature context, was identified on the spur landform, as indicated in Figure 3-2. This concentration was documented within five 1-x-1 m test units and occurred wholly within the plow zone (Table 6-15). Thermally altered stone frequency within the units ranged between 68 and 7 per unit. Mean fragment weight within these units ranged from 37-to-112.3 g with an overall mean of 29.7 g. Lithic materials within the concentration consisted of quartz, quartzite, siltstone, sandstone, jasper, and chert (Figure 6-19). Quartz was the most frequent lithic material by count while siltstone was most frequent by weight followed closely by quartz and quartzite. Other artifacts recovered in association with this concentration of thermally altered stone included a small amount of flaking debris (n=34), one quartz early stage biface, and an untyped side-notched point made of jasper (#256-3).

Table 6-15. Thermally Altered Stone Recovered from Test Units on Spur Landform.

<i>Unit</i>	<i>Count</i>	<i>Weight (g)</i>	<i>Mean Wt. (g)</i>
N247/E385	9	333	37.0
N250/E382	12	435.3	36.3
N250/E385	68	1,260.9	18.5
N252/E385	10	327.8	32.8
N252/E388	7	786.3	112.3
Total	106	3,143.3	29.7

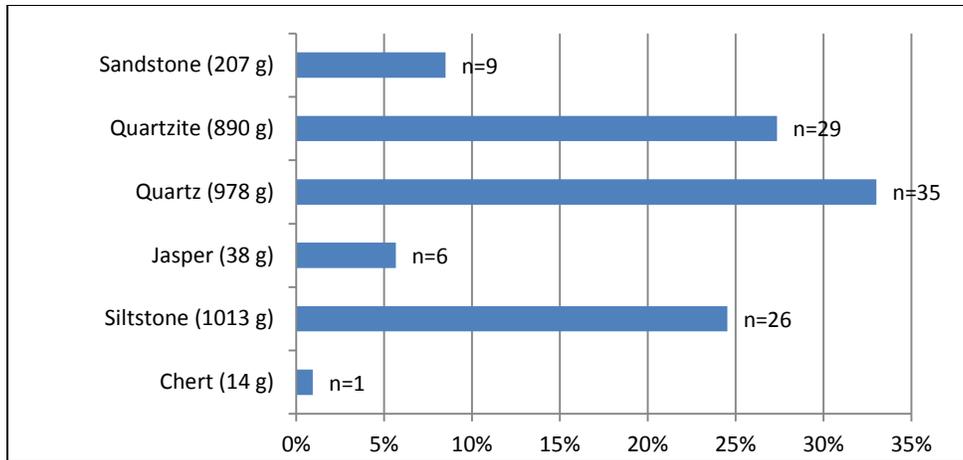


Figure 6-19. Thermally Altered Stone Lithic Material Frequency within the Spur Landform Concentration.

6.2.3 Archaeobotanical Remains

Bulk sediment samples were submitted for 10 of the round, flat-bottomed pit features. Wood charcoal was present in all of the samples analyzed from Features 52, 95, 96, 112, 136 140, 159, 167, 170, and 191. In total, 353 carbonized wood fragments weighing 3.81 g were recovered. Of these, 161 fragments (a maximum of 20 fragments per sample) were randomly selected for identification (Figure 6-20). Identified taxa included white oak species (*Quercus sp. LEUCOBALANUS group*), maple (*Acer sp.*), hickory (*Carya sp.*), unspecified oak (*Quercus sp.*), red oak species (*Quercus sp. ERYTHROBALANUS group*), tulip poplar (*Liriodendron tulipifera*), beech (*Fagus grandifolia*), walnut family (*JUGLANDACEAE*), black walnut (*Juglans nigra*) and American chestnut (*Castanea dentata*). Wood fragments not minimally identifiable to the family level (n=77 fragments) were classified as ‘deciduous taxa’, ‘ring porous’, ‘diffuse porous’, and ‘unidentifiable’.

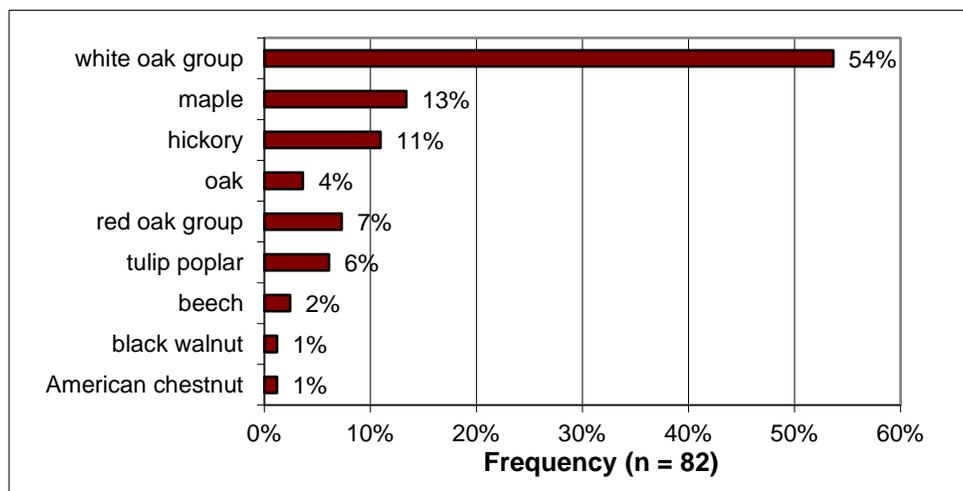


Figure 6-20. Identifiable Wood Charcoal Recovered from the Round, Flat-Bottomed Pit Features.

Nutshell remains were recovered from four of the 10 samples analyzed from the round, flat-bottomed pits (Features 52, 112, 167, 170). In total, 13 fragments of nutshell weighing 0.05 g were recovered. Two species of native mast were identified: beech (*Fagus grandifolia*) and acorn (*Quercus sp.*). Beech nutshell accounted for 12 of the 13 fragments.

Two bulk sediment samples from the group of irregular pit features (Features 39 and 145) were submitted for analysis. Identified taxa included 7 wood fragments of unspecified oak (*Quercus sp.*) and hickory (*Carya sp.*) along with 26 fragments unidentifiable to the family level fell into the 'deciduous taxa' and 'ring porous', or 'unidentified categories. A single hickory nutshell fragment was recovered from Feature 45. Non-carbonized seed remains recovered from these two features (n=41) included carpetweed (*Mollugo verticillata*), goose grass (*Eleusine indica*), chickweed (*Stellaria media*), sedge (*Carex sp.*), pigweed (*Amaranthus sp.*), three-seeded mercury (*Acalypha sp.*), and members of the pigweed (AMARANTHACEAE) family. The complete archaeobotanical report is provided in Appendix F.

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