

DOLORS ARCHAEOLOGICAL PROGRAM TECHNICAL REPORTS

REPORT NO.: DAP-005

Excavations at Sagehill Hamlet (Site 5MT2198),  
a Basketmaker III/Pueblo I habitation site.

by

Nancy J. Hewitt

Prepared for  
Cultural Resources Mitigation Program: Dolores Project  
Bureau of Reclamation, Upper Colorado Region  
Contract No. 8-07-40-S0562

Under the supervision of  
David A. Breternitz, Senior Principal Investigator

Final Submission  
30 September 1981



## TABLE OF CONTENTS

	PAGE NUMBER
ABSTRACT. . . . .	1
INTRODUCTION. . . . .	2
ENVIRONMENTAL SETTING . . . . .	6
SOCIAL SETTING. . . . .	11
EXCAVATION METHODS AND OBJECTIVES . . . . .	13
CULTURAL UNITS. . . . .	20
Pithouse 1 . . . . .	20
Use Area 1 . . . . .	48
Use Area 2 . . . . .	52
Other Structural Remains . . . . .	59
DATING SAMPLES. . . . .	62
PORTABLE ARTIFACTS. . . . .	63
Lithics. . . . .	63
Ceramics . . . . .	72
Vegetal Remains. . . . .	83
Bone . . . . .	85
PRELIMINARY INTERPRETATIONS . . . . .	88
Chronology . . . . .	88
21 Economic Activity <sup>ies</sup> . . . . .	88
Paleodemography. . . . .	89
Social Activities. . . . .	91
Trade. . . . .	93
25 Cultural Processes <sup>e</sup> . . . . .	93
CONCLUSIONS . . . . .	94
APPENDICES	
APPENDIX 1 - POLLEN . . . . .	95
APPENDIX 2 - ARCHAEOLOGICAL . . . . .	100
APPENDIX 3 - LITHICS. . . . .	109
APPENDIX 4 - CERAMICS . . . . .	120
REFERENCES. . . . .	129



LIST OF TABLES

Format P  
(not consistent)

	PAGE NUMBER
✓ Table 5.1. <i>e</i> Point Location Artifacts, Pithouse 1, Site 5MT2198. . . . .	21
✓ Table 5.2. <i>e</i> Site 5MT2198, Use Area 1, Point Location Artifacts .	52
✓ Table 5.3. <i>e</i> Site 5MT2198, Use Area 2, Point Location Artifacts .	59
✓ Table 5.4. <i>e</i> Tree-ring Dates from Site 5MT2198. . . . .	62
✓ Table 5.5. <i>e</i> Site 5MT2198, Vegetal Remains. . . . .	84
✓ Table 5.6. <i>e</i> Site 5MT2198, Population Estimates Based on Habitation Area. . . . .	90
✓ Table 5.7. <i>e</i> Provenience of Pollen Samples from Site 5MT2198. . .	97
✓ Table 5.8. <i>e</i> Archaeomagnetic Results from Site 5MT2198. . . . .	103
✓ Table 5.9. <i>e</i> Lithic Analysis Data Summary for Site 5MT2198, Nonflaked Lithic Tools . . . . .	111
✓ Table 5.10. <i>e</i> Lithic Analysis Data Summary for Site 5MT2198, Flaked Lithic Debitage . . . . .	113
✓ Table 5.11. <i>e</i> Lithic Analysis Data Summary for Site 5MT2198, Flaked Lithic Tools. . . . .	115
✓ Table 5.12. <i>e</i> Summary of Descriptive Frequencies of Ceramics at Site 5MT2198. . . . .	122
✓ Table 5.13. <i>e</i> Site 5MT2198, Ceramic Data from Selected Proveniences . . . . .	123

✓ appears in text

ABSTRACT

Sagehill Hamlet (Site 5MT2198), a small Anasazi habitation located approximately <sup>8 km</sup> 5 miles northwest of Dolores, Colorado, was excavated during the summer of 1978 as part of the Dolores Project Cultural Resources Mitigation Program. Field operations were conducted during the months of August and September; a University of Colorado crew excavated and recorded a small pithouse and associated surface features. Site 5MT2198 was probably the domicile and home base of a single household group practicing limited agriculture and foraging in the Escalante Sector. Because of the scant nature of the material collection and the lack of any major architectural remodeling, it is assumed that the site was inhabited for a relatively short time span. While Site 5MT2198 is clearly associated with the Sagehen Phase (AD 600-850), more precise dating of the site is problematic: tree-ring dates indicate that pithouse construction probably occurred during the last half of the seventh century AD, while ceramic analysis suggests that the occupation occurred during the eighth century, terminating by AD 775.

✓  
✓  
✓

## INTRODUCTION

Sagehill Hamlet is a small habitation situated on a low prominence north of the Sagehen Flats marsh (Figure 5.1). In the systems of spatial and temporal units employed by Dolores Archaeological Program (D.A.P.) archaeologists (Kane [1]), the site is located in the Sagehen Flats Locality, Escalante Sector and incorporates one component of the Sagehen Phase (AD 600-850). Surface indications of the site included a rather sparse concentration of ceramic fragments and lithic debris over the top and south slope of the small knoll or prominence. The artifact scatter at the site measures approximately 50 m NS by 45 m EW, or a surface area of 0.23 ha. Sagehill Hamlet is located in the Northwest Quarter of the Northwest Quarter of Section 35, Township 38 North, Range 16 West. The Universal Transverse Mercator grid coordinates from this location are 713,780 m E, 4,145,240 m N, Zone 12; a basic map reference to the area is the U.S.G.S. 7.5' Trimble Point Quadrangle (1965).

The original survey report (Breternitz and Martin [2]) described Site 5MT2198 as an oval area along a ridge spur containing rock rubble, shrub and flakes; no functional interpretations were included. The artifact collection from survey operations indicated a Basketmaker III and/or Pueblo I occupation. The site was re-examined during June of 1978 and was tentatively designated as a Sagehen Phase small hamlet; it was later selected for excavation as one unit of a sample designed to yield data on Sagehen Phase communities in the Sagehen Flats Locality.

Investigations at Sagehill Hamlet were supervised by Nancy J. Hewitt, University of Colorado archaeologist; the excavations were conducted by one ~~C.U.~~ <sup>University of Colorado</sup> field crew during the period 1 August - 10 October 1979.

Figure 5.1. *e* Topographic plan of Site 5MT2198.  
Contours and major cultural features  
are illustrated.

# 5MT2198 TOPOGRAPHIC MAP

25 cm CONTOUR INTERVALS

0 4 8 meters

2120.5m

2120.0m

2119.5m

2119.0

2118.5m

2118.0m

N

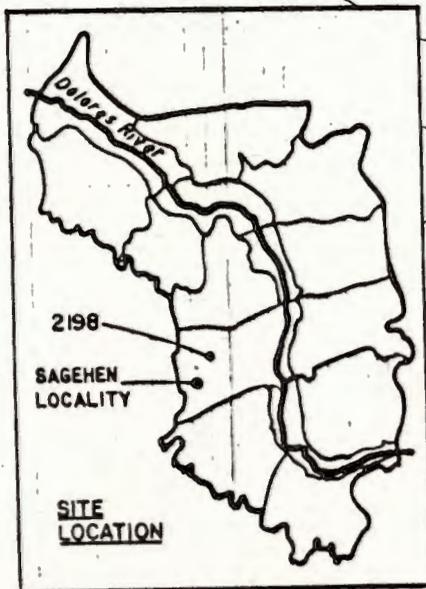


Figure 5.1. Topographic plan of Sagehill Hamlet (Site 5MT2198).

Environmental data and dating samples were recovered by environmental studies program and dating-remote sensing program personnel. A total of 234 person-days <sup>was</sup> ~~were~~ expended excavating the site, all by University of Colorado personnel.

~ = repeats info  
2 sentences before ✓

## ENVIRONMENTAL SETTING

Situated on the crest and south side of a low knoll in the west Sagehen Flats Locality, the site overlooks a small drainage basin approximately 100-150 m to the southeast. To the east and west of the knoll are narrow tributaries which empty into the basin. Although the native red loess soils on and adjacent to the site are deep and well-drained and apparently suitable for farming, perhaps the basin area would have provided better conditions for cultivation due to the presence of additional ground moisture from the drainages.

One <sup>1.5 km</sup> ~~kilometer~~ southeast of the site is a large marsh; core tests carried out by Ken Petersen, Washington State University, as part of a regional pollen study, have revealed that this marsh has been in existence intermittently for at least the last 2000 years, but the exact periods when the marsh was active cannot be reconstructed. If the marsh area was active during the Sagehen Phase it would have provided the aboriginal inhabitants of Site 5MT2198 with valuable, easily accessible resources such as domestic water, water fowl, and various wild plants for consumption and other economic activities. Seeps located in shallow canyons approximately <sup>2 km</sup> ~~two kilometers~~ to the north and northeast may have provided domestic water periodically. However, the most dependable permanent water source would probably have been the Dolores River, 3.4 km due east.

At an elevation of 2120 m, Sagehill Hamlet is located in the Upper Sonoran vegetation zone, although the flora in the immediate site vicinity is typical of a disturbed area (Figure 5.2). Discussions with local ranchers confirm that this land had been cleared and farmed quite

Figure 5.2. *e* Site 5MT2198 before excavations, showing local topography and vegetation.

recently; as a result of this disturbance the local ecosystem is currently in a transitional stage.

Plant species presently growing in the immediate site vicinity include big sagebrush (Artemisia tridentata), squawbush (Rhus aromatica), Indian rice grass (Oryzopsis hymenoides), birdbeak (Cordylanthus spp.), and lupine (Lupinus spp.). South and north of the site (approximately 300 m) are a few low hills with remnant stands of pinyon (Pinus edulis) and juniper (Juniperus osteosperma). Since this area had been cleared for agriculture historically it is entirely possible that the climax pygmy pinyon-juniper forest endemic to the area covered a larger area prehistorically. Fremont cottonwoods (Populus fremontii) grow in the washes adjacent to the site area.

Within a 5-km radius of the site numerous exploitable plant resources may have been available for the prehistoric residents. These include pads and fruit from prickly pear cactus (Opuntia spp.); fruit, fiber and soap from yucca (Yucca baccata); and fruit and wood from pinyon, juniper, squawbush, serviceberry (Amelanchier utahensis), and chokecherry (Prunus virginiana). Bulbs from sego lily (Calochortus nuttallii) and onion (Allium spp.) and seeds from sunflowers (Helianthus spp.), Indian rice grass and other grasses are readily available.

The microclimate of Site 5MT2198 is similar to that of other low elevation areas in the Escalante Sector. The general pattern is one of low humidity, wide diurnal temperature changes, mild summers and cold dry winters. An average annual precipitation of 455 mm is recorded at the Dolores Weather Station, approximately 8 km southeast of the site. This amount is attained during two wet seasons, one in the winter months and one in late summer. With an average of approximately 126 average frost-free days (this

figure is recorded at the United States Weather Bureau station in Yellowjacket, Colorado, 13 km west of Site 5MT2198), this site and its ~~its~~ vicinity, therefore, seems to have a sufficient growing season for certain varieties of maize (Carter [3:88-89]). Cold air drainage in the low areas within <sup>1 km</sup> ~~one kilometer~~ of the site, however, may have affected prehistoric cultivation and its distribution.

Animal species observed near the site are limited to Nuttall's cottontail (Sylvilagus nuttallii), coyote (Canis latrans), mule deer (Odocoileus hemionus), and rattlesnakes (Crotalus spp.). Avifauna observed during the field season included bald eagle (Haliaeetus leucocephalus), red-tailed hawk (Buteo jamaicensis), Cooper's hawk (Accipiter cooperii), sparrow hawk (Falco sparverius), turkey vulture (Cathartes aura), raven (Corvus corax), scrub jay (Aphelocoma coerulescens), mourning dove (Zenaidura macroura), night hawk (Chordeiles spp.), red-shafted flicker (Colaptes auratus caper) and numerous passerines.

## SOCIAL SETTING

1-km  
Within a ~~one-kilometer~~ radius of Sagehill Hamlet are 21 sites which exhibit characteristics of the Sagehen Phase and hence are considered archaeologically contemporaneous (although the nature of momentary populations in the area must be further researched). Surface evidence indicates that 18 close neighbors are similar in form and layout to Site 5MT2198 and are probably unit or double unit hamlets. The closest contemporary habitations to the site are Site 5MT4679, located 120 m to the northwest; Site 5MT2194, located 190 m to the east; and Site 5MT2200, located 40 m <sup>to the</sup> southwest. <sub>g</sub> the clustering of Sagehen Phase habitations in the vicinity of Sagehill Hamlet leads one to the inference that there were probably close social ties and local cooperation among farmsteads; these hamlets comprise the home residences of what is inferred to have been the West Sagehen Neighborhood, a dispersed farming community based in the area north of the Sagehen Flats marsh between AD 650 and AD 800 (Kane [4]).

Three limited activity sites assigned Sagehen Phase components are located within 1 km of Sagehill Hamlet; these include Site 5MT2199, located 550 m southeast; Site 5MT2202, located 900 m southeast; and Site 5MT4525, located 900 m east. It is impossible to state that the inhabitants of Sagehill Hamlet actually frequented these locations; however, it seems likely that local peoples used a network of limited activity sites to acquire raw materials and for other purposes. This hypothetical network probably included sites within 1 km of Sagehill Hamlet as well as more distant outliers.

In summary, Sagehill Hamlet is regarded as one habitation unit of the postulated Sagehen Phase West Sagehen Neighborhood, a dispersed local

community. The group abiding at Site 5MT2198 probably maintained close social relations with other nearby households. Sagehill Hamlet is one node in the local Sagehen Phase settlement network which includes small hamlets and limited activity loci.

## EXCAVATION METHODS AND OBJECTIVES

Surface indications of prehistoric occupation at Site 5MT2198 were scant. Sherds, flakes, and a few fragments of ground stone tools were sparsely scattered over a 50 ~~x~~<sup>by</sup> 45 m area on the top and south side of the knoll. Depressions suggesting subsurface structures were nonexistent, and evidence of other architectural features was likewise absent. Excavation objectives were to discover and record architectural features present at the site (if any), recover a representative sample of the material culture, and reconstruct the types and extent of activities carried out by the prehistoric inhabitants. ✓

Investigation of the site was initiated by laying out a grid system of 2 ~~x~~<sup>by</sup> 2 m squares over the extent of the artifact scatter. All cultural material on the surface within the grid was collected ~~by~~<sup>in</sup> 4 ~~units~~<sup>by 4 m</sup> units. ✓

Then, by applying standard random sampling procedures developed before the field season began, 52 2 ~~x~~<sup>by</sup> 2 m squares were chosen for excavation. ✓

Vegetation within the gridded area was removed and excavation of the random squares was begun by stripping away the 15-20 cm of unconsolidated upper plow zone to reach the prehistoric occupation surface. This method resulted in the exposure of a large stained area representing pithouse fill. Once this structure was identified, the random-squares design was abandoned and stripping continued until the entire pithouse outline was exposed. This stripping technique also resulted in uncovering ancillary features such as outlying ~~fire~~ hearths and postholes. Seventy-three 2 by 2 m squares were ultimately excavated in this manner (Figures 5.3 and 5.4). ✓

OK  
or shift  
then to  
after  
"well"

Figure 5.3 ✓ Site 5MT2198, site sampling plan. ✓

# 5MT2198

## SITE SAMPLING PLAN

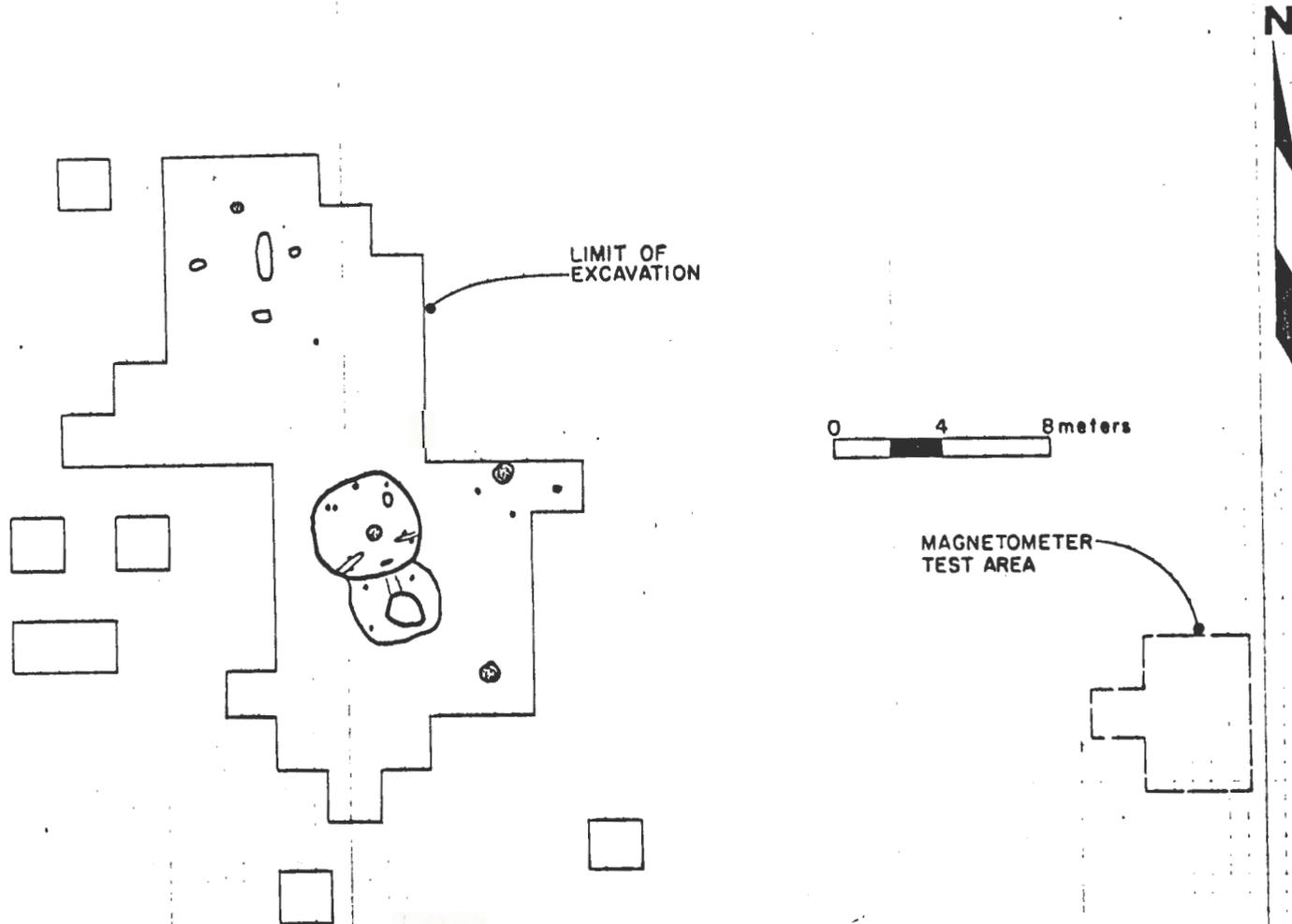


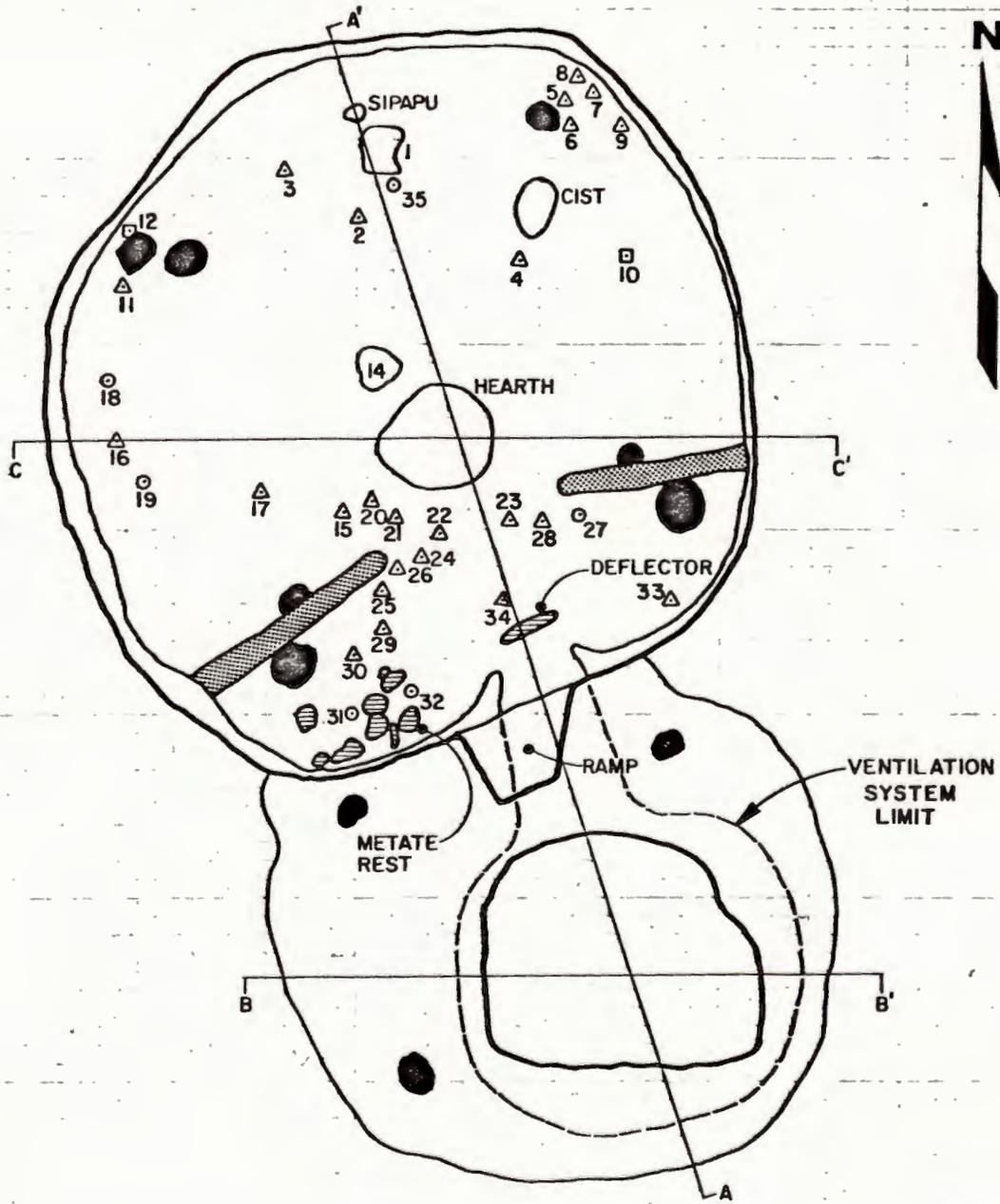
Figure 5.3. *e* Site 5MT2198, site sampling plan.



Figure 5.4. Site 5MT2198, view to the south, fill  
being cleared from pithouse.

# 5MT2198

## PITHOUSE I; PLAN VIEW



0 1 2 meters

### EXPLANATION

POST HOLE	●	ADOBES	▨
FLAKED LITHIC	△	CERAMIC	□
NON-FLAKED LITHIC	○	ROCK	▨

Figure 5.8. Sagehill Hamlet (Site 5MT2198) Pithouse 1, plan view.

Excavation of the pithouse was initiated by digging two test trenches into the fill of the structure. Test Trench 1 was sunk into the antechamber-ventilator area and Test Trench 2 was placed in the north end of the main chamber. Both trenches were extended until floors in both chambers were exposed. At this point the fill of the antechamber-ventilator was removed by hand. In the main chamber, limits of excavation were extended from Test Trench 2 until the north wall of the structure was encountered. Then, the wall was followed around the perimeter of the structure toward the antechamber-ventilator. With the walls exposed in this manner most of the post-occupational fill within the main chamber could be removed, with caution, by a backhoe. Once this was accomplished, removal of the remaining fill to the floor was done by hand.

Additional testing of peripheral areas was done by continuing the excavation of 2 ~~x~~<sup>by</sup> 2 m squares chosen according to the sampling design and by investigating other areas with the backhoe and a posthole digger. ✓

Approximately 25 m southeast of the pithouse was a relatively flat area which could have conceivably supported another pitstructure. A magnetometer test survey was conducted over 400 sq m in this area, resulting in the identification of a prominent subsurface magnetic anomaly. A total of ~~7~~<sup>seven</sup> 2 ~~x~~<sup>by</sup> 2 m squares and a backhoe trench were excavated in the anomaly area, but no cultural features were found. On-site and laboratory interpretations of this anomaly by magnetic reconnaissance consultants (R. Huggins and J. Weymouth, University of Nebraska) indicate that it may have been the result of a metal object (such as a bolt dropped from a farm implement) rather than prehistoric architecture. ✓

Artifacts from Sagehill Hamlet were collected and catalogued according to grid squares, levels, structures, and features. For better ✓

provenience control, the post-occupational fill within the pithouse was arbitrarily divided into upper and lower fill since no cultural division existed and the deposition appeared to be the result of natural forces.

Bulk soil samples were collected from nearly every grid square, from ~~fire~~ hearths, postholes, floor cists, floors, pithouse fill, corn concentrations, and from a stratigraphic control column in the fill of the pithouse at 20 cm intervals.

Pollen samples were collected from the floor of the main chamber in each 2 <sup>by</sup> 2 m excavation square, and under large artifacts associated with cultural surfaces. Samples were also taken from each quadrant on the floor of the pithouse ventilator, from the bottom of ~~fire~~ hearths and from a stratigraphic control column in the pithouse fill at 20 cm intervals. Refer to Appendix 1 for the results of the pollen analysis for this site.

Lithic materials recovered in situ off the floor of the pithouse were collected for amino acid testing.

Since artifactual material was extremely sparse throughout the site and in the fill of the pithouse, only the lower fill in the pithouse was screened. However, very little material was recovered by this technique, again due to the paucity of artifacts.

Whenever possible, charred wood remains were collected and treated for dendrochronological analysis. If the wood was in a fragmented condition the charred material was collected for radiocarbon dating. Ideally both types of samples as well as botanical samples were collected from the same log.

Archaeomagnetic samples were taken from the central hearth in the pithouse and from one of the outside fireplace<sup>s</sup>. A summary of the dating samples recovered from Site 5MT2198 is included in Appendix 2.

## CULTURAL UNITS

Architectural remains at Sagehill Hamlet consist of a single pithouse and three types of surface features: fireplaces and hearths, postholes, and amorphous concentrations of corn kernels; the surface features have been used to define two use areas (Figure 5.5).

### Pithouse 1

Pithouse 1, a small, deep, nearly circular structure, was the major architectural feature investigated at Site 5MT2198. Photographs and plan and profile maps of Pithouse 1 are included in this chapter as Figures 5.6 through 5.12. Table 5.1 presents point-located artifacts from Pithouse 1.

#### Dimensions:

North-south diameter (including south room):	3.85 m
East-west diameter:	4.05 m
South room length:	3.56 m
South room width:	1.11 m
17 Floor area (main chamber) <sup>se, north room</sup> :	11.06 sq m
18 Floor area <del>(south room)</del> <sup>(main chamber, south room)</sup> :	3.40 sq m
Floor area (antechamber):	8.36 sq m
Total roofed area (without antechamber):	14.46 sq m
Total roofed area (including antechamber):	22.82 sq m
Depth of structure (floor level to modern ground surface):	2.35 m
Reconstructed roof height (from floor):	2.70 m
Height of stringer shelf/bench from floor:	2.20 m

#### Period and Span of Occupation

The site was occupied during the Sagehen Phase (late Basketmaker III-Early Pueblo I); dendrochronological data indicates the pithouse was built between the years AD 660-700, while ceramic evidence suggests occupation <sup>time</sup> some between AD 700-775. The pithouse was probably occupied for a relatively short time span, <sup>perhaps</sup> a single generation <sup>or</sup> perhaps less than 30 years.

Table 5.1: Point Location Artifacts, Pithouse 1, Site 5MT2198

STRUCTURE	ARTIFACT	P.L. NUMBER
Pithouse		
Main chamber (north room)		
Floor, sq 030024	• 1 shaped stone slab	1
Floor, sq 030024	• 1 flake † → shift up	2
Floor, sq 030024	• 7 flaked lithic debitage	3
Floor, sq 032024	• 1 flaked lithic debitage	4
Floor, sq 032024	• 1 flaked lithic debitage	5
Floor, sq 032024	• 1 flaked lithic debitage	6
Floor, sq 032024	• 1 core	7
Floor, sq 032024	• 1 thick biface	8
Floor, sq 032024	• 1 flaked lithic debitage	9
Floor, sq 032024	• 1 sherd →	10 <sup>x</sup>
Floor, sq 028024	• 1 flaked lithic debitage	11
Floor, sq 028024	• 1 sherd	12
Floor, sq 032026	- charred beam fragment	13
Floor, sq 030026	• 1 anvil	14
Floor, sq 030026	• 2 flaked lithic debitage, and • 1 utilized flake	15
Floor, sq 028026	• 1 flaked lithic debitage	16
Floor, sq 030026	• 1 flake † shift up	17 <sup>x</sup>
Floor, sq 028026	• 1 polishing/pecking stone	18
Floor, sq 030026	• 1 mano	19
Floor, sq 030026	• 1 flaked lithic debitage	20
Floor, sq 030026	• 1 flaked lithic debitage	21
Floor, sq 030024	• 1 mano	35
South Room		
Floor, sq 030026	• 1 flaked lithic debitage	22
Floor, sq 032026	• 1 flaked lithic debitage	23
Floor, sq 030026	• 1 flaked lithic debitage †	24 <sup>x</sup>
Main Chamber		
Floor, sq 030026	• 2 flaked lithic debitage	25
Floor, sq 030026	• 1 flaked lithic debitage	26
Floor, sq 032026	• 1 mano	27
Floor, sq 032026	• 1 flaked lithic debitage	28
Floor, sq 030026	• 1 flaked lithic debitage	29
Floor, sq 030028	• 1 flaked lithic debitage	30
Floor, sq 030028	• 1 round sandstone cobble †	31
Floor, sq 030028	• 1 mano	32
Floor, sq 032026	• 1 flaked lithic debitage	33
Floor, sq 032026	• 1 flaked lithic debitage	34

All 2x2 sq should be reversed

change all lithic so

28

2  
24  
17

ut

†Not available for analysis  
\*function indeterminate

42

Doesn't match list of figures (caption)

+5.3

Figure 5.5. *g* Cultural units defined at Sagehill  
Hamlet (Site 5MT2198).

5MT2198

SPATIAL RELATIONSHIPS OF  
MAJOR CULTURAL UNITS

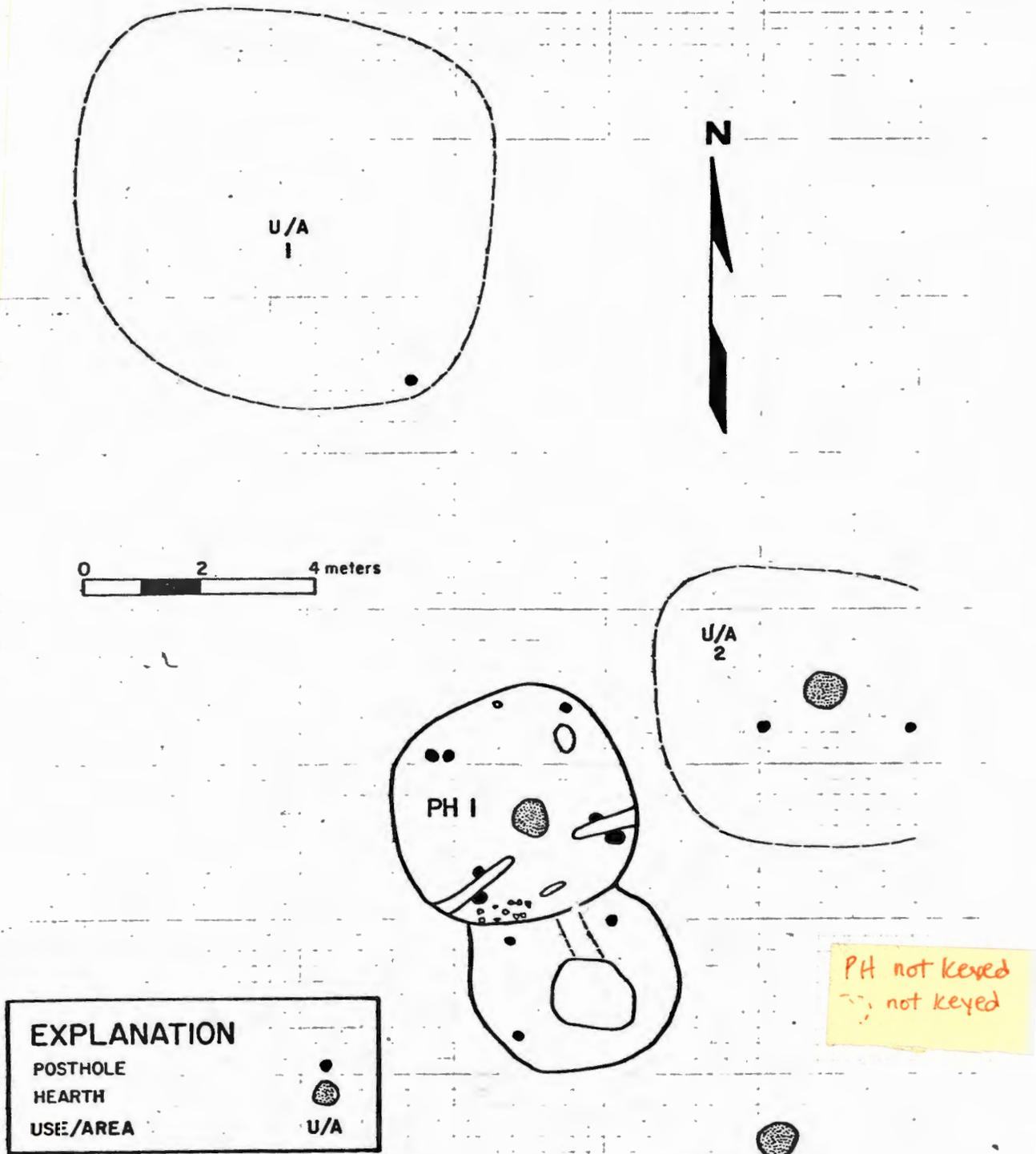


Figure 5.5. Spatial relationships of major cultural units.  
Site 5MT2198.

doesn't match caption pg or list of figures.

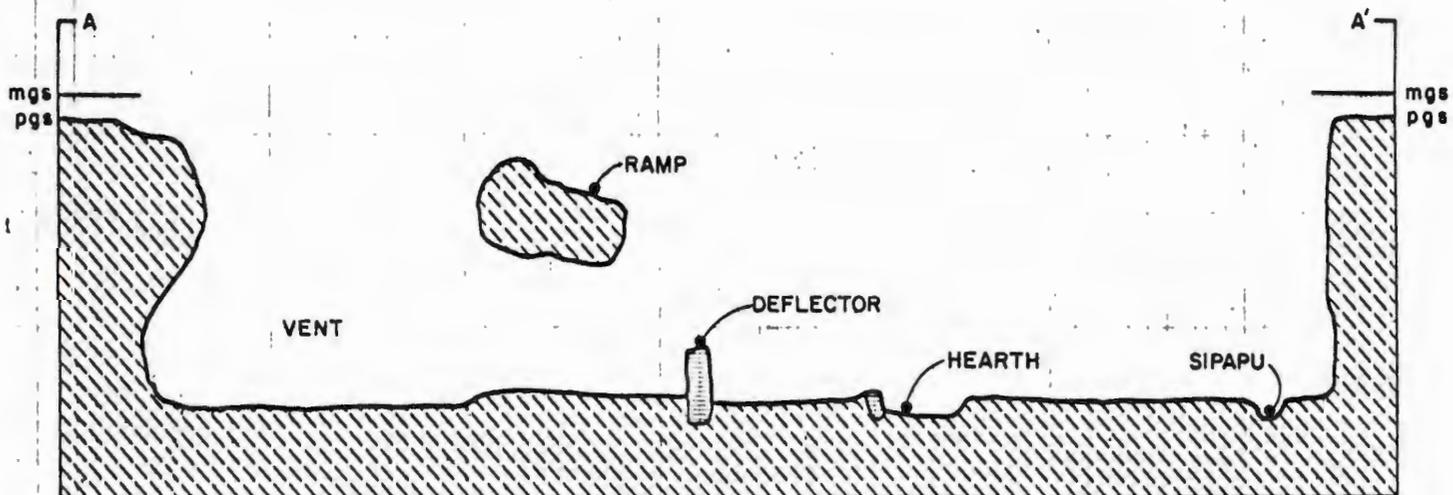
Figure 5.6 and 5.7. Locking south, photographs of Pithouse 1, Site 5MT2198. Note posthole pattern, central hearth, wingwalls, and antechamber/ventilator.

Figure 5.8. Sagehill Hamlet (Site 5MT2198), Pithouse  
1, plan view.

Figure 5.9. Pithouse 1, Site 5MT2198, north-south architectural profile.

5MT2198

PITHOUSE 1, NORTH-SOUTH ARCHITECTURAL PROFILE



EXPLANATION

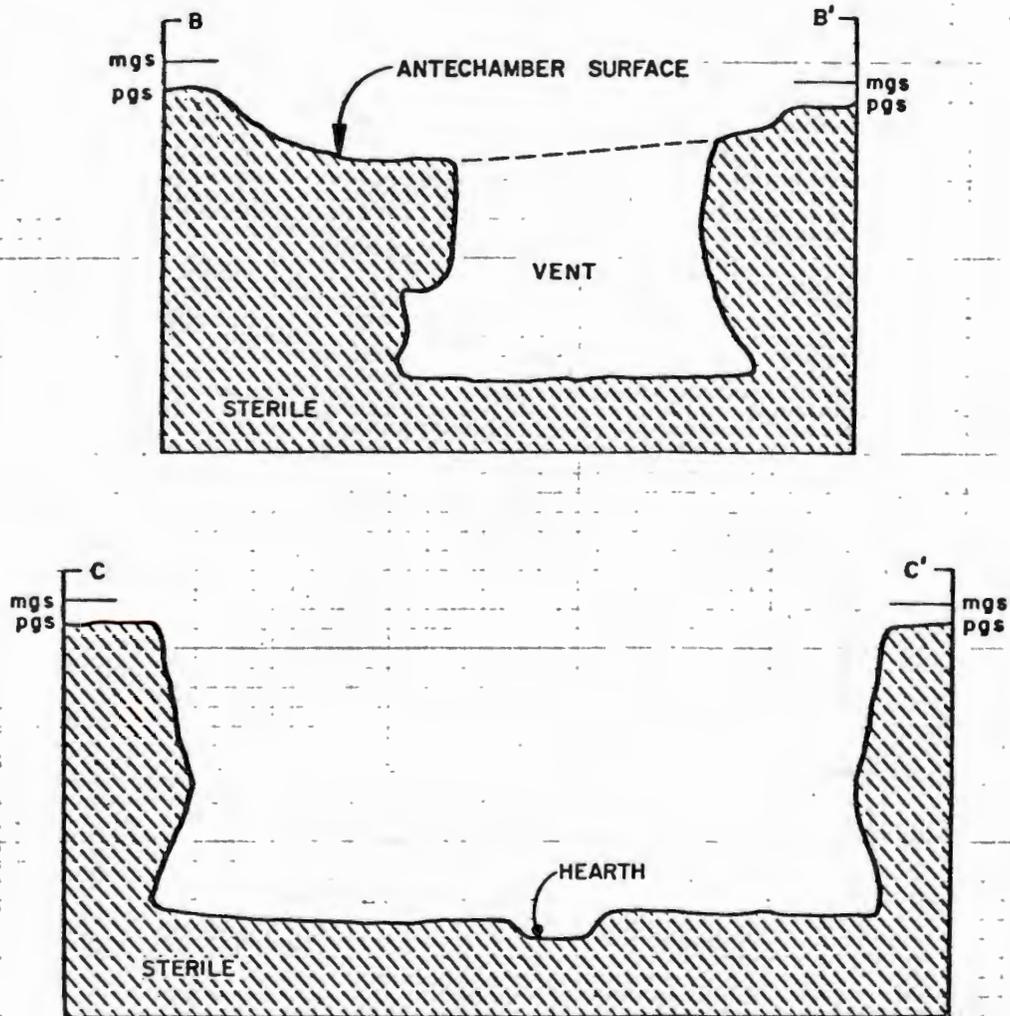
SANDSTONE	
STERILE	
MODERN GROUND SURFACE	mgs
PREHISTORIC GROUND SURFACE	pgs

Figure 5.9. Pitthouse 1, Site 5MT2198, north-south architectural profile.

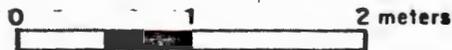
Figure 5.10, *e* Pithouse 1, Site 5MT2198, east-west architectural profiles.

# 5MT2198

## PITHOUSE 1 EAST-WEST ARCHITECTURAL PROFILES



EXPLANATION	
MODERN GROUND SURFACE	mgs
PREHISTORIC GROUND SURFACE	pgs



✓ Figure 5.10. ✓ Pithouse 1, Site 5MT2198, east-west architectural profile S. ✓

Figure 5.11. Photograph of central hearth in Pithouse  
1, Site 5MT2198. Hearth has been  
sectioned to record stratigraphy.

Figure 5.12, *q* Detail photograph of south half of Pithouse 1, Site 5MT2198. Note central hearth, wingwalls, deflector, and ventilator tunnel. ✓

### Shape

This structure is a deep circular pithouse with squared corners, and slightly undercut walls. No bench was encountered.

### Orientation

✓ The main (northwest<sup>p</sup>southeast) axis of the pithouse (a line passing through the centers of the ventilator tunnel, deflector, hearth, and sipapu) is oriented 18 degrees west of magnetic north. Therefore, the front of the pithouse, the antechamber end, faces south-southeast. This orientation is typical for Basketmaker III pithouses in the eastern Anasazi area (Birkedal [5:39]). ✓

### Walls

The walls of the pithouse are cut into the native sterile soil. They are fairly vertical at the top but undercut slightly at the bottom. The upper portions of the walls were fairly eroded and there is no evidence of plaster. At approximately 1.3 m below present ground surface the native soil changes from a hardpacked and clay-like consistency to sandy and loose. To alleviate any potential degradation of the lower walls, the inhabitants coated the walls with a thin wash of the clay soil. ✓

### Surfaces

Floor 1 of the main chamber consists of a relatively level layer of "puddled adobe" laid over the native coarse yellow sand. Although the floor appears to have been laid down as a single unit, it varies in thickness from 2.0 to 3.5 cm. The floor is thickest around the hearth and thins out in the area south of the wing wall. It is basically gray, probably due to ash trodden into the floor during the prehistoric occupation. The walls and floor meet in a nearly perpendicular fashion, ✓

except for a slight rise in the floor to meet the east wall. Rodent activity and erosion was minimal, leaving the floor in good condition for excavation and recording.

### Hearth

✓ Located slightly south of center along the northwest-southeast axis of the pithouse is a fairly large circular hearth (Figure 5.11). This hearth measures 66 cm in diameter and has a depth of 16 cm. The south border was lined with three upright sandstone slabs. Two of these slabs were concealed by an adobe collar, 4 cm high and 13 cm wide; the collar ✓ did not extend around the rest of the hearth rim. In cross-section the hearth is basin-shaped with a fairly flat bottom and steep concave walls, except for the north wall which is stepped. Except for the three stone slabs on the south end, the sides and bottom of the pit consisted of unlined but fire-hardened and slightly fire-reddened native earth. ✓

tense

There were numerous layers of fill in the hearth, most of them consisting of ash and charcoal. About 5 cm from the bottom of the pit was a 2-3 cm layer of sterile red clay-like soil. Originally it appeared as if this layer was deposited naturally during a period of non-use, but further investigation showed that this layer was restricted to the middle of the basin and did not extend out to the sides of the basin. Therefore it seems that this soil may have been purposely deposited into the hearth for unknown reasons. This layer of red soil corresponds with the step or ledge in the north border of the hearth.

An archaeomagnetic sample (Sample #2) obtained from the bottom of the hearth yielded a date of  $650 \pm 50$  years (Appendix 2). ✓

### Deflector

A single upright, roughly rectangular slab of unshaped sandstone

served as a deflector. This slab measures 20 cm in height, 41 cm in width and 8 cm in thickness. This deflector is situated between the two wing walls but 65 cm south of the wing wall line and 18 cm north of the ventilator tunnel.

### Sipapu

In line with the ventilator tunnel, deflector, and hearth is a small unlined cylindrical hole. It has vertical sides, is 12 cm deep and 10 <sup>by</sup> 12 cm in diameter. Because of its size and location it is postulated that this feature functioned as a sipapu. Clean yellow sand constituted the contents of the hole.

### Postholes

Four relatively large cylindrical postholes form a square pattern on the floor of the main chamber. They are set out from the walls of the pithouse 15-30 cm. The postholes range in size from 24 ~~to~~ 30 cm in diameter and 22-53 cm in depth. The two southern postholes are in the area just behind the wingwalls (the south end). Two other smaller postholes abut against the north sides of the wingwalls, and are half-moon-shaped. Apparently the posts originally placed in these postholes were cut in half vertically before placement. Since these holes are not in line with the four larger postholes and are set further in toward the center of the chamber, it is assumed that these were for secondary support posts. The eastern-most of these holes measures 19 <sup>by</sup> 10 cm and 15 cm in depth. The western posthole measures 20 <sup>by</sup> 11 cm and 21 cm in depth.

A seventh posthole lies 5 cm east of the northwestern-most of the major postholes. Measuring 10 <sup>by</sup> 20 in cross-section and 20 cm in depth, it is slightly smaller than the major support holes. Its size and location seem to indicate that it was for a secondary support post which

either replaced or provided additional strength to the adjacent post. This posthole and the southeast main support posthole were reinforced at the bottom with flat pieces of sandstone.

#### Roof

The posthole pattern on the floor of the main chamber indicates that the inhabitants used a typical 4-main-support-post construction to support the roof. It is assumed that four main beams were then strung between the support posts and a superstructure consisting of secondary beams, matting, and earth was used to complete the roof. The two other support posts located against the north side of the wingwall may have been used to support auxiliary beams. As the pithouse lacks a bench, it is assumed that the stringer poles were placed against the main beams and anchored in a shelf area around the perimeter of the main chamber; this shelf was probably constructed on or near the prehistoric ground surface and was destroyed by erosion.

#### Floor Cist

A single shallow cist is located 80 cm northeast of the hearth. Kidney-shaped, this feature measures 47 cm east-west, 33 cm north-south, and is 21 cm deep. The fill of the cist was the same as the lower fill of the pithouse, indicating it was probably empty at the time of abandonment. This cist is basin-shaped in profile and unlined.

#### Wingwalls

Two wingwalls form a partition across the southeast portion of the main chamber (Figure 5.12). These walls appear to be constructed of a material different from the local native soil; the construction is of a reddish-gray clay with flecks of charcoal. These walls abut against the walls of the pithouse and extend into the middle of the main chamber

arching slightly to the north. The interior ends are rounded and there is a 20-cm space between them. The wingwalls appear to have been built in sections, one stacked on top of the other, to reach their total heights. The west wingwall is 116 cm long and 75 cm high, and the east wingwall is 115 cm long and 73 cm high; both walls may have been higher at one time. Average thickness of the wing walls is 12 cm. There is no evidence that the wing walls had been plastered. However, they may have been smoothed by hand as there are fingerprints on the south side of the west wingwall (Figure 5.13).

#### Metate Rest

In the western portion of the south room (the part of the pithouse south of the wingwalls) was a double alignment of stones. The alignments consist of a total of five unworked fragments of sandstone resting on the floor of the main chamber. A mano (Point Location 32) was incorporated into the eastern<sup>8</sup> most alignment. It is inferred that a metate rested on these stones; such a placement would have elevated and angled the metate to a workable position. Processing areas containing metates, metate rests, and manos are commonly found in the western portions of the south rooms of Basketmaker III and Pueblo I pithouses (see Birkedal [5], Farmer [6]).

#### Floor Artifacts

✓ 22 ✓ 23  
✓ 22 ✓ 23  
Forty<sup>Two</sup> - ~~Forty~~ artifacts and a segment of a burned beam were found in direct association with the floor of the main chamber (Figure 5.1, Table 5.1). Twenty-eight of these were flakes which tended to be clustered around the south end of the hearth and just north of the northeastern main support posthole. One core was also found in the latter location; ~~one was in the posthole.~~ An anvil, and a composite polishing/pecking stone

Figure 5.13, *e* Prehistoric fingermarks on east  
wingwall, Pithouse 1, Site 5MT2198.

were found in the northwest quadrant of the chamber. One mano and a round sandstone cobble (function indeterminate) were found in the area south of the west wingwall near the metate rest, and a broken shaped stone slab and a mano were located near the sipapu. The remaining two artifacts were pottery sherds.

#### Antechamber

The antechamber measures 3.39 m east-west and 2.96 m north-south; the floor was probably located about 40 cm below the prehistoric ground surface.

The actual antechamber is situated south of the main chamber; its central axis is 22 degrees west of north.

In plan the antechamber is roughly oval. In profile this chamber is basin-shaped and very shallow, having a maximum depth of 42 cm below the original occupation surface. This is an atypical form, as most Basketmaker III antechambers are deeper in relation to the main chamber and have steep vertical sides (Bullard [7:141]).

Walls. No evidence of the walls of the antechamber remain; they probably were destroyed by modern disturbance due to cultivation. It is assumed that the walls consisted of a wooden framework plastered with mud, since adobe fragments were recovered in this area.

Floor. The floor of the antechamber is rough, uneven, and of unprepared native earth. This surface is 108 cm above the floor of the main chamber.

Ramp entry to main chamber. At the north end of the antechamber is a ramp that slopes down into the main chamber. The front edge of the ramp is 88 cm above the floor of that structure. If this was an entry ramp, a long vertical stretch would have been necessary for getting in and out of

Figure 5.14. Pithouse 1, Site 5MT2198; detail of deflector slab and horizontal portion of ventilator system.

the pithouse. Perhaps there was a step to alleviate the problem, and it was removed later when the ventilator system was installed. This feature shows no sign of having been plastered or prepared in any way.

Postholes. Three relatively large postholes present in the antechamber floor are probably associated with its construction. A fourth posthole which would have completed a square pattern may have been destroyed when the ventilator shaft was constructed. These postholes range from 15 <sup>cm</sup> to 20 cm in diameter, and 19 to 39 cm in depth. The northeast posthole contained remnants of a partially burned post. None of the postholes were lined.

The original ground surface adjacent to the basin-shaped surface of the antechamber shows no evidence of side pole sockets which may have supported stringer poles for the walls and roof; if they were present, they probably have eroded away.

#### Ventilator

the east side of the antechamber was remodeled to accommodate a shaft that functioned as the vertical portion of the ventilation system; a horizontal tunnel connects this feature to the main chamber.

At floor level the ventilator shaft measures 2.13 m east-west <sup>by</sup> 1.91 m north-south. The length of the tunnel from the north portal to the back of the ventilator shaft is 2.70 m.

Walls. The walls of the shaft are cut into the native sterile soil, and show no evidence of having been plastered. They are undercut, resulting in a bell-shape effect.

Floor. No <sup>hard-packed</sup> hard-packed or prepared surface that could be identified as a floor was found at the bottom of the ventilator shaft. There was a layer of clean yellow sand and fragments of yellow sandstone on a surface

thought to be a floor, but was later determined to be part of the natural deposits present at the site. This surface was 165 cm below present ground surface, but 11 cm below the floor level of the main chamber and 8 cm below the floor level of the tunnel. Since this surface is a natural phenomenon, the actual bottom of the ventilator shaft may have been level with the floor of the tunnel.

Tunnel. Connecting the ventilator shaft with the main chamber is a rounded tunnel. On each side of the north end <sup>of the</sup> tunnel is a small adobe lip that extends out into the main chamber. The tunnel is slightly funnel-shaped in that it is wider at the south end, narrowing toward the north end. On the north end the tunnel opening is 43 cm high, and 50 cm wide. The south end opening is 43 cm high and 56 cm <sup>wide</sup> across. Total length of the tunnel is 113 cm. Figure 5.14 depicts the pithouse deflector and horizontal ventilator tunnel.

#### Pithouse Fill

The general characteristics of the pithouse fill indicate that the structure lay open to aeolian and water-borne sedimentation and to decay for a short period, before the remnants of the roof burned. The fire must have been minimal since the walls and floor show no signs of burning and only one fragment of a charred beam was found on the floor of the main chamber. The burning was concentrated in the ventilator shaft and antechamber area, as more charcoal and numerous fragments of charred beams were recovered from these features. After the fire the forces of nature continued to fill the depression formed by the pithouse until the ground surface above the pithouse became indistinguishable from the surrounding area.

The character of the pithouse fill reflects the nature of the depositional history. The topmost fill layer consisted of 10-15 cm of loose, dry, reddish-brown soil, which was essentially the plow layer resulting from modern cultivation. Only flecks of charcoal in this layer gave a clue to the structure below. Beneath this topsoil layer, extending to the floor of the pithouse, was a fairly homogeneous fill. Clearly post-occupational, this soil was dark reddish-brown, compact and contained pieces of charcoal and very little cultural debris. The upper 50 cm of this fill was blocky, angular and slightly darker than lower deposits, probably due to certain soil formation processes. The middle portion of this fill was characterized by numerous thin varve layers, probably reflecting periods when water accumulated in the depression. Although there were small chunks of burned adobe throughout the fill, there was not a distinct layer of roof fall. A few unburned, unshaped sandstone slabs were found in the lower fill. These may have been lying on the roof when it decayed and fell in.

Artifactual remains were scarce throughout the post-occupational deposits and consisted mainly of small sherds and flaked stone debris. A broken metate was recovered from the fill of the ventilator shaft.

#### Use Area 1

Use Area 1 is an unbounded surface locus of prehistoric activity located north of the pithouse; surviving internal features consist of a posthole and several pockets of charred corn kernels (Figure 5.15).

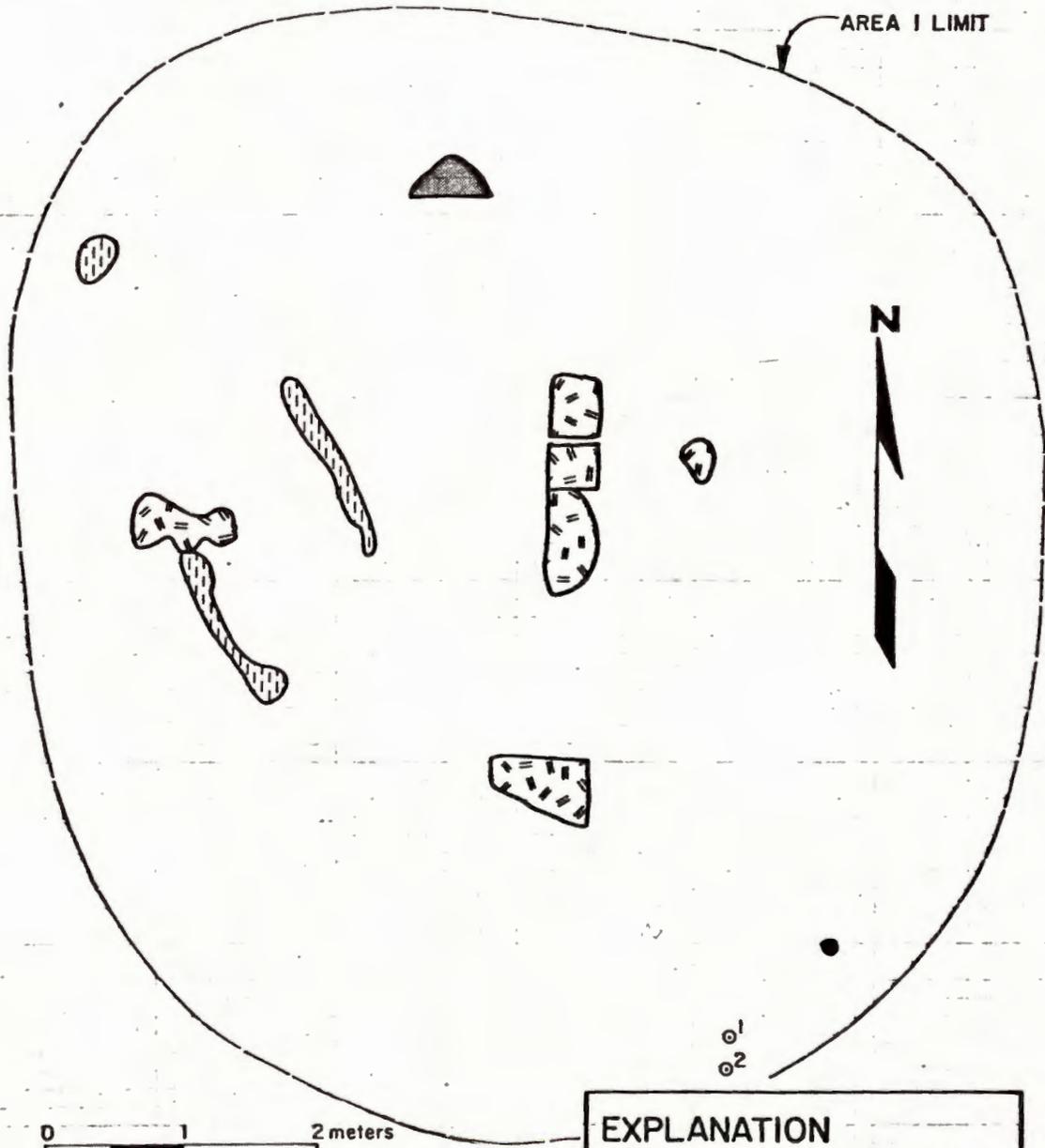
Figure 5.15. Sagehill Hamlet (Site 5MT2198), Occupation/Activity Area 1, plan view.

Use Area

called use area on list of figures

5MT2198

PLAN VIEW OF USE AREA 1



EXPLANATION	
CHARRED SURFACE	
CONCENTRATION OF CORN	
STAIN	
POSTHOLE	
NONFLAKED LITHIC	

Figure 5.15 Sagehill Hamlet (Site 5MT2198), Use Area 1, plan view.

format E-W N-S

Dimensions:

Length (E-W):

ca. 6 m

Width (N-S):

ca. 8 m

Surface area:

ca. 48 sq m

~~Depth of activity surface (prehistoric living surface to modern ground surface):~~

~~not reconstructable (prehistoric ground surface)~~



Period and Span of Occupation

The occupation of Use Area 1 is inferred to correspond to that of the central dwelling or pithouse.

Shape

The use area probably did not correspond to a regular size or shape and was not bounded by architectural configurations.

Walls

No walls were incorporated into the use area.

Surfaces

No surfaces were encountered during excavations. It is believed that a surface probably existed during the prehistoric occupation, but that it was destroyed by modern cultivation.

Postholes

Located 6.9 m north of the north wall of the pithouse is a solitary isolated posthole; it measures 13-14 cm in ~~cross~~<sup>diameter</sup> section and is 7 cm in depth. No other postholes were located that might indicate the former presence of a ramada or other structure; such evidence may have been destroyed by plowing or other agriculture practices.



Pockets of Corn

In close spatial association with the posthole are numerous

wierd heading

defined pockets of charred corn kernels and cob fragments and charcoal-stained areas. These features may represent the former presence of a storage facility, possibly incorporating jacal construction, since fragments of burned adobe were also recovered in these areas.

#### Surface Artifacts

Two manos were found in a disturbed context just south of the posthole (Table 5.2). A conjecture is that these artifacts were originally on a prehistoric use surface that has been destroyed through modern farming practices. An inference is that the manos are the remnants of a food resource processing locus in Use Area 1.

Table 5.2, Site 5MT2198, Use Area 1, Point Location Artifacts.

Point Location Number	Artifact	Location
1	mano	southern edge of use area
2	mano	southern edge of use area

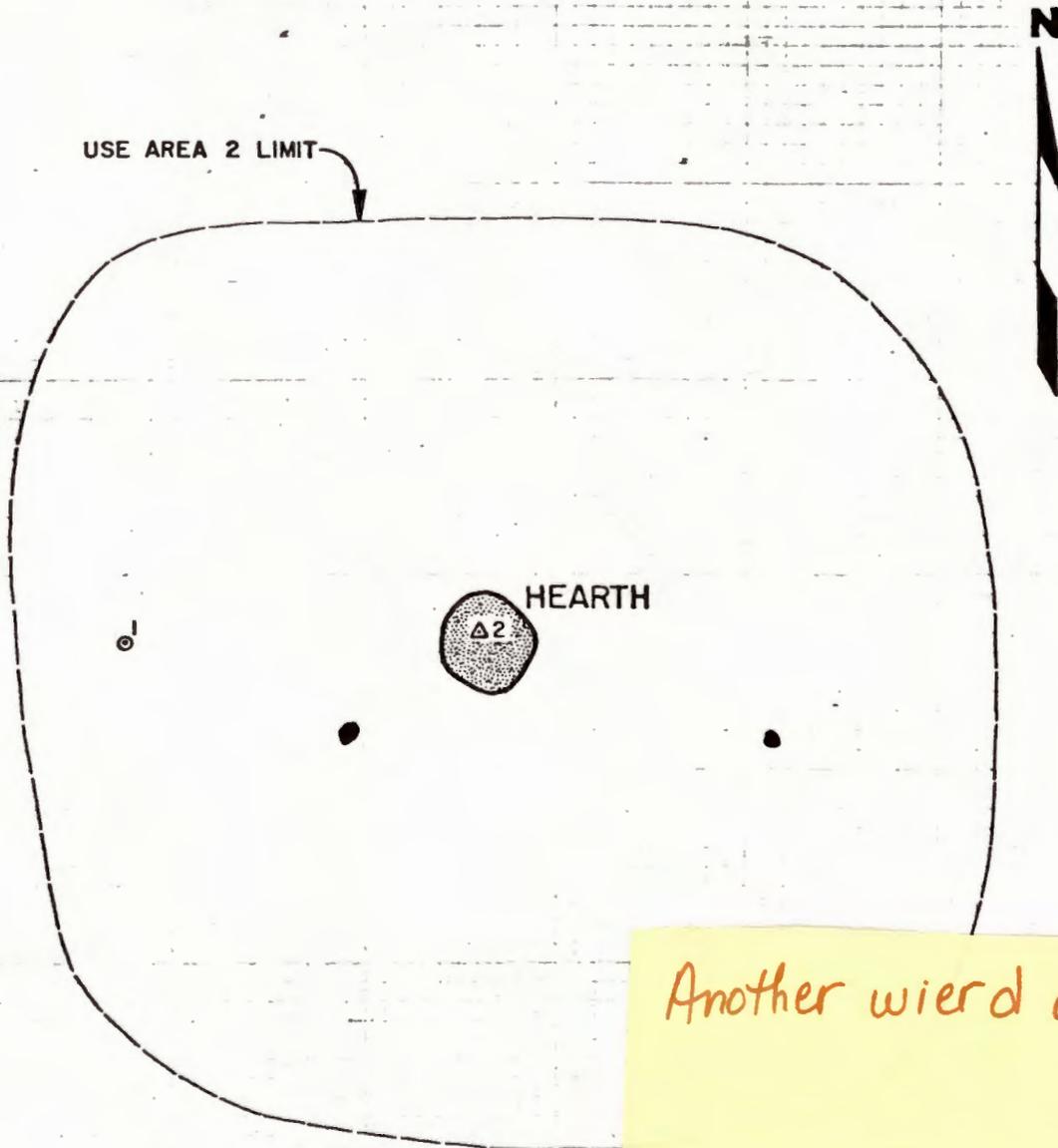
#### Use Area 2

Use Area 2 is an unbounded surface locus of prehistoric activity situated east of the pithouse; internal features consist of a hearth, 2 postholes and several possible associated artifacts (Figure 5.16).

Figure 5.16. *e* Site 5MT2198, Use Area 2, plan view.

5MT2198

PLAN VIEW OF USE AREA 2



*Another wierd one.*



EXPLANATION	
CHARCOAL FILL	
NON-FLAKED LITHIC	
POSTHOLE	
FLAKED LITHIC	

Figure 5.16 *g* Site 5MT2198, Use Area 2, plan view.



Format

Dimensions:

Length (E-W):

ca. 6 m

Width (N-S):

ca. 6 m

Surface area:

ca. 36 sq m

~~Depth of activity surface (prehistoric living surface to modern ground surface):~~

~~not reconstructable; assumed to correspond to disturbed prehistoric ground surface.~~

Shape

The bound<sup>ary</sup> of the use area probably did not correspond to a regular size or shape; no architectural boundaries were defined during the excavation process.

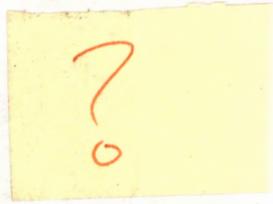
Surfaces

No activity surfaces were encountered during excavations. It is assumed that use surfaces existed during the occupation of the site, but that they have been destroyed by modern agricultural practices.

Hearth

Located 4.3 m east of the main chamber of Pithouse 1 is a small hearth (Figure 5.17). This feature is a shallow, basin-shaped in cross-section and unlined. The hearth measures 63 cm along the north-south axis and 74 cm east-west; the center of the basin is 6 cm deep. Examination of the sides and bottom of the feature revealed very little oxidation of the native soil; therefore, the hearth probably was not used for a prolonged period or processes entailing intense burning. The fill of the hearth contained pulverized flecks of charcoal mixed with post-occupational wind- and water-deposited materials. Because of the unsuitability of the materials preserved, archaeomagnetic or radiocarbon samples were not collected from the hearth. As this firepit is the most

Figure 5.17. *g* Site 5MT2198, Use Area 2, hearth,  
looking west. Hearth has been sectioned  
to record stratigraphy. Note posthole  
in upper left (southwest).



prominent feature in Use Area 2, it is assumed that most activities in Use Area 2 were performed in the vicinity of the hearth.

### Postholes

Located near the center of the use area are two postholes. Posthole 1 is approximately 16 cm in diameter and 10 cm deep; it is 70 cm southwest of the hearth. Posthole 2 is approximately 11 cm in diameter and is 5 cm deep; it is situated 3.82 m east of the hearth. Possible functions of these postholes in association with the use of the hearth are conjectural. One hypothesis is that these features were part of a ramada or windbreak that was used to shelter the area during periods of use. It is notable that the prevailing winds in the area are from the southwest, and a structure anchored on these postholes would shield the hearth from winds <sup>from</sup> in this direction. Another possibility is that the postholes were used to support a structure directly associated with food processing or other activities (such as a meat-drying rack or other drying apparatus).

### Artifacts

Any prehistoric surfaces and artifact associations originally present in Use Area 2 have been destroyed by modern farming practices.

19 Several artifacts were recovered from Stratum 2, the plow zone, (a mano and a flake, see Table 5.3), and Stratum 1, the unconsolidated upper plow zone (several flakes, a uniface, and a broken cobble). It could not be ascertained whether these artifacts might be associated with the destroyed surface. The nature of the modern agricultural practices in the site area were not intensive enough to greatly affect the lateral displacement of artifacts.

✓ Table 5.3. ✓ Site 5MT2198, Use area 2, Point Location Artifacts ✓

✓ P.L. Number	Artifact	Location
1	mano	northwest quadrant of use area
2	flake	above hearth

5 Other Structural Remains

One other ancillary feature was investigated at Sagehill Hamlet that was not part of a use area or structure; this is described below.

Fireplace - This rock-lined feature is located 4 m east-southeast of Pithouse 1 (Figure 5.18). The fireplace is 63 cm in diameter and measures 7 cm in depth. Although the sides of the pit are outlined with unshaped fragments of sandstone, this lining is conspicuously absent from the bottom and one-half of the south side of the pit. An archaeomagnetic sample (71) <sup>Sample</sup> <sub>was</sub> obtained from this fireplace. While analysis yielded four possible dates for this feature, the earliest date, AD 700 ± 75 is not inconsistent with the other dating evidence for this site (see Appendix 2). Like the hearth in Use Area 2, this feature probably functioned as the central focus of a seasonal or specialized activity area of the inhabitants of the site. ✓ ✓

Figure 5.18. *g* Site 5MT2198, fireplace in isolated context; feature has been sectioned to record stratigraphy.

DATING SAMPLES

✓<sup>2</sup> Sixteen tree-ring samples, <sup>19</sup>~~nineteen~~ radiocarbon samples and <sup>2</sup>~~two~~ archaeomagnetic samples (Appendix 2) were recovered from Site 5MT2198. No radiocarbon samples were submitted for analysis. The results from the tree-ring samples are available at this time and the three dates obtained ✓<sup>6</sup> are summarized in Table 5.4. While the tree-ring and archaeomagnetic *dates* ✓ suggest that the pit structure was constructed during the last half of the seventh century AD, the ceramic assemblage at the site (discussed in the ✓<sup>9</sup> following section) suggests a slightly later occupation. ✓

Table 5.4 ✓ Tree-ring Dates from Site 5MT2198 ✓

Provenience	Lab Number	Field Number	Species	Dating	
				Inside <sup>1</sup>	Outside <sup>2</sup>
<u>Pithouse</u>					
Antechamber Upper fill	DAR-56	3	Juniper	0581fp-	0655vv
Main chamber Upper fill	DAR-57	9	Juniper	0496fp-	0550vv
Antechamber Upper fill	DAR-58	8	Juniper	0528p-	0634vv

1

fp - the curvature of the inside ring indicates that it is far from the pith

p - pith ring present

2

vv - there is no way of estimating how far the last ring is from the true outside.

## PORTABLE ARTIFACTS

2 Results of laboratory preliminary analysis performed on the arti-  
3 fact assemblage recovered from Sagehill Hamlet <sup>are</sup> ~~is~~ presented below ✓  
according to material categories. ✓

### Lithics

This category includes both flaked and nonflaked tools and debris. Totals and field proveniences of these artifacts are summarized in Appendix 3.

A total of 52 flaked stone tools and 351 debitage items are included in the artifact assemblage from Sagehill Hamlet. Flaked tools are limited to cores (used and unused), unifaces and bifaces, specialized forms, and utilized flakes (Figures 5.19, 5.20, and 5.21). The assemblage contains a  
13 single corner-notched, expanding-stem projectile point. Clusters of  
flaked tools and debitage on the floor of the main chamber, Pithouse 1  
15 (Figure 5.9) possibly represent activity areas where flintknapping was  
carried out. Raw materials used by the inhabitants of Sagehill Hamlet for making flaked stone tools included quartzites, siltstones, felsites, rhyolites, slate, and various cherts. ✓

Most of the 55 nonflaked stone artifacts in the assemblage from Sagehill Hamlet are utilitarian objects such as manos and metates. Other tools in the collection from the site include hammerstones, pecking stones, and an anvil; all these forms were probably employed for a variety of purposes. The anvil (Figure 5.22) was discovered in situ approximately 25 cm north of the central fireplace, Pithouse 1. Such a placement is typical for Anasazi pithouses investigated in the Four Corners Area (see, ✓

Figure 5.19 Site 5MT2198, flaked lithic tool:  
uniface (recovered 10 cm above floor  
of main chamber, Pithouse 1).

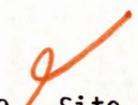
Figure 5.20.  Site 5MT2198, flaked lithic tools:  
cores. All illustrated examples from  
upper fill of Pithouse 1.

Figure 5.21. Site 5MT2198, flaked lithic tools:  
cores. Proveniences: upper left,  
surface collection; upper right, plow  
zone above Use Area 2; lower left, plow  
zone west of pithouse; lower right, fill  
of pit in floor, Pithouse 1.

Figure 5.22. ✓ Site 5MT2198, nonflaked lithic tool:  
anvil (recovered from floor of Pithouse  
1 north of hearth). ✓

✓ for example, <sup>Bristling</sup> Emerson, et al. [8] or Farmer [6]), and probably represents the standard location of a manufacturing area. Several shaped sandstone slabs are also represented in the artifact inventory; these may represent cist or jar covers. Raw materials used in the manufacture of nonflaked lithic tools were primarily sandstones; some quartzites, diorites, siltstones and basalts were also represented. Typical nonflaked stone artifacts recovered from Sagehill Hamlet are depicted in Figures 5.22-5.27.

### Ceramics

✓ Over 500 sherds were recovered from both the excavations and the initial survey collections at Site 5MT2198. <sup>(Appendix 4)</sup> Of these, only 16 could be classified to type, including Chapin Gray, Chapin Black-on-white, and Piedra Black-on-white. The remainder of the sherds are classified with grouped types, and include gray wares, white wares, and red wares. Crushed igneous rock is the predominant temper type (84 percent by weight), and <sup>is</sup> there are no sherds that are identified as trade wares from beyond the Mesa Verde region. The only vessel from the site that could be reconstructed was a small portion of a gray ware jar. ✓ ✓ ✓

The types recovered span the time range of about AD 575-900 (Breternitz, et al. [9]). Piedra Black-on-white and the red wares appear in the Project area at about AD 750, but Moccasin Gray, a type that appears at about AD 775 and is abundant by AD 800, is totally absent. Thus, ceramic data suggest occupation of the site during the early AD 700s and abandonment before AD 775. ✓ ✓ ✓ ✓

Vessel forms present at the site are what one would expect from a small habitation. Jar fragments account for 90 percent of the total sherd weight, while bowls account for 8 percent and other forms (especially seed

Figure 5.23. Site 5MT2198, nonflaked lithic tool:  
mano (from west corner of south room,  
Pithouse 1).

Figure 5.24. Site 5MT2198, nonflaked lithic tools:  
manos. Proveniences: left, from floor  
of Pithouse 1; right, from plow zone  
west of pithouse.

Figure 5.25. Site 5MT2198; nonflaked lithic tool:  
mano (recovered from east end of south  
room, Pithouse 1).

Figure 5.26. Site 5MT2198, nonflaked lithic tool:  
polishing/pecking stone. (Point  
Location 18, floor of Pithouse 1, see  
Figure 5.7).

Figure 5.27. Site 5MT2198, nonflaked lithic tool:  
round sandstone cobble, ~~function~~  
~~indeterminate~~ rubbing stone or polisher (function  
(recovered from west end, south room of indeter-  
pithouse). ~~minate~~)

jars) account for the remaining 2 percent. The greatest use of ceramics was for cooking and storage.

#### Vegetal Remains

Charred corn cobs and kernels are the only vegetal food items represented in the material inventory recovered from Site 5MT2198. Other vegetal remains include charred juniper, and sagebrush wood, and phragmites, a reed-like plant that grows in marshy environments. Proveniences of vegetal remains are summarized in Table 5.5. ✓

In addition to conducting dendrochronological analysis on suitable specimens, Laboratory of Tree-Ring Research personnel also identified to species the specimens of structural wood sent to their laboratory. Of a total of 16 individual pieces sent to the Tree-Ring Laboratory, 11 specimens or 68.7 percent were juniper (Juniperus osteosperma), 1 or 6.2 percent was pinyon pine (Pinus edulis), 1 or 6.2 percent was cottonwood (Populus spp.) and 3 or 18.7 percent were unidentified soft wood. The results of this identification indicate that the people of the hamlet were relying primarily on juniper as construction wood; this tree was probably easily obtainable within a short distance from the site. More surprising is the presence of cottonwood and other softwoods. If the prehistoric environment was similar to the modern one, then the inhabitants of Site 5MT2198 would probably have had to transport non-coniferous wood from the Dolores River bottomlands, a distance of 3.2 km. (A few cottonwoods are presently growing in the drainages north of the Sagehen Flats marsh; however, if they were available in the local area during prehistoric times, this potential source was probably quickly exhausted.) This would ✓

Table 5.5 Site 5MT2198, Vegetal Remains.

	Cobs	Kernels	Phragmites	Juniper*	Nonidnt wood
Level 1		N**	1	N	
Antechamber/Ventilator Upper Fill				N	
Main Chamber Upper Fill Fireplace	1	2			N
Ancillary Features Posthole C Pockets of Charred Corn				N N	
Test Trench 2		2			N

Nonidnt wood - Nonidentifiable wood

\* - tentative identification

\*\*N - numerous

have entailed a significant expenditure of energy; perhaps softwood was preferred for special elements of house construction.

#### Bone

One worked bone artifact was recovered from Site 5MT2198. This is a jackrabbit tibia awl recovered from the ventilator shaft of the pithouse (Figure 5.28). The smallness of the collection makes impossible any conclusions regarding the nature of the worked bone inventory or manufacturing industry of the household group inhabiting this site.

Figure 5.28 ✓ Site 5MT2198, bone tool: jackrabbit  
tibia awl.

## PRELIMINARY INTERPRETATIONS

### Chronology

Architectural and ceramic remains indicate that Site 5MT2198 was occupied during the Sagehen Phase (Late Basketmaker III Period). The three dates of tree-ring specimens confirm this association. The general paucity of artifacts and lack of a trash mound suggest that the site was occupied for a short period of time; the remodeling of the antechamber into a ventilation system is not interpreted as evident<sup>ce</sup> of a second component. Assigning a more precise date to this occupation is difficult. The three tree-ring dates suggest that the pitstructure was constructed during the last half of the seventh century (AD); in agreement with this, an archaeomagnetic sample from the hearth in Pitstructure 1 yielded a date of (AD) 650 ± 50 years. On the other hand, the presence of red ware and Piedra Black-on-white sherds suggests that the site's occupation occurred somewhat later - during the eighth century (AD) terminating by (AD) 775.

### Economic Activities

This single pit dwelling and associated surface features probably represents a farmstead occupied by a nuclear family (Birkedal [5:459]). That the occupants were farmers is certain, due to the abundance of charred corn recovered near the pithouse. Their fields were probably close by, perhaps in the basin directly south of the hamlet and on the low hills within 100 m of the site. That the inhabitants of the hamlet were restricted to a very local area for their farming activities is supported by the nearness of other similar habitation units of the West Sagehen Neighborhood. Although we can speculate that these farmers grew other

crops and utilized wild plants as well, positive evidence for these activities is lacking from the material collections recovered from the site.

#### Paleodemography

It is postulated that Sagehill Hamlet was the residence of one household unit incorporated into the dispersed community designated the West Sagehen Neighborhood. Although no reliable figures are available concerning population estimates for Formative stage or Anasazi Tradition households, Parsons [10], Blanton [11], and Winter [12] all assume a mean figure of five individuals per household unit based on their research involving Mesoamerican villages. Both Birkedal [5] and Flannery [13:23] believe that American Formative stage households (for the Anasazi Tradition, Mesa Verde Region, and the Mesoamerican Formative Period, respectively) consisted of nuclear families. This social unit can be described as a parent pair, their children, and possibly <sup>1-2</sup> ~~one two~~ close relatives, or <sup>2-3</sup> ~~two three~~ individuals at a minimum and <sup>8-10</sup> ~~eight ten~~ individuals maximum or a mean of <sup>5-6</sup> ~~five six~~ persons. ✓  
✓  
✓

One popular approach to estimating prehistoric site populations is to infer the number of occupants based on the available habitation area (see, for example, Naroll [14], LeBlanc [15], Casselberry [16], or Clarke [17]). Based on the total roofed area for Pithouse 1, population estimates have been calculated for Sagehill Hamlet based on the methods of Naroll (the population of a settlement unit can be calculated as one-tenth the floor area measured in square meters) and Casselberry (the population of a multifamily dwelling can be estimated as one-sixth the total floor area of

the dwelling as measured in square meters). These population estimates are shown in Table 5.6.

Table 5.6. Site 5MT2198, Population Estimates Based on Habitation Area.

Floor Area Pithouse (sq m)	Estimated Number of Occupants		
	Naroll	Casselberry	
With antechamber	22.82	2.28	3.80
Without antechamber	14.46	1.45	2.41

Population estimates for the site obtained by using the Naroll formula appear unreasonably low, while those using Casselberry's method seem more plausible; Birkedal [5:437] also reports more success by applying Casselberry's techniques. The early occupation had access to more roofed floor area as an antechamber was incorporated in the design of the pithouse. Later occupants had less space when the antechamber area was remodeled into a ventilator system; perhaps some activities that were originally performed in the antechamber were relocated in Use Area 1 to the north of the pithouse.

In summary, it is inferred that Sagehill Hamlet served as the residence of one household unit that was integrated into the West Sagehen Neighborhood. Based on estimates of available floor area, it appears that Site 5MT2198 was occupied by a small family unit or two or four individuals.

### Social Activities

It can reasonably be assumed from artifactual and structural remains at the site that activities were basically restricted to those involving subsistence, e.g., farming, food processing, tool production, etc., and social functions relating to these activities. There is no evidence that would indicate any specialized use of the site in the economic, social or ceremonial realms. That some religious or ceremonial activities occurred at the hamlet is evidenced by the sipapu in the pithouse; the extent of these activities remains conjectural. ✓

Specific activity areas within the pithouse can summarily be assigned on the basis of floor artifacts. The abundance of flakes around the hearth, flakes and cores in the northeast corner, and a cluster of stone tools and flakes near the west wall of the structure point to tool producing activities in these areas. Food preparation probably took place in the south room (the area south of the wingwall) since manos and a metate rest were recovered from that area. The anvil recovered just northwest of the central hearth may represent a specialized tool manufacturing locus in this area.

Outside activities probably centered around the hearth to the east and the fireplace to the southeast of the pithouse, and around Use Area 1 to the north. Actual evidence for specific activities around the hearth and fireplace is lacking; perhaps they represent the centers of seasonal activity areas, since during the winter they would be exposed to the elements and unusable during heavy snows. They would have been somewhat protected by construction of a ramada; the postholes located to the west and southwest of the hearth in Use Area 2 may be evidence for such a structure. Storage and/or food processing activities may have been

carried out in Use Area 1 north of the pithouse since an abundance of charred corn and two manos were recovered from this location. However, as a result of destruction from modern cultivation, any conclusions regarding prehistoric structures and activities in this area must remain mostly conjectural.

Because of the array of architectural remains present at Site 5MT2198 it has been concluded that one family or household occupied the habitation. The total cultural remains at Site 5MT2198 can therefore be said to represent a household cluster; according to Flannery, "(the household cluster) consists of the house and all the surrounding storage pits, burials, middens and features that can be reliably associated with the same household" [13:5]. The household cluster, therefore, is a cluster of architectural and artifactual remains used by a social unit, the household. In this case the remains recorded at Site 5MT2198 can be used to estimate the facilities and portable artifacts present at a Sagehen Phase household cluster and the activities performed by the household members utilizing that household cluster. At Sagehill Hamlet the household cluster consists of a (pit)house, a storage and use area (possibly with surface rooms and pits) to the north of the house, and other use/activity areas with hearths and possible brush screens or ramadas to the east of the house. Activities performed at the household cluster include flaked stone tool manufacture (represented by the core and debitage concentrations on the house floor), other tool manufacture (represented by the anvil), food processing (corn and/or seed grinding as represented by the manos and metate rest), and food storage (represented by the pockets of corn and numerous storage jar fragments recovered from Use Area 1 north of the house). This household cluster will be compared to those recorded at

other Sagehen Phase hamlets to establish parameters for the prehistoric occupation during this time period.

#### Trade

There is nothing in the cultural materials inventory recovered from Site 5MT2198 that would indicate that the prehistoric inhabitants of the hamlet traded with their more distant neighbors. The extent of trade and cooperation among the very close hamlets in the vicinity is presently unknown.

#### Cultural Process

Although all evidence indicates that Sagehill Hamlet was occupied " for a short period of time, one extensive remodelling episode did occur in that interval. The original shallow antechamber was undoubtedly abandoned when the inhabitants elected to replace it with a ventilator. This shift of ventilating systems appears to be a general trend in Anasazi architecture toward the end of the Basketmaker III Period (Bullard [7], Brew [18]).

## CONCLUSION

In summation it can be concluded that Site 5MT2198 was a small habitation occupied by a single family intent on making a living by local farming and by foraging for other resources available in the Escalante Sector. This household unit was part of what is considered to have been the larger West Sagehen Neighborhood, a dispersed community inhabiting the area north of the Sagehen Flats marsh during the seventh and eighth centuries AD. The Sagehill residents occupied the site for a short period of time, then abandoned their home for unknown reasons, perhaps only moving a short distance to another knoll in the Sagehen Locality. Future excavations in the Sagehen Flats Locality will help to elucidate the local movements and other cultural patterns of the prehistoric peoples living in small hamlets during the Sagehen Phase. ✓

APPENDIX 1

POLLEN REPORT FOR SITE 5MT2198

by  
Linda Scott

Site 5MT2198 (Sagehill Hamlet)

Pollen samples were collected at various sites to obtain information concerning the prehistoric environment and potential economic resources used by the prehistoric peoples. Discussion of the methodology involved and inter-site comparisons are presented in the Pollen Administrative Report (Scott [19]). Not all the pollen recovered is discussed in detail in that report, but mention is made of the various types and the entire pollen record is graphically represented. ✓

The first sample diagrammed from this site, Pollen Sample 7, represents the upper-most layer of a stratigraphic column taken from the pitstructure (Table 5.7). This sample was taken from 0-20 cm below the present ground surface. Sample 7 contains slightly less arboreal pollen than does the modern pollen sample from Site 5MT4512, another Sagehen Phase site located about 760 m east of Site 5MT2198; the difference between the two samples is primarily that the sample from Site 5MT4512 contains more Pinus pollen. In most respects, however, Sample 7 reflects the same pollen rain exhibited in the modern sample from Site 5MT4512. ✓

All of the archaeological pollen samples from this site were taken from Surface 1 in Pitstructure 1. Pollen Sample 13 was taken from contact with the floor in the northwest quadrant of this pitstructure. Pollen Sample 15 was taken from beneath a lap anvil in the same quadrant of the same pitstructure. The pollen composition of these two samples is similar and appears to represent primarily ambient or background pollen from this pitstructure. A small amount of Cleome (one percent) was noted in the floor-contact sample, while the sample taken from under the lap anvil contains 5 percent Cleome, one percent Opuntia, and one percent ✓

Table 5.7. Provenience of Pollen Samples from Site 5MT2198

POLLEN SAMPLE #	FS #	PITSTRUCTURE/SURFACE	PROVENIENCE AND COMMENTS
7	84	PS 1	0-20 cm below present ground surface, SW quad, against wall
13	83	PS 1	NW quad, Surface 1
15	114	PS 1	Under lap anvil, NW of hearth, Surface 1
19	114	PS 1	SW quad, in front of wingwall, Surface 1, SQ 030026
20	126	PS 1	SQ quad, behind west wingwall, Surface 1, SQ 030028
21	114	PS 1	S edge of main hearth
22	124	PS 1	Under mano behind distal end of east wingwall, Surface 1
24	115	PS 1	SE quad, corner where east wingwall meets wall of structure, Surface 1, SQ 032-026, no pollen
28	132	PS 1	Under mano, behind west wingwall, Area B, Surface 1
29	127	PS 1	Below rim of main hearth, SE corner, 5 cm N of slab, no pollen
31	127	PS 1	Below main hearth, SW corner, 4 cm NE of slab, no pollen

Umbelliferae pollen. This lap anvil is located slightly to the northwest of the hearth. It might be that the increased amount of economic pollen relates to activities around the hearth, rather than specifically to this lap anvil.

Pollen Sample 19 was taken from inside the main chamber just in front of the west wingwall. Sample 24, taken from near the east wingwall, where the wingwall joins the main chamber, did not yield sufficient pollen for analysis. Pollen Sample 20 represents the area behind the west wingwall. The primary differences between the <sup>two</sup> samples analyzed are that Sample 20 has slightly more Artemisia, and that Cleome pollen (2 percent) was found only in Sample 19. Neither of these samples contain any evidence of Zea pollen. The pollen record suggests that these two areas sampled were probably not connected with food-processing activities or vegetable storage.

Pollen Samples 28 and 22 were taken from beneath mano fragments behind the wingwalls. These samples contain arboreal pollen frequencies similar to one another, and in fact, they have pollen records similar to Samples 13 and 19. Both mano fragments contain evidence of Opuntia pollen (one percent), and one contains evidence of Cleome pollen (12 percent), while the other contains a small amount of Zea pollen (one percent). The Cleome pollen in Sample 22 indicates that the mano sampled was probably used to grind Cleome seeds.

Three pollen samples were taken in association with the hearth in this pitstructure. Pollen Sample 21 was taken from the south edge of the hearth and was the only sample to contain sufficient pollen for analysis. Samples 29 and 31, taken from below the rim of the hearth and from below the hearth, respectively, contained insufficient pollen for analysis.

Pollen Sample 21 contains an arboreal pollen frequency similar to those from the rest of the samples from this pitstructure (22 percent). The unique components of this pollen sample include a trace of Opuntia pollen and 5 percent Umbelliferae pollen.

The pollen evidence indicates that the prehistoric environment at or near this site offered the following vegetation types for exploitation by the inhabitants of the site: Juniperus, Pinus, Quercus, short-spined Compositae, Artemisia, high-spined Compositae, Chenopods, Cleome, Ephedra nevadensis-type and Ephedra torreyana-type, Eriogonum, Graminae, Opuntia, Rosaceae, and Umbelliferae. Zea was the only cultigen noted in the pollen samples from this site. The archaeological pollen samples at this site establish a fairly uniform record of background pollen in this pitstructure. The variations in pollen content in these samples appear in the ones taken from under the mano fragments, which contain evidence of Opuntia, Cleome, and Zea pollen. The relatively small frequencies for these pollen types make it difficult to ascertain whether this pollen should be attributed to ambient pollen in the area or to grinding activities of the mano. The limited occurrence of these economic pollen types in this pitstructure suggests that their occurrence in samples associated with features and artifacts is probably related to food-preparation activities.

The hearth sample also contains evidence of Opuntia, Zea, and Umbelliferae pollen. The association of these pollen types with the mano fragments and hearth appear to indicate not only the use of Cleome, Opuntia, Umbelliferae, and Zea as food items, but also their preparation for consumption at these specific locations in the pitstructure.

APPENDIX 2

ARCHAEOMAGNETIC RESULTS FOR SITE 5MT2198

by

J. Holly Hathaway and Jeffrey L. Eighmy



fall close to the <sup>#</sup>AD 650 portion of the curve with a large error range (± 50 years). A modern interpretation is also possible, also with a ± 50 year error range. The paleopole plot of Sample 2 is somewhat problematic due to its wide range of error, and dates reported should be used in conjunction with the archaeological record to determine the most feasible interpretation. Possible archaeomagnetic interpretations include: AD 700, AD 1075, AD 1340, and AD 1440; all with a ± 75 year range of error.

APPENDIX 3

DATA TABLES AND SUMMARY STATEMENTS, LITHIC REPORT FOR SITE 5MT2198

by

Carl J. Phagan and Thomas H. Hruby

The data presented in Tables 5.9, 5.10, and 5.11 represent part of the lithic reductive-technology analysis completed for Site 5MT2198. From a twelve-attribute Flaked Lithic Tool (FLT) analysis system, four attributes were selected to illustrate general technological, functional, and raw material variability. A traditional morphological-use classification, a ranked estimation of production technology input for dorsal and ventral surfaces, and a grain-size evaluation are included. Six variables are included from the Flaked Lithic Debitage (FLD) analysis system: grain-size ranking, classification of items with cortex, items which retain a striking platform, obsidian items, mean weight, and total number ofdebitage items. The Nonflaked Lithic Tool (NFLT) analysis system is represented by four variables: traditional morphological-use item classification, production-input evaluation, indication of item completeness, and raw-material grain-size evaluation. The complete lithic-analysis systems are described elsewhere in D.A.P. publications (Phagan [24]).

During 1980 the D.A.P. lithic-laboratory personnel have repeatedly reviewed the utility and reliability of the lithic-analysis systems. In this review, a number of analysis variables have been modified, particularly the item morphological-use variables on both the FLT and NFLT systems. Analytical perspectives change as information accumulates and as models of tool production and use improve. In order to minimize the effects of this analytical modification on interpretation, the observed values of these variables have been regrouped into larger categories within which analytic consistency is reliable.

For comparative purposes, the tables also include data for a grouping of temporally and functionally similar D.A.P. sites and for all D.A.P.

Analysis Data Summary for Site 5MT2198,  
Lithic Tools (Page 1 of 2)

#2?  
↑

	Face Collection (N = 3)		Pit- structure 1 (N = 24)		Use Area 1 (N = 4)		Other Excavated Units (N = 21)		Pit- structure Fill (N = 19)	
	#	%	#	%	#	%	#	%	#	%
<b>MORPHO-USE FORM, #2</b>										
Indeterminate										
Utilized flakes	1	33.3	8	33.3			8	38.0	6	31.6
Cores	1	33.3	10	41.6	2	50.0	6	28.6	8	42.1
Choppers, <u>Scraper planes</u>			2	8.3			3	14.2	1	5.3
Thick scrapers			1	4.2			1	4.8	1	5.3
Thin scrapers			2	8.3					2	10.5
Bifaces			1	4.2						
Projectile points							1	4.8		
Specialized forms	1	33.3			2	50.0	2	9.5	1	5.3
<b>THINNING STAGE: DORSAL</b>										
Indeterminate										
Non-facial item	1	33.3	10	41.6	2	50.0	4	19.0	8	42.1
Unthin item, w/ cortex			8	33.3	1	25.0	2	9.5	6	31.6
Unthin item, no cortex	2	66.7					5	23.8		
Prelim shap, w/ cortex			1	4.2			3	14.2	1	5.3
Prelim shap, no cortex			1	4.2						
Primary thinning										
Secondary thinning										
Well-shaped			4	16.7	1	25.0	6	28.6	4	21.1
Highly stylized							1	4.8		
<b>THINNING STAGE: VENTRAL</b>										
Indeterminate										
Non-facial item	1	33.3	10	41.6			4	19.0	8	42.1
Unthin item, w/ cortex			1	4.2	3	75.0			9	47.4
Unthin item, no cortex	1	33.3	10	41.6			11	52.3		
Prelim shap, w/ cortex			2	8.3			1	4.8	1	5.3
Prelim shap, no cortex	1	33.3								
Primary thinning										
Secondary thinning										
Well-shaped			1	4.2	1	25.0	4	19.0	1	5.3
Highly stylized							1	4.8		
<b>GRAIN SIZE</b>										
Medium (coarse)			2	8.3			1	4.8	2	10.5
Fine	1	33.3	8	33.3			3	14.2	5	26.3
Very Fine (detrital)	2	66.7	11	45.8	4	100.0	15	71.4	10	52.6
Miscroscopic (non-granular)			3	12.5			2	9.5	2	10.5

RC)?

replaced  
new

with  
page

Table 5.10. Lithic Analysis Data Summary for Site 5MT2198,  
Flaked Lithic Debitage (Page 1 of 2).

	Surface Collection (N = 12)		Pitstructure 1 (N = 195)		Use Area 1 (N = 12)		Other Excavated Units (N = 132)		Pitstructure Fill (N = 137)	
	#	%	#	%	#	%	#	%	#	%
<u>GRAIN SIZE</u>										
Medium (coarse)			2	1.0	2	16.6	4	3.0	2	1.5
Fine	7	58.3	124	63.6	7	58.4	71	53.8	81	59.1
Very Fine (detrital)	5	41.7	57	29.2	2	16.6	50	37.9	48	35.0
Microscopic (non-granular)			12	6.1	1	8.3	7	5.3	6	4.4
Items with Cortex, %	5	41.7	76	38.9	6	50.0	52	39.4	55	40.1
Items with Platform, %	3	12.5	150	76.9	5	41.6	92	69.7	111	81.0
Obsidian Items, #										
Mean Weight (grams)	9.92		9.47		23.1				10.30	
Total Debitage, #	12		195		12		132		137	

Table 5.10. Lithic Analysis Data Summary for Site 5MT2198, Flaked Lithic Debitage (Page 2 of 2).

	Pitstructure Floor (N = 29)		5MT2198 Total (N = 351)		5MT2194, 5MT2858, 5MT4545, 5MT4614 Total (N = 132)		Anasazi Group (N=66095)
	#	%	#	%	#	%	%
GRAIN SIZE							
Medium (coarse)			8	2.3	235	2.9	3.2
Fine	21	72.4	209	49.5	2531	30.7	21.4
Very Fine (detrital)	5	17.2	114	32.5	3875	47.0	51.6
Microscopic (non-granular)	3	10.3	20	5.7	1598	19.4	23.7
Items with Cortex, %	10	34.5	139	39.6	2153	26.1	25.9
Items with Platform, %	21	72.4	251	71.5	3630	44.1	38.8
Obsidian Items, #					6	00.1	18
Mean Weight (grams)	7.45		10.78		8.65		7.93
Total Debitage, #	29		351		8239		66095

Table 5.11. Lithic Analysis Data Summary for Site 5MT2198, Nonflaked Lithic Tools (Page 1 of 2)

	Surface Collection (N = 3)		Pitstructure 1 (N = 27)		Use Area 1 (N = 4)		Other Excavated Units (N = 21)		Pitstructure Fill (N = 13)	
	#	%	#	%	#	%	#	%	#	%
<b>MORPHO-USE FORM</b>										
Indeterminate			1	3.7	1	25.0	2	9.5		
Generalized, unhafted			4	14.8			2	9.5	1	7.7
Hammerstones			3	11.1			5	23.8	1	7.7
Knives	1	33.3	10	37.0	2	50.0	8	38.1	5	38.5
Flake Metates										
Crude Metates			2	7.4			2	9.5		
Spec & Frag Metates	2	66.7	1	3.7	1	25.0	1	4.8	1	7.7
Generalized, hafted										
Disc Specialized			6	22.2			1	4.8	5	38.5
<b>SHAPE EVALUATION</b>										
Indeterminate	2	66.7			2	50.0	4	19.0		
Module	1	33.3	20	82.4	2	50.0	9	42.9	10	76.9
Primarily Shaped			2	2.9			5	23.8	2	15.4
Well-shaped			5	11.7			3	14.3	1	7.7
Highly stylized										
<b>STATE OF COMPLETENESS</b>										
Indeterminate							1	4.8		
Small Fragment							14	66.7	4	30.8
Partial Implement	2	66.7	7	25.9	2	50.0				
Complete (+ or -)										
Implement	1	33.3	20	82.4	2	50.0	6	28.6	9	69.2
<b>GRAIN SIZE</b>										
Indeterminate	1	33.3	3	5.9	1	25.0	2	9.5		
Coarse	2	66.7	11	47.0	1	25.0	7	33.3	7	53.8
Medium			10	35.3	1	25.0	6	28.6	4	30.8
Fine			3	11.8	1	25.0	5	23.8	1	7.7
Non-granular							1	4.8	1	7.7

caps?

Table 5.11. Lithic Analysis Data Summary for Site 5MT2198, Nonflaked Lithic Tools (Page 2 of 2).

	Pitstructure Floor (N = 8)		5MT2198 Total (N = 55)		5MT2194, 5MT2858, 5MT4545, & 5MT4614 Total (N = 572)		Anasazi Group (N = 4318)
	#	%	#	%	#	%	%
<b>MORPHO-USE FORM</b>							
Indeterminate	1	12.5	4	7.3	43	7.5	9.2
Generalized, unhafted	2	25.0	6	10.9	138	24.1	24.0
Hammerstones			8	14.5	90	15.7	9.9
Manos	4	50.0	21	38.2	207	36.2	33.5
Slab Metates					12	2.1	2.1
Trough Metates			4	7.3	23	4.0	9.4
Unspecified & Frag Metates			5	9.1	28	4.9	5.2
Generalized, hafted					12	2.1	2.5
Miscellaneous Specialized	1	12.5	7	12.7	18	3.1	4.0
<b>ODUCTION EVALUATION</b>							
Indeterminate			8	14.5	34	6.0	8.4
Module	6	75.0	32	58.2	382	66.8	53.5
Minimally Shaped			7	12.7	90	15.7	16.7
Well-shaped	2	25.0	8	14.5	63	11.0	21.1
Highly stylized					3	0.5	0.1
<b>EM COMPLETENESS</b>							
Indeterminate					18	3.1	0.9
Small Fragment			1	1.8			3.3
Partial Implement			25	45.4	242	42.3	45.6
Complete (+ or -) Implement	8	100	29	57.7	312	54.5	50.8
<b>GRAIN SIZE</b>							
Indeterminate			7	12.7	72	12.6	8.1
Coarse	3	37.5	21	38.2	103	18.0	16.5
Medium	4	50.3	17	30.9	207	36.2	39.4
Fine	1	12.5	9	16.4	183	31.9	34.5
Non-granular			1	1.8	7	1.2	1.2

caps?

Anasazi sites analyzed prior to the 1980 field season. These latter "Anasazi group" data have been generated from computer files which have not undergone complete editing, and final figures may differ slightly from those presented. Comparisons and interpretations presented here, particularly those of an inter-site nature, are based on a qualitative assessment of lithic profile variation, since significance has not been statistically established.

Site 5MT2198 is a small unit hamlet placed within the Sagehill Subphase of the Sagehen Phase. Four sites, Site 5MT2194, Site 5MT2858, Site 5MT4545, and Site 5MT4614, have a similar temporal/functional matrix and have been grouped together for comparable purposes.

Site 5MT2198 has an unusually large percentage of cores and is underrepresented in utilized flakes when compared with the Anasazi Group and the group of similar temporal/functional sites. Site 5MT2198 also has a comparatively low percentage of items with high technological input--the exception to this is the specialized forms which have high technological input values. The above evidence along with the relatively low number of other high input items (bifaces, scrapers, and projectile points) indicates that Site 5MT2198 has a very specialized flake tool industry--probably related to specialized household tasks. Supporting this conclusion are the dorsal and ventral technological evaluations which suggest that a relatively large amount of energy input was being given to the traditionally low input items. Also supporting the specialized nature of the flaked lithic is the percentage of flaked tools to total flaked lithic items. Both the Anasazi Group and the group of unit hamlets have 9.8 tools per 100 flaked lithic items; Site 5MT2198 has 12.9 tools per 100 items. This percentage is quite high for an Anasazi site. The above

discussion suggests that Site 5MT2198 might be functionally specialized with respect to other Anasazi sites. It is also possible that the differences might reflect collection-mode or abandonment-mode problems.

The FLD profile may also indicate a specialized primary production situation. The profile for the lithic debitage indicates a selection for raw materials in the fine to very fine grain sizes. In the two groups used for comparative purposes, microscopic raw materials were highly selected for. The large flake size, high cortex count, and very high platform counts indicate a fairly specialized production situation-- probably reflecting primary production of low input items. The paucity of debitage items, 351 pieces of debitage, suggests that the high input tools were carried onto the site.

The percentage of flaked lithic tools to nonflaked lithic tools is very low. In Site 5MT2198 only 48.6 percent of the tools are flaked lithic tools; in the two groups used for comparative purposes the flaked lithic tools account for approximately 60 percent of the tools. The nonflaked lithics also suggests the specialized character of Site 5MT2198. The nonflaked lithic tools on Anasazi sites are usually dominated by manos and metates. Site 5MT2198 follows this pattern but has a greater percentage of manos and metates than the other unit hamlets of the Sagehill Subphase. Generalized nonflaked lithic tools are more abundant in the Anasazi Group and the unit hamlet group, while specialized nonflaked lithics are twice as abundant in Site 5MT2198.

The above information suggests that Site 5MT2198, a unit hamlet currently placed in the Sagehill Subphase, is a highly specialized site in terms of the lithic materials. Both the FLT and NFLT systems indicate that food processing was a very important activity at the site. The

flaked lithics are more difficult to evaluate but appear to represent an industry more related to specialized domestic activities than hunting activities.

## INTRODUCTION

Archaeomagnetic dating is a relatively recent chronometric method which has important implications for the archaeologist. Utilization of this method will not only refine estimates of ancient chronology, but enable archaeologists to assign dates in the absence of other dating methods (e.g., dendrochronology and C-14). Care should be taken, however, in reporting results because in a young science methodology needs a thorough discussion and good communication should speed the diffusion of any significant technical or methodological advances. Archaeomagnetic methods are continually being refined in attempts to increase the variety of dateable features, to tighten temporal control, and to further understand the nature of magnetic change. For a more complete discussion of laboratory and field methods see Hathaway and Eighmy [29].

## SAMPLING AND METHODS

Two samples were collected on Site 5MT2198 during the 1978 field season. The site is located at 37°31' north latitude and 108°35' east longitude in the Sagehen Flats area of the Dolores Archaeological Program. The site consists of a small hamlet, probably occupied during the Sagehen Phase (AD 600-850). ✓

Sample 1 was collected from a slab-lined fireplace located in an exterior area southeast of the main living structure. Sample 2 was collected from the central hearth in Pitstructure 1. No other features suitable for archaeomagnetic analysis were recovered on this site.

Twelve specimens were collected for each of the samples from Site 5MT2198. Each specimen (an estimated volume of 3.4 <sup>cc</sup> ~~cu~~ cm) was encased in a 2.5 cm plaster cube (15.6 cc). The orientation of each specimen was maintained by leveling the cube and measuring the magnetic declination of one cube side. To control for current local magnetic declination North Star was sited on 2 September 1978. The average observed magnetic declination was 13.5 degrees, one-half degree different than the U.S.G.S. 1965 geological map, and in substantial agreement with expected values calculated from the National Oceanic and Atmospheric Administration Map "Magnetic Declination in the United States-Epoch 1975.0.0". ✓

ref?

Table 5.8. Archaeomagnetic Results from Site 5MT2198.

Archaeomagnetic Designation	5MT2198-1	5MT2198-2
Feature and Provenience	Fireplace Sq 034032 Level 1	Hearth Pitstr 1, Surface 1
Specimens used in final analysis/total collected	7/12	9/12
DeGauss level	180 Oersted	150 Oersted
Mean Inclination	64.49	59.44
Mean Declination	5.43	1.81
Mean Intensity	.165272*	.125983*
Mean Sample Vector	6.99	8.94
Precision Parameter (k)	449.66	139.90
Alpha 95	2.85	4.37
Paleolatitude	80.29	86.91 N
Paleolongitude	274.21	277.91 E
Error along great circle (EP)	3.66	4.92
Error perpendicular to great circle (EM)	4.57	6.56

\*x 10<sup>-4</sup>

Pitstr - Pitstructure

Figure 5.29. Site 5MT2198, archaeomagnetic specimen  
plots, Samples 1 and 2.

SMC  
↑↑↑  
caps 2

✓ Figure 5.30, <sup>2</sup> Site 5MT2198, southwest master curve. ✓

APPENDIX 4

CERAMIC REPORT FOR SITE 5MT2198

by

William A. Lucius and Eric Blinman

Analysis of ceramic artifacts from Site 5MT2198 was carried out by members of the D.A.P. Additive Analysis Laboratory. Structure and procedures of this inventory analysis are described in Lucius [25] and familiarity with this program will aid in the understanding of the data and interpretations below. ✓

Ceramic data for the site as a whole are presented in Table 5.12. These data include materials collected at the time the site was recorded in 1972. Sherds are grouped by "culture categories and wares" (Lindsay et al. [26]). Apart from two indeterminate white ware sherds, all ceramics could be assigned to wares of the Mesa Verde Culture Category. These reflect a local (Mesa Verde region) manufacturing tradition and exchange system. Pottery types within each ware are listed sequentially from early to late, and grouped types (e.g., Early Pueblo Gray) are listed last and include sherds not assignable to specific types. The two indeterminate sherds have attributes that are not consistent with the expected attributes of either the Mesa Verde or adjacent culture categories. A breakdown of sherd frequencies within smaller spatial units of the site is presented in Table 5.13. ✓

Only one partially reconstructable ceramic vessel was recovered from the site. It consists of several body sherds of a gray ware jar. No rim or manipulated sherds were present, and it could not be assigned to a type. Sherds comprising the partial jar were found in both surface and fill proveniences. ✓

The ceramic profile presented in Figure 5.31 is based on relative weights of the typable sherds of each ware for the entire site. Relative contributions of each ware to the site total are listed in parentheses to the left of the figure. Date ranges for the types are based on those

Table 5.12. Summary of Descriptive Frequencies of Ceramics at Site 5MT2198.

WARE TRADITIONAL TYPE	BY COUNT												WEIGHTS	
	BOWL		JAR		OTHER		TOTAL		RIMS		MODIFIED		grams	%
	#	%	#	%	#	%	#	%	#	%	#	%		
Mesa Verde Gray														
Chapin Gray			3	1	9	90	12	2	12	52			67	2
Early Pueblo			474	94			474	85			1	50	2662	84
Mesa Verde White														
Chapin B/W	3	7					3	1	1	4			25	1
Piedra B/W	1	2					1	*	1	4			4	*
Early Pueblo	32	76	25	5	1	10	58	10	8	35	1	50	359	11
Mesa Verde Red														
Early Pueblo	5	12	1	*			6	1	1	4			21	1
Late Pueblo	1	2					1	*					1	*
Indeterminant														
White Ware			2	*			2	*					21	1

TOTALS                    42                    505                    10                    557                    23                    2                    3160

\* - Trace

Table 5.13. Site 5MT2198, Ceramic Data from Selected Proveniences (Page 1 of 3)

	SURFACE COLLECTION					Total	
	Over	South of	North of	Other	#	%	
	Pithouse 1 % (N = 1)	Pithouse 1 % (N = 2)	Pithouse 1 % (N = 17)	Surface <sup>a</sup> % (N = 28)			
Mesa Verde Gray Chapin Gray Early Pueblo	100	100	94	100	47	98	
Mesa Verde White Chapin B/W Piedra B/W Early Pueblo			6		1	2	
Mesa Verde Red Early Pueblo Late Pueblo							
Indeterminant White Ware							
TOTAL					48	100	
Vessel Form							
Bowl							
Jar	100	100	100	100	48	100	
Other							

<sup>a</sup> - includes 1972 survey collection

Table 5.13 Site 5MT2198, Ceramic Data from Selected Proveniences (Page 2 of 3)

	PITHOUSE 1				USE AREA 1	
	Upper Fill % (N = 119)	Floor Fill % (N = 2)	Floor % (N = 2)	Total Pithouse #	Total Pithouse %	Plowzone % (N = 83)
Mesa Verde Gray				3	2	1
Chapin Gray	2			99	80	90
Early Pueblo	80	100	100			
Mesa Verde White				2	2	
Chapin B/W	2			1	1	
Piedra B/W	1			15	12	7
Early Pueblo	12					
Mesa Verde Red				1	1	1
Early Pueblo						
Late Pueblo	1					
Indeterminant White Ware	2			2	2	
TOTAL				123	100	
Vessel Form						
Bowl	8			10	8	2
Jar	90	100	100	111	90	96
Other	2			2	2	1

Table 5.13. Site 5MT2198, Ceramic Data from Selected Proveniences (Page 3 of 3).

	USE AREA 1	USE AREA 2		Other		Total	
	Surface % (N = 5)	Plowzone Over Hearth 2 % (N = 6)	Plowzone Over Hearth 2 % (N = 7)	#	%	#	%
Mesa Verde Gray							
Chapin Gray	60	100	71	8	3	12	2
Early Pueblo				238	83	474	85
Mesa Verde White							
Chapin B/W				1	*	3	1
Piedra B/W						1	*
Early Pueblo	20		29	33	12	58	10
Mesa Verde Red							
Early Pueblo	20			3	1	6	1
Late Pueblo				1	*	1	*
Indeterminant White Ware						2	*
TOTAL				286	100	557	100
Vessel Form							
Bowl	40		29	24	8	40	7
Jar	60	100	71	254	89	507	91
Other				7	2	10	2

\* - Trace

Figure 5.31. Diagnostic Type Occurrences for Site 5MT2198.

Doesnt match caption on list of figures.

Site 5MT2198

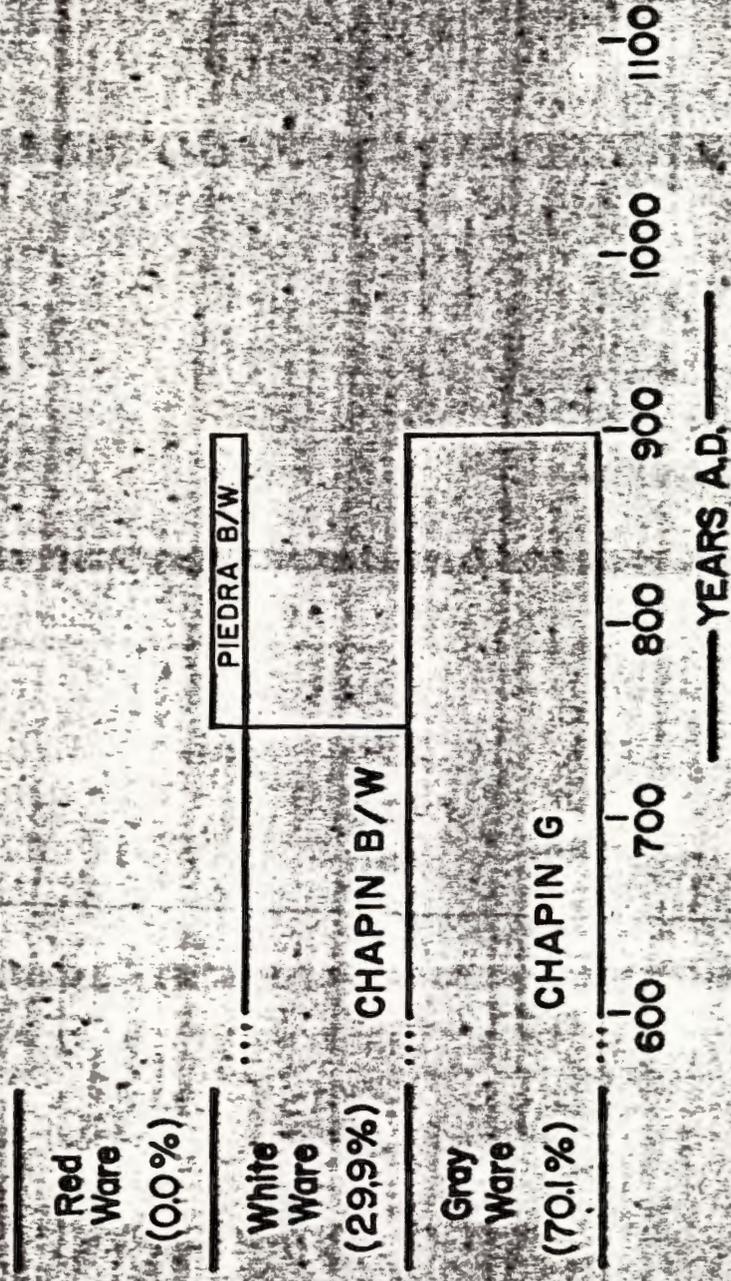


Figure 5.31 Diagnostic type occurrences for ceramics, Site 5MT2198.

published in Breternitz et al. [9], with some adjustments based on dating results from within the D.A.P. Intensity of occupation as well as temporal span are illustrated by the figure, and it can be compared with similar figures that have been prepared for other D.A.P. sites.

✓ An extremely cautious estimate of occupation span for ten site would be AD 600-900. However, the absence of Moccasin Gray (present as early as AD 775 and common after AD 800), argues for termination of site occupation at or before AD 775. Both Piedra Black-on-white sherds and red wares are also present, and their introduction into the Project area is currently believed to postdate AD 750. If this assumption is correct, then the ceramic dating (site occupation lasting into the AD 750-775 time range) is in conflict with dating inferences based on tree-ring samples and architecture. These inferences place the date of pithouse construction after AD 655 but probably before AD 700, and there is no evidence that use of the pithouse was unusually protracted or that there were two sequential occupations at the site. It may be that this site represents an early introduction of both red wares and Piedra Black-on-white into the Project area, sometime between AD 700-750.

✓ 19 Although all classifiable sherds are attributable to the Mesa Verde region, 14 percent were tempered with materials believed to have been used outside of the immediate Project area. Most of these were tempered with a multilithic sand, probably originating somewhere to the west.