

MUSEUM OF NEW MEXICO

OFFICE OF ARCHAEOLOGICAL STUDIES

LIMITED TEST EXCAVATIONS FOR THE PROPOSED CRM MAINTENANCE FACILITY AT PECOS NATIONAL HISTORICAL PARK

by
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FINAL REPORT

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for
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ARCHAEOLOGY NOTES 167

ADMINISTRATIVE SUMMARY

Between September 14 and 30, 1994, the Office of Archaeological Studies conducted limited test excavations and documentation at Pecos National Historic Park in San Miguel County, New Mexico. The project was in anticipation of constructing a new Cultural Resources Management and Building Maintenance Facility and moving the adobe processing area away from the Church/Convento Complex.

Investigations included surface collecting the areas designated as Scatters A and B by the National Park Service, hand-excavation of nine 1-by-1-m test units, excavation of nine power-auger tests and a series of hand-auger tests, excavation of four backhoe trenches, and preparation of a base map of the area.

No structures or features were found in the immediate area of the proposed construction. The presence, however, of structures north and south of the construction area suggests that any ground-disturbing activities should be monitored.

MNM Project 41.587A (Pecos NHP)

Submitted in fulfillment of cooperative agreement no. CA7029-4-0018 between Pecos National Historical Park and the Office of Archaeological Studies, Museum of New Mexico.

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I would like to thank OAS field and laboratory personnel for their efforts in accomplishing this project. In addition, I thank Tim Maxwell for his help in preparing a budget and plan of work, Eric Blinman for his review and helpful comments on this manuscript and a preliminary management plan, Nancy Warren for artifact and report photographs, Ann Noble for the illustrations, and Robin Gould for editing the manuscript. Dr. Glen Greene volunteered his time and power auger to help describe the soils in the project area. His efforts are greatly appreciated.

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INTRODUCTION

The Office of Archaeological Studies (OAS) contracted with the National Park Service through a cooperative agreement to conduct limited test excavations and documentation at Pecos National Historical Park (Fig. 1). Plans for a Cultural Resource Management/Maintenance Facility (CRM Facility) include assembling a prefabricated aluminum building on a concrete pad and moving the adobe processing area from the Church/Convento Complex to an area just north of the new facility. The area selected for the proposed adobe processing area was chosen because it was utilized for material storage in the late 1930s and 1940s and has already been disturbed. Few surface artifacts and features are known in the immediate vicinity.

Pecos National Historical Park developed a general testing plan to guide OAS's investigation on this project. The OAS limited testing program was designed to thoroughly examine and recover information on the context, distribution, and significance of cultural resources within the area and to relocate previously recorded sites within the immediate vicinity. To accomplish these goals, the OAS collected surface artifacts from the areas designated as Scatters A and B, hand excavated nine 1-by-1-m test units, investigated subsurface deposits with a series of auger tests and four backhoe trenches, and prepared a base map of the area.

Previous Research in the Study Area

Detailed accounts of the prehistory, history, geology, and natural environment of the Pecos area can be found in a number of sources (Forrest 1929; Kessel 1979; Moore 1992; Nordby and Creutz 1993; Schroeder 1979).

National Park Service Survey

Survey of the core area of Pecos National Historical Park (Nordby 1993) located a number of archaeological sites in the proposed CRM Facility area. Because the area around Pecos Pueblo is a continuous light scatter of artifacts, sites were designated only when architectural features were present (Nordby 1993:4). Recorded sites include Peco 54, Peco 57, Peco 61, Peco 64 (the Presido), Peco 65, Peco 66, and Peco 207.

Peco 54 (LA 14156) is 15 m from the southeast corner of the OAS Scatter A and B collection grid but well outside the area of potential impact. It consists of a small rubble mound (1.5 m in diameter) and a second mound (.5 m diameter) 4.8 m west of the first. Black-on-white ceramics and lithic artifacts are present on the surface.

Peco 57 (LA 14155) is approximately 41 m east of the OAS collection grid and outside the area of potential impact. It is an earthen mound, 0.36 m high, measuring approximately 15.6 m east-west and 9.5 m north-south. Galisteo Black-on-white and glaze ware ceramics were collected from the surface (Nordby 1993, site data form).

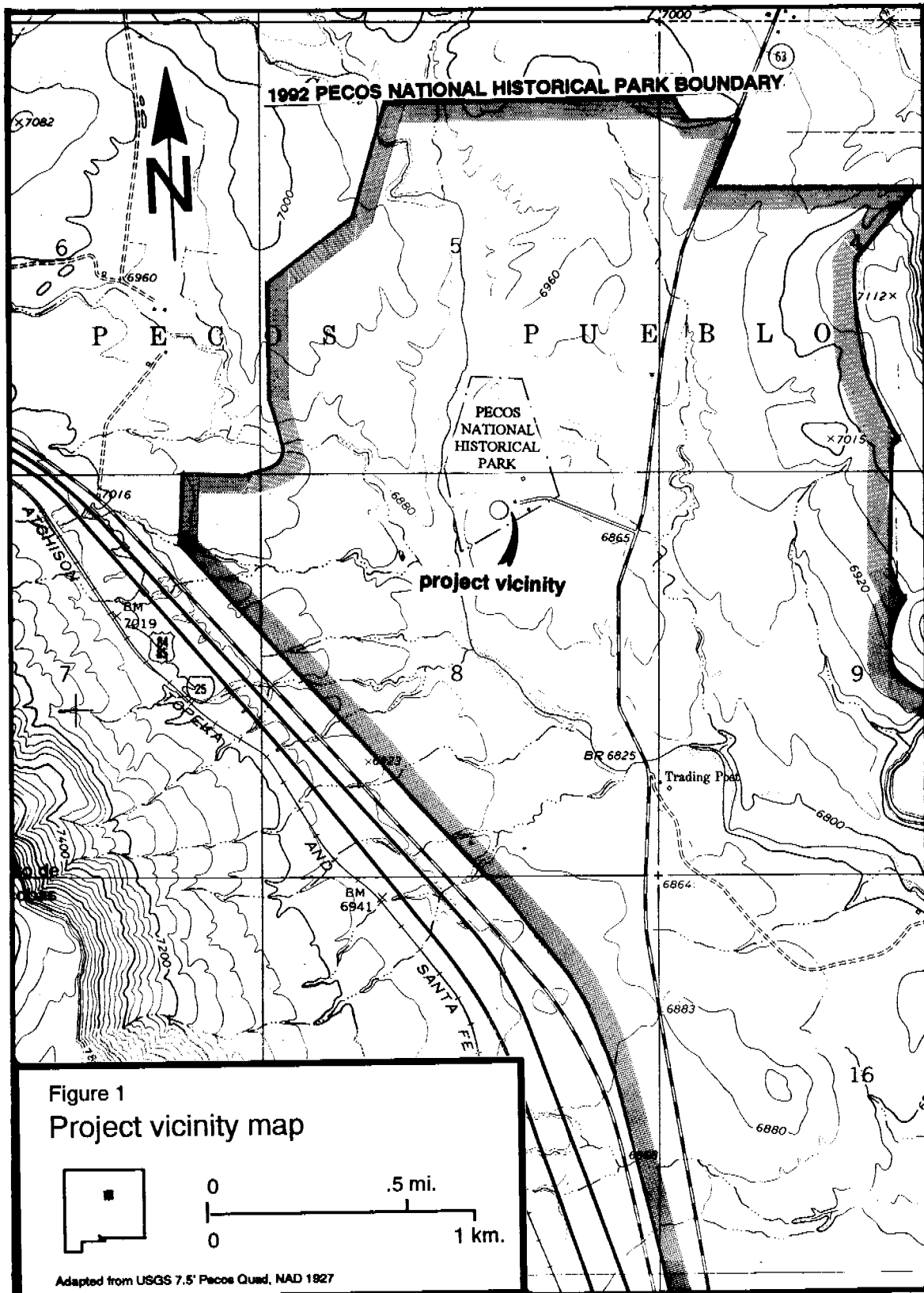
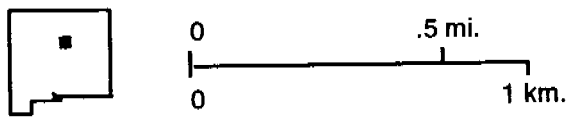


Figure 1
Project vicinity map



Adapted from USGS 7.5' Pecos Quad, NAD 1927

Peco 61 (LA 14150) is about 55 m northwest of the edge of the proposed adobe processing area. Surveyed as a possible hearth constructed of stones larger than those present in the immediate area, no artifacts were noted and the feature was presumed to be recent (Nordby 1993, site data form). Subsequent test excavations in the site area located a pit structure (Nordby and Creutz 1993).

The Presido (Peco 64) is approximately 65 m north of the proposed adobe processing area. It consists of a large mound, approximately 70-by-90 m.

Peco 65 (LA 14148) is 45 m northeast of the proposed adobe processing area. It is a possible tipi or wickiup ring (3.7-by-4.0 m interior dimensions) and wall segment that may be Athabascan. The only artifacts noted were isolated ceramics (Nordby 1993, site data form).

Peco 66 (LA 14151) lies an unknown distance west of the study area beyond the septic tank and leach field. It consists of a storage feature or shrine constructed of upright slabs and a slab cover (.8-by-1.0 m) (Nordby 1993, site data form). This site was not relocated or plotted during the OAS study. The site was presumably destroyed during construction of a sewage evaporation pit in 1984.

Peco 207 was discovered and excavated during the installation of a sewer line. Although there were no surface indications of a feature, at least one pit structure existed in this location (Nordby 1993, site data form). It is approximately 45 m north-northeast of the edge of the proposed adobe processing area.

National Park Service Excavations

Excavations have located pit structures at three sites in the vicinity of the proposed CRM Facility (Nordby and Creutz 1993). There were no surface indications of the structures at these locations. The pit structure comprising Peco 207 was found by a backhoe trench for a sewer line. Constructed around A.D. 832 and remodeled about A.D. 841, the structure was burned and not reoccupied. Excavation was confined to the structure and a small area (generally less than 1.0 m) around the perimeter (Nordby and Creutz 1993:3.1-4).

Peco 53 (LA 14154) was selected for test excavations to aid in interpreting the small sites within the park. Surveyed as rock alignments enclosing two or three rooms dating to the sixteenth or seventeenth centuries, the excavations also encountered a burned pit structure (Nordby and Creutz 1993:1.3). Footings for two rooms and a checkerboard pattern of grids around the rooms were excavated. One of the surrounding grids contained a burned pit structure dating to the ninth century (Nordby and Creutz 1993:4.1-25). This site is approximately 180 m west of the OAS project area.

At Peco 61 (LA 14150), test excavations prior to installing a surface propane tank encountered a burned pit structure (Nordby and Creutz 1993:1-5). Approximately one-quarter of the structure was excavated after discovery in a test trench (Nordby and Creutz 1993:5.1-2).

National Park Service Survey for the CRM Facility

Susan Eininger (1993) surveyed approximately two acres in anticipation of development in the study area. Peco 54, 57, 65, and 207 were relocated. No new architectural features were found within the project area; however, two artifact concentrations (Scatters A and B), thought to be part of the continuous scatter surrounding Pecos Pueblo, were located (Eininger 1993:5, 11-12).

OAS INVESTIGATIONS

Field investigations were conducted between September 14 and 30, 1994, by Nancy J. Akins (project director), Carolyn Count, Deborah Johnson, Lewis Kimmelman, Macy Mensel, Lloyd Moiola, and Christine Sterling. Dr. Glen Greene, geomorphologist, took nine cores with a power auger and provided descriptions of the soils in the project area. Alley Cat excavated the backhoe trenches. The following section describes these investigations as the Surface Collection Area, Surface Collection Area tests pits, the Adobe Processing Area tests, the Peco 207 Area, and additional auger tests (Fig. 2). A later section discusses the artifact analysis methods and summarizes the assemblage.

Excavation of the test units was in arbitrary 10-cm levels and was terminated when culturally sterile deposits were reached. Sterile was defined as a 10-cm level with no cultural material. Auger tests were placed in the bottom of each test pit to record stratigraphic changes beneath the pit. All fill was screened through ¼-inch hardware cloth. Forms were completed for each level excavated, and plan views were drawn when appropriate. In many instances, no rock or fill changes existed and this was noted. Profiles of two faces of each test pit were completed along with a description of the fill in the profile and a grid summary form.

Surface Collection Area

The Surface Collection Area is relatively flat with slight undulations, dipping from south to north (roughly 1.1 cm per meter along both the 72E and 100E grid lines) and east to west (2.6 cm per meter along the 100N grid line). It is bounded to the north by a deflated area that slopes down into the disturbed area of the proposed Adobe Processing Area. No collection was made within the Adobe Processing area. The surface is disturbed from its prior use as storage and the vegetation is dense. To the west are a shallow erosional channel and a disturbed area. Rock, adobe blocks, and other debris are piled along and in the channel. Within the drainage are recent piles of dirt of unknown origin containing artifacts. These were not collected since their relationship to the study area is unknown. The east boundary of the collection area was determined by a thinning of artifacts and the south by distance from the proposed CRM Facility. Vegetation is a piñon and juniper woodland with annual grasses and wildflowers.

The proposed CRM Facility site, near the northwest corner of the Surface Collection Area, will incorporate an area approximately 30 m north-south and 23 m east-west, 24 by 32 m for the Adobe Processing area, or 42 by 75 m overall. Other features of note include ant hills, often impacting areas a meter in diameter, and push piles consisting of slightly mounded areas with burned earth and rock, partially burned tree trunks and limbs, artifacts, and possible building stones. These piles resulted from ranchers bulldozing trees into piles and burning them in order to increase the area available for grasses (Todd Metzger, pers. comm., September 1994). Four of these mounds are located within the Surface Collection Area.

OAS began by marking artifact locations with pin flags to determine the distribution of artifacts. Once the extent of the scatters was identified, a datum was established in a relatively

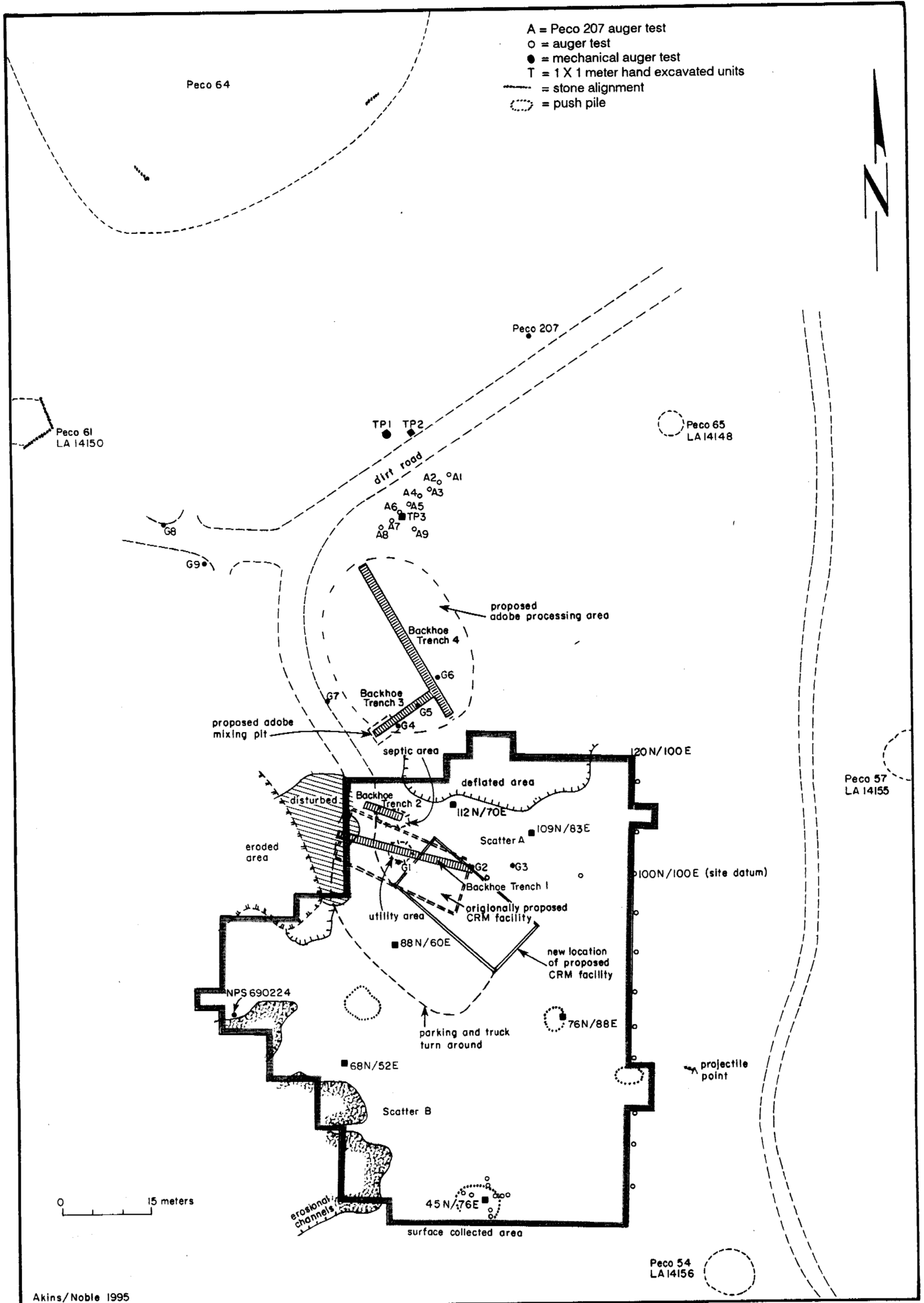


Figure 2. Plan of study area and surrounding sites.

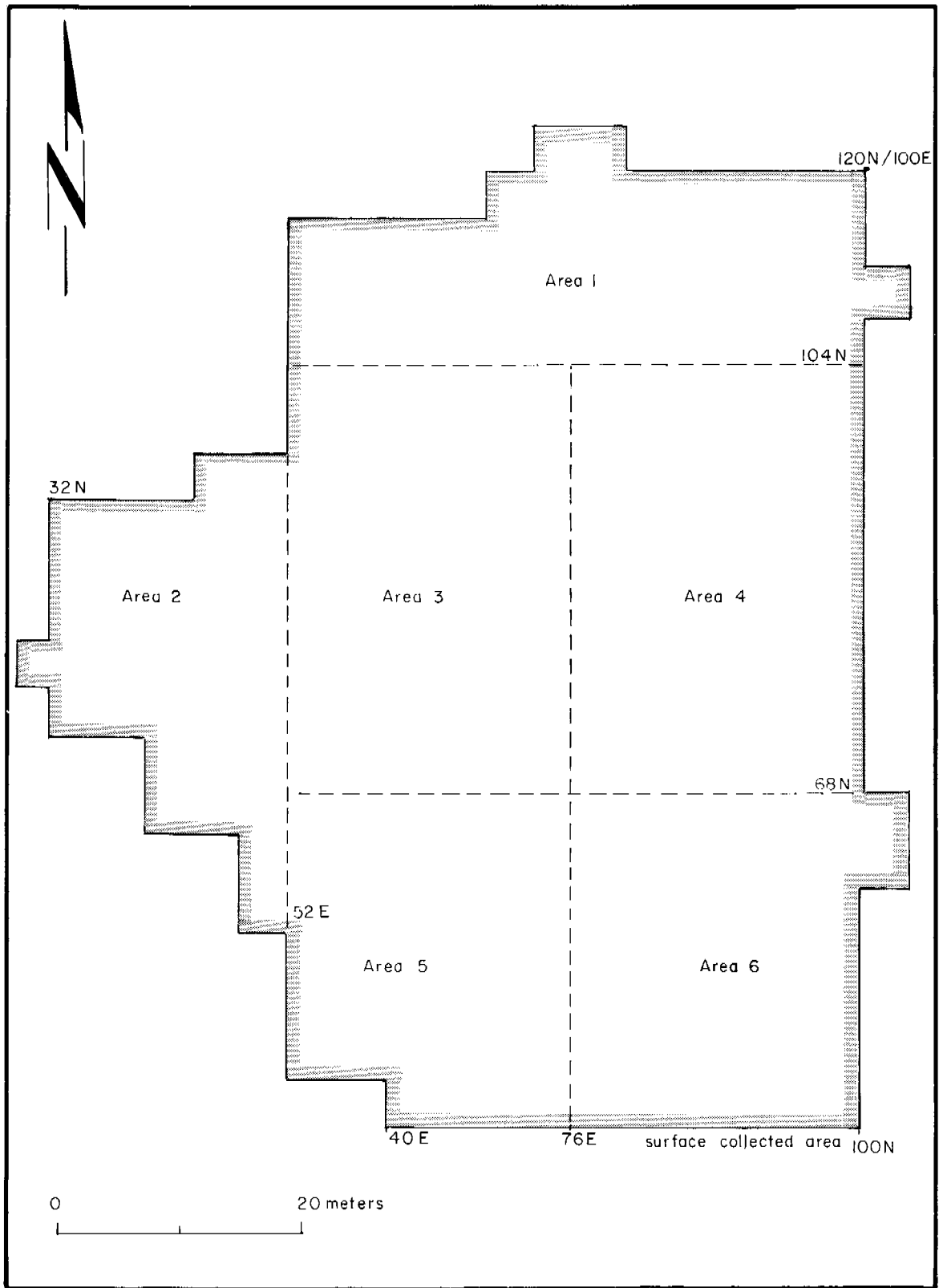


Figure 3. Surface collection areas.

clear area along the east edge and was designated 100N 100E (elevation 0 cm). This datum is approximately 74 m northeast of and 55 cm above NPS 690224. Base lines were established at 100N, 60E, 72E, and 100E using a transit and 30-m tape. These facilitated surface collection of artifacts. Two 30-m tapes were stretched between stakes placed at 4-m intervals along the base lines and artifacts were collected from each 4-by-4-m unit. The entire area encompassing Scatters A and B was gridded and collected. A projectile point just outside the grid was also collected (as requested by Todd Metzger). A total of 275 units (4,400 sq m) was examined and the cultural material collected.

The Surface Collection Area is divided into six units for discussion (Fig. 3). Area 1 roughly corresponds to Scatter A (Fig. 4) and has the lowest lithic artifact density but the highest ceramic density compared to the other surface collection areas. Area 2 is to the far west, parts of which are disturbed and cut by the erosional channel. Areas 3 and 4 split the area between Scatters A and B. Area 5 includes much of Scatter B and Area 6 is a dense lithic scatter that is part of and beyond Scatter B.

Appendix 1 lists the grid coordinates, field specimen number (FS), number of ceramics, number of lithic artifacts, and other material collected or observed (fire-cracked rock) in each of the surface collection grids. Table 1 summarizes this information by area.



Figure 4. Overview, Scatter A, looking northwest.

Table 1. Summary of Artifacts Recovered from the Surface Collection Area

	Area 1	Area 2	Area 3	Area 4	Area 5	Area 6	Totals
Area (m ²)	752	576	864	864	640	704	4400
Ceramics (n=)	111	33	47	49	46	30	316
density (n/m ²)	.15	.06	.05	.06	.07	.04	.07
Lithics (n=)	58	31	27	94	152	249	611
density (n/m ²)	.08	.05	.03	.11	.24	.37	.14
retouched (n=)	3		2	2	3	11	21
utilized (n=)	1	4		3	1	2	11
retouched & utilized (n=)	3		1	3	2	5	14
retouched or utilized (%)	12.1	12.9	11.1	8.5	4.6	7.2	7.5
Flaked stone tools (n=)	3	1	2		1	13	20
Hafted implements (n=)	2		2	2			6
Ground stone (n=)			1	2	2	3	8
Bone (n=)	2	1	1			1	5
Historic (glass)				1			1
Fire-cracked rock (no. of grids)		4	3	1	5	7	20

Lithic density is the density of lithic artifacts and flaked stone tools.

Flaked stone tools include bifaces, projectile points, drills, and unifaces.

Hafted implements are axe or maul-like notched stones.

Table 2. Summary of Ceramic Wares by Area

Ceramic Ware Type or Vessel Form	Area 1		Area 2		Area 3		Area 4		Area 5		Area 6	
	n=	%	n=	%	n=	%	n=	%	n=	%	n=	%
Utility Wares	55	49	17	51	11	24	20	41	30	65	15	50
White Wares	1	1	2	6	2	4	7	14	5	11	5	17
Biscuit Wares	1	1	1	3			1	2			1	3
Glaze Wares	23	21	9	27	20	43	14	29	8	17	8	27
Historic Wares	31	28	4	12	13	28	7	14	3	6	1	3
Bowls	51	46	11	33	26	56	23	47	14	30	12	40
Jars	20	18	15	45	13	28	14	29	29	63	15	50
Number of sherds	111		33		46		49		46		30	

Ceramics were densest in Area 1 or Scatter A (0.15 per sq m). While the same types appear across the Collection Area (Appendix 2 gives the distribution of ceramic types and area), there are differences in the proportions of wares (Table 2). Utility wares are common, comprising more than 40 percent of the assemblage in all but Area 3 where it was only 24 percent. White wares indicate that Areas 4, 5, and 6 have early assemblages. Glaze wares have a fairly constant presence ranging from 17 to 43 percent with the largest proportion from Area 3. Historic wares are most common to the north and west and decrease to the south. Bowl sherds occur most frequently in Area 2 and least in Area 5.

This distribution fits well with what is known of the area. The Presidio, Pecos Pueblo, and the Church/Convento Complex are to the north and northeast, and the ceramic distribution seems to represent a fall-off curve where numbers decrease with the distance from these major features. Our test pit in Area 6 located a pit structure, which helps explain the greater proportion of early-dating wares to the south. Furthermore, this finding suggests that other areas with high densities of utility and white wares could have buried pit structures.

Tables 3 and 4 summarize the lithic artifact and material types for the Collection Area. Core flakes are the predominant lithic type recovered ranging from 53 to 74 percent of the area collections. Biface flakes are most common in Areas 1 and 2, infrequent in the area between the scatters, and relatively common in Scatter B (Areas 5 and 6). Angular debris is most common in the eastern areas (Areas 4 and 6), hafted implements in Scatter A (Area 1) and the areas between the scatters (Areas 3 and 4), and projectile points and bifaces in Area 6. Proportions of flakes and angular debris that are retouched or utilized are greater in Scatter A (Area 1) and Areas 2 and 3, possibly indicating a greater use of expedient tools associated with later use of the study area.

Undifferentiated chert dominates the lithic materials ranging from 66 to 85 percent of the area assemblages. Obsidian, quartzite, and micaceous schist comprise greater portions of the northern assemblages.

Ground stone artifacts were uncommon, only eight were found. These include an anvil from Area 3; an unidentifiable fragment and a mano fragment from Area 4; an abrader and an anvil from Area 5; and an abrader and two unidentifiable fragments from Area 6.

Bone ($n = 5$) was found in four grid units. Three pieces are burned while those from Area 1 are unburned but do not look recent. Obviously recent bone was not collected. None of the bone collected from the surface is identifiable to species. All are long bone shaft fragments from animals ranging from a small to medium mammal to large mammal in size. None are diagnostically human.

Between one and five pieces of fire-cracked rock were found in 20 grid units. Some could have been created by the ranchers' burning trees and debris as there is fire-cracked rock in or adjacent to three of the four push piles. No fire-cracked rock was found in Scatter A (Area 1) and the greatest numbers are in the Scatter B area, especially along the eroded channel.

The only historic trash collected were two pieces of a single dark green bottle neck and lip. The bottle has a hand applied bust off and grind lip (see Fig. 12k) indicating a manufacturing date between 1840 and 1913 (Newman 1970).

Table 3. Lithic Artifacts Recovered from the Surface Collection Area

	Area 1		Area 2		Area 3		Area 4		Area 5		Area 6		Totals	
	n=	%	n=	%	n=	%	n=	%	n=	%	n=	%	n=	%
angular debris	5	8	2	6	3	10	17	18	18	12	40	15	85	13
core flake	40	63	17	53	21	68	68	71	113	74	177	68	436	68
biface flake	12	19	8	25	2	6	2	2	17	11	28	11	69	11
core			4	12	1	3	7	7	3	2	3	1	18	3
hafted implement	2	3			2	6	2	2					6	1
cobble tool									1	1			1	
uniface	1	2									1		2	
drill					1	3							1	
biface	3	5			1	3					7	3	11	2
projectile point			1	3					1	1	6	2	8	1
Totals	63	100	32	99	31	99	96	100	153	101	262	100	637	99

Table 4. Lithic Material Types from the Surface Collection Area

	Area 1		Area 2		Area 3		Area 4		Area 5		Area 6		Totals	
	n=	%	n=	%	n=	%	n=	%	n=	%	n=	%	n=	%
chert	47	75	21	66	21	68	80	83	130	85	216	82	515	81
Pederal chert							3	3	1	1	4	1	8	1
Alibates chert					1	3	1	1	2	1			4	1
chalcedony	1	2	1	3	1	3	1	1	3	2	6	2	13	2
silicified wood	1	2											1	
obsidian	9	14	7	22	5	16	6	6	10	6	26	10	63	10
igneous									1	1			1	
basalt									1	1	1		2	
sedimentary			1	3									1	
metamorphic									1	1			1	
quartzite	2	3							2	1	4	1	8	1
qtz. sandstone	1	2									2	1	3	
micaceous schist	2	3	2	6	3	10	3	3	2	1	2	1	13	2
massive quartz							2	2			1		3	
totals	63	101	32	100	31	100	96	99	153	101	262	98	637	98

Surface Collection Area Tests

Tests within the surface collection area include 3 power-auger holes, 13 hand-auger holes, 6 hand-excavated test pits, and 2 backhoe trenches (see Fig. 2). The power-auger tests and backhoe trenches are described first since they define the stratigraphy for the general area. Test pit information follows, and finally the auger tests. Hand-auger tests were used to determine whether stratigraphic anomalies exist that could indicate buried features.

Power-Auger Tests

Dr. Greene (Greene 1994:1-2) placed two power-auger tests in, and one to the east of, the area that will be covered by the CRM building. The first, at 101N 60E (surface at 95.5 cm below site datum [bd]), described the A or recent soil horizon as a 40-cm-thick layer of reddish brown (Munsell 5YR4/3 moist) clay loam that is subangular blocky; friable, slightly sticky, slightly plastic; and mildly alkaline; with few very fine gravels throughout. This overlies a clearly demarcated mixed AC horizon (recent and derived from parent material) consisting of 17 cm of reddish brown (5YR4/4 m) silty clay loam that is weak to moderate, fine to medium, angular to subangular blocky; friable, slightly sticky, slightly plastic; and mildly alkaline. Below this and continuing at least 145 cm below the surface is a C horizon (derived from parent material) of light reddish brown (5YR6/4) sandy clay loam with weak, very fine to fine granular to crumb texture, that is soft, slightly sticky, and slightly plastic.


His second test (101N 72E, surface at approximately 59 cm bd) found that the A horizon extended 29 cm from the surface. Here, it was reddish brown (5YR4/3 m) silt loam; weak, fine to medium subangular blocky; slightly hard, friable, slightly sticky, slightly plastic; with few thin colloidal stains; and mildly alkaline. It overlies an AB horizon (29 to 131 cm) described as a clearly demarcated layer of reddish yellow (5YR5/6 m) silt loam that is weak, fine to medium subangular blocky; slightly hard, friable, slightly sticky, slightly plastic with few thin colloidal stains; and mildly alkaline. The C horizon occurs between 131 and at least 178 cm below the surface and is reddish yellow (5YR5/6 m) silty clay loam; moderate medium angular blocky; very friable, slightly sticky, slightly plastic; with common thin clay films and colloidal staining, and mildly alkaline. The third test (101N 80E) produced soils similar to the first. The A horizon extended from the surface (32.5 cm bd) to 24 cm, the AC horizon from 24 to 96 cm, and the C horizon from 96 to at least 154 cm.

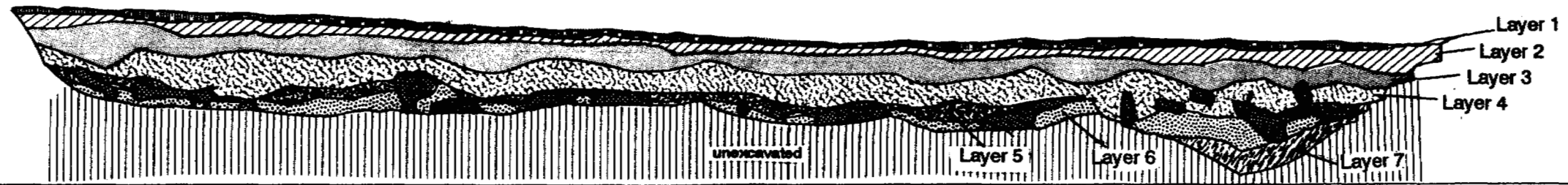
Backhoe Trenches

Backhoe Trench 1 cut across the proposed CRM building location. The trench (Fig. 5a) was approximately 23 m long and 1.0 m wide with a maximum depth of 1.8 m at the west end and averaging 1.25 m deep. In general, the fill appears sterile with abundant rodent disturbance in Layers 4 through 6. The only charcoal observed was in a rodent burrow.

Seven layers of fill were defined in the trench profile. Layers 1 and 2 correspond to Dr. Greene's A horizon. Layer 1 was loosely consolidated top soil while Layer 2 was hard packed and otherwise conforms to his description. Layer 3 is the AB or B horizon, which was most clear


Backhoe Trench 1
south face

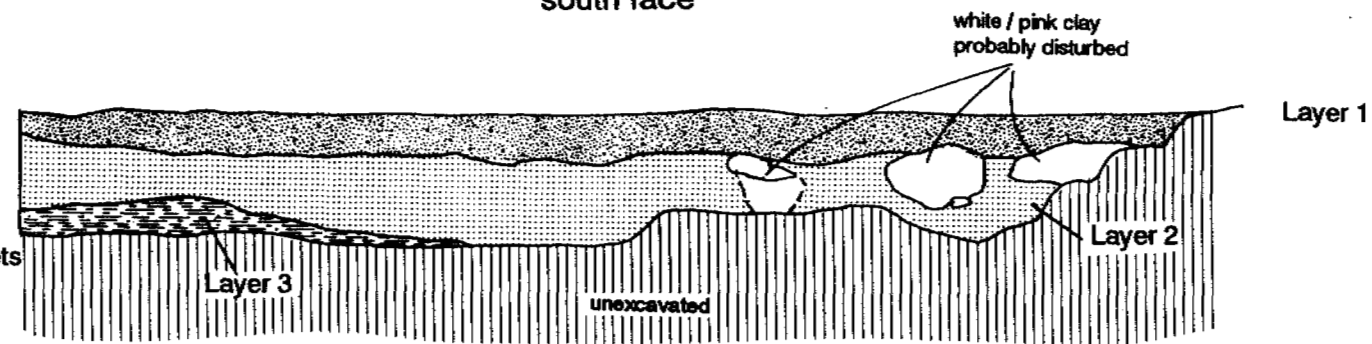
- Layer 1 - loosely packed top soil
- Layer 2 - hard packed top soil
- Layer 3 - hard clay
- Layer 4 - pinkish brown clay
- Layer 5 - reddish brown clay
- Layer 6 - white clayey soil
- Layer 7 - hard packed clay
-  - rodent disturbed



a.

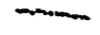

Backhoe Trench 3
south face

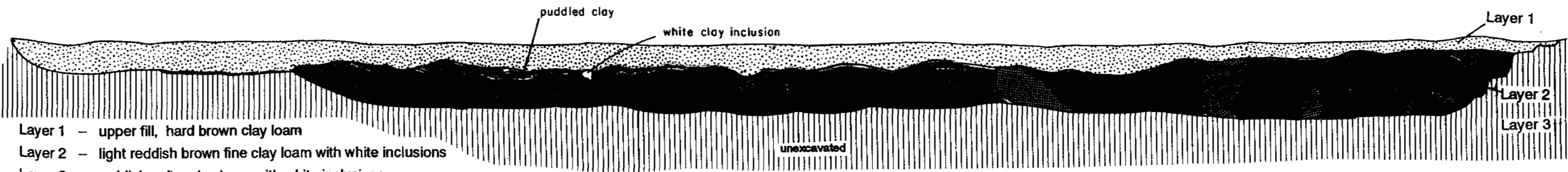
- Layer 1 - dark brown clay loam
- Layer 2 - hard reddish brown silty clay loam with white clay pockets
- Layer 3 - smooth fine red silty clay
-  - rodent disturbed



b.

Backhoe Trench 4
east face

- Layer 1 - upper fill, hard brown clay loam
- Layer 2 - light reddish brown fine clay loam with white inclusions
- Layer 3 - reddish softer clay loam with white inclusions
-  - gravel lenses
-  - rodent disturbed



c.

Figure 5. Profiles, Backhoe Trench 1, Trench 3, and Trench 4.

at the eastern end of the trench but present throughout. Layers 4, 5, and 6 are C horizon soils distinguished mainly by color, which grades from a pinkish brown to red then white with depth. Layers 4 and 5 are very hard packed clay loam and Layer 6 is soft and chalky. At the west end of the trench, beneath the level of Dr. Greene's tests, is light reddish brown (5YR6/4) very hard packed clay loam (Layer 7). Auger testing in the deepest portion of the trench indicates that Layer 7 ends at the base of the trench (1.8 m below the ground surface) where the fill changes to a reddish yellow (5RY4/6) clay loam that becomes increasingly sandy. Gravel was encountered at 2.0 m and continued to at least 2.1 m where the auger was stopped by gravel.

A second short backhoe trench (Backhoe Trench 2) was placed where the utility lines were initially planned to enter the CRM building, but instead, will be the location of the buried septic tank. It was 6.5 m long and 1.0 m wide, with a maximum depth of about 1.0 m. Because there was only 4.25 m between it and Backhoe Trench 1, and because the fill was identical, no profile was made of this trench.

Hand-Excavated Test Pits

Placement of test pits was subjective. Artifact densities and distributions of burned or piled rock determined the placement of all but one pit. The latter was placed in the area between Scatter A and B.

112N 70E. This test pit was placed between two surface grid units with relatively high ceramic densities. The first excavation level (66.5 to 76.5 cm bd) recovered ten ceramics, five lithic artifacts, and a hafted implement. Densities fell dramatically in the second 10-cm level (76.5-86.5 cm bd) with only two ceramics found. No artifacts were found in the third level (86.5-96.5 cm bd). The ceramics (Appendix 2) were plain utility (n = 9) and glaze wares (n = 3). The lithic artifacts were chert (n = 3), chalcedony (n = 1), and obsidian (n = 1); artifact forms were angular debris (n = 3) and biface (n = 1) and core (n = 1) flakes. Fauna included a piece of horn, possibly pronghorn (*Antilocapra americana*), and long bone shaft fragments from medium to large mammals.

Fill (Fig. 6a) was 4 to 8 cm of loose brown silty clay containing artifacts, overlying 5 to 10 cm of semicompact sandy clay loam with scattered charcoal (A horizon), and 12 to 22 cm of semicompact to compact sandy clay with carbonate inclusions (B horizon). An auger test at the base of the pit indicates that Layer 3 continues down another 26 cm where it overlies the yellowish red C horizon strata that continues for at least 25 cm.

109N 83E. This test pit was located just downslope from a grid with a concentration of ceramics. Twelve ceramic and five lithic artifacts were recovered in the first level of fill (27 to 37 cm bd), two ceramics from the second level (37-47 cm bd), and no artifacts were found in the final level (47-57 cm bd). The ceramics (Appendix 2) were predominantly early wares (plain and corrugated utility wares and an unpainted white ware) but also included historic wares (n = 2). Lithic artifacts were chert core (n = 4) and biface (n = 1) flakes.

Fill (Fig. 6b) was 2 to 12 cm of loose silty sand overlying 8 to 12 cm of compact sandy clay with charcoal and small gravel (A horizon), and 12 to 21 cm of compact clay loam with carbonates and fewer gravels (B horizon). An auger test at the base of the pit indicates that the B horizon continues another 30 cm before the fill changes to a sandy yellowish brown clay loam

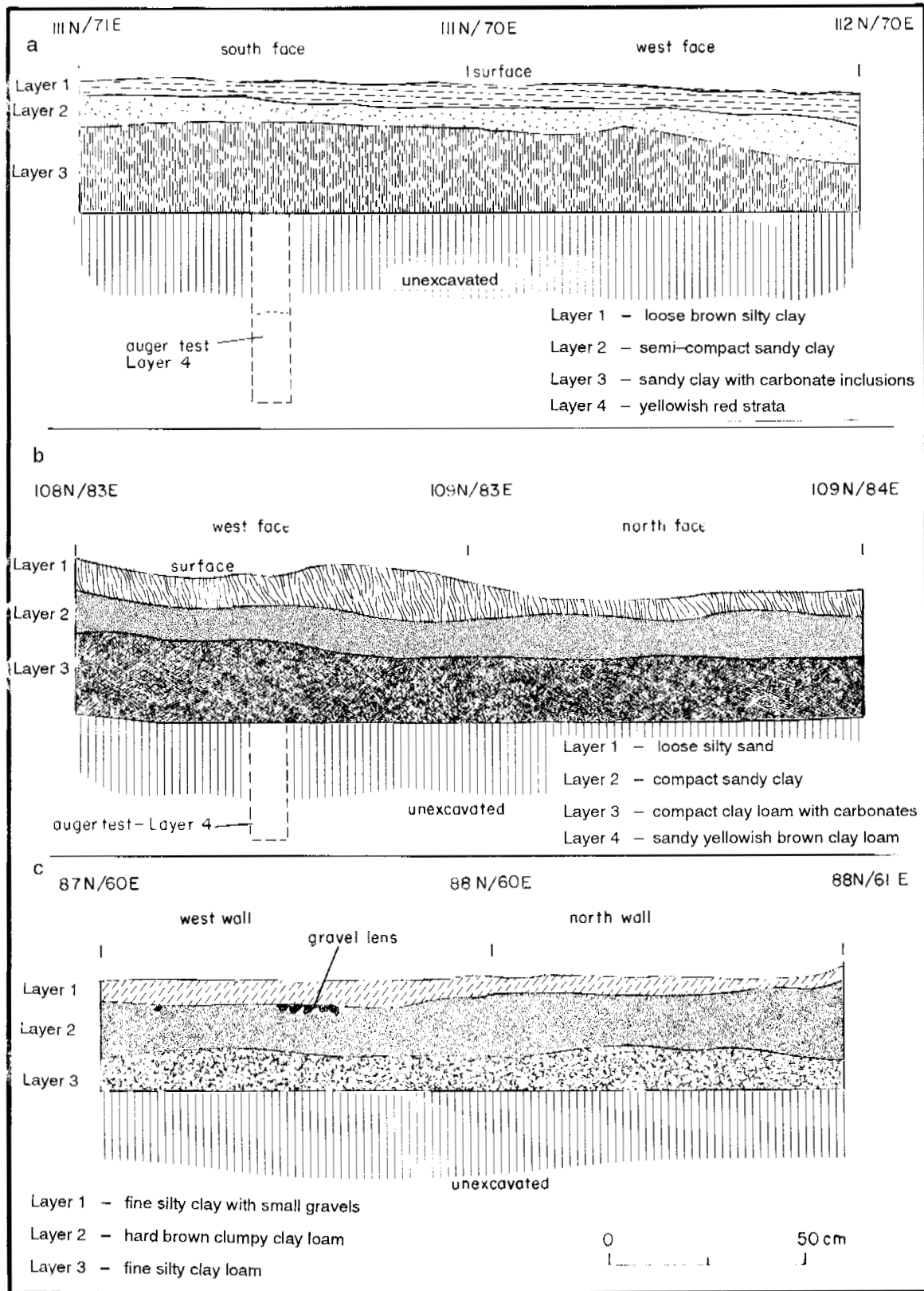


Figure 6. Profiles, (a) 112N 70E, (b) 109N 83E; (c) 88N 60E.

(C horizon?) that continues at least 10 cm.

88N 60E. This pit was placed mid-way between Scatters A and B and toward the west end of the Surface Collection Area. The upper level of fill (45.5 to 55.5 cm bd) contained one ceramic, an unpainted white ware. No artifacts were found in the next two levels of fill (55.5 to 75.5 cm).

Fill (Fig. 6c) was 3 to 6 cm of fine silty clay with small gravels overlying 12 to 20 cm of hard brown clumpy clay loam and 8 to 12 cm of a darker brown, less compact, fine textured silty clay loam. Layer 3 soils continued down for at least another 1.0 m in the auger test placed in the bottom of the pit.

76N 88E. This location was chosen because it had burned sandstone slabs on the surface and was at the edge of a push pile. In the first level of fill (11.5 to 21.5 cm bd) were a plain utility sherd and a glaze-on-yellow sherd. Lithic artifacts were a silicified wood early stage biface, chert angular debris (n = 2), a chert core flake, and an obsidian biface flake. A black-on-white ceramic and one piece of chert angular debris were all that was found in Level 2 (21.5 to 31.5 cm bd). No artifacts were found in the third level (31.5 to 41.5 cm bd).

Fill (Fig. 7a) was 6 to 12 cm of dark brown loose duff comprised of sandy loam with artifacts, charcoal, and burned wood. The composition of and inclusions in the soil are consistent with the proposed origin of push piles: that is, top soil pushed into low mounds in the process of piling and burning trees. Beneath the loose fill was an 8 to 14 cm layer of dark brown semicompact sandy clay (A horizon) with few artifacts, charcoal, and a rodent burrow. This overlies the reddish brown compact, carbonate-stained sandy clay loam B horizon material, which was between 8 and 14 cm thick in the pit profile and extended down another 20 cm in an auger test before the yellowish red C horizon soil was reached.

68N 52E. This pit was located next to a pile of fire-cracked schist cobbles within Scatter B. The upper level of fill (46.5 to 56.5 cm bd) produced a single organic painted black-on-white bowl sherd. No cultural material was found in the succeeding two levels (56.5 to 76.5 cm bd).

Fill (Fig. 7b) was 4 to 6 cm of brown loose sandy clay duff. Beneath this was a darker brown layer of sandy clay loam 2 to 14 cm thick with abundant rodent disturbance and 12 to 20 cm of hard packed brown clay loam with carbonate staining (B horizon) and considerable rodent disturbance. The auger test indicates that the Layer 3 material extends 20 cm before reaching the C horizon brown clay loam, which continues for at least 30 cm.

45N 76E. This test was at the edge and down slope from a large lithic artifact scatter that probably is the source for much of the material comprising Scatter B. While it lies beyond the area of potential impact, this location was chosen because it is in a concentration of lithic artifacts that includes projectile point fragments and tiny shaping and resharpening flakes, and it is in one of the push-pile or tree burn areas (Fig. 8).

Although there were no surface indications that a structure was present in this area, this test pit fell within a pit structure. The 14 levels (43 cm above datum to 98 cm bd) produced 59 ceramics (Table 5). Later dating wares are confined to the upper levels of fill. The rest are consistent with those expected from a Basketmaker III or Pueblo I pit structure. Lithic artifacts (Table 6) are predominantly chert core flakes. Tools include a biface fragment and three

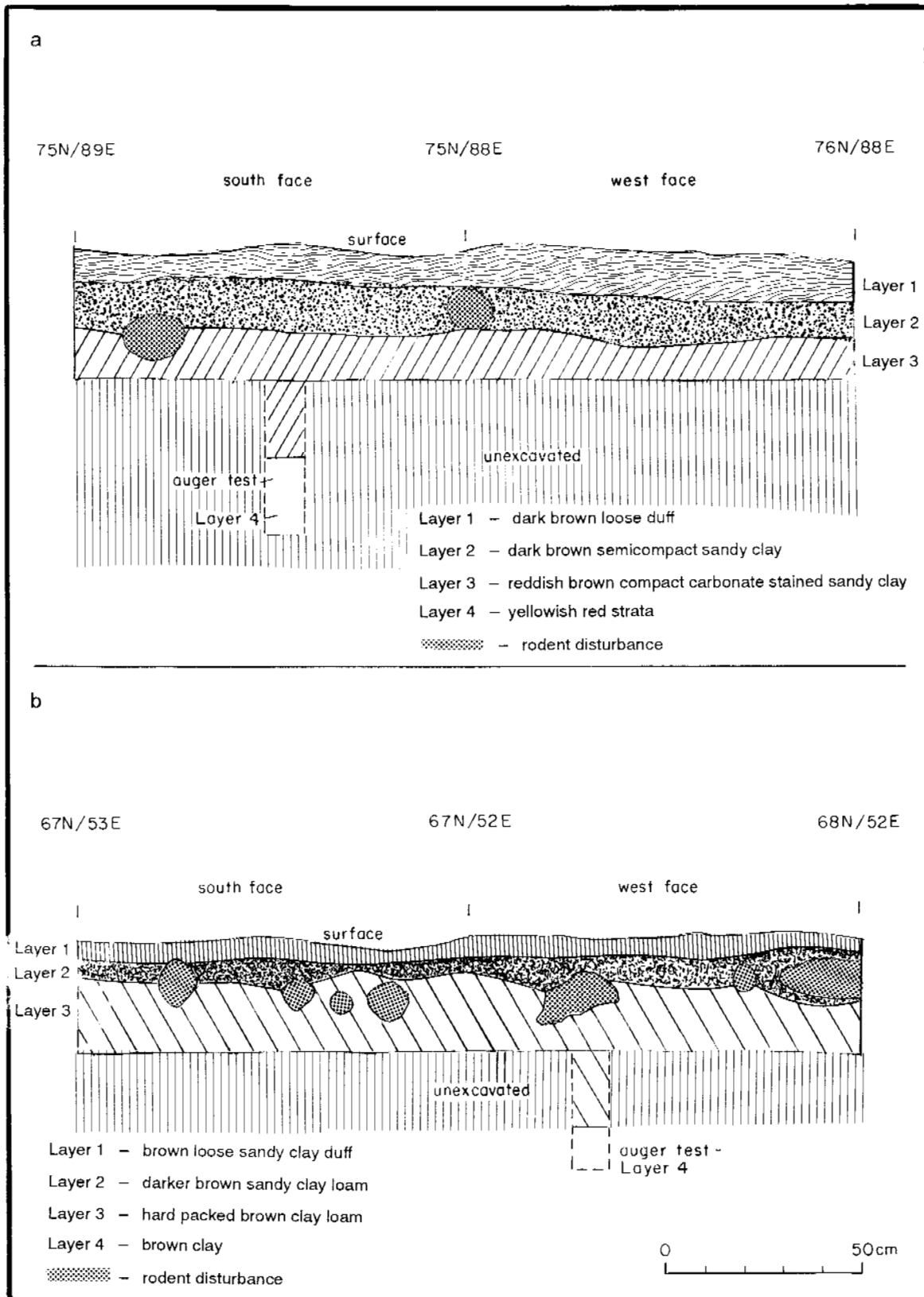


Figure 7. Profiles, (a) 76N 88E, (b) 68N 52E.



Figure 8. Grid 45N 76E before excavation.



Figure 9. Stratigraphy in 45N 76E.

Table 5. Ceramic Wares from 45N 76E

Ceramic Type	Bowl Body	Jar Body	Bowl or Jar Body	Coiled Handle	Total
San Juan area, Red Ware		1			1
Plain utility		47	1	1	49
Neckbanded utility		2			2
White ware, unpainted	3				3
Organic-on-white	1				1
Glaze Red Ware, unpainted	1				1
Glaze-on-red	1				1
Cream ware, unpainted, slipped, polished, historic	1				1
Total	7	50	1	1	59

Table 6. Lithic Artifacts from 45N 76E by Level and Associated Auger Test

Level	material				lithic type					n=
	chert	Alib.	chal.	obsid.	ang.deb.	core flk.	biface flake	biface	proj. point	
1	8	1			1	8				9
2	6				2	4				6
3	18				4	12	1		1	18
4	3		1	1		4	1			5
5	3					3				3
1-5	1			1	1				1	2
6	2			1		3				3
7	2					2				2
8	3					2	1			3
9	2					2				2
10	1		1			1		1		2
11	1					1				1
13	2					2				2
43N 77E auger				1					1	1
Total	52	1	2	4	8	44	3	1	3	59

Table 7. Wood Recovered from 45N 76E by Level

Taxa	Level 12			Floor		
	wt. in g	%	Branch diameter*	wt. in g	%	Branch diameter*
<i>Juniperus juniper</i>	.41	9%	2.0 cm	1.54	5%	5.0 cm
<i>Pinus edulis</i> piñon pine	2.00	44%	3.0 cm	9.43	32%	5.6 cm
<i>Pinus ponderosa</i> ponderosa pine				16.17	54%	6.0 cm
<i>Abies</i> fir	1.37	30%	3.0 cm			
Undetermined conifer	.74	17%		2.61	9%	
Total	4.52	100%		29.75	100%	

projectile points, one of which is side-notched. Two pieces of large mammal long bone came from Levels 3 and 10. Level 9 contained two artiodactyl metapodial fragments, both of which had been grooved and split lengthwise, probably part of the awl manufacturing process. Three other bones from this level are large mammal long bone shaft fragments, possibly parts of metapodials. Also collected were pieces of burned wood from the floor, Level 12 (Table 7).

The upper 4 to 18 cm of fill was loose reddish brown clay loam containing fire-cracked rock, wood, charcoal, and ash, probably the result of tree-piling and burning (Fig. 9). Beneath this, was about 30 cm of fairly compact brown silty loam still containing charcoal and underlying the tree piling episode. The third layer was 50 cm of hard-packed brown clay loam with a few charcoal flecks overlying 20 to 25 cm of hard-packed silt and fine-grained sand with an increased charcoal content. Finally, the floor fill (Level 14) was 4 to 8 cm of hard-packed fine clay with caliche and charcoal flecks. The floor surface (130-134 cm below ground surface) was hard packed and gray, possibly plastered, with caliche flecks on the surface and charcoal embedded in the surface. Rodent burrows (Fig. 10) riddled the fill throughout the structure and destroyed much of the floor surface. Aluminum cans were left in the bottom of the pit before backfilling.

Nine auger tests (identified by grid corners) placed at 1-m intervals in all four directions indicate that the structure extends at least 2.0 m to the west, 1.0 m to the east, less than 2.0 m to the north, and at least 2.5 m to the south. This suggests that the structure is at least 5.5 m in diameter. An obsidian biface fragment and a chert core flake were found in the auger fill.

The Peco 207 pit structure measured 8.5 by 9.5 m in diameter and had a similar thin gray plaster floor (Nordby and Creutz 1993:3.4, 7). That at Peco 53 was 10.0 to 11.0 m in diameter (Nordby and Creutz 1993:4.26).

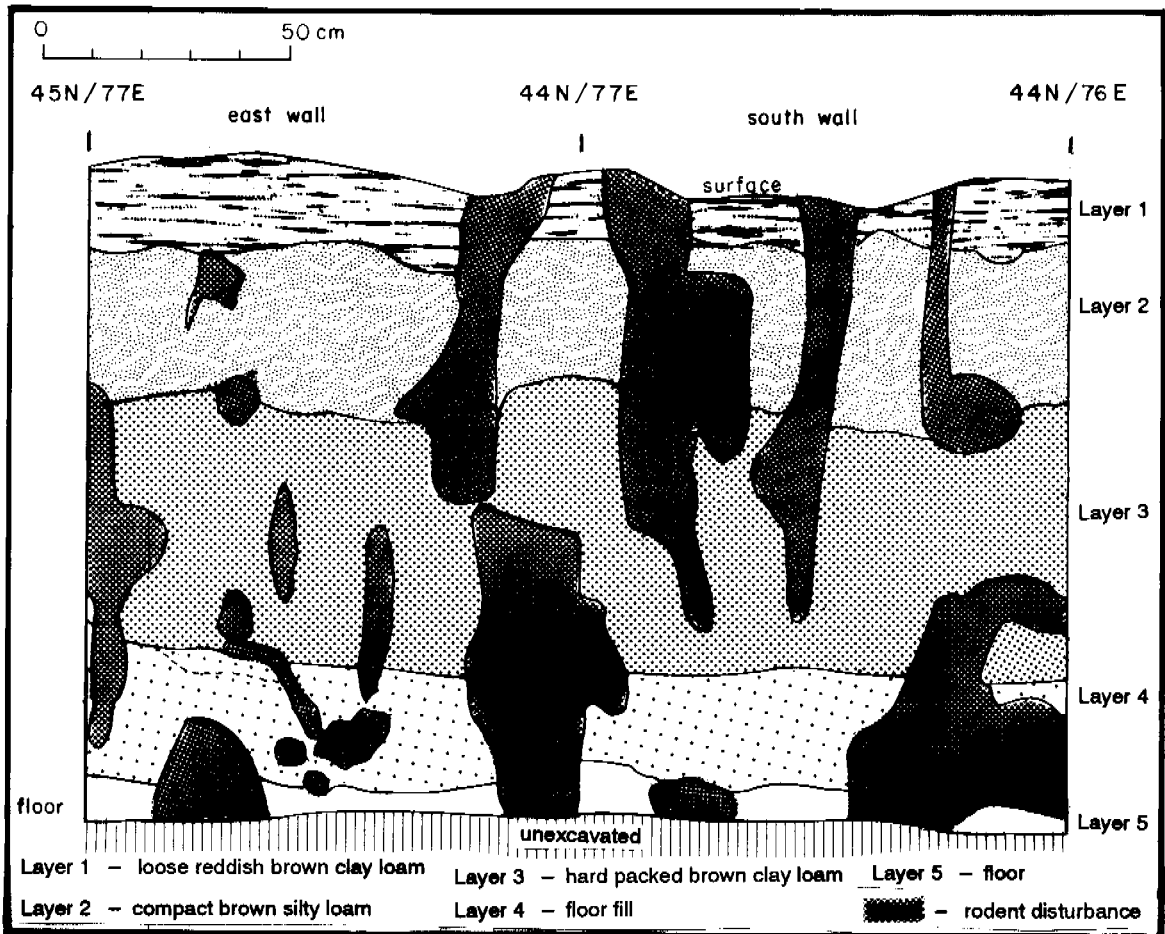


Figure 10. Profile of 45N 76E.

Auger Tests

Thirteen auger tests were placed at and identified by the grid corners along the 100N and 100E grid lines. Table 8 summarizes the results of these tests, which recorded the approximate thickness of the loose recent soil or duff, the harder A horizon soil, and the carbonate-stained B horizon. No artifacts were found in these tests, and charcoal was observed in two, one located in a push-pile.

Table 8. Results of the Surface Collection Area Auger Tests

Auger Test, Grid (NW corner)	Surface cm from datum	Fill depth (cm)			Comments
		Duff	A horizon	Bk horizon	
100N 76E	-46.5	0-10	10-30	30-40	
101N 84E	-27.0	0-10	10-30	30-40	
100N 91E	-21.5	0-10	10-40	40-50	
100N 100E	0.0	0-10	10-30	30+	
92N 100E	+17.0	0-10	10-30	30+	
84N 100E	+27.5	0-10	10-30+	30-50	
77N 100E	+35.0	0-20	20-30	30+	
68N 100E	+54.0	0-10	10-30	30-40	near a push-pile; bits of burned wood and charcoal in duff; A soils look oxidized; C horizon at 40 cm
60N 100E	+59.0	0-10	10-30	30+	
52N 100E	+62.5	0-10	10-30	30+	charcoal fleck from 10 to 20 cm
46N 100E	+64.0	0-10	10-30	30-65	
108N 99E	+7.5	0-10	10-30	30+	
116N 100E	+12.0	0- < 10	10-40	40+	

Adobe Processing Area

The Adobe Processing Area will incorporate an expanse approximately 24-by-30 m. Since the area chosen had been cleared and used for material storage, some prior disturbance was expected. Currently, the area is flat with stands of tall grasses and abundant mullen stalks. Soils appear darker and retain moisture better than those in the Surface Collection Area. This is probably due to mechanical compaction of soil. Testing the proposed Adobe Processing Area consisted of three power-auger holes and two backhoe trenches (see Fig. 2).

Power-Auger Tests

Dr. Greene's power-auger tests found a similar stratigraphic sequence in all three cores. The A horizon (33 cm in Test 4, 45 cm in Test 5, and 28 cm in Test 6) was reddish brown (5YR4/4 m) silt loam; weak, fine to medium subangular blocky; soft, very friable, slightly sticky, and slightly plastic with roots. Test 6 (the farthest east) also had a ABtk horizon (transitional between A and B horizons with calcic deposits) between 28 and 69 cm below the surface. The Btk horizon (33 to 80 cm in Test 4, 45 to 94 cm in Test 5, and 69 to 110 cm below surface in Test 6) is reddish brown (5YR5/4 m) clay loam; moderate fine to medium angular blocky; hard, friable, sticky, plastic with moderately thick clay films common on ped faces; and mildly alkaline. The k designates a calcic diagnostic horizon. At the base is a Ck horizon that was from 80 to 120 cm in Test 4, 94 to 148 in Test 5, and 110 to 143 cm in Test 6. It is described as a light reddish brown (5YR6/4) sandy loam that is weak, fine granular; soft, loose, nonsticky, and nonplastic.

Backhoe Trenches

Backhoe Trench 3 bisects the proposed adobe mixing pit location, which is the portion of the Adobe Processing Area that will most likely to have subsurface disturbance. The trench was 13 m long with a maximum depth of 1.4 m below ground surface (0.95 to 2.35 m bd). Stratigraphy within the trench was fairly simple (see Fig. 5b). The upper layer was 20 to 40 cm of wet rough textured dark brown clay loam with no distinct duff layer (A horizon). It was very hard and the darker color probably comes from decaying vegetation. Sparse charcoal was noted at the west end of the trench between 20 and 30 cm below the surface during the excavation of the trench. The profile contained two ceramics in the same general area but no indication of a feature or their origin. Beneath this upper layer was a 40 to 90 cm layer of hard reddish brown silty clay loam with small white clay inclusions and larger pockets of white clay near the west end. The final layer was a smooth textured fine red silty clay with no white inclusions (Greene's Ck horizon?) that was 40-cm thick toward the eastern end. An auger test at the central portion of the trench encountered gravel at 33 cm below the trench bottom. Definite rodent disturbance was minor, however, there were several large pockets of pinkish white clay with a churned appearance, which probably represents soil from an underlying stratigraphic level. These do not appear to be prehistoric features, since the fill originates from below and could be the result of mechanical or rodent disturbance. No artifacts were collected from this trench.

Backhoe Trench 4 intersects the east end of Backhoe Trench 3 and is roughly perpendicular. It was 29.5 m long with a maximum depth of 1.4 m below ground surface (0.97 to 2.37 m bd). The upper 20 to 40 cm of fill was the usual clumpy textured hard brown clay loam (see Fig. 5c). Just below this upper level, near the north-central portion of the trench, were a number of distinct lenses of gravel. These are short and thin, rarely more than one or two gravels thick, mostly tiny but up to 3 cm in size, and are flat or dip slightly. Puddled clay occurs above some of the lenses. These probably represent a gravel pavement or gravel placed in the area during its use for material storage in the 1930s and 1940s. Vehicular traffic appears to have pushed the gravel into a lower level when the soil was wet. The second layer of fill is a light reddish brown fine clay loam with numerous white chalky inclusions, some as large as 2 to 3 cm. The texture is less clumpy than Layer 1. This grades into a brown softer silty clay loam with occasional white inclusions (Layer 3).

No charcoal or artifacts were observed during the excavation of the trench. A single speck of charcoal was present in the profiled face. Like Backhoe Trench 3, there were a number of stratigraphic anomalies. These are probably natural, most likely rodent burrows with the fill coming from lower stratigraphic layers.

Peco 207 Area

The Peco 207 Area was tested because underground utilities will pass through it and a vegetative screen will be planted. It was originally believed that Peco 207, a pit structure found during installation of a sewer line, was in this location. During this project, however, Bill Creutz indicated that the structure was actually 25 m to the northeast. This more accurate site placement is shown on Figure 2.

The area lies on both sides of an access road lined with large junipers. Two test pits were placed north of the road, both in locations where trees are likely to be planted, and a test pit and nine auger tests were placed south of the road.

Test Pits

Test Pit 1 was on the western edge of the area in a good location for planting a tree. It was originally thought to be in the approximate area of the Peco 207 pit structure. The first level of fill (50-60 cm bd) produced four tiny pieces of plain utility ware (Appendix 2) and the second level (60 to 70 cm bd) a chert biface flake. Fill was 2 to 4 cm of duff, a brown silty sand with many small grass roots, overlying 18 to 20 cm of brown sandy clay loam with a gray cast and small pieces of burned clay (Fig. 11a). Since the fill appeared to be redeposited, possibly pit structure backfill, an auger test was placed at the base of Level 2 (20 cm below ground surface) and the sewer line was encountered at 50 cm below ground surface. Backdirt from the pit structure excavations must have been used to fill this portion of the trench.

Peco 207 Test Pit 2 lies just east and south of Test Pit 1, outside the trajectory of the sewer line. A single plain utility ware ceramic was recovered from the first level of fill (39 to 49 cm bd), no artifacts were found in the second (49 to 59 cm bd). Duff was the usual 8 to 10 cm of reddish brown clay loam with no charcoal (Fig. 11b). This overlies a sterile brown clay loam that continued to 95 cm below ground surface in the auger test. Pinkish clay with white clay lumps was present from 0.95 to about 1.2 m.

The third Peco 207 test pit was placed south of the access road after a series of auger tests found charcoal in three of the holes and a ceramic in one. Artifacts were most numerous in the upper 10 cm (95 to 105 cm bd) of fill ($n = 16$) but continued to the base of the test at 70 cm (175 cm bd). Ceramics (Table 9, Appendix 2) are predominately glaze wares with some white and historic wares. There is no apparent patterning in their distribution, suggesting that the fill is mixed or disturbed. The earlier wares tend toward the top of the test pit while historic wares are split between the upper and lower levels. Disturbance is also suggested by the presence of an historic majolica ware sherd and a piece of horse tooth in Level 6. Lithic artifacts ($n = 4$) were sparse and include two core flakes, one of chert and one of obsidian, from Level 1, a

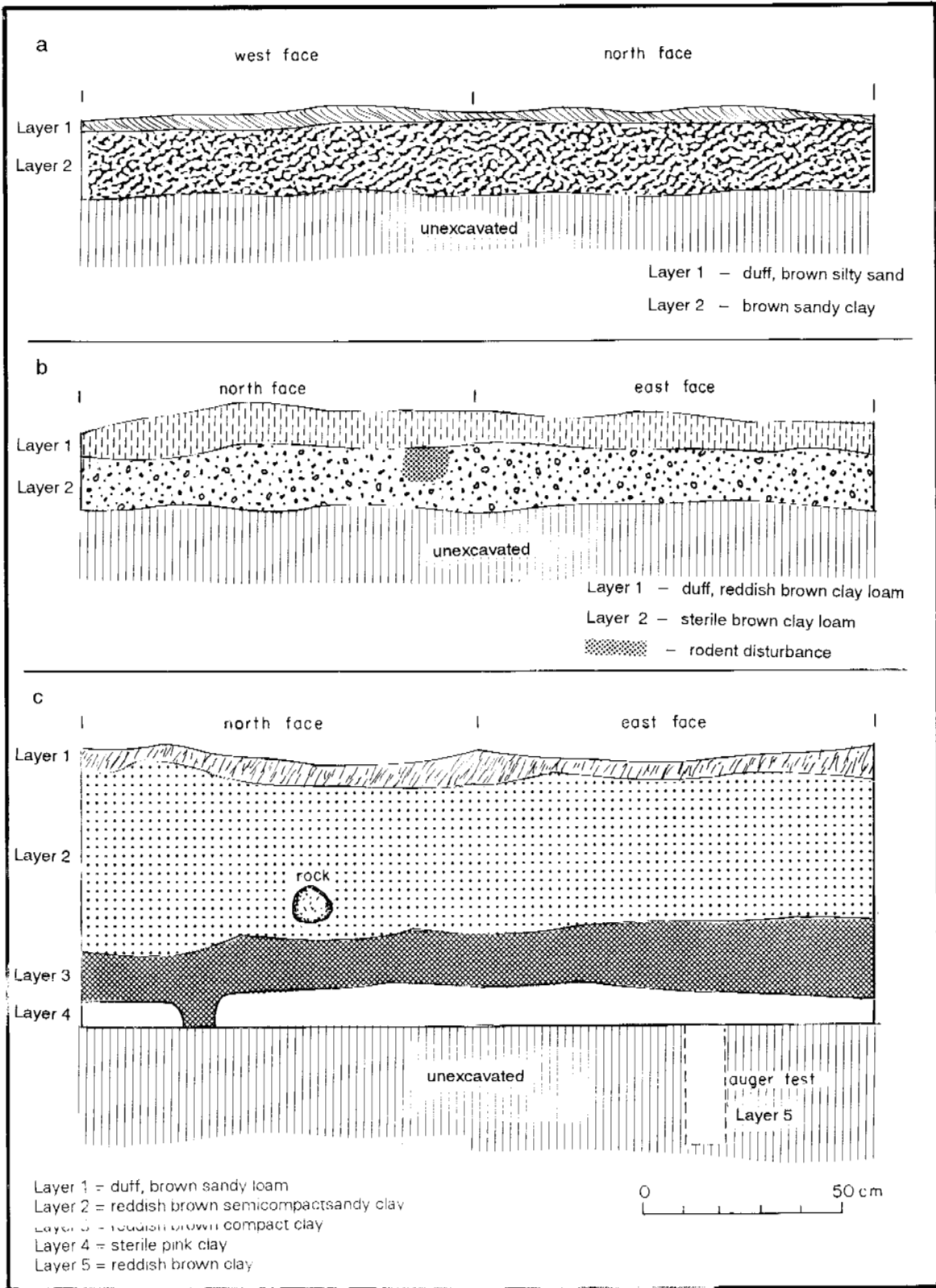


Figure 11. Profiles of Peco 207, (a) Test Pit 1, (b) Test Pit 2, (c) Test Pit 3.

Table 9. Ceramic Wares from Peco 207, Test Pit 3 by Level

Ceramic Type	Level							Rodent Burrow	Total
	1	2	3	4	5	6	7		
Plain utility	4	1	1			3	1		10
Plain Smudged utility	2								2
White ware, unpainted	1								1
Glaze Red ware, unpainted	1		1						2
Glaze White ware, unpainted									1
Glaze ware, red and white slip, unpainted						1			1
Glaze Yellow ware, unpainted	2								2
Glaze-on-red	1					1			2
Glaze-on-red and white (slipped)								1	1
Glaze-on-white					1				1
Glaze-on-white w/red matte							2		2
Buff/Brown/Tan ware, unpainted				1					1
Cream ware, unpainted, slipped, polished, historic	1					2			3
Red ware, smudged	1								1
Total	14	1	2	1	1	7	3	1	30

limestone core flake from Level 4, and a chert core flake from Level 5. Fauna recovered were two tooth fragments from a mature horse, six flat bone fragments from a large mammal in Level 6, and a flat bone fragment from a medium to large mammal in Level 7.

Duff was 4 to 8 cm of the usual brown sandy loam overlying 36 to 50 cm of reddish brown semicomcompact to compact sandy clay loam with some charcoal (Fig. 11c). The third layer was 12 to 18 cm of clay loam with carbonates and charcoal. Sterile pink clay was reached at 60 cm below ground surface and continued to 90 cm, where it changed to light reddish brown clay loam.

We were unable to determine whether the charcoal and artifacts in this test resulted from primary cultural deposits, rodent disturbance, disturbance from the clearing and utilization of the area for material storage, or a combination of these. Auger tests 2 m to the west and 2 m to the south both contained charcoal, and the auger test to the south had a ceramic indicating that the deposits cover an area at least 3-by-8 m. According to Todd Metzger (pers. comm., Sept. 1994), there would be no ground-disturbing activities in this area. If this changes and the area is to be disturbed, further investigations to determine the nature and extent of the deposits is recommended.

Auger Tests

Table 10 summarizes the Peco 207 auger tests. Five had charcoal at levels ranging from just below the surface to 60 cm. The ceramic was found in fill from approximately 50 cm.

Table 10. Summary of Peco 207 Auger Tests

Auger Test	Surface, cm below datum	Fill depth (cm)			Comments
		Duff	A horizon	Bk horizon	
1	65.5	0-10	10-30	30-40	
2	73.5	0-10	10-40	40+	
3	82.0	0-10	10-50	50+	light charcoal in A horizon
4	86.5	0-10	10-50	50-60	light charcoal 20 to 40 cm, small gravel 40 to 50 cm
5	91.0	0-10	10-60	60	light charcoal in A horizon; some charcoal staining 40-60 cm
6	93.0	0-10	10-50	50+	light charcoal 0 to 30 cm
7	97.25	0-10	10-50	50+	charcoal 0-50 cm; ceramic at 0-10 cm
8		0-10	10-60	60-65	charcoal 0-60 cm
9		0-10	10-58		sparse charcoal; ceramic at 50 cm; gravel lens at 55 cm

Additional Auger Tests

Dr. Greene also placed three power-auger tests along the road. Test 7, which was just west of the Adobe Processing Area, had the usual soils except that the C horizon included two distinct strata. A horizon extended from the surface (87 cm bd) to 49 cm and was a reddish brown (5YR4/4 m) silt loam; moderate, medium subangular blocky; friable, sticky, plastic; with few thin colloidal stains; and mildly alkaline. This overlies an AC horizon (49 to 85 cm) that is pink (5YR7/4 m) sandy loam; weak fine granular; soft, very friable, nonsticky, and nonplastic. The upper or C1 horizon (85 to 130 cm) is a reddish brown (5YR4/4 m) sandy loam; weak, fine to medium granular to crumbly; soft, very friable, nonsticky, and nonplastic. C2 horizon (130 to 230 cm) is also reddish brown sandy loam but with weak fine subangular blocky; soft, very friable, very slightly sticky, and very slightly plastic.

The other two power-auger tests were placed north and south of the access road leading to the propane tank. Neither were successful because of an abundance of gravel and disturbance associated with the road.

ARTIFACT ANALYSES

Artifact analyses were performed by OAS personnel. Macy Mensel analyzed and prepared the ceramic tables; Marcy Snow and Lewis Kimmelman analyzed the lithic artifacts; Guadalupe Martinez, the historic artifacts; Mollie Toll, the wood; and Nancy Akins, the fauna and ground stone. All artifacts, samples, and documentation will be curated at Pecos National Historical Park.

Ceramic Artifacts

A total of 444 ceramics were collected and analyzed at a rough sort level. Attributes recorded in a computer format include the field specimen (FS) number, the lot number (assigned to each sherd category in an FS); the ceramic classification; the temper type for identifiable wares; interior and exterior pigment types; surface treatment; vessel form; rim form; the presence and type of slip; use-wear on the sherd; post-firing modification of the sherd; and the count.

Table 11 gives the counts and estimated dates for the assemblage. Plain and utility wares are by far the most common with few sherds ($n = 13$) identifiable as specific types. Datable ceramics range from Santa Fe Black-on-white at A.D. 1175 to 1350 (Breternitz 1966) to Pecos Glaze Polychrome at 1600 to 1700 (Warren 1979). Appendix 2 gives the counts and vessel forms for the Surface Collection Areas and test pits with more than one ceramic.

Temper was examined on those sherds identifiable to a type. Local temper (sand and sandstone) account for just over half of the tempering materials in the sherds where temper was identified (Table 12). Other recognizable ceramic types have a wide variety of tempering material indicating trade with the San Juan area in the early period and groups along the Rio Grande later in time.

Table 11. Ceramic Inventory by Type

Ceramic Type	#	Estimated Date (Reference)
UTILITY WARE TYPES		
Plain utility	197	
Neckbanded utility	2	
Corrugated utility	3	
Corrugated-indent utility	7	
Smeared-indent corrugated	1	
Plain smudged utility	24	
Striated utility	5	

Ceramic Type	#	Estimated Date (Reference)
WHITE WARE TYPES		
White ware, unpainted	15	
Organic-on-white	14	
Santa Fe Black-on-white	2	1175-1350 (Breternitz 1966)
Abiquiu Black-on-gray (Biscuit A)	2	1375-1450 (Breternitz 1966)
Bandelier Black-on-gray (Biscuit B)	2	1400-1550 (Breternitz 1966)
GLAZE WARE TYPES		
Glaze red ware, slipped & unpainted	31	
Glaze white ware, slipped & unpainted	4	
Glaze yellow ware, slipped & unpainted	6	
Glaze red and white ware, slipped & unpainted	11	
Glaze-on-red	15	
Glaze-on-white	4	
Glaze-on-yellow	10	
Glaze-on-red and white	10	
Glaze-on-white w/red matte	2	
Cieneguilla Glaze-on-yellow	1	1325-1425 (Warren 1979)
San Lazaro Glaze Polychrome	1	1490-1515 (Warren 1979)
Puaray Glaze Polychrome	1	1515-1650 (Warren 1979)
Pecos Glaze Polychrome	4	1600-1700 (Warren 1979)
HISTORIC WARE TYPES		
Red ware, unslipped	2	
White ware, slipped & unpainted	2	
Cream ware, slipped & unpainted	8	
Red ware, slipped & unpainted	9	
Buff/Brown/Tan ware, slipped & unpainted	27	
Black ware, slipped & polished	8	
Gray ware, unslipped & polished (Kapo)	1	1650-1720 (Oppelt 1988)
Red and cream-slipped ware, unpainted	1	
Red ware, smudged interior	4	

Ceramic Type	#	Estimated Date (Reference)
Organic-on-white and red	3	
Organic-on-cream	2	
Organic-on-red	2	
TRADE WARES		
San Juan area red ware	1	
Total Ceramics	444	

Table 12. Ceramic Type by Temper

Ceramic Type	Sherd	Sand	Sand-stone	Pumice	Pumice/Sand	Pumice/Sherd	Ande-site	Tuff/Horn-blende	Total
Santa Fe B/w	1							1	2
Abiquiu B/g				1		1			2
Bandelier B/gray				1					1
Glaze-on-red					1				1
Glaze-on-red and white slip			1						1
Cienguilla G/yellow			1						1
San Lazaro G/poly-chrome			1						1
Puaray G/poly-chrome						1			1
Pecos G/poly			4						4
Organic-on-red (hist)		1							1

Ceramic Type	Sherd	Sand	Sandstone	Pumice	Pumice/Sand	Pumice/Sherd	Andesite	Tuff/Hornblende	Total
Organic-on-white with red		1							1
San Juan area tradeware							1		1
Total	1	2	7	2	1	2	1	1	17

Lithic Artifacts

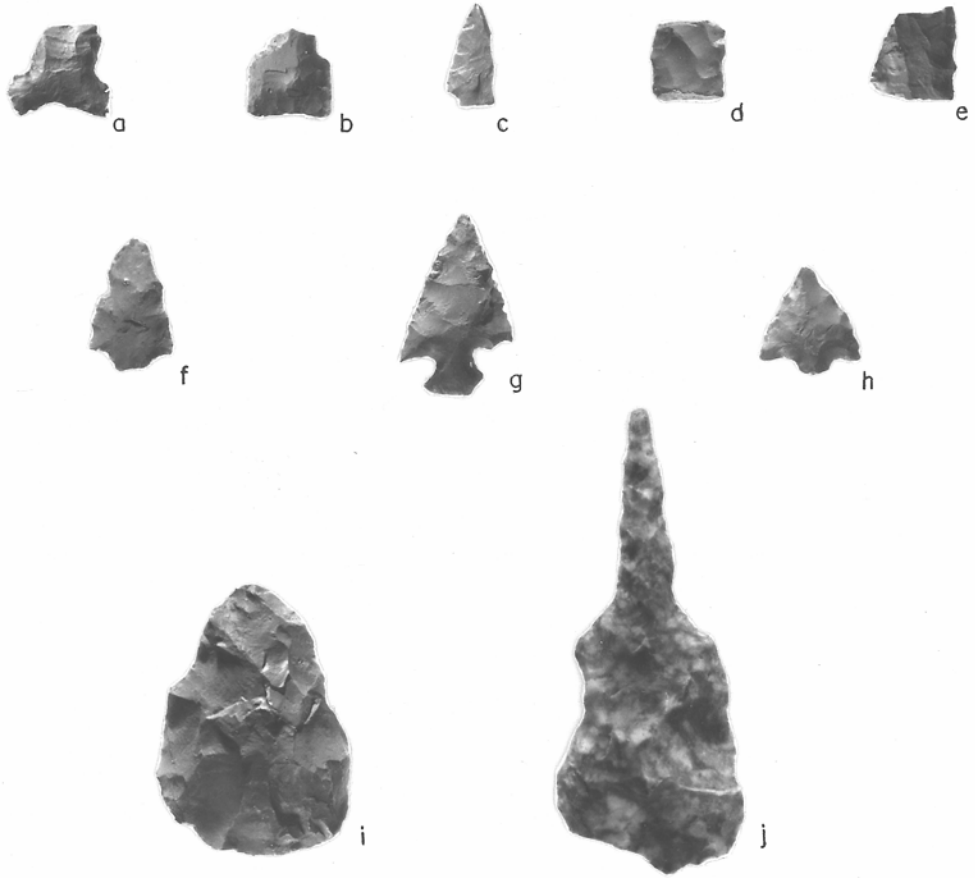
Lithic artifacts were the most common form of artifact recovered ($n = 717$). These were analyzed at a rough-sort level. Attributes recorded and computer coded include the FS number, the artifact number, material type, artifact morphology, artifact function, the amount of dorsal cortex, whether a flake platform was modified or unmodified, whether the artifact was a fragment or complete, and the length.

Table 13 gives the lithic artifact type by material. Chert is by far the most common lithic material. Five pieces are identifiable as Alibates chert, including a drill (Fig. 12j). Two Alibates drills were recovered from the pit structure excavated at Peco 53 (Nordby and Creutz 1993:4.36). Other Alibates is undoubtedly present in the OAS assemblage. Several pieces of plum-colored chert lacked or had only minimal banding and could be Alibates but were recorded as chert. Alibates outcrops on the Canadian River in Texas and is found in gravels 612 km downstream (Banks 1990:91).

Table 14 gives the attributes of the material types, that is, the texture and dorsal cortex. Large amounts of cortex are common on micaceous schist artifacts (often cobbles made into hafted implements). Cortex is absent or less than 20 percent for Alibates, silicified wood, and chalcedony, and is relatively rare for chert (23.2 percent have cortex).

Attributes of the artifact types (material quality, dorsal cortex, fragmentation, platform type, and retouch or utilization) are in Table 15. Core flakes predominate with a fair number of biface flakes. Cores are relatively rare and include a tested cobble of micaceous schist; undifferentiated cores of chert ($n = 1$) and massive quartz ($n = 1$); unidirectional cores of chert ($n = 1$) and micaceous schist ($n = 1$); a bidirectional core of quartzite; and multidirectional cores of chert ($n = 11$) and micaceous schist ($n = 1$).

One of the more interesting artifact types is the hafted implements (Fig. 13) that are made of micaceous schist, mainly cobbles, and are minimally modified (Table 16). These resemble what Kidder (1932:56-58) called notched pebbles. His were flat, round-ended cobbles of sandstone, micaceous schist, and diorite. In size, the length of Kidder's notched pebbles ranged from 5.1



0 3 cm

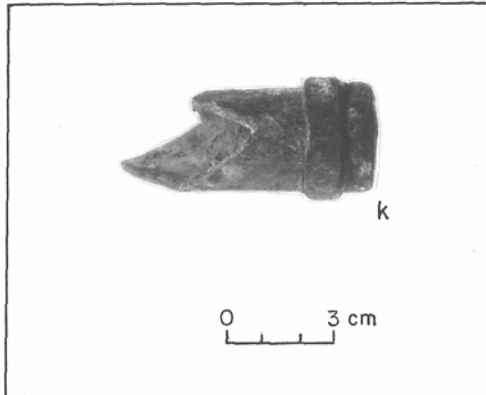


Figure 12. Bifaces, projectile points, drill, and historic bottle finish.

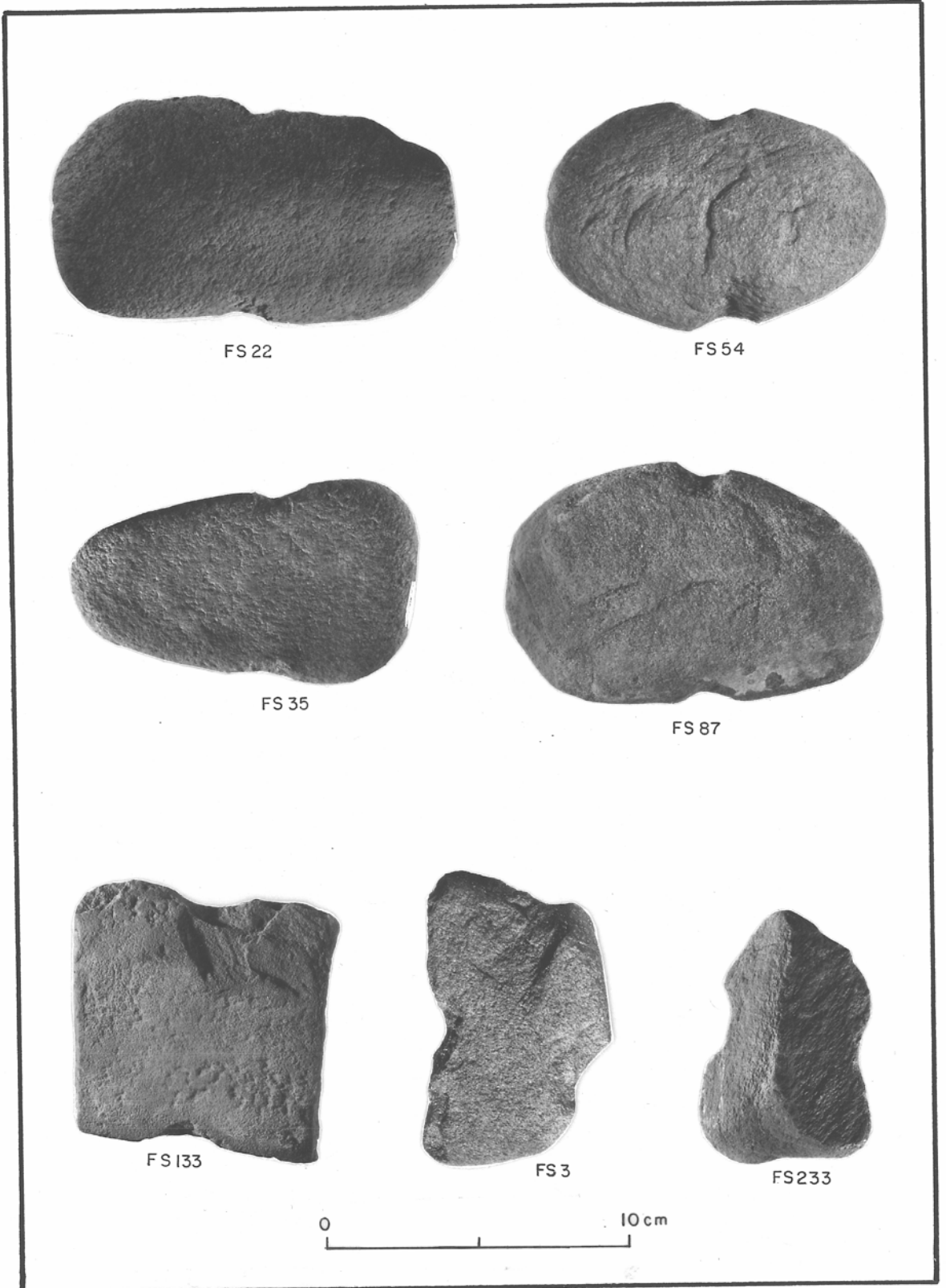


Figure 13. Notched implements.

Table 13. Summary of Lithic Artifacts by Material Type

	chert	P. chert	Al. chert	chalced.	s. wood	obsidian	igneous	basalt	sediment.	limestone	quartzite	quartz	micaceous	micaceous	totals	
Angular debris	89	1		2		5							1		98	
Core flake	423	7	2	12	1	25	1	1	1	1	7	2	4	2	490	
Biface flake	40		2	2		32									76	
Core	3										1		3	1	18	
Hafted implement													7		7	
Cobble tool								1							1	
Uniface	2														2	
Drill			1												1	
Biface	8				1	3						1			13	
Projectile point	6					5									11	
Totals	581	8	5	16	2	70	1	2	1	1	1	8	3	15	3	717

Key: P = Pedernal; Al = Alibates; S = silicified; M = micaceous; sch = schist

Table 14. Material Attributes (number of artifacts)

	c h e r t	P . c h e r t	A l . c h e r t	c h a l c e d	s . w o o d	o b s i d i a n	i g n e o u s	b a s a l t	s e d i m e n t	l i m e s t o n e	m e t a m o r .	q u a r t z i t e	q t z . s a n s	m i c a . s c h	m . q u a r t z	t o t a l s
texture: glassy	2					70										72
fine grained	481	7	5	15	2							1	2	3	1	517
medium grained	96	1		1			1	2	1	1	1	4		5		113
coarse grained	2											3	1	7	2	15
dorsal cortex: 0 %	446	7	5	15		66			1		1	4	2	1	1	549
10-20%	57				2	2						1	1	1		64
30-40%	27					1						1		5	1	35
50-60%	21	1		1				1						2	1	27
70-80%	12						1					2				15
90-100%	18					1		1		1				6		27
Total artifacts	581	8	5	16	2	70	1	2	1	1	1	8	3	15	3	717

Table 15. Lithic Artifact Attributes (number of artifacts)

	angular debris	core flake	biface flake	core	hafted imp.	cob. tool	uni-face	drill	biface	point
material quality:										
glassy	6	26	32	12					3	5
fine	82	360	44	2			1	1	9	6
medium	9	96		4		1	1		1	
coarse	1	8			7					
dorsal cortex:										
0%	66	383	73	4	1		2	2	5	9
10-20%	20	31	3	6			1		3	
30-40%	9	21		4					1	
50-60%	3	19		3	1	1				
70-80%		14		1						
90-100%		22			5					
portion:										
fragment	5	272	37		1				8	10
complete	93	218	39	18	6	1	2	1	5	1
platform type:										
cortical		22								
single facet		41								
single & abraded		24	6							
multiple facet		78	3							
mult. & abraded		24	1							
retouched		9	3							
retou. & abraded		9	14							
abraded		2	10							
collapsed		133	21							
crushed		17	2							
absent		88	6							
broken in manuf.		40	10							
obscured		3								

	angular debris	core flake	biface flake	core	hafted imp.	cob. tool	uni-face	drill	biface	point
Utilized	1	20	1	1						
Retouched	1	10	1							
Utilized & retouched	2	12	1							
Total artifacts	98	490	76	18	7	1	2	1	13	11

to 12.8 cm and were unmodified except for the notch. Few had evidence of use for chopping. Only 35 were saved by Kidder, a considerable number were discarded in the field. They occurred in the trash and rooms of all periods. Kidder suggests these may have been makeshift axes, weapons, or even weights. "Notched stones" were relatively common in the fill (n = 4) and on the floor (n = 5) of the Peco 207 pit structure (Nordby and Creutz 1993:3.39-41), indicating this tool type has a long tradition at Pecos.

Those recovered from this project varied in bit shape. Three are flaked at the bit ends producing fairly sharp edges on two implements. Three others are rounded and one lacks an end. No wear is evident, however weathering and the material type may obscure direct evidence of

Table 16. Attributes of Hafted Implements

Attribute	FS 3	FS 22	FS 35	FS 54	FS 87	FS 133	FS 233
provenience	104N 88E	116N 96E	112N 64E	88N 68E	72N 52E	88N 92E	112N 70E, Level 1
condition	complete	complete	complete	complete	complete	mid-section	complete
material	micaceous schist	micaceous schist	mica. schist	mica. schist	mica. schist	mica. schist	micaceous schist
form	cobble fragment	cobble	cobble	cobble	cobble	mano	cobble fragment
manufacture	flaked bit and notch	flaked bit and notch	flaked notch	flaked notch	flaked bit and notch	flaked notch	flaked notch
shape	irregular	ovoid	triangular	ovoid	ovoid	unknown	irregular
end cross-section							
end shape							
length (cm)	10.26	13.70	11.91	11.10	12.28		9.23

Attribute	FS 3	FS 22	FS 35	FS 54	FS 87	FS 133	FS 233
width (cm)	5.70	7.50	6.93	7.46	7.90	8.53	5.96
haft width (cm)	4.80	6.86	5.96	6.95	7.00	7.65	4.63
thickness (cm)	2.37	3.98	2.61	4.38	5.05	3.22	3.49

wear. These implements could have been used as hoes, for clearing brush, as weapons, or other functions.

Formal lithic tools resemble those recovered by Kidder (1932). Bifaces are early stage (n = 4), middle stage (n = 3), late stage (n = 1), or undifferentiated (n = 5). Projectile points are side (n = 1) or corner (n = 4) notched (Fig. 12a, b, f, g, h) and are of chert or obsidian. Three are tips, three are midsections, two are bases, and three are largely complete. Projectile points were common finds in the pit structures excavated near the study area. Twenty-nine obsidian and chert projectile points were recovered from the structure at Peco 207 (Nordby and Creutz 1993:3.27), and 38 obsidian, chert, and chalcedony points were recovered from the structure at Peco 53 (Nordby and Creutz 1993:4.36). Most of those from Peco 53 were corner-notched with straight to convex blades and bases (Nordby and Creutz 1993:4.37).

Fauna

Few pieces of bone were found (Table 17; Appendix 3). Many are fragments of long bones (n = 15) or flat bones (crania, vertebra, scapula, mandible, etc.) (n = 10). Two pieces of equine (horse or mule) tooth and a horn fragment, probably pronghorn, complete the assemblage. Much of the bone was burned (n = 5), root etched (n = 3) or badly weathered (n = 11), and one piece was rounded from digestion or boiling. Two metapodial shaft fragments from an artiodactyl the size of pronghorn or deer found in the fill of the pit structure (45N 76E) were grooved and split, probably in the process of manufacturing tools.

Table 17. Summary of Faunal Remains

Taxon	Common name or size	Surface Collection Area	45N 76E	112N 70E	Peco 207 Test Pit 3	Totals
small to medium mammal	rodent to coyote size	1				1
medium to large mammal	coyote to deer size	2		3	1	6
large mammal	wolf to deer size	2	4	1	6	13

Taxon	Common name or size	Surface Collection Area	45N 76E	112N 70E	Peco 207 Test Pit 3	Totals
large mammal/medium artiodactyl	deer size; probably artiodactyl		2			2
medium artiodactyl	deer or pronghorn size		2			2
cf. <i>Antilocapra americana</i>	pronghorn?			1		1
<i>Equus</i> sp.	horse or mule				2	2
Totals		5	8	5	9	27

Ground Stone

Few pieces of ground stone were recovered ($n = 11$; Table 18); all but one are from the surface collection. Two are also hafted implements made by notching a mano and an abrader. Micaceous schist is the primary raw material, often in cobble form. As for function, the pieces that are not fragmentary discards are general purpose tools, abraders, and anvils, all of which could have been used for a wide range of purposes away from a site area.

Table 18. Ground Stone Attributes

FS	provenience	artifact type	Condition	Material	Comments
3	104N 88E	abrader made into a notched implement	much of an abrader	micaceous schist	abrader flaked and notched for reuse as a hafted implement
87	72N 52E	bifacial anvil and chopper	complete	micaceous schist cobble	
107	56N 56E	bifacial anvil	complete	micaceous schist cobble	
133	88N 92E	mano made into notched implement	mano midsection	micaceous schist	triangular two-hand mano
147	80N 88E	indeterminate	small fragment	sandstone conglomerate	probably a metate fragment; fire-cracked
159	72N 88E	mano	small fragment	micaceous schist	
163	68N 100E	abrader	complete	sandstone conglomerate	

FS	provenience	artifact type	Condition	Material	Comments
168	68N 100E	indeterminate	small fragment	micaceous sandstone	possibly a metate fragment
172	64N 92E	abrader	complete	micaceous sandstone	
190	52N 88E	indeterminate	small fragment	hornblende	
210	45N 88E Level 1	indeterminate	small fragment	micaceous sandstone	mano or metate fragment; fire-cracked

Historic Artifacts

Only two historic artifacts were collected. One, a bottle neck and lip (see Fig. 12k), was collected from the surface (88N 96E), and the other, a piece of majolica, was recovered from Level 6 of Peco 207, Test Pit 3. The bottle neck is dark green glass and its manufacture technique, a hand applied bust-off and grind lip, indicates it was manufactured between 1840 and 1913 (Newman 1970). The majolica is a small cream-colored sherd with no paint. It dates from the seventeenth or eighteenth century and could have originated from the Presidio just north of the test pit, or it could be associated with the occupation of Pecos Pueblo itself.

Wood

The only prehistoric wood encountered in our excavations came from the pit structure in 45N 76E and probably is burned roofing material. This material indicates that a wide range of local conifers was used: juniper, ponderosa and piñon pine, and Douglas fir. Material diameters range from 2.0 to 6.0 cm (Appendix 4).

CONCLUSIONS AND RECOMMENDATIONS

Our work at Pecos National Historical Park was too limited to offer large-scale conclusions regarding prehistoric use of the area. On a practical level, OAS investigations indicate that construction of the CRM Facility, moving the Adobe Processing Area, and planting a vegetative screen should not impact significant prehistoric resources. Test pits and backhoe trenches found no features or associated deposits in areas that will be impacted by construction activities. On the other hand, subsurface deposits were found in areas with no surface indications of structures or disturbance, indicating that all ground disturbing activities associated with the construction should be monitored by an archaeologist. The Test Pit 3 area should be avoided if possible. If not, further testing should determine the nature and extent of the deposits.

Dealing with the ubiquitous artifact scatter around Pecos Pueblo is indeed a problem, especially in combination with modification of the landscape by ranching activities. Piling and burning vegetation has affected surface distributions by creating concentrations of fire-cracked rock, building materials, and artifacts that may have little relationship to their original distribution. Fortunately, these areas can be recognized and caution should be used when interpreting concentrations where these activities are obvious. Conversely, concentrations should be examined for evidence of piling.

Finding another pit structure in this general area again confirms that the early occupation of the park area was greater than previously thought. The presence of early structures pose a number of intriguing questions. As Nordby and Creutz note (1993:1.4-6), the length of the frost-free season at Pecos makes it only marginally suited for maize agriculture. To compensate, these early residents appear to have relied heavily on hunting, as suggested by the large numbers of projectile points and other animal processing tools recovered in and around the structures. They also interacted with groups outside the general area. Alibates tools (a knife, drills, and a scraper), found in all three pit structures reported by Nordby and Creutz (1993:3.27, 4.36, 5.4b), indicate relations with groups to the east, and the San Juan Red Ware sherd recovered in our test pit shows exchange with groups to the northwest.

Our relatively intense examination of the scatters in the study area has a number of implications. Artifact scatters differ and can provide a good deal of information. For example, Scatter A was less dense and contained fewer chipped stone tools but more utilized and retouched debitage than Scatter B, and it had no fire-cracked rock. The variability in ceramic wares and their probable relationship to nearby sites all point to an interpretation of peripheral activities associated with those sites. In contrast, Scatter B has a greater density of lithic artifacts, a variety of flaked stone tools, and fire-cracked rock, a combination that is generally considered an indication of habitation. Early sites without evidence of features can be recognized when attention is paid to the density, type, and variety of artifacts.

REFERENCES CITED

Banks, Larry D.

- 1990 *From Mountain Peaks to Alligator Stomachs: A Review of Lithic Sources in the Trans-Mississippi South, the Southern Plains, and Adjacent Southwest*. Oklahoma Anthropological Society, Memoir 4.

Breternitz, David A.

- 1966 *An Appraisal of Tree-Ring Dated Pottery in the Southwest*. Anthropological Papers of the University of Arizona 10. University of Arizona Press, Tucson.

Eininger, Susan F.

- 1993 Cultural Resource Inventory of Three Parcels Proposed for Development, Pecos National Historical Park, San Miguel County, New Mexico. Report on file, National Park Service, Southwest Regional Office, Division of Anthropology, Santa Fe.

Forrest, Earle R.

- 1929 *Missions and Pueblos of the Old Southwest*. Rio Grande Press, Inc. 1979 edition, Glorieta.

Greene, Glen

- 1994 Pecos Coring Tests. Report on file, National Park Service, Southwest Regional Office, Division of Anthropology, Santa Fe.

Kessel, John L.

- 1979 *Kiva, Cross, and Crown: The Pecos Indians and New Mexico 1540-1840*. National Park Service, U.S. Department of the Interior, Washington, D.C.

Kidder, Alfred Vincent

- 1932 *The Artifacts of Pecos*. Yale University Press, New Haven.

Minnis, Paul E.

- 1987 Identification of Wood from Archaeological Sites in the American Southwest, I: Keys for Gymnosperms. *Journal of Archaeological Science* 14:121-131.

Moore, James L.

- 1992 *An Archaeological Survey of 29 Construction Maintenance Easements and 40 Temporary Construction Permits along NM 50 between Glorieta and Pecos, Santa Fe and San Miguel Counties, New Mexico*. Archaeology Notes 106. Office of Archaeological Studies, Museum of New Mexico, Santa Fe.

Newman, T. Stell

- 1970 A Dating Key for Post-Eighteenth Century Bottles. *Historical Archaeology* 4:70-74.

Nordby, Larry V.

1993 Pecos Archeological Survey: A Management Summary. Draft report on file, National Park Service, Southwest Regional Office, Division of Anthropology, Santa Fe.

Nordby, Larry V., and A. William Creutz

1993 Houses Underground: Pithouse Archeology in the Upper Pecos Drainage. Draft report on file, National Park Service, Southwest Regional Office, Division of Anthropology, Santa Fe.

Oppelt, Norman T.

1988 *Southwestern Pottery: An Annotated Bibliography and List of Types and Wares*. Scarecrow Press, Inc., Metuchen, New Jersey and London.

Puseman, Kathryn

1993 Gymnosperms of the Colorado Plateau. Paper presented at the Second Southwest Paleoethnobotany Workshop, Phoenix.

Schroeder, Albert H.

1979 Pecos Pueblo. In *Handbook of North American Indians*, vol. 9, *Southwest*, edited by Alfonso Ortiz, pp. 430-437. Smithsonian Institution, Washington D.C.

Warren, A. H.

1979 The Glaze Paint Wares of the Upper Middle Rio Grande. In *Archaeological Investigations in Cochiti Reservoir, New Mexico*, vol. 4, *Adaptive Change in the Northern Rio Grande Valley*, edited by Jan V. Biella and Richard C. Chapman, pp. 187-216. Office of Contract Archaeology, University of New Mexico, Albuquerque.

APPENDIX 1
ARTIFACT COUNTS FOR THE SURFACE COLLECTION GRID
(SURFACE MATERIALS ONLY)

North	East	F.S.	ceramics	lithics	other
Area 1					
124	72	27	1		
124	76	26	1	1	
120	68	41	3	1	
120	84	25	1		
120	88	24	5		
120	96	23	3	2	
116	56	37	1		
116	60	38	2	2	
116	64	39	28	12	
116	68	40	7	4	2 bones
116	72	16	1	2	
116	76	17	2	1	
116	80	18	1		
116	84	19	1	2	
116	88	20	5	2	
116	92	21	2	1	
116	96	22	4	1	1 hafted
112	60	36		1	
112	64	35	5	1	1 hafted
112	68	34	1	2	
112	72	15	2	3	1 biface
112	76	14	3	2	
112	84	13	24	4	1 biface
112	88	12	2		
112	92	11		1	
112	96	10		5	
112	100	28		1	
108	56	32		1	

North	East	F.S.	ceramics	lithics	other
108	64	33	3		
108	72	6	1	4	
108	76	7		1	
108	88	8	2		1 biface
108	96	9		2	
Totals for Area 1			111	58	3 bifaces; 2 hafted; 2 bones
Area 2					
96	44	43	7		
96	48	44	3	2	
92	36	52	2		1 point
92	44	51	1	1	
92	48	50	1	3	
88	32	61		1	
88	36	62	1		
88	40	60	1		
88	44	59		1	
84	32	63	1	1	
84	48	64		1	
80	28	76	1		
80	32	75	3	1	1 bone
80	36	74	1	1	fer
80	44	72	2	1	
76	32	77	1	1	fer
76	36	78	1		
76	40	79		1	
76	44	80	1	2	
76	48	81		1	
72	40	89		3	
72	48	88		3	
68	40	90	1	3	

North	East	F.S.	ceramics	lithics	other
68	44	91	5	2	fer
68	48	92		2	fer
Totals Area 2			33	31	1 point; 1 bone; 4 fer
Area 3					
104	52	31	1		
104	56	30	1		
104	64	29		1	
100	68	145			1 drill
96	52	45		2	
96	56	46			1 biface, 1 bone
96	68	47	2	1	
96	72	126	1		
92	60	49	1	1	
92	68	48		1	
92	72	127		2	
88	52	58	1	1	
88	56	57		1	
88	64	55	6	1	
88	68	54	3	2	1 hafted
88	72	138	2	1	
84	60	65	5		
84	64	66	8	1	
84	68	67		1	
84	72	139		2	
80	52	71		1	
80	56	70	1		fer
80	60				fer
80	64	69	8		
80	68	68	3	1	
80	72	151	1	4	
76	52	82		1	

North	East	F.S.	ceramics	lithics	other
76	56	83	1		
76	64	84		1	
76	68	85	1		
72	52	87		1	1 hafted; 1 g.s.; fcr
72	56	86	1		
Totals Area 3			47	27	1 drill, 1 biface, 2 hafted, 1 g.s. 2 bones, 3 fcr
Area 4					
104	76	119		1	
104	80	5	1	3	
104	84	4		2	
104	88	3		2	1 hafted
104	92	2	2	2	
104	96	1	1	2	
100	76	117	1	1	
100	80	118	4	4	
100	84	120	1	1	
100	88	121	2	2	
100	92	122	2	9	
100	96	123	1	4	
96	84	125	2	1	
96	92	124		1	
92	80	128	1	3	
92	88	129	2	1	
92	92	130	1	5	
92	96	131	1	1	
88	76	137		1	
88	80	136	1	1	
88	84	135		2	
88	88	134		2	
88	92	133	6	5	1 hafted

North	East	F.S.	ceramics	lithics	other
88	96	132	1		2 bottle frags.
84	80	140	1		
84	84	141	1	1	
84	88	142	2	4	
84	92	143	2	3	
84	96	144	1		
80	76	150	1		fer
80	80	149	1		
80	84	148	1	1	
80	88	147		2	1 g.s.
80	92	146	2	1	
76	76	152		1	
76	80	153		4	
76	84	154	3	1	
76	92	155		1	
76	96	156	1	5	
72	76	162	1	1	
72	80	161	1	1	
72	84	160		1	
72	88	159		5	1 g.s.
72	92	158		1	
72	96	157	1	5	
Area 4 totals			49	94	2 hafted; 2 g.s.; 1 fer
Area 5					
68	52	93		1	
68	64				fer
68	68	94	2	1	
68	72	163		1	1 g.s.; fer
64	52	98		3	
64	56	97	1		
64	60	96	1	1	

North	East	F.S.	ceramics	lithics	other
64	64	95		2	
64	72	174	2		
60	52	99	4	2	fer
60	56	100		1	
60	60	101		3	
60	64	102		1	
60	68	103		1	
56	52	108	6	4	fer
56	56	107	4	3	1 g.s.
56	60	106	2	3	
56	64	105		1	
56	68	104		1	
52	56	109	1	3	
52	60	110	6	6	fer
52	64	111	3	3	
52	68	112		1	
52	72	186		1	
48	56	116	4	5	
48	60	115	1	4	
48	64	114		3	
48	68	113		11	
48	72	199	4	27	1 point
44	60	209	1	7	
44	64	208	3	20	
44	68	207	1	21	
44	72	200		11	
Totals Area 5			46	152	1 point, 2 g.s., 5 fer
Area 6					
68	80	164		1	
68	84	165		1	
68	88	166	5	2	

North	East	F.S.	ceramics	lithics	other
68	92				fer
68	96	167	2	2	
68	100	168	4	6	1 g.s.; fer
68	108	169			1 point
64	88	173		3	1 biface
64	92	172	1	4	1 g.s.; fer
64	96	171	1	3	
64	100	170	2	3	1 point, 1 biface
60	72	175		1	
60	80	176		1	
60	84	177		1	
60	88	178		2	fer
60	92	179	1	10	
60	96	180	1	3	1 biface
56	80	185		3	
56	84	184		2	1 biface
56	88	183	1		
56	92	182		3	
56	96	181		4	
52	76	187		6	
52	80	188		6	
52	84	189	1	8	
52	88	190		4	1 g.s.
52	92	191		9	1 point
52	96	192		4	
48	76	198	1	18	
48	80	197	2	11	
48	84	196		27	fer
48	88	195		3	
48	92	194		4	
48	96	193	4	4	

North	East	F.S.	ceramics	lithics	other
44	76	201	2	19	fer
44	80	202		23	2 points; 1 biface; fer
44	84	203		8	1 point; 2 bifaces
44	88	204	1	31	1 biface; 1 bone
44	92	205	1	6	
44	96	206		3	
Area 6 totals			30	249	6 points; 7 bifaces; 2 g.s.; 1 bone; 7 fer

APPENDIX 2
CERAMIC ASSEMBLAGE BY AREA OR TEST PIT

AREA 1

Ceramic Type	Vessel Form							Total
	Bowl Rim	Bowl Body	Jar Rim	Jar Neck	Jar Body	Bowl or Jar Body	Bowl or Jar Rim	
Plain utility		1	5	6	3	22		37
Plain Smudged utility				1		16		17
Faint Striated utility						1		1
Organic-on-white		1						1
Bandelier Black-on-Gray (Biscuit B)	1							1
Glaze Red ware, unpainted	1	4						5
Glaze ware, red and white slip, unpainted		2						2
Glaze Yellow ware		3						3
Glaze-on-red		3						3
Glaze-on-red and white (slipped)	1	2						3
Glaze-on-white		1						1
Glaze-on-yellow		5						5
Cieneguilla Glaze-on-Yellow	1							1
Organic-on-white w/red slip, historic		1					1	2
Buff/Brown/Tan ware, unpainted, historic		13		1				14
Gray ware, unpainted, historic		1						1
Black ware, unpainted, historic		5						5
Cream ware, slipped & unpainted		1						1
Red ware, slipped, unpainted, historic		2			4			6
Red ware, smudged		2						2
Total	4	47	5	8	7	39	1	111

AREA 2

Ceramic Type	Vessel Form					
	Bowl Rim	Bowl Body	Jar Rim	Jar Body	Bowl or Jar Body	Total
Plain utility			1	9	1	11
Corrugated indented utility				3		3
Faint Striated utility					3	3
Santa Fe Black-on-white	2					2
Bandelier Black-on-Gray (Biscuit B)		1				1
Glaze red ware, unpainted		3		1		4
Glaze-on-red		2				2
Glaze-on-red and white (slip)		1				1
San Lazaro Glaze-Polychrome	1					1
Puaray Glaze-on-Red	1					1
Black ware, unpainted, historic					2	2
Red ware, unpainted, slipped, historic					1	1
Cream ware, unpainted, slipped, historic				1		1
Total	4	7	1	14	7	33

AREA 3

Ceramic Type	Vessel Form				
	Bowl Body	Jar Neck	Jar Body	Bowl or Jar Body	Total
Plain utility		2	6	1	9
Plain Smudged utility				1	1
Faint Striated utility				1	1
White ware, unpainted	1				1
Organic-on-white	1				1
Glaze red ware, unpainted	8				8
Glaze white ware, unpainted			1		1
Glaze ware, red and white, unpainted, slipped	5				5
Glaze-on-red	1				1
Glaze-on-red and white slip, unpainted	3		1		4
Glaze-on-yellow	1				1
Organic-on-red, historic	2				2
Red ware, unpainted, unslipped, historic				1	1
Red ware, slipped, unpainted, historic	1				1
Buff/Brown/Tan ware, unpainted, historic	2		2	3	7
Cream/white ware, unpainted, slipped, historic	2		1		3
Total	27	2	11	7	47

AREA 4

Ceramic Type	Vessel Form					
	Bowl Rim	Bowl Body	Jar Neck	Jar Body	Bowl or Jar Body	Total
Plain utility				9	7	16
Corrugated utility	1					1
Corrugated indented utility				2		2
Plain smudged utility					1	1
White ware, unpainted		1		1	2	4
Organic-on-white		3				3
Abiquiu Black-on-white (Biscuit A)		1				1
Glaze red ware, unpainted		8				8
Glaze white ware, unpainted		1				1
Glaze ware, red and white, unpainted (slipped)		1				1
Glaze yellow ware, unpainted		1				1
Glaze-on-red	1		1			2
Glaze-on-yellow		1				1
Red ware, unpainted, unslipped					1	1
Buff/Brown/Tan ware, unpainted, historic		1			1	2
Red and cream ware, unpainted, slipped, historic		1				1
Cream ware, unpainted, slipped, historic				1		1
Red ware, smudged		1				1
Organic-on-white w/red slip		1				1
Total	2	21	1	13	12	49

AREA 5

Ceramic Type					
	Bowl Rim	Bowl Body	Jar Body	Bowl or Jar Body	Total
Plain utility			26	1	27
Plain Smudged utility				1	1
Corrugated indented utility			1		1
Smearred indented corrugated utility			1		1
White ware, unpainted		3			3
Organic-on-white	1	1			2
Glaze Red ware, unpainted		1			1
Glaze White ware, unpainted			1		1
Glaze-on-red		2			2
Glaze-on-red and white (slipped)		1			1
Glaze-on-white				1	1
Pecos Glaze Polychrome	2				2
Organic-on-cream, historic		1			1
Buff/Brown/tan ware, unpainted, historic	1	1			2
Total	4	10	29	3	46

AREA 6

Ceramic Type	Vessel Form				
	Bowl Rim	Bowl Body	Jar Body	Bowl or Jar Body	Total
Plain utility			11	2	13
Plain Smudged utility				1	1
Corrugated utility			1		1
White ware, unpainted		1			1
Organic-on-White		4			4
Abiquiu Black-on-Gray (Biscuit A)		1			1
Glaze Red Ware, unpainted		1			1
Glaze Red and White ware (slipped)		2			2
Glaze-on-red			1		1
Glaze-on-Yellow			2		2
Pecos Glaze Polychrome	2				2
Organic-on-cream, historic		1			1
Total	2	10	15	3	30

Test Pit 112N 70E

Ceramic Type	Bowl Body	Jar Body	Bowl or Jar Body	Total
Plain utility		6	3	9
Glaze red ware, unpainted		1		1
Glaze-on-red		1		1
Glaze-on-white	1			1
Total	1	8	3	12

Test Pit 109N 83E

Ceramic Type	Bowl Body	Jar Body	Bowl or Jar Body	Total
Plain utility		8	1	9
Corrugated utility			1	1
Corrugated-indented utility		1		1
White ware, unpainted	1			1
Buff/Brown/Tan ware, unpainted, slipped, polished	1			1
Red and white ware, unpainted, slipped, historic		1		1
Total	2	10	2	14

Test Pit 76N 88E

Ceramic Type	Jar Body	Total
Plain utility	1	1
Organic-on-white	1	1
Glaze-on-yellow	1	1
Total	3	3

Test Pit 45N 76E

Ceramic Type	Bowl Body	Jar Body	Bowl or Jar Body	Coiled Handle	Total
San Juan Area, Red ware		1			1
Plain utility		47	1	1	49
Neckbanded utility		2			2
White ware, unpainted	3				3
Organic-on-white	1				1
Glaze Red ware, unpainted	1				1
Glaze-on-red	1				1
Cream ware, unpainted, slipped, polished, historic	1				1
Total	7	50	1	1	59

Peco 207, Test Pit 1

Ceramic Type	Jar Body	Total
Plain utility	4	4
Total	4	4

Peco 207, Test Pit 3

Ceramic Type	Bowl Body	Jar Body	Bowl or Jar Body	Soup Bowl Rim	Total
Plain utility		7	3		10
Plain smudged utility			2		2
White ware, unpainted	1				1
Glaze red ware, unpainted	1	1			2
Glaze white ware, unpainted		1			1
Glaze ware, red and white slip, unpainted	1				1
Glaze yellow ware, unpainted	2				2
Glaze-on-red	1	1			2
Glaze-on-red and white (slipped)			1		1
Glaze-on-white	1				1
Glaze-on-white w/red matte		2			2
Buff/Brown/Tan ware, unpainted				1	1
Cream ware, unpainted, slipped, polished, historic	1	2			3
Red ware, smudged	1				1
Total	9	14	6	1	30

APPENDIX 3
FAUNAL REMAINS

FS/provenience	no.	taxon	element	comment
40/116N 68E surface	1	medium to large mammal	long bone shaft fragment	mature; root etched
	2	medium to large mammal	long bone shaft fragment	mature
46/96N 56E surface	1	large mammal	long bone shaft frag.?	mature; calcine; exfoliated
75/80N 82E surface	1	large mammal	long bone shaft fragment	mature; burned black; exterior weathered
204/44N 88E surface	1	small to medium mammal	long bone shaft fragment	mature; burned black
213/45N 76E Level 3	1	large mammal	long bone shaft fragment?	mature; burned black exterior, calcine interior
221/45N 76E Level 9	1-2	large mammal/med. artiodactyl	long bone shaft fragments	mature; checked; possibly parts of 3 and 4
	3	medium artiodactyl	metacarpal shaft fragment	young adult; distal end carnivore gnawed; grooved and split for tool manufacture; slight root etching
	4	medium artiodactyl	metapodial shaft fragment	young adult?; probable carnivore gnawing on shaft; grooved and split for tool manufacture; root etched
	5	large mammal	long bone shaft fragment	mature; surface missing -- possibly cut off
222/45N 76E Level 10	1	large mammal	long bone shaft fragment	mature
225/45N 76E Level 13	1	large mammal/ medium artiodactyl?	flat bone - possibly cranial	mature; partial black burn
233/112N 70E	1	medium artiodactyl, c.f. <i>Anilocapra americana</i>	horn fragment	mature; 6 pieces - fresh break; very eroded
	2	medium to large mammal	long bone fragment - shaft near end	mature; slight rounding - boiled or digested
	3-4	medium to large mammal	long bone shaft fragment	mature; cracked and exfoliated
	5	large mammal	flat bone fragment	mature; vertebra process?
243/Peco 207, T.P. 3 Level 6	1-2	<i>Equus</i>	molar fragment	mature
	3-8	large mammal	flat bone fragments	mature; very checked
244/Peco 207, T.P. 3 Level 7	1	medium to large mammal	flat bone fragment	mature

APPENDIX 4
SPECIES OF WOOD FROM SCATTER B

Mollie S. Toll

The Pecos Park charcoal assemblage, from two locations in Test Pit 45N 76E of Area B, runs the elevational gamut from juniper to fir, with none of the upland shrubs so prominent in Anasazi and Archaic assemblages at lower elevations. Piñon and fir dominated FS 224 (Level 12), where smaller branches were represented, and ponderosa pine and piñon were most common in FS 226 (floor), where some substantial branches were found. Branch size was determined by measuring a radius from the central growth point to the furthest outside ring, then doubling to estimate a diameter for the largest specimen of each taxon in each sample.

Charcoal samples were first screened through a 2 mm screen to remove dirt and charcoal dust. Pieces were snapped to expose a fresh transverse section, and examined at 90x. The first-level observation involved the presence or absence of resin ducts (Minnis 1987:126; Puseman 1993:2). Specimens lacking resin ducts were labeled *Juniperus* if late wood bands were very brief, consisting of only 1-3 rows of cells, and *Abies* if late wood bands were broader and developed more gradually. *Pinus edulis* sports abundant resin ducts with a distinctive morphology (moderate size, stout cell walls, surrounded by neatly arranged, robust supporting cells); the resin ducts are distributed throughout the growth rings. *Pinus ponderosa* has large, thinner walled resin ducts, with loosely organized support cells, and the ducts congregate in the later end of the growth ring. Specimens were put in the category of Undetermined Conifer generally when specimen quality left some ambiguity as to one taxon vs. another: small pieces whose lack of resin ducts might be a sampling problem, or reaction wood with distorted morphology.

Taxa	FS 224			FS 226		
	wt. in g	%	Branch diameter*	wt. in g	%	Branch diameter*
<i>Juniperus</i> juniper	.41	9%	2.0 cm	1.54	5%	5.0 cm
<i>Pinus edulis</i> piñon pine	2.00	44%	3.0 cm	9.43	32%	5.6 cm
<i>Pinus ponderosa</i> ponderosa pine				16.17	54%	6.0 cm
<i>Abies</i> fir	1.37	30%	3.0 cm			
Undetermined conifer	.74	17%		2.61	9%	
Total	4.52	100%		29.75	100%	

*e.g., largest branch was at least this big