Volume 1992 Article 18

1992

Archeological Significance Testing at Site 41SR191, Starr County, Texas

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G. R. DENNIS PRICE

July 1992

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AUSTIN, TEXAS

ABSTRACT/MANAGEMENT SUMMARY

The Texas Department of Transportation (TxDOT) conducted archeological significance testing at Site 41SR191, within the right-of-way of proposed improvements to US 83 in Starr County.

The site was recorded in 1991 during an archeological survey of additional rights-of-way required for highway improvements. At that time, the site was recorded as a surface scatter of burned rock fragments and lithic debitage in a fallow field, covering an area approximately 50 meters east-west by 150 meters north-south. Although it was thought that the site was unlikely to yield substantial significant information, the site was considered to be one of the two (out of a total of 25 recorded during the survey) most likely to yield significant information. Thus, additional testing was recommended for this site as the project involves federal funding.

As the improvements will utilize federal funding, the testing was undertaken under the guidelines of the National Historic Preservation Act of 1966 and its implementing regulations, 36CFR, Part 800, and the National Environmental Policy Act.

A total of 120 work-hours was spent on hand-excavation of eight square meters and machine excavation of two trenches, each approximately 40 meters in length and two meters in depth.

The testing yielded only five prehistoric biface fragments, none of which was temporally or culturally diagnostic, and relatively small quantities of lithic debitage, all confined within approximately 30 cm of the surface. Historic artifacts were found throughout the same depths of deposit. Thus, it was concluded that the site was extremely disturbed by historic land clearing and cultivation activities, and that the site was unlikely to yield any significant information.

It is recommended that no additional cultural resources investigations be carried out at the site, and that the project be allowed to proceed.

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INTRODUCTION

General

The Texas Department of Transportation (TxDOT) conducted archeological significance testing at Site 41SR191, within the right-of-way of proposed improvements to US 83 in Starr County (Figure 1-1).

Site 41SR191 was recorded in 1991 during an archeological survey of additional rights-of-way required for highway improvements (Texas State Department of Highways and Public Transportation 1991). At that time, the site was recorded as a surface scatter of burned rock fragments and lithic debitage in a fallow field. The site covered an area approximately 50 meters east-west by 150 meters north-south.

As the improvements will utilize federal funding, the testing was undertaken under the guidelines of the National Historic Preservation Act of 1966 and its implementing regulations, 36CFR, Part 800, and the National Environmental Policy Act.

Fieldwork

Significance testing was conducted during May 1992 under the supervision of G. R. Dennis Price, with a field crew supplied by Pharr District 21. A total of 120 work-hours was spent on hand-excavation of eight square meters and machine excavation of two trenches, each approximately 40 meters in length and two meters in depth.

Acknowledgments

Cooperation by the Rio Grande City Maintenance Section in providing personnel and equipment is gratefully acknowledged. The field crew consisted of Jose Garza, Jose Lopez, and Pedro Pena. Pedro Pena also operated the backhoe. Project coordination was ably handed by Velma Garcia, who also worked in the field. Laboratory processing and cataloging of collected materials was undertaken by Todd Ashby and Suzanne Krejci. Illustrations were drafted by Milton Bell.

SITE SETTING

Topography

Site 41SR191 is located on a slight rise west and north of a meandering, south trending, ephemeral stream in a shallow, almost level, bowl-shaped, erosional basin (Figure 1). The unnamed stream, when flowing, drains into Salado Creek, also an ephemeral stream, which in turn empties into the Rio Grande. Elevation of the site is approximately 200 feet above National Geographic Vertical Datum (NGVD) (USGS 1965).

Geology

Geologic deposits on which the site is situated have been mapped as the Pliocene age Goliad Formation (Bureau of Economic Geology 1976). The for-

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mation includes clay, sand, sandstone, marl, caliche, limestone and conglomerate. The conglomerate includes black chert and dark siliceous pebbles in a caliche matrix.

Soils

Soils on the site have been identified by the Soil Conservation Service (1972:map sheet 62, pp16-17) as McAllen fine sandy loam. This upland soil developed in friable loamy sediments with a high lime content. The following is a representative profile:

0-18 cm	A11	fine sandy loam; 10YR 6/2 dry, 10YR 4/2 moist; weak fine granular structure; slightly hard when dry, friable when moist; porous; few broken snail shells; calcareous; moderately alkaline; gradual wavy boundary.
18-43 cm	A12	fine sandy loam; 10YR 6/2 dry, 10YR 4/2 moist; weak subangular blocky structure; slightly hard when dry, friable when moist; numerous roots; many fine pores; few broken snail shells; calcareous; moderately alkaline; gradual wavy boundary.
43-76 cm	B2	sandy clay loam; 10YR 6/3 dry, 10YR4/3 moist; weak subangular blocky structure; slightly hard when dry; friable when moist; many fine pores and root channels; few broken snail shells; few films and threads of calcium carbonate; calcareous; moderately alkaline; diffuse irregular boundary.
76-150 cm	Cca	sandy clay loam; 10YR 7/4 dry, 10YR 5/4 moist; structureless, slightly hard when dry, friable when moist, many fine pores, few broken snail shells; strongly cemented concretions, soft lumps, and finely disseminated calcium carbonate ranges between 15 and 35% by volume; few rounded quartzite pebbles; calcareous.

Climate

Starr County has a warm-temperate, subtropical steppe climate. Rainfall between 1931 and 1962 averaged about 43 cm annually. Most of the rain falls in the form of thundershowers; however, occasional tropical disturbances produce heavy rains in early fall, resulting in September having the highest monthly rainfall average. The next wettest period is late May-early June. The driest months are November and December (ibid.:56,57).

Temperatures are high in summer, with daily maximums exceeding 100° F. in July and August. Winter temperatures do not usually fall below 40° F. Freezing temperatures occur in 7 out of 10 years in the fall, and in 9 out 10 years in the spring.

Vegetation

Natural vegetation of the area includes mesquite, spiny hackberry, ebony, lime prickly-ash, guayacan, Texas persimmon, lotebush, coyotillo, cenizo, and

pricklypear. Grasses and forbes include Arizona cottontop, Texas bristlegrass, lovegrass tridens, fourflowered trichloris, hooded windmillgrass, pink pappusgrass, and knotroot panicum (ibid.:39).

Historic land use and practices such as overgrazing, deep root plowing, irrigation and consequent lowering of water tables, have undoubtedly altered the natural vegetation of today from the natural prehistoric vegetation. The natural prehistoric and early historic vegetation, aided by large scale burning, probably included more grasses and less mesquite and brushy thorn.

At the time that testing took place, the site was in an area that had been cultivated, but which had been fallow for about two years. Vegetation consisted primarily of grasses, with fairly large areas devoid of vegetation.

Fauna

Davis (1974) indicates that the following mammalian species probably do or did occur in Starr County: opossum, eastern mole, least shrew, desert shrew, black bear, raccoon, long-tailed weasel, eastern & western spotted skunk, striped skunk, badger, gray fox, coyote, ocelot, cougar, jaguarundi, bobcat, Mexican ground squirrel, spotted ground squirrel, south texas pocket gopher, Merriam pocket mouse, Hispid pocket mouse, Ord kangaroo rat, beaver, short-tailed grasshopper mouse, Fulvous harvest mouse, pygmy mouse, deer mouse, white-footed mouse, hispid cotton rat, gray wood rat, California Jack rabbit,eastern cotton tail, Audubon cottontail, javelina, pronghorn antelope, white-tailed deer. The, only mammals observed during the testing program were several gophers trapped in the backhoe trenches.

In addition to mammals, numerous lizards were observed on the site during the testing, and the presence of snail shells indicates that snails are also fairly abundant naturally in the area.

FIELD EXCAVATIONS AND OBSERVATIONS

Hand Excavations

Eight test units (Figure 2:A through H) were excavated by hand. Each unit was 1 x 1 meter in plan. The units were located to test the overall site area within the highway right-of-way, with individual units being placed at locations where there appeared to be slightly higher concentrations of material on the surface.

After each unit had been staked and marked with string, vegetation was cleared from the surface and lithic debris exposed on the surface was collected and bagged separately. Each unit was then excavated in 10 cm levels, with fill being screened through 1/4-inch hardware cloth. Materials, other than root and recent plant remains, that did not pass through the screen were bagged by level and returned to the laboratory for further analysis. Most materials appeared to consist of thermally fractured rock fragments and snail shells. Lithic flakes, though present, were generally few in number, and usually did not exhibit evidence of use or modification.

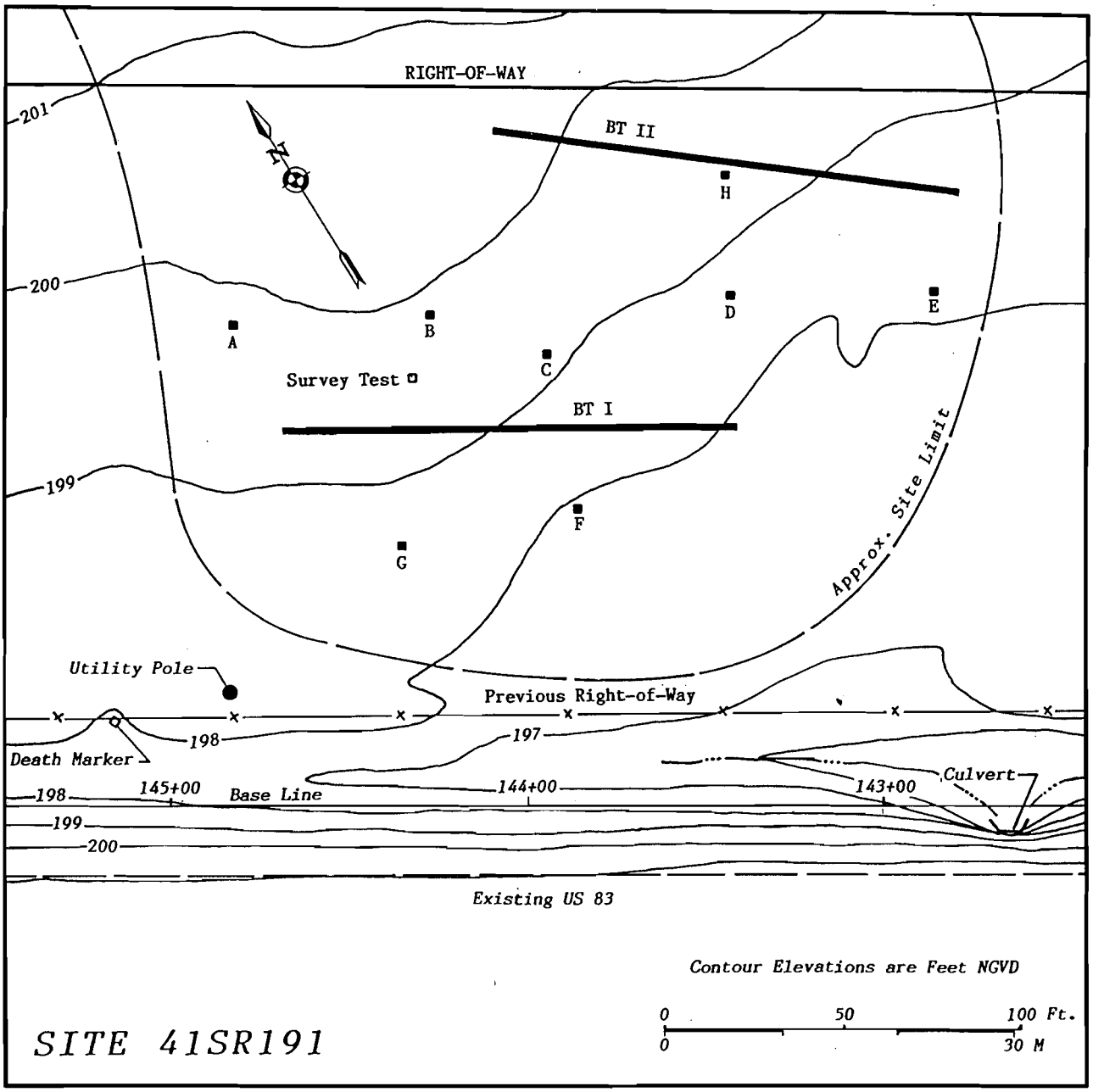


Figure 2. 41SR191, topography with locations of test units and backhoe trenches.

The base of each level was trowelled and inspected for evidence of cultural features before the next level was excavated. Excavation continued until culturally sterile deposits were reached. Test Unit C was excavated to a depth of 60 cm, Test Unit G was excavated to a depth of 40 cm, and each of the remaining units was excavated to a depth of 50 cm.

Following completion of the excavation of each unit, the east wall of each unit (except for Test Unit E, the west wall) was then cleaned and photographed, and the soil profile was drawn.

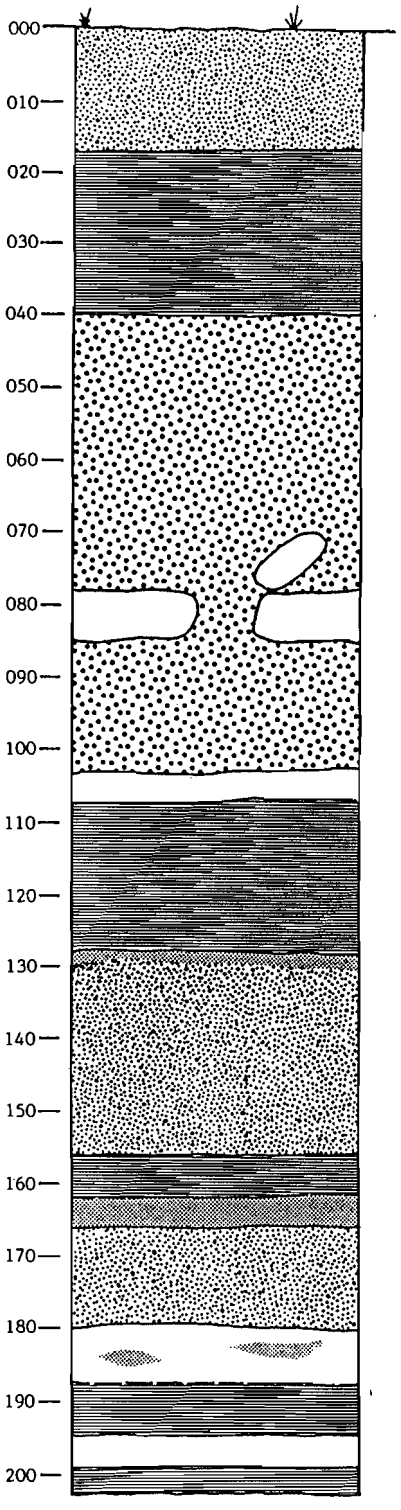
Machine Excavations

Two trenches were excavated across the site by backhoe. These were each approximately 40 meters in length, 2 meters in depth, and oriented approximately parallel with the highway. Following excavation, one wall of each trench was shovel cleaned to examine the stratigraphy and profiles were then drawn at intervals of between 2 and 5 meters along each trench. For safety reasons, the trenches were then backfilled.

Stratigraphy

Profiles observed in each of the test units were virtually identical, and conformed with the upper part of the profiles revealed by the backhoe trenches. A typical section is depicted in Figure 3, and described below:

000-016 cm	fine sandy loam; 10YR 6/3 field color (10YR 4/3 moist); slightly hard; fine rootlets; snail shell fragments; gradual wavy boundary.
016-040 cm	sandy clay loam; 10YR 5/3 field color (10YR 4/3 moist); slightly hard; films and threads of calcium carbonate; snail shells and fragments; diffuse boundary.
040-078 cm	sandy clay loam; 10YR6/3 field color (10YR 5/3 moist); hard; structureless (massive); snail shells and fragments; fine calcium carbonate concretions; abrupt boundary.
078-085 cm	calcium carbonate; 10YR8/1; hard; continuous layer except where disturbed, apparently by root-plowing; abrupt boundary.
085-103 cm	sandy clay loam; 10YR6/3 field color (10YR 5/3 moist); hard; structureless (massive); fine calcium carbonate concretions; abrupt boundary. Appears to be virtually identical with 40-78 cm.
103-107 cm	calcium carbonate; 10YR8/1; continuous layer; abrupt boundary.
107-128 cm	clay; 2.5YR5/2 field colour (2.5YR 4/3 moist); calcium carbonate films and fine to medium concretions; abrupt boundary.



000 - 016 cm Fine sandy loam; 10YR 6/3.

016 - 040 cm Sandy clay loam; 10YR 5/3.

040 - 078 cm Sandy clay loam (slightly less clayey) 10YR 6/3.

078 - 085 cm Calcium Carbonate; 10YR 8/1.

085 - 103 cm Sandy clay loam; 10YR 6/3.

103 - 107 cm Calcium carbonate; 10YR 8/1.

107 - 128 cm Clay; 2.5YR 5/2.

128 - 156 cm Sand; very fine at top to fine at base; 10YR 7/3.

156 - 162 cm Clay; 5YR 4/3.

162 - 166 cm Silt; 10YR 7/3.

166 - 180 cm Very fine sand; 10YR 6/3.

180 - 188 cm Silty calcium carbonate; 10YR 7/3.

188 - 195 cm Clay; 5YR 4/3.

195 - 199 cm Calcium carbonate; 10YR 8/1.

199 - 203 cm Clay; 5YR 4/3.

All Munsell Colors are as observed in the field.

Figure 3. 41SR191, typical stratigraphy.

128-156 cm	sand; very fine at top to fine at base; 10YR 7/3 field color; soft; structureless, individual grains; abrupt boundary.
156-162 cm	clay; 5YR4/3 field color(5YR4/3 moist); calcium carbonate films; abrupt boundary.
162-166 cm	silt; 10YR 7/3 field color.
166-180 cm	very fine sand; 10YR 6/3 field color; soft; structureless, individual grains.
180-188 cm	silty calcium carbonate; 10YR 7/3 field color; soft; structureless.
188-195 cm	clay; 5YR4/3 field color; calcium carbonate films.
195-199 cm	calcium carbonate; 10YR8/1 field color; continuous layer.
199-203 cm	clay; 5YR 4/3 field color; calcium carbonate films.

The upper part of the soil profile is consistent with the Soil Conservation Service description of the McAllen series: 0-16 cm being consistent with the A-horizon, 16-40 cm being consistent with the B-horizon and 40-107 cm being consistent with the C-horizon. The underlying strata represent a series of depositional episodes consistent with the Goliad formation.

Features

No prehistoric cultural features were identified in any of the test units (level floors or walls) or the backhoe trenches. A burned root was noted in Test Unit E at a depth of between 30 and 40 cm, and this extended below a depth of 50 cm. Interuptions in an approximately 10 cm thick band of fairly solid calcium carbonate at a depth of approximately 80 cm in Backhoe Trench I were identified as being the result of historic root plowing.

RECOVERED MATERIALS

Materials returned to the laboratory were washed, marked with a lot number to identify the test unit and level from which they originated, and cataloged. Summaries of recovered materials by Test Unit and Level are presented in Table 1 and Table 2. A breakdown of artifacts, by level, for each test unit is presented in Appendix A. Individual artifact categories are briefly described below.

Chipped Lithics

Bifaces

Only five bifacially worked artifacts or fragments were recovered during the significance testing. Apart from being prehistoric, none is culturally or temporally diagnostic.

TABLE 1

Summary of Recovered Materials by Test Unit

	Sur-face	TEST UNIT A	B	C	D	E	F	G	H	TOTAL
Lithics										
Chipped chert										
bifaces and fragments (#)	1	-	-	-	2	1	-	1	-	5
flakes, altered/utilized (#)	-	-	-	2	4	-	2	-	-	8
flakes, interior (#)	-	3	5	19	106	4	13	8	5	163
flakes, secondary (#)	-	2	1	17	18	1	11	4	2	56
flakes, primary (#)	-	-	-	-	4	-	3	4	2	13
shatter (#)	-	-	-	-	1	-	1	-	-	2
chunks (#)	-	1	-	1	-	-	-	-	-	2
cobbles, unaltered (#)	1	-	-	1	-	1	-	-	-	3
Burned/shattered stone										
chert (gm)	-	214	508	1004	472	670	540	465	1020	4893
conglomeritic mudstone (gm)	-	118	321	672	110	91	187	144	282	1925
limestone (gm)	-	3	183	230	179	134	197	1	555	1482
petrified wood (gm)	-	-	21	-	-	-	-	-	-	21
Glass										
amber (#)	-	-	1	-	-	-	-	-	1	2
olive green (#)	-	-	-	-	-	-	-	1	-	1
Selenium bleached (#)	-	1	-	-	-	-	-	-	-	1
Metal										
iron (#)	-	4	-	-	1	-	-	-	1	6
Faunal										
Mussel										
untyped fragments (#)	-	-	-	9	1	1	-	2	-	13
Snails										
Mesodon thyroidus (#)	-	-	1	-	2	-	-	-	-	3
Polygyra sp. (#)	-	7	6	18	9	34	9	4	7	94
Practicolella sp. (#)	-	4	9	5	13	12	12	3	4	62
Rabdotus sp. (#)	-	95	275	379	413	293	270	158	317	2200
Rabdotus sp. fragments (gm)	-	58	92	129	133	68	70	43	92	685
Floral										
Charcoal/burned wood (#)	-	8	-	19	8	15	3	7	63	123

TABLE 2

Summary of Recovered Materials by Level

	LEVEL							
	Surface	1	2	3	4	5	6	TOTAL
Lithics								
Chipped chert								
bifaces and fragments (#)	1	1	1	1	1	-	-	5
flakes, altered/utilised (#)	2	1	-	4	1	-	-	8
flakes, interior (#)	2	36	33	84	6	1	1	163
flakes, secondary (#)	1	17	15	21	1	1	-	56
flakes, primary (#)	1	6	2	4	-	-	-	13
shatter (#)	-	-	1	1	-	-	-	2
chunks (#)	-	1	-	1	-	-	-	2
cobbles, unmodified (#)	1	-	-	1	-	1	-	3
Burned/shattered stone								
chert (gm)	557	1199	1932	853	226	105	21	4893
conglomeritic mudstone (gm)	227	326	600	557	107	67	41	1925
limestone (gm)	45	631	321	300	182	3	-	1482
petrified wood (gm)	-	21	-	-	-	-	-	21
Glass								
amber (#)	-	-	-	2	-	-	-	2
olive green (#)	-	-	1	-	-	-	-	1
Selenium bleached (#)	-	-	1	-	-	-	-	1
Metal								
iron (#)	-	-	1	1	4	-	-	6
Faunal								
Mussel								
untyped fragments (#)	-	4	2	3	-	3	1	13
Snails								
Mesodon thyroidus (#)	-	1	-	-	-	2	-	3
Polygyra sp. (#)	3	7	10	21	33	20	-	94
Practicolella sp. (#)	-	4	2	13	20	22	1	62
Rabdotus sp. (#)	21	135	172	426	718	647	89	2200
Rabdotus sp. fragments (gm)	8	55	58	140	206	181	37	685
Floral								
Charcoal/burned wood (#)	2	59	33	27	2	-	-	123

One fragment (Figure 4:a), found on the surface, appears to be an unfinished distal fragment, probably abandoned when the tip could not be thinned. Material is a grayish brown (10YR 5/1) chert with bands of light gray (10YR 7/2), and small (less than 2 mm diameter), white (10YR 8/2) inclusions. Dimensions are: length, 50 mm; width, 25 mm; thickness, 8 mm.

One fragment (Figure 4:b), found in Test Unit D-Level 2, is a mid-sectional fragment from an apparently unfinished artifact. Material is a light gray (10YR 6/1) chert. Dimensions are: length, 22 mm; width, 27 mm; thickness, 11 mm.

One fragment, found in Test Unit D-Level 3, is a flake-like lateral edge fragment, removed perhaps accidentally or during final thinning. Material is a very dark brown (10YR2/2) chert. Dimensions are: length, 18 mm, width, 20 mm, thickness, 3.5 mm.

One fragment (Figure 4:c), found in Test Unit E-Level 4, is a distal tip from an apparently completed biface. Material is a dark gray (10YR 4/1) chert with large (greater than 20mm diameter), light gray (10YR 6/1), matte inclusions. Dimensions are: length, 33 mm, width, 29 mm; thickness, 8 mm.

The final biface (Figure 4:d), found in Test Unit G-Level 1, is an apparent rough-out or preform, possibly for a gouge. It is made from a split pebble fragment, still retaining cortex over much of the dorsal surface. Material is gray (10YR 5/1) chert with light gray 10YR7/1 bands. Dimensions are: length, 65 mm; width, 51 mm; thickness, 26 mm.

Utilized/altered flakes

Seven chert flakes were identified with secondarily chipped edges. The secondary chipping was generally light, with no well developed patterning, and may have resulted from use, deliberate prehistoric action, or accidental prehistoric or historic activities.

One secondary flake (Figure 4:e), found on the surface of Test Unit C, exhibits apparent use marks along an approximately 18 mm long portion of a concave edge of the ventral face. Material is a mottled light gray (10YR 6/1 and 10YR 7/2) chert. Dimensions are: length, 38 mm; width, 46 mm; thickness, 15 mm.

A secondary flake (Figure 4:f), found in Test Unit C-Level 3, exhibits retouch along the distal edge of the dorsal surface. Material is a light brownish gray (2.5Y 6/2) chert. Dimensions are: length, 34 mm; width, 28 mm; thickness, 15 mm.

A secondary flake (Figure 4:g), found in Test Unit D-Level 1, exhibits steep retouch or utilization marks along approximately 12 mm of a lateral edge on the dorsal surface. A large notch just below the retouch is a recent break. Material is a brown (10YR 5/3 to 6/3) chert. Dimensions are: length, 41 mm; width, 28 mm; thickness, 6 mm.

Two utilized/altered flakes were found in Test Unit D-Level 3. An interior flake (Figure 4:h) has fine retouch along a lateral edge on the dorsal face. Material is a grayish brown (10YR 5/2) chert. Dimensions are:

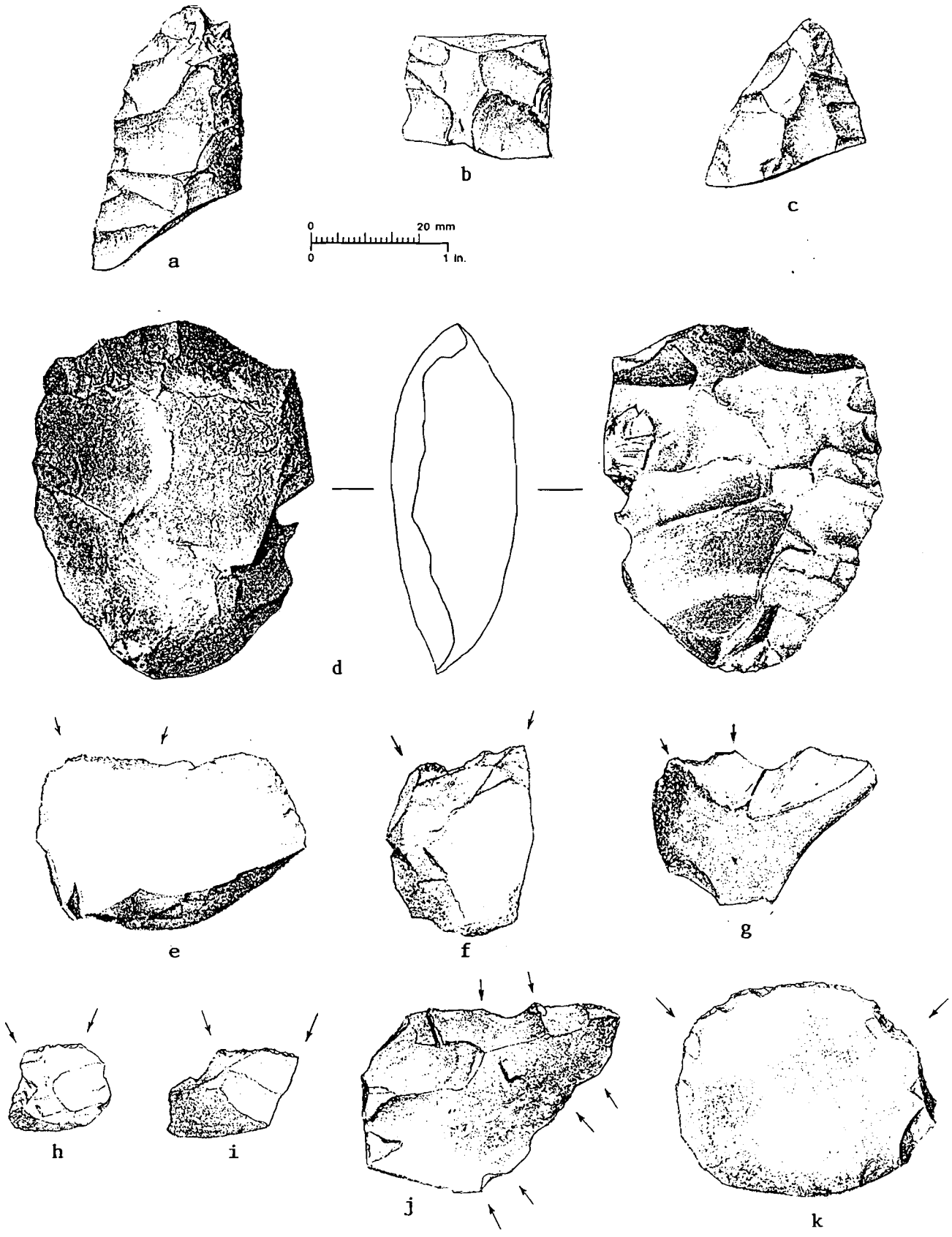


Figure 4. 41SR191, artifacts: a-c), biface fragments; d), gouge roughout; e-k), utilized/altered flakes.

length, 19 mm; width, 16 mm; thickness, 4.5 mm. A secondary flake (Figure 4:i) exhibits steep retouch along a lateral edge on the dorsal surface. Material is a chert ranging from a dusky red (10R 3/2) on the cortex to red (10R4/6) on the interior. Dimesions are: length, 20 mm; width, 17 mm; thickness, 6 mm.

A secondary flake (Figure 4:j), found on the surface of Test Unit F, exhibits minor alteration along both lateral edges, one edge showing scars on the dorsal face, and the other edge showing scars on the ventral face. Material is a light brownish gray (2.5Y 6/2) chert. Dimensions are: length, 49 mm; width, 34 mm; thickness, 11 mm.

A secondary flake (Figure 4:k), found in Test Unit F-Level 4, exhibits retouch along the hinge-fractured, convex, distal end. Material is a finely speckled very dark grayish brown (10YR 3/2) and white (10YR 8/2) chert. The darker color is predominant close to the cortex, while the lighter color predominates in the interior. Dimensions are: length, 41 mm; width, 47 mm; thickness, 13 mm.

Debitage

Debitage recovered includes 163 interior flakes (flakes and chips with no cortex); 56 secondary flakes (flakes and chips with cortex covering between 10 and 90% of the dorsal surface; 13 primary flakes (flakes with cortex covering at least 90% of the dorsal surface; 2 thermally shattered flake fragments; and two chunks. All of the debitage appears to be from locally derived gravels, eroding from conglomerate in the Goliad formation.

Cobbles

Numerous siliceous pea gravels and small pebbles (less than 25 mm in diameter) were observed in the fill from the test units. These were discarded during laboratory processing. Only two largish cobbles were recovered from the test units. One was a very pale brown (10YR 8/3) chert, with a diameter of over 5 cm and still retaining caliche adhering to one end, and the other was a dark brown (7.5YR 3/2) chert. The cobble from the surface was very pale brown (10YR 7/3) chert with dimensions of 255 x 148 x 122 mm.

Thermally shattered rock

Thermally broken and shattered rock of different composition was relatively abundant at the site. Recovered from the surfaces and fill of the test units were 4893 gms of chert, 1925 gms of conglomeritic mudstone, 1482 gms of limestone, and 21 gms of petrified wood (a single fragment). Examination of thermally broken and shattered rock from Test Units C and H revealed the following maximum dimensions: chert, 55 mm; conglomeritic mudstone, 30 mm; and limestone, 65 mm.

Glass

Four fragments of historic glass were recovered from the fill of the test units: two amber fragments, one from Test Unit B-Level 3, and one from Test Unit H-Level 3; one olive green fragment from Test Unit G-Level 2; and a selenium bleached fragment from Test Unit A-Level 2.

Each of the amber fragments had a maximum dimension of less than 18 mm. The olive green fragment was from a jar or bottle, maximum dimension was 38 mm. The selenium bleached fragment was also from a jar or bottle, maximum dimension was 30 mm. None of the fragments included any makers marks or other distinctive markings or features. However, the selenium glass post-dates 1916 (Munsey 1970:55).

Metal

Six small fragments of sheet metal, probably from cans, were recovered: four from Test Unit A-Level 4, one from Test Unit D-Level 2, and one from Test Unit H-Level 3. None includes any diagnostic features.

Faunal

Faunal remains consisted solely of shell, both freshwater mussel and terrestrial snail.

Thirteen fragments of mussel shell were recovered: nine fragments from Test Unit C - Levels 1 through 6; one fragment from Test Unit D - Level 1; one fragment from Test Unit E - Level 1; and two from Test Unit G -Level 2. The fragments were not identifiable as to species.

Terrestrial snail shells were encountered in relatively large numbers. The most common type was Rabdotus sp., which was present in all levels of all test units, and of which a total of 2200 intact shells and 685 gms of fragments was collected. None of the shells exhibited any evidence of burning. Polygyra sp. (94 shells) and Practicolella sp. (62 shells) were also found in all test units. Mesodon thyroidus (3 shells) was the least frequently collected snail type.

Floral

Floral remains consisted of charred wood and associated charcoal fragments.

ANALYSIS AND DISCUSSION

Temporal Attribution of Recovered Materials

Materials recovered from the site include chipped chert, glass, iron, mussel and snail shells, thermally fractured stone, and wood and charcoal fragments.

The chipped lithics can be assigned to the prehistoric period with almost total certainty. However, some of the minor edge modification on flakes may be the result of later accidental events and caused by such factors as animals walking over the flakes, or byothe flakes being hit with plows or other vegetation clearing machinery.

The glass and iron fragments are clearly dateable to the historic era.

Mussel shell does not occur at the site naturally, and is present almost certainly as a result of prehistoric activity. However, it is possible that the shell could have been imported to the site by animals.

Snail shells occur naturally in the area, and as none of the snail shells exhibited any evidence of burning, and were not recovered from dense accumulations, it is believed that they are of natural origin. Further, the quantities of snail shell appeared to increase at depths below which prehistoric and historic artifacts were generally found.

Attribution of the burned/shattered stone to either the prehistoric or the historic period is open to question. It is thought that the origin is most likely to be historic, an accidental result of burning cleared vegetation prior to cultivation. Evidence for this includes the charred wood and charcoal found during the testing and the observed frequent occurrence of thermally shattered rock without associated chipped lithics throughout the proposed right-of-way during the survey. However, this does not exclude the possibility that some of the rock fragments may have resulted from prehistoric hearths.

Charred wood fragments and associated charcoal are clearly from historic activities, probably associated with root plowing and land clearing prior to cultivation.

Vertical Distribution and Integrity of the Deposits

Cultural material was confined primarily to the first three levels excavated (Table 2), or within 30 cm of the surface. Below a depth of about 30 cm the numbers of artifacts dropped off dramatically.

Prehistoric artifacts (chipped lithics) were most frequent in Level 3, a total of 116 chipped pieces. The prehistoric artifact count from Level 1 (62 pieces) was slightly greater than from Level 2 (52 pieces). The count dropped off dramatically in Level 4 (9 pieces), Level 5 (3 pieces), and Level 6 (1 piece from one test unit, Test Unit C).

Historic artifacts, found in considerably fewer numbers, were recovered from Levels 2, 3, and 4.

The presence of historic artifacts as deep as Level 4 indicates considerable mixing of prehistoric and historic materials. The degree of mixing is further revealed by the quantities of burned/shattered stone, thought to be historic, which is spread through Levels 1 through 3 ,in particular, and which also extends into Level 5. The frequency of snail remains may also be indicative of mixing; the large increase in both numbers of whole shells and weight of fragments in Level 4 indicating that this depth has been less disturbed, presumably below the normal plow zone.

Prehistoric Component

The prehistoric artifacts are not temporally or culturally diagnostic. However, the size of the biface fragments suggests the use of dart points, rather than arrowpoints, and as there was no evidence of ceramics, it is reasonable to conclude an Archaic affiliation for the prehistoric component.

The low frequency of biface fragments and other possibly utilized lithic flakes precludes meaningful discussion of prehistoric activities. The presence of apparently unfinished tools and debitage indicates that lithic reduction took place at the site, with finished tools probably including dart points (to be used for hunting) and gouges (possibly used for woodworking or for scraping hides). The amount of edge modification on flakes suggests either accidental modification or brief casual usage, rather than utilization for specific defineable tasks.

No prehistoric features were identified.

Subsistence evidence consists of a few mussel shell fragments, presumably imported from a flowing stream, possibly Salado Creek indicating greater stream flow than present, or the Rio Grande, presently in a stream channel just over two miles south of the site. The biface fragments suggest the production of dart points which, in turn, indicate that hunting was also undertaken.

Historic Component

The number of historic artifacts recovered from the site is extremely small, four small glass fragments and six small sheet metal fragments. These probably originated from casual trash disposal along the highway, with subsequent cultivation activities spreading and mixing them in the site.

ASSESSMENT OF SIGNIFICANCE

Criteria of Significance

The National Register of Historic Places criteria for evaluation of significance (36CFR, Part 60.4) are:

> The quality of significance in American history, architecture, archeology and culture is present in districts, sites, buildings, structures and objects of State and local importance that possess integrity of location, design, setting, materials, workmanship, feeling and association, and (a) that are associated with events that have made a significant contribution to the broad patterns of our history; or (b) that are associated with the lives of persons significant in our past; or (c) that embody the distinctive characteristics of a type, period or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or (d) that have yielded, or may be likely to yield information important in prehistory or history (36CFR, Part 60.4).

Thus, in general, a prehistoric archeological site must normally meet criterion (d) to be considered significant. That is, the site should be likely to yield information important in prehistory.

Evaluation of Significance

Prehistoric Component

As described and discussed above, testing at site 41SR191 revealed prehistoric artifacts within a disturbed context. None of the recovered prehistoric artifacts could be associated with either a discrete temporal period or cultural group. Further, the artifacts were not of a kind that allowed for interpretation of site activities. No prehistoric features were identified in any of the eight test units or the two backhoe trenches, each 40 meters in length. Thus, it is believed that the site is unlikely to yield any information important in prehistory on either a local, state, or national level.

Historic Component

Historic artifacts recovered from the site were very few and appeared to represent re-deposited casually disposed of artifacts rather than an occupational site. Thus, it is believed that the site is unlikely to yield any information important in history on either a local, state, or national level.

RECOMMENDATIONS

Based on the significance testing caried out at site 41SR191, it is believed that the site is not significant. Therefore, it is recommended that road construction proceed without further cultural resources investigations.

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APPENDIX A

TABLES OF RECOVERED MATERIALS BY TEST UNIT AND LEVEL

Artifacts

Test Unit A

Level	Surface	1	2	3	4	5	6	Total
Lithics								
Chert, chipped								
biface fragments (#)	-	-	-	-	-	-	-	-
flakes, altered/utilised (#)	-	-	-	-	-	-	-	-
flakes, interior (#)	-	1	-	1	1	-	-	3
flakes, secondary (#)	-	-	-	2	-	-	-	2
flakes, primary (#)	-	-	-	-	-	-	-	-
shatter (#)	-	-	-	-	-	-	-	-
chunks (#)	-	1	-	-	-	-	-	1
cobbles, unmodified (#)	-	-	-	-	-	-	-	-
Burned/shattered stone								
chert (gm)	26	66	77	41	4	-	-	214
conglomeritic mudstone (gm)	22	11	-	22	-	63	-	118
limestone (gm)	-	-	3	-	-	-	-	3
petrified wood (gm)	-	-	-	-	-	-	-	-
Glass								
amber (#)	-	-	-	-	-	-	-	-
olive green (#)	-	-	-	-	-	-	-	-
Selenium bleached (#)	-	-	1	-	-	-	-	1
Metal								
iron (#)	-	-	-	-	4	-	-	4
Faunal								
Mussel								
untyped fragments (#)	-	-	-	-	-	-	-	-
Snails								
Mesodon thyroidus (#)	-	-	-	-	-	-	-	-
Polygyra sp. (#)	-	2	3	2	-	-	-	7
Practicolella sp. (#)	-	1	1	2	-	-	-	4
Rabdotus sp. (#)	3	16	17	47	9	3	-	95
Rabdotus sp. fragments (gm)	2	15	6	30	4	1	-	58
Floral								
Charcoal/burned wood (#)	-	3	-	4	1	-	-	8

Artifacts

Test Unit B

Level	Surface	1	2	3	4	5	6	Total
Lithics								
Chert, chipped								
biface fragments (#)	-	-	-	-	-	-	-	-
flakes, altered/utilised (#)	-	-	-	-	-	-	-	-
flakes, interior (#)	-	3	1	1	-	-	-	5
flakes, secondary (#)	-	-	1	-	-	-	-	1
flakes, primary (#)	-	-	-	-	-	-	-	-
shatter (#)	-	-	-	-	-	-	-	-
chunks (#)	-	-	-	-	-	-	-	-
cobbles, unmodified (#)	-	-	-	-	-	-	-	-
Burned/shattered stone								
chert (gm)	61	61	367	11	8	-	-	508
conglomeritic mudstone (gm)	62	48	137	49	25	-	-	321
limestone (gm)	-	2	160	7	14	-	-	183
petrified wood (gm)	-	21	-	-	-	-	-	21
Glass								
amber (#)	-	-	-	1	-	-	-	1
olive green (#)	-	-	-	-	-	-	-	-
Selenium bleached (#)	-	-	-	-	-	-	-	-
Metal								
iron (#)	-	-	-	-	-	-	-	-
Faunal								
Mussel								
untyped fragments (#)	-	-	-	-	-	-	-	-
Snails								
Mesodon thyroidus (#)	-	1	-	-	-	-	-	1
Polygyra sp. (#)	-	2	2	2	-	-	-	6
Practicolella sp. (#)	-	1	-	1	7	-	-	9
Rabdotus sp. (#)	-	17	16	61	115	66	-	275
Rabdotus sp. fragments (gm)	-	7	5	18	50	12	-	92
Floral								
Charcoal/burned wood (#)	-	-	-	-	-	-	-	-

Artifacts

Test Unit C

Level	Surface	1	2	3	4	5	6	Total
Lithics								
Chert, chipped								
biface fragments (#)	-	-	-	-	-	-	-	-
flakes, altered/utilised (#)	1	-	-	1	-	-	-	2
flakes, interior (#)	-	7	7	4	-	-	1	19
flakes, secondary (#)	-	7	7	2	-	1	-	17
flakes, primary (#)	-	-	-	-	-	-	-	-
shatter (#)	-	-	-	-	-	-	-	-
chunks (#)	-	-	-	1	-	-	-	1
cobbles, unmodified (#)	-	-	-	1	-	-	-	1
Burned/shattered stone								
chert (gm)	97	306	301	235	2	42	21	1004
conglomeritic mudstone (gm)	64	137	183	199	46	2	41	672
limestone (gm)	-	122	69	37	2	-	-	230
petrified wood (gm)	-	-	-	-	-	-	-	-
Glass								
amber (#)	-	-	-	-	-	-	-	-
olive green (#)	-	-	-	-	-	-	-	-
Selenium bleached (#)	-	-	-	-	-	-	-	-
Metal								
iron (#)	-	-	-	-	-	-	-	-
Faunal								
Mussel								
untyped fragments (#)	-	2	-	3	-	3	1	9
Snails								
Mesodon thyroidus (#)	-	-	-	-	-	-	-	-
Polygyra sp. (#)	-	2	2	3	9	2	-	18
Practicolella sp. (#)	-	1	-	-	-	3	1	5
Rabdotus sp. (#)	-	21	34	72	68	103	81	379
Rabdotus sp. fragments (gm)	-	2	15	19	15	41	37	129
Floral								
Charcoal/burned wood (#)	-	3	10	6	-	-	-	19

Artifacts

Test Unit D

Level	Surface	1	2	3	4	5	6	Total
Lithics								
Chert, chipped								
biface fragments (#)	-	-	1	1	-	-	-	2
flakes, altered/utilised (#)	-	1	-	3	-	-	-	4
flakes, interior (#)	1	12	17	71	5	-	-	106
flakes, secondary (#)	-	3	1	13	1	-	-	18
flakes, primary (#)	-	1	-	3	-	-	-	4
shatter (#)	-	-	-	1	-	-	-	1
chunks (#)	-	-	-	-	-	-	-	-
cobbles, unmodified (#)	-	-	-	-	-	-	-	-
Burned/shattered stone								
chert (gm)	117	136	151	28	15	25	-	472
conglomeritic mudstone (gm)	40	42	13	8	7	-	-	110
limestone (gm)	-	57	-	119	-	3	-	179
petrified wood (gm)	-	-	-	-	-	-	-	-
Glass								
amber (#)	-	-	-	-	-	-	-	-
olive green (#)	-	-	-	-	-	-	-	-
Selenium bleached (#)	-	-	-	-	-	-	-	-
Metal								
iron (#)	-	-	1	-	-	-	-	1
Faunal								
Mussel								
untyped fragments (#)	-	1	-	-	-	-	-	1
Snails								
Mesodon thyroidus (#)	-	-	-	-	-	2	-	2
Polygyra sp. (#)	-	-	-	4	4	1	-	9
Practicolella sp. (#)	-	1	-	6	4	2	-	13
Rabdotus sp. (#)	9	29	36	101	129	109	-	413
Rabdotus sp. fragments (gm)	2	12	12	29	46	32	-	133
Floral								
Charcoal/burned wood (#)	-	3	3	2	-	-	-	8

Artifacts

Test Unit E

Level	Surface	1	2	3	4	5	6	Total
Lithics								
Chert, chipped								
biface fragments (#)	-	-	-	-	1	-	-	1
flakes, altered/utilised (#)	-	-	-	-	-	-	-	-
flakes, interior (#)	-	1	2	-	-	1	-	4
flakes, secondary (#)	-	1	-	-	-	-	-	1
flakes, primary (#)	-	-	-	-	-	-	-	-
shatter (#)	-	-	-	-	-	-	-	-
chunks (#)	-	-	-	-	-	-	-	-
cobbles, unmodified (#)	-	-	-	-	-	1	-	1
Burned/shattered stone								
chert (gm)	26	220	304	85	1	34	-	670
conglomeritic mudstone (gm)	16	15	27	19	12	2	-	91
limestone (gm)	45	42	5	1	41	-	-	134
petrified wood (gm)	-	-	-	-	-	-	-	-
Glass								
amber (#)	-	-	-	-	-	-	-	-
olive green (#)	-	-	-	-	-	-	-	-
Selenium bleached (#)	-	-	-	-	-	-	-	-
Metal								
iron (#)	-	-	-	-	-	-	-	-
Faunal								
Mussel								
untyped fragments (#)	-	1	-	-	-	-	-	1
Snails								
Mesodon thyroidus (#)	-	-	-	-	-	-	-	-
Polygyra sp. (#)	-	-	1	3	13	17	-	34
Practicolella sp. (#)	-	-	-	-	2	10	-	12
Rabdotus sp. (#)	-	10	17	29	120	117	-	293
Rabdotus sp. fragments (gm)	1	5	7	9	27	19	-	68
Floral								
Charcoal/burned wood (#)	-	8	7	-	-	-	-	15

Artifacts

Test Unit F

Level	Surface	1	2	3	4	5	6	Total
Lithics								
Chert, chipped								
biface fragments (#)	-	-	-	-	-	-	-	-
flakes, altered/utilised (#)	1	-	-	-	1	-	-	2
flakes, interior (#)	1	5	2	5	-	-	-	13
flakes, secondary (#)	-	5	3	3	-	-	-	11
flakes, primary (#)	-	2	-	1	-	-	-	3
shatter (#)	-	-	1	-	-	-	-	1
chunks (#)	-	-	-	-	-	-	-	-
cobbles, unmodified (#)	-	-	-	-	-	-	-	-
Burned/shattered stone								
chert (gm)	65	227	154	90	1	3	-	540
conglomeritic mudstone (gm)	9	39	100	39	-	-	-	187
limestone (gm)	-	2	71	-	124	-	-	197
petrified wood (gm)	-	-	-	-	-	-	-	-
Glass								
amber (#)	-	-	-	-	-	-	-	-
olive green (#)	-	-	-	-	-	-	-	-
Selenium bleached (#)	-	-	-	-	-	-	-	-
Metal								
iron (#)	-	-	-	-	-	-	-	-
Faunal								
Mussel								
untyped fragments (#)	-	-	-	-	-	-	-	-
Snails								
Mesodon thyroidus (#)	-	-	-	-	-	-	-	-
Polygyra sp. (#)	1	1	-	3	4	-	-	9
Practicolella sp. (#)	-	-	-	2	5	5	-	12
Rabdotus sp. (#)	2	10	10	24	87	137	-	270
Rabdotus sp. fragments (gm)	2	1	2	9	19	37	-	70
Floral								
Charcoal/burned wood (#)	-	-	-	2	1	-	-	3

Artifacts

Test Unit G

Level	Surface	1	2	3	4	5	6	Total
Lithics								
Chert, chipped								
biface fragments (#)	-	1	-	-	-	-	-	1
flakes, altered/utilised (#)	-	-	-	-	-	-	-	-
flakes, interior (#)	-	4	3	1	-	-	-	8
flakes, secondary (#)	1	-	2	1	-	-	-	4
flakes, primary (#)	-	3	1	-	-	-	-	4
shatter (#)	-	-	-	-	-	-	-	-
chunks (#)	-	-	-	-	-	-	-	-
cobbles, unmodified (#)	-	-	-	-	-	-	-	-
Burned/shattered stone								
chert (gm)	58	28	129	234	16	-	-	465
conglomeritic mudstone (gm)	14	14	106	8	2	-	-	144
limestone (gm)	-	-	-	1	-	-	-	1
petrified wood (gm)	-	-	-	-	-	-	-	-
Glass								
amber (#)	-	-	-	-	-	-	-	-
olive green (#)	-	-	1	-	-	-	-	1
Selenium bleached (#)	-	-	-	-	-	-	-	-
Metal								
iron (#)	-	-	-	-	-	-	-	-
Faunal								
Mussel								
untyped fragments (#)	-	-	2	-	-	-	-	2
Snails								
Mesodon thyroidus (#)	-	-	-	-	-	-	-	-
Polygyra sp. (#)	-	-	1	1	2	-	-	4
Practicolella sp. (#)	-	-	1	1	1	-	-	3
Rabdotus sp. (#)	3	4	16	46	89	-	-	158
Rabdotus sp. fragments (gm)	-	7	5	14	17	-	-	43
Floral								
Charcoal/burned wood (#)	2	-	-	5	-	-	-	7

Artifacts

Test Unit H

Level	Surface	1	2	3	4	5	6	Total
Lithics								
Chert, chipped								
biface fragments (#)	-	-	-	-	-	-	-	-
flakes, altered/utilised (#)	-	-	-	-	-	-	-	-
flakes, interior (#)	-	3	1	1	-	-	-	5
flakes, secondary (#)	-	1	1	-	-	-	-	2
flakes, primary (#)	1	-	1	-	-	-	-	2
shatter (#)	-	-	-	-	-	-	-	-
chunks (#)	-	-	-	-	-	-	-	-
cobbles, unmodified (#)	-	-	-	-	-	-	-	-
Burned/shattered stone								
chert (gm)	107	155	449	129	179	1	-	1020
conglomeritic mudstone (gm)	-	20	34	213	15	-	-	282
limestone (gm)	-	406	13	135	1	-	-	555
petrified wood (gm)	-	-	-	-	-	-	-	-
Glass								
amber (#)	-	-	-	1	-	-	-	1
olive green (#)	-	-	-	-	-	-	-	-
Selenium bleached (#)	-	-	-	-	-	-	-	-
Metal								
iron (#)	-	-	-	1	-	-	-	1
Faunal								
Mussel								
untyped fragments (#)	-	-	-	-	-	-	-	-
Snails								
Mesodon thyroidus (#)	-	-	-	-	-	-	-	-
Polygyra sp. (#)	-	2	-	1	3	1	-	7
Practicolella sp. (#)	-	-	-	1	1	2	-	4
Rabdotus sp. (#)	4	28	26	46	101	112	-	317
Rabdotus sp. fragments (gm)	1	6	6	12	28	39	-	92
Floral								
Charcoal/burned wood (#)	-	42	13	8	-	-	-	63