AN ARCHAEOLOGICAL SURVEY FOR THE POLONIA WATER SUPPLY CORPORATION IN CALDWELL COUNTY, TEXAS

Antiquities Permit 3239

By
William E. Moore

Brazos Valley Research Associates

Contract Report Number 129

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AN ARCHAEOLOGICAL SURVEY FOR THE POLONIA WATER SUPPLY CORPORATION IN CALDWELL COUNTY, TEXAS

BVRA Project Number 03-28

Author and Principal Investigator

William E. Moore

Prepared by

Brazos Valley Research Associates
813 Beck Street
Bryan, Texas 77803

Prepared for

Polonia Water Supply Corporation
Post Office Box 778
Lockhart, Texas 78644

ABSTRACT

An archaeological survey of seven areas (7.50 acres) in east-central Caldwell County, Texas was performed by Brazos Valley Research Associates (BVRA) in October 2003 under Texas Antiquities Permit 3239. This project was reviewed by the Texas Historical Commission, Archeology Division. The Federal agency involved with this project is the United States Department of Agriculture, Rural Development. The area was investigated through shovel testing and backhoe trenching. No evidence of a prehistoric archaeological site was found in any of the seven areas surveyed, and no artifacts were collected. One historic bridge (41CW91) dating to the early 20th Century spans Plum Creek. This bridge is not in use today and will not be affected by the water line. It is recommended that the Polonia Water Supply Corporation (WSC) be allowed to proceed with construction as planned with no further archaeological investigations. Copies of this report are on file at the Texas Archeological Research Laboratory (TARL); Texas Historical Commission, Archeology Division; Polonia WSC in Lockhart, Texas; and BVRA in Bryan, Texas.

ACKNOWLEDGMENTS

BVRA is appreciative of the assistance provided by those whose efforts made this project possible. Paul Pittman, Manager of the Polonia WSC in Lockhart, Texas and John A. Bartle, P.E. at the engineering firm Neptune-Wilkinson Associates, Inc. in Austin, Texas are thanked for providing maps and other logistical support. Mr. Pittman visited the project area with the field crew to make sure we conducted shovel testing in the proper areas and also operated one of the backhoes. Allegra Azulay, Records File Search Assistant at TARL, is thanked for conducting the records check for previously recorded sites in the project area. Edward P. Baxter (Project Archaeologist) performed the field survey under the supervision of the Principal Investigator. Debra L. Beene at the Texas Historical Commission, Archeology Division, served as the reviewer for this project. The figures appearing in this report were prepared by Lili Lyddon of LL Technical Services in North Zulch, Texas and Edward P. Baxter.

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INTRODUCTION

BVRA was retained by Polonia WSC through Neptune-Wilkinson Associates, Inc., Consulting Engineers of Austin, Texas, to conduct an archaeological survey of a proposed water line and well site that will service the residents of rural Caldwell County (Figure 1). The survey areas are depicted on the USGS 7.5' topographic maps Dale (dated 1964 and photorevised 1981) (map number 2997-344), Harwood (dated 1964 and photorevised 1981) (map number 2997-314), and McMahan (dated 1963 and photorevised 1981) (map number 2997-341).

Improvements to the distribution system will consist of adding approximately 22 miles of new water line throughout the existing service and a well site on a two acre tract. The line will be installed in easements on private property and along state and county roads within the public right-of-way. Water lines at creek crossings will be encased and creek bottoms restored to their original condition.

Caldwell County is in an area known to contain significant archaeological sites. Because of this potential, an archaeological survey by a professional archaeologist was warranted according to Section 106 of the National Historic Preservation Act. The Federal agency involved in this project is the United States Department of Agriculture, Rural Development. Since this project is sponsored by Polonia WSC, a political subdivision of the State of Texas, an antiquities permit was required, and Antiquities Permit 3239 was issued to BVRA by the Texas Historical Commission, Archeology Division. The project number assigned by BVRA is 03-28.

Prior to the field survey, an assessment of the project area was conducted by the Principal Investigator (William E. Moore) and the Project Archaeologist (Edward P. Baxter). Within the 22 mile project area, nine areas (1-9) were selected for survey. These areas were examined on October 21 and 23, 2003.

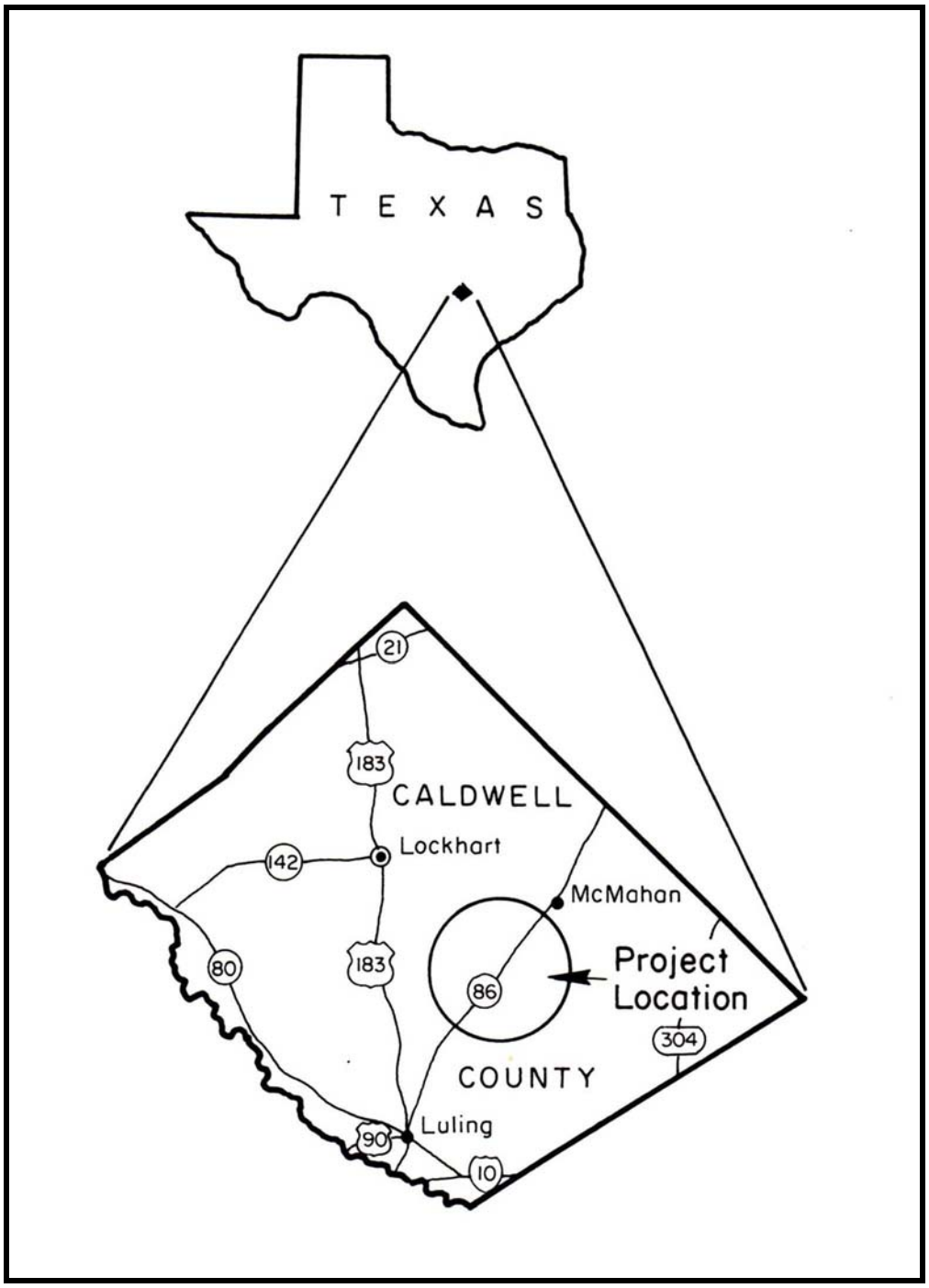


Figure 1. General Location Map

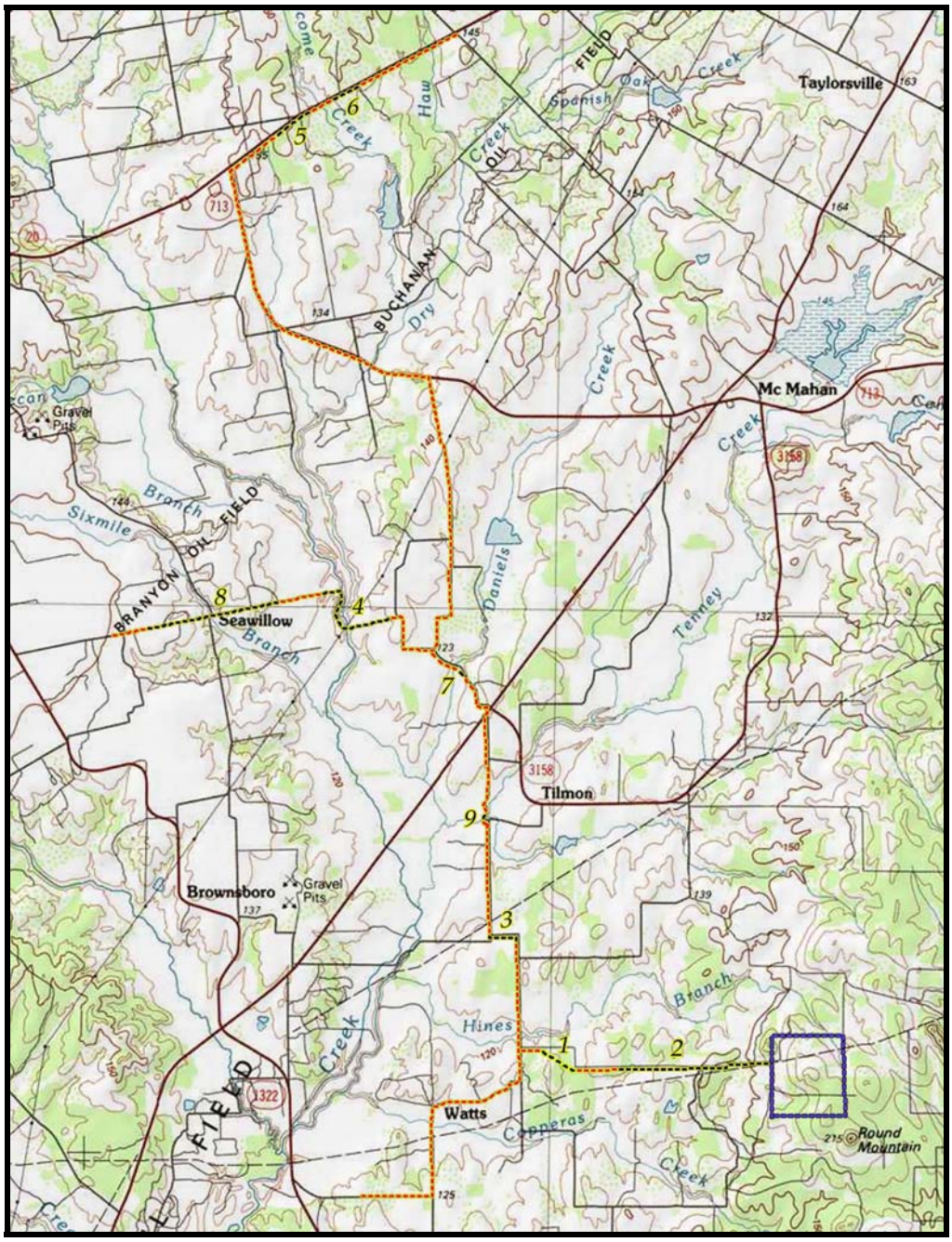


Figure 2. Project Area

(Proposed Waterline – red; Areas Surveyed – numbers; Well Pad – blue)

ARCHAEOLOGICAL BACKGROUND

Caldwell County is located in the Central Texas Archeological Region within the Central and Southern Planning Region as defined by Mercado-Allinger et al. (1996:Figure 1.1.4). In 1996, there were no sites listed in the National Register of Historic Places, and only four sites designated as State Archeological Landmarks (Mercado-Allinger et al. 1996:19). Since 1996, at least one additional site (41CW58) has been designated as a State Archeological Landmark (Moore 2003). At the time of this survey, 90 sites were known to exist in the county (TARL site files).

In general, this part of Caldwell County has not been subjected to large-scale archaeological surveys. According to Baxter and Shafer (n.d.:2), writing in the 1970s, "previous archeological work in Caldwell County has been almost nonexistent." The topographic maps at the Texas Historical Commission, Archeology Division, show four negative surveys by the Soil Conservation Service and one survey by the Texas Department of Transportation within the area.

A check of the site records at TARL indicate two prehistoric sites and two historic sites in the general area. These are 41CW9, a prehistoric site near Plum Creek that was recorded by avocational archaeologists in 1974; 41CW40, a historic mine recorded by the Caldwell County Historical Commission in 1989; 41CW49, a prehistoric site; and 41CW50, two historic residences. Both sites were recorded by the Texas Water Development Board in 1995. No site forms for 41CW49 and 41CW50 are on file at TARL, and no report documenting the survey is in the TARL library. Site 41CW25, located on a tributary of Plum Creek, was tested by the Texas Highway Department in 1984. It was not considered significant as only 14 flakes were recovered.

Very little information exists for the prehistoric sites near the project area. Those recorded near the project area are located on elevated landforms adjacent to streams that contained water in the past. The preferred location for more permanent sites was on sandy hills. Lithic procurement sites can be found on hills with clay soils provided natural cobbles suitable for stone tool manufacture are present. These sites are usually restricted to the surface, although some downward artifact movement is possible in areas where plowing has occurred. The more significant sites are found on major streams, often at confluences. The upper reaches of streams, especially minor tributaries, are low probability areas for sites.

Historic sites can occur anywhere within the county; however, it is not common to find a standing structure within the APE when it is only 15 feet wide. The bridge at Plum Creek (41CW91) is an exception since it crosses the creek well within the road right-of-way.

METHODS

Prior to entering the field, a records check for previously recorded sites in or near the project area was conducted by Allegra Azulay at TARL, the state repository for site records. No previously recorded archaeological sites were found to be within the Area of Potential Effect (APE). An assessment of the 22 mile project area was conducted in order to identify areas to be surveyed. In all, nine areas were identified (1-9).

Although nine areas were identified for survey, only seven (1-4; 7-9) were examined through shovel testing and backhoe trenching (Figure 2; Table 1). Areas 5 and 6 were found to have a firm clay at the surface, and no cobbles suitable for stone tool manufacture were observed on the surface. When possible, excavated dirt was screened using 1/4" hardware cloth. Shovel tests were excavated to basal clay in most cases. Shovel test data were recorded in the field notes and appear in this report as Appendix I. Selected shovel tests were photographed with a digital camera, and GPS plottings were taken at the location of each test for more accurate plotting on the topographic map (Appendix II). In all, 27 shovel tests were excavated.

The floodplains of Plum Creek, Tenney Creek, and Daniels Creek were examined through backhoe trenching. At these locations, the excavators looked for evidence of buried sites in the form of mussel shell, burned rock, and/or lithic artifacts. The trenches were profiled in the field and photographed with a digital camera. GPS plottings were taken at the location of each trench for more accurate plotting on the topographic map (Appendix II). Since the soils in most of these areas consist of heavy clays, screening was only possible at Backhoe Trench 7 on Daniels Creek. As a result, clay lumps at the other trenches were broken apart by hand or with a trowel. The eight backhoe trenches were excavated in 30 cm levels with samples of earth examined at each level. Munsell readings of the soils were taken. The depth of each backhoe trench met or exceeded the four foot APE as planned for the water line. Specific information regarding each backhoe trench is presented in Appendix III. Six backhoe trenches (1-6) were excavated within the floodplain of Plum Creek with five on the west side and one on the east side (Appendix II). One backhoe (7) trench was excavated at Daniels Creek (Appendix II). It was dug on the opposite side of the road from the proposed water line because that side had been thoroughly disturbed through road construction. One trench (8) was excavated at Tenney Creek (Appendix II). It was sterile, and additional trenches in this area were not considered necessary.

At the crossing of Plum Creek on County Road 197, a historic county road bridge was assessed by the field crew and recorded at TARL as 41CW91. The field crew measured the width, length, and height of the bridge and took photographs with a digital camera. The bridge was originally recorded by Joe Denton of the Texas Highway Department in 1985, but no TARL number was assigned.

As part of this project, a two acre well site will be constructed within a 200 acre area. Although the exact location has not been determined, the probable site has been narrowed to a 10 acre area. Based on our "windshield survey" of the general area and a review of the topographic map, BVRA believes this to be a very low probability setting for a significant archaeological site. Because landowner permission to shovel test had not been granted at the time of this survey, it was not formally examined.

Table 1. Areas Surveyed

Area	Nearest Water	Discussion
01	Hines Branch	Five shovel tests revealed sandy soil with gravels over a firm clay that was encountered between 30 and 60 cm (Appendix I). No cultural materials were observed. This area is depicted on the Harwood quadrangle.
02	Hines Branch	Nine shovel tests revealed sand and clay loam overlying clay that was encountered between 20 and 60 cm (Appendix I). Two tests were dug to 100 cm without reaching clay. No cultural materials were observed. This area is depicted on the McMahan quadrangle.
03	minor stream	Four shovel tests revealed clay loam and sandy clay loam over clay which was encountered between 20 and 50 cm (Appendix I). No cultural materials were observed. This area is depicted on the Harwood quadrangle.
04	Plum Creek	Five shovel tests excavated on the upland ridge overlooking Plum Creek revealed clay with gravels over clay that was encountered between 30 and 40 cm. Six backhoe trenches were excavated in the floodplain of Plum Creek. No cultural materials were observed in either area. This area is depicted on the McMahan quadrangle.
05	Linscome Creek	Shovel probes revealed firm clay at the surface within the Area of Potential Effect. No shovel testing or backhoe trenching was conducted. This area is depicted on the Dale quadrangle.
06	Linscome Creek	Shovel probes revealed firm clay at the surface within the Area of Potential Effect. No shovel testing or backhoe trenching was conducted. This area is depicted on the Dale quadrangle.

Area	Nearest Water	Discussion
07	Daniels Creek	One backhoe trench was excavated in the floodplain of Daniels Creek. No cultural materials were observed. This area is depicted on the McMahan quadrangle.
08	Sixmile Creek	Four shovel tests excavated on the two upland ridges overlooking Sixmile Creek revealed a clay loam over clay between 30 and 50 cm and firm clay at the surface (Appendix I). No cultural materials were observed. This area is depicted on the McMahan quadrangle.
09	Tenney Creek	One backhoe trench was excavated in the floodplain of Tenney Creek. No cultural materials were observed. This area is depicted on the McMahan quadrangle.

RESULTS AND CONCLUSIONS

A check of the site records at TARL revealed no prehistoric sites within the APE as defined by Polonia WSC. One historic site (41CW91), an early 20th Century bridge, was observed at the Plum Creek crossing on County Road 197. The name of this site is the Plum Creek Through Truss Bridge (Figure 3). It was recorded for the Texas Department of Transportation in 1985 with the site number CALD-011. The estimated date of this structure is 1922, a time that coincides with the oil boom in the area. This is a large, single span, steel, Pratt type through truss bridge with wood floor, wood stringers, and concrete-filled steel pipe abutments. Pin connected joints allow flexibility for movement. The survey crew measured the bridge and obtained the following: height (28 feet), length (126 feet), and width (13 feet 9 inches). This bridge was in use through 1985 when the current bridge was constructed. An old metal sign attached to the bridge gives the weight limit at 5 tons. It will not be affected by the water line. Several cemeteries and historic structures are present in the area. They will not be affected by construction of the water line.

No prehistoric sites were found as a result of this survey. According to Baxter and Shafer (n.d.:2), significant archaeological sites are most likely to be found along the major streams in the county such as the San Marcos River and Plum Creek. Sites may also be expected to occur on the lesser streams if there was a dependable supply of water in prehistoric times as well as exploitable plant and animal resources.

In general, the water line avoids high probability areas. Much of the route of the proposed water line is on slopes and in low areas. Deep sand on the upland ridges and first terraces is rare. In all but two cases shovel tests encountered basal clay at depths between 20 and 60 cm. The two areas containing deep sandy soils (100 cm) are located on a slope in an area believed by BVRA to be an unlikely setting for a significant archaeological site. The one major floodplain in the area (Plum Creek) was tested with six backhoe trenches, and no subsurface cultural materials were found. Backhoe trenches were also excavated at two minor streams, Daniels Creek and Tenney Creek. They were negative as well.

The proposed well site will be placed on a two acre site within a ten acre tract. The topography of the ten acres contains a high point and saddle and slopes of an upland ridge. There is no nearby water source to the 10 acres. Therefore, this area is believed to be a low probability setting for a significant archaeological site, and shovel testing is not recommended.

Figure 3. Plum Creek Through Truss Bridge (41CW91)

The six backhoe trenches at Plum Creek were found to be within soils of the Trinity Series, specifically Trinity clay (Tr) and Trinity soils, frequently flooded (Ts) (Lowther and Werchan 1978:29-30). These are nearly level soils on floodplains along local streams. In areas of Tr soils (trenches 1-2), old sloughs dissect the surface in many places, and they carry floodwater annually in some places. The Ts soils flood several times each year, and constant scouring and deposition during flooding have caused surface alteration creating soil patterns that are not uniform. The surface layer is clay or silty clay, but areas of clay loam and silt loam may be included. According to the soil survey, these are soils of recent alluvium.

The two backhoe trenches at Daniels Creek (7) and Tenney Creek (8) were found to be within soils of the Gowen series, specifically Gowen soils, frequently flooded (Gs) (Lowther and Werchan 1978:19). These are nearly level soils on bottomlands that are frequently flooded. Slopes are less than one percent, and the surface is undulating where deposition occurs during flooding. Soil patterns are not uniform. Some areas have a clay loam surface layer, and other areas have a silty clay, sandy clay loam, or silty clay loam surface layer. According to the soil survey (Lowther and Werchan 1978:67), these are soils of recent alluvium.

RECOMMENDATIONS

Historic site 41CW91, a 20th century bridge, was assessed as a result of this survey. It is recommended that this site be avoided during construction of the water line. Several cemeteries and historic structures were observed near the project area. It is recommended that they be avoided. No prehistoric sites were found during the shovel testing and backhoe trenching. It is, therefore, recommended that construction be allowed to proceed as planned. Should any evidence of an archaeological site not discussed in this report be encountered during construction of the proposed water line, work in the area where the find has been made should be temporarily suspended until the situation can be evaluated by a professional archaeologist in consultation with the Texas Historical Commission, BVRA, and Polonia WSC.

REFERENCES CITED

Baxter, Edward P., and Harry J. Shafer
n.d. *Lower Plum Creek Watershed, Caldwell County, Texas: An Archeological Survey of Structure No. 38.* Anthropology Laboratory, Research Report Number 3.

Goode, Glenn T.
1984 Archaeological Testing of Site 41CW25. Unnumbered report prepared by the Texas Department of Highways and Public Transportation.

Lowther, A. C., and Leroy E. Werchan
1978 *Soil Survey of Caldwell County, Texas.* United States Department of Agriculture, Soil Conservation Service in cooperation with the Texas Agricultural Experiment Station.

Moore, William E.
2003 *Archaeological Investigations at Site 41CW58 in Caldwell County, Texas.* Brazos Valley Research Associates Contract Report Number 116, 16 pp. (TAC permit 3130) (Project Number 03-01)

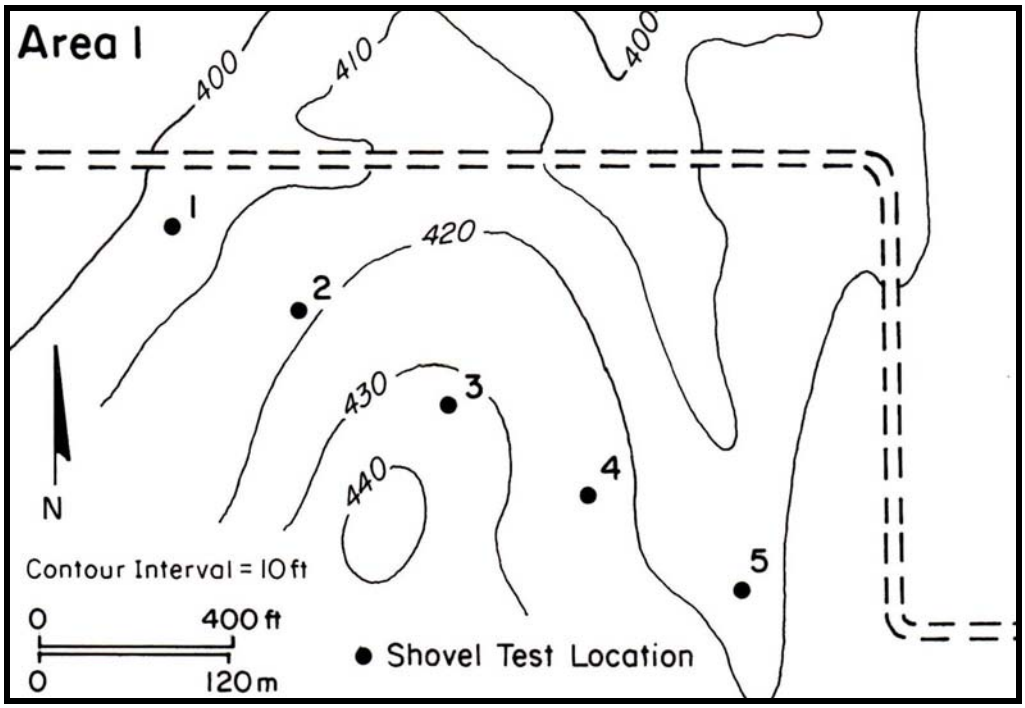
APPENDIX I: SHOVEL TEST LOG

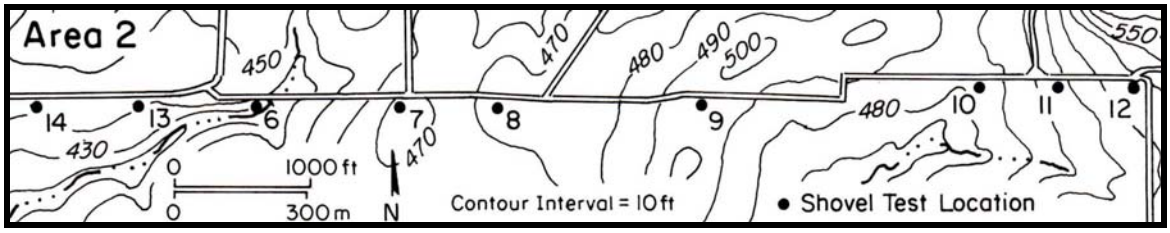
Area	Test	Depth	Description
01	1	60 cm	Dug through sand and gravels over clay at the bottom of the slope. Negative.
01	2	50 cm	Dug through sand and gravels over clay on the slope. Negative.
01	3	50 cm	Dug through sand and gravels over clay at the top of a rise. Negative.
01	4	30 cm	Dug through sand and gravels over clay on a slope. Negative.
01	5	40 cm	Dug through sand and gravels over clay in a swale. Negative.
02	6	100 cm	Dug through sand on a slope. Did not encounter clay. Negative.
02	7	20 cm	Dug through sandy clay over clay at top of hill. Negative.
02	8	30 cm	Dug through sandy clay over clay at top of hill. Negative.
02	9	30 cm	Dug through sandy clay over clay on slope. Negative.
02	10	100 cm	Dug through sand on a slope. Did not encounter clay. Negative.
02	11	40 cm	Dug through sand over clay on a slope. Negative.
02	12	10 cm	Dug through clay on a slope. Negative.
02	13	40 cm	Dug through clay loam over clay in a flat area. Negative.
02	14	60 cm	Dug through sand over clay in a flat area. Negative.

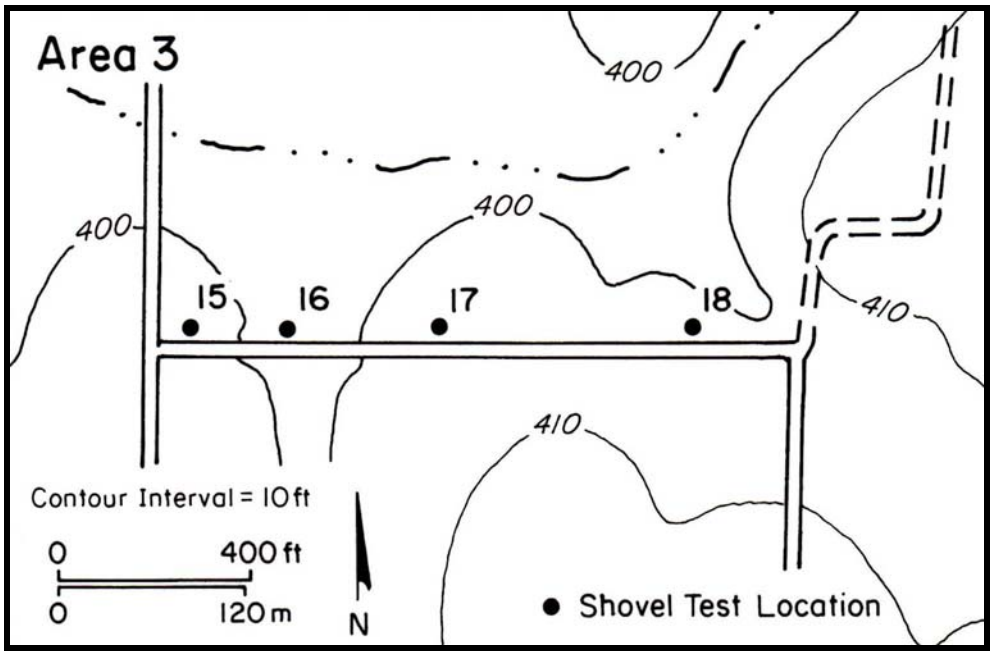
Area	Test	Depth	Description
03	15	30 cm	Dug through clay and gravels over clay on top of a rise. Negative.
03	16	50 cm	Dug through sandy clay loam over clay in a swale. Negative.
03	17	30 cm	Dug through clay loam over clay on top of a rise.
03	18	20 cm	Dug through clay loam over clay on a slope. Negative.
04	19	40 cm	Dug through clay and gravels over clay in a swale. Negative.
04	20	30 cm	Dug through clay and gravels over clay in a flat area. Negative.
04	21	40 cm	Dug through clay and gravels over clay at the top of a rise. Negative.
04	22	30 cm	Dug through clay and gravels over clay in a swale. Negative.
04	23	40 cm	Dug through clay and gravels at the top of a rise. Negative.
08	24	50 cm	Dug through clay loam and gravels over clay on a slope. Negative.
08	25	30 cm	Dug through clay loam and gravels over clay on a slope. Negative.
08	26	40 cm	Dug through clay in a flat area. Negative.
08	27	40 cm	Dug through clay loam and gravels over clay on the top of a hill. Negative.

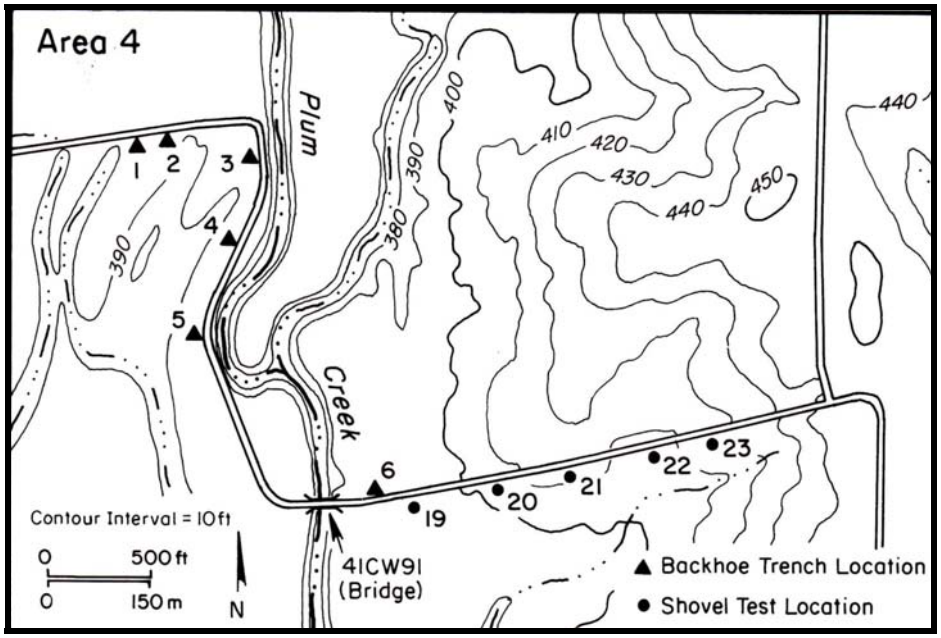
APPENDIX II

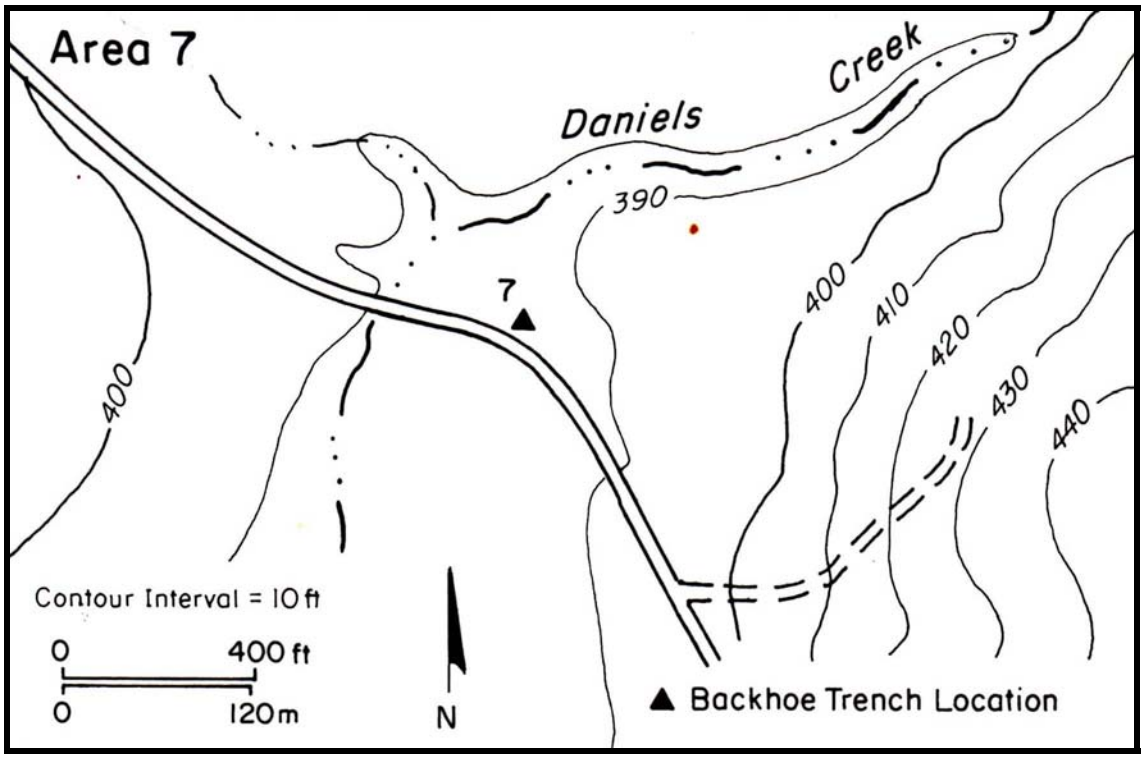
SHOVEL TEST AND BACKHOE TRENCH LOCATIONS

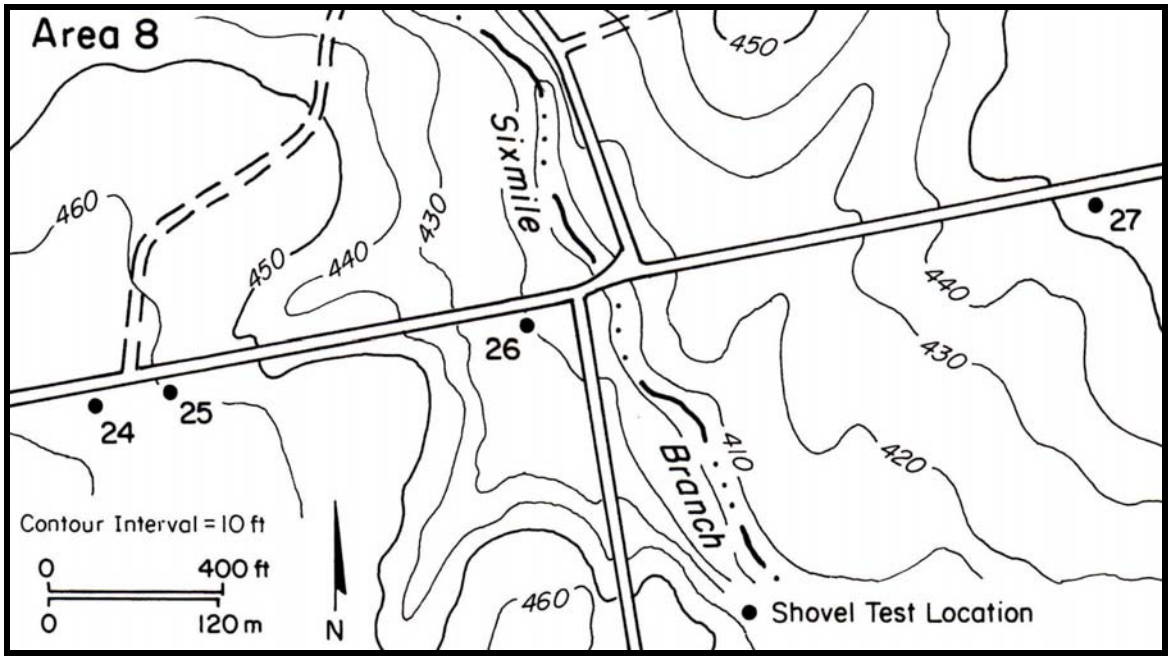

Area 1
400
410
400
420
430
440
1
2
3
4
5
N
Contour Interval = 10 ft
0
400 ft
0
120 m
Shovel Test Location

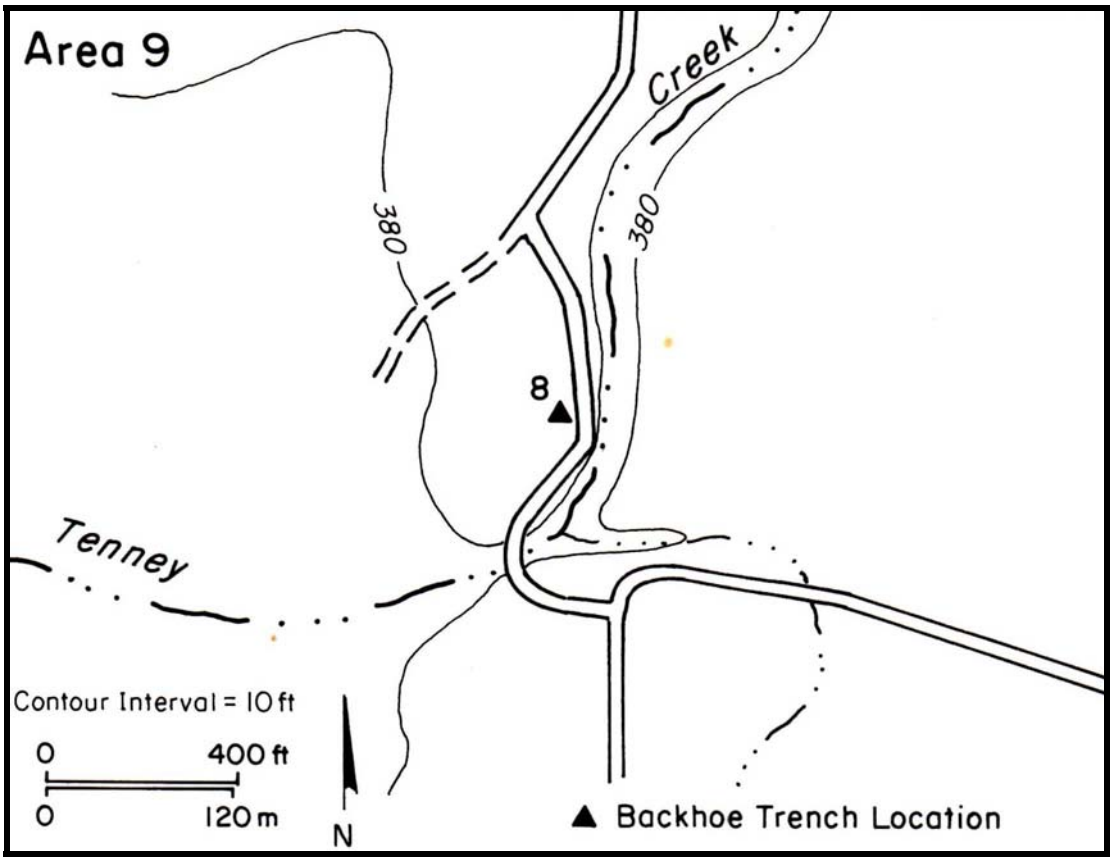

Area 2
450
470
480
490
500
550
480
14
13
6
7
8
9
10
11
12
430
470
0
1000 ft
0
300 m
N
Contour Interval = 10 ft
Shovel Test Location


Area 3
400
400
400
410
410
15
16
17
18
Contour Interval = 10 ft
0
400 ft
0
120 m
N
Shovel Test Location


Area 4
Plum
Creek
400
410
420
430
440
450
390
380
390
1
2
3
4
5
6
19
20
21
22
23
41CW91
(Bridge)
Contour Interval = 10 ft
0
500 ft
0
150 m
N
Backhoe Trench Location
Shovel Test Location


Area 7
Daniels
Creek
390
400
410
420
430
440
400
7
Contour Interval = 10 ft
0
400 ft
0
120 m
N
Backhoe Trench Location


Area 8
Sixmile
Branch
450
460
450
440
430
440
430
420
410
460
27
26
24
25
Contour Interval = 10 ft
0
400 ft
0
120 m
N
Shovel Test Location


Area 9
Creek
380
380
8
Tenney
Contour Interval = 10 ft
0
400 ft
0
120 m
N
▲ Backhoe Trench Location

APPENDIX III

BACKHOE TRENCH DATA

Backhoe Trench 1

This trench was excavated in the floodplain of Plum Creek (Area 4). The dimensions are 12 feet (length) x 18 inches (width). It was dug to a depth of four feet. Black clay (10YR 2/2) was found throughout the depth of this trench. Although gravels were numerous on the surface of the floodplain, they were absent in the trench. A profile was not drawn.

Backhoe Trench 2

This trench was excavated in the floodplain of Plum Creek (Area 4). The dimensions are 11 feet (length) x 18 inches (width). It was dug to a depth of four feet. Black clay (10YR 2/2) was found throughout the depth of this trench. Although gravels were numerous on the surface of the floodplain, they were absent in the trench. A profile was not drawn.

Backhoe Trench 3

This trench was excavated in the floodplain of Plum Creek (Area 4). The dimensions are 14 feet (length) x 18 inches (width). It was dug to a depth of five feet. Although gravels were numerous on the surface of the floodplain, they were absent in the trench. Black clay (10YR 2/2) was found overlying tan clay (2.5YR 4/4). A profile was drawn in the field and is part of the notes.

Backhoe Trench 4

This trench was excavated in the floodplain of Plum Creek (Area 4). The dimensions are 16 feet (length) x 18 inches (width). It was dug to a depth of five feet. Although gravels were numerous on the surface of the floodplain, they were absent in the trench. A stratum of clay (10YR 3/6) with small gravels was found in the southeast corner of the trench. The rest of the soil is brown clay (2.5YR 4/4). A profile was drawn in the field and is part of the notes.

Backhoe Trench 5

This trench was excavated in the floodplain of Plum Creek (Area 4). The dimensions are 16 feet (length) x 18 inches (width). It was dug to a depth of five feet. Although gravels were numerous on the surface of the floodplain, they were absent in the trench. Below a thin layer of sand and gravels is brown/black clay (7.5YR 2.5/2). A profile was drawn in the field and is part of the notes.

Backhoe Trench 6

This trench was excavated in the floodplain of Plum Creek (Area 4). The dimensions are 16 feet (length) x 18 inches (width). It was dug to a depth of four feet. Although gravels were numerous on the surface of the floodplain, they were absent in the trench. Below a thin layer of sand and gravels (part of an old roadbed) is brown clay (2.5YR 3/2). A profile was drawn in the field and is part of the notes.

Backhoe Trench 7

This trench was excavated in the floodplain of Daniels Creek (Area 7). The dimensions are 16 feet (length) x 18 inches (width). It was dug to a depth of five feet. The soils in this trench consist of ight brown sand (10YR 4/4) over a brown clay (10YR 2/2). A profile was drawn in the field and is part of the notes.

Backhoe Trench 8

This trench was excavated in the floodplain of Tenney Creek (Area 9). The dimensions are 16 feet (length) x 18 inches (width). It was dug to a depth of five feet. The soils in this trench consist of a mixture of clay (10YR 4/2) and small gravels over brown clay (10YR 4/3). A profile was drawn in the field and is part of the notes.