

**AN ARCHAEOLOGICAL SURVEY FOR THE
PROPOSED REDLAND WATER SUPPLY CORPORATION
WETLANDS TREATMENT PLANT
IN CENTRAL ANGELINA COUNTY TEXAS**

Antiquities Permit 3766



***By
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***Brazos Valley Research Associates
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AN ARCHAEOLOGICAL SURVEY FOR THE PROPOSED
REDLAND WATER SUPPLY CORPORATION WETLANDS TREATMENT
PLANT IN CENTRAL ANGELINA COUNTY, TEXAS

BVRA Project Number 05-03

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ABSTRACT

Brazos Valley Research Associates (BVRA) performed a cultural resources survey at the site of a proposed 12-acre wetlands treatment plant and 1000 feet of pipeline in central Angelina County, Texas in March of 2007 for the Redland Water Supply Corporation (WSC). This project was conducted under Texas Antiquities Committee permit number 3766. The project area was investigated by shovel testing. Most of the soils consisted of a shallow clay with few areas of deep sand. No archaeological sites were found, and it is recommended that construction be allowed to proceed as planned. Copies of the final report are on file at the Texas Historical Commission (THC) and Texas Archeological Research Laboratory (TARL) in Austin, Texas and BVRA in Bryan, Texas.

ACKNOWLEDGMENTS

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INTRODUCTION

The Redland WSC proposes to construct a wetlands treatment plant on a twelve-acre site and install 1000 feet of water line in central Angelina County, Texas (Figure 1). The project area is depicted on the topographic quadrangle, Redland, Texas (3194-243) (Figure 2). Because of the proximity of the project area to a stream, an archaeological survey was recommended by the Texas Parks and Wildlife Department. In order to comply with this request, the Redland WSC retained BVRA to conduct this service which was performed under Texas Antiquities permit 3766 with William E. Moore the Principal Investigator. The size of the footprint of the wetlands treatment plant will be 260 feet x 600 feet (3.5 acres). Subsurface construction within this area will be four feet. The rest of the 12 acres will not be affected except for the water line that will connect an existing, non-operational sewer plant with the proposed wetlands treatment plant. The pipe for the water line will be 10 inches in diameter and will be placed in a trench 18 inches in diameter and eight feet deep. There will be a 15-foot easement. Construction is scheduled to begin on August of 2007.

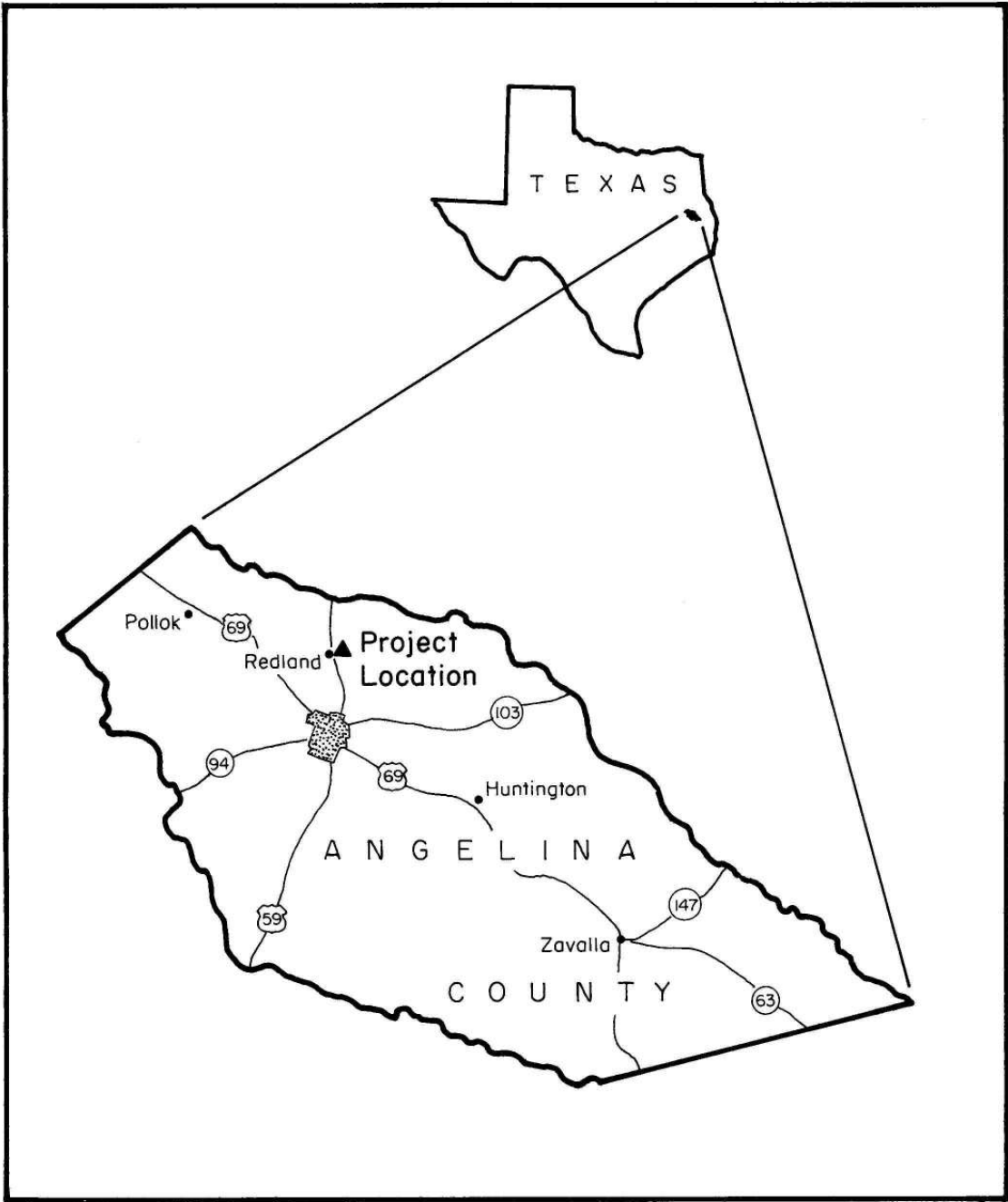
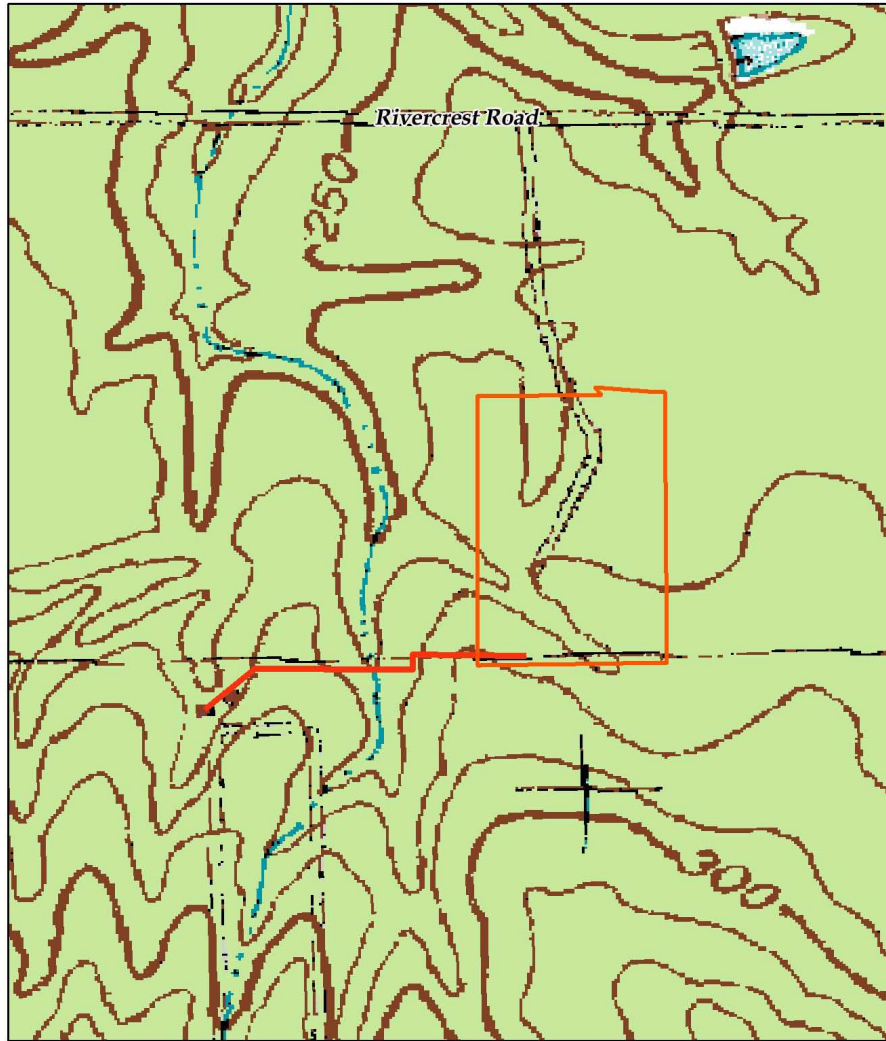


Figure 1. General Location



USGS Redland, Texas
Quadrangle 3194-243

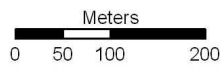


Figure 2. Project Area

ENVIRONMENTAL SETTING

The following general discussion was taken from the Soil Survey of Angelina County, Dolezel (1988:1-4). Angelina County is located in the central part of East Texas. The northern and southern parts of the county have a dendritic drainage system with many large streams. Two rivers, Neches and Angelina, drain the county. Elevation ranges from about 100 feet in the south near the Neches River to about 460 feet in the northern part of the county. Angelina County is in the East Texas Timberlands Land Resource Area and forest products are a major part of the local economy. Soils in this area formed mainly under forest vegetation in a humid environment, and most are light in color and low in natural fertility. Nearly level areas are often wet, and moderately steep to steep areas tend to erode easily. The county has long, hot summers because of moist tropical air from the Gulf of Mexico persistently covers the area. Winters are cool and fairly short. Rainfall is fairly heavy throughout the year, and prolonged droughts are rare. The total annual precipitation is 41 inches. Of this, 21 inches (50%) usually falls in April through September. In winter, the average temperature is 50 degrees Fahrenheit, and the average daily minimum temperature is 39 degrees. In summer, the average temperature is 82 degrees, and the average daily maximum temperature is 93 degrees.

According to the soil survey (Dolezel 1988:Sheet 7), the entire project area is located in Woodtell very fine sandy loam, 1 to 5 percent slopes (WoB) (Figure 3). This soil is described by Dolezel (1988:62) as being located on gently sloping broad ridges. It developed in marine shells and clays and in some areas the surface has small humps of gilgai about two to three inches high. This soil has a very fine sandy loam surface layer about four inches thick. The subsoil is plastic and sticky clay and extends to a depth of 41 inches. Below that is a stratum of shale. This soil is very slowly permeable and moderately well drained. Water erosion is a severe hazard.

At the time of this survey the project area consisted of woods and cleared areas. Much of the area had been disturbed by past lumbering activities. The site of the proposed wetlands treatment plant site showing woods and clearing is depicted in Figure 4, and Figure 5 depicts brush and shallow clays along the 1000-foot water line.

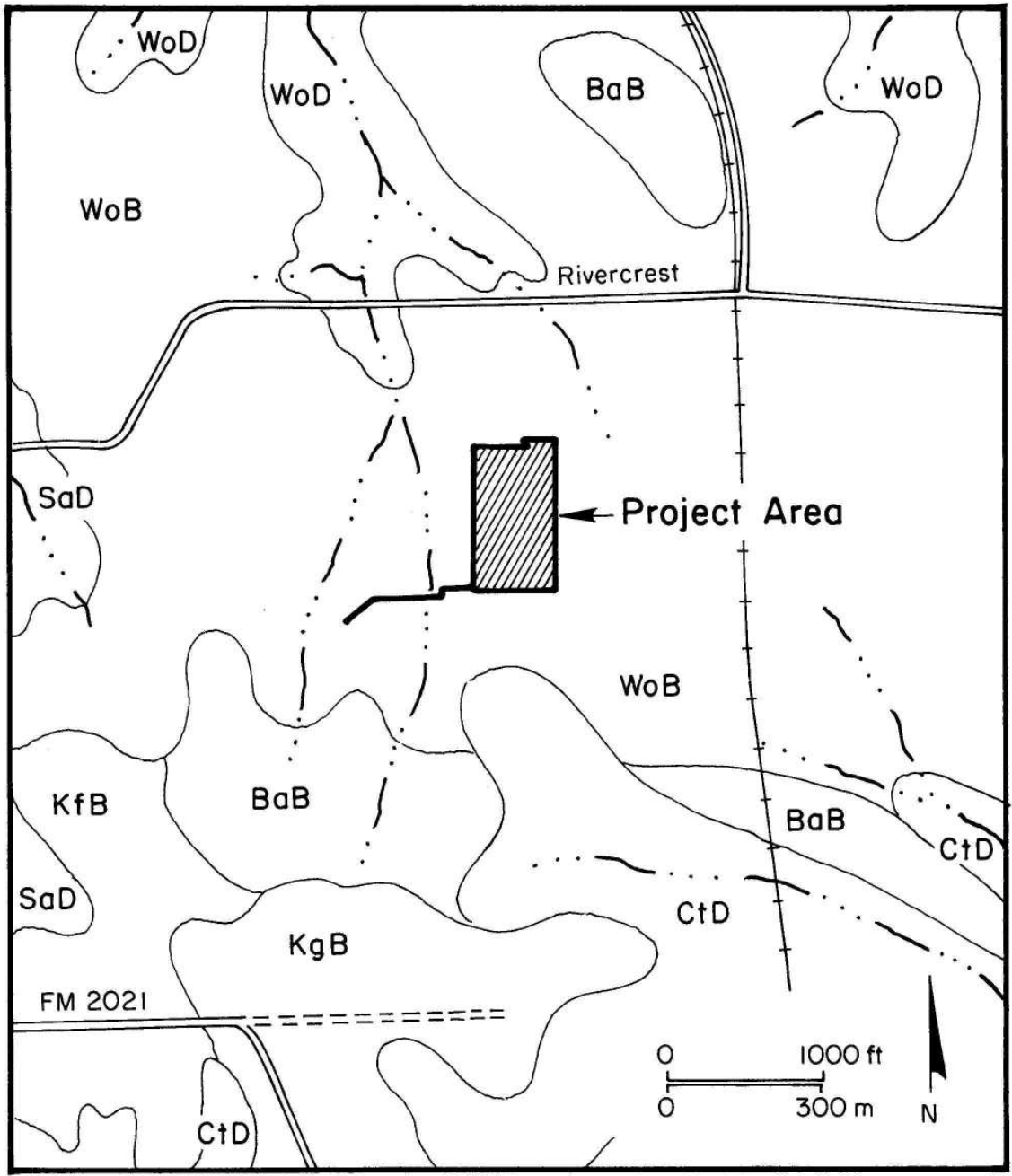


Figure 3. Project Area Soils



Figure 4. View of Proposed Wetlands Treatment Plant Site



Figure 5. View along Proposed Water Line

ARCHAEOLOGICAL BACKGROUND

According to a recently published planning document for the Eastern Planning Region of Texas (Kenmotsu and Perttula 1993:Figure 1.1.2), Angelina County is situated within the Northeast Texas archeological study region. In 1985, according to a statistical overview prepared by the Texas Historical Commission (Biesaart et al. 1985:107), Angelina County contained 52 recorded sites. The site files at TARL revealed 172 recorded sites at the time of this survey. In 1985, 1 site in the county had been excavated, 21 had been tested by hand, 1 had been tested by machine, 30 sites had been dug by collectors, and 46 had been surface collected. Nine recorded prehistoric sites in the county were listed as Archaic, and 41 sites were listed as Late Prehistoric (Biesaart et al. 1985:108). Five sites contained burials.

In 1991, an evaluation was made of significant sites in the Northeast Texas Archeological Region (Kenmotsu and Perttula 1993:Table 2.1.1). At this time Angelina County contained 121 recorded prehistoric sites; of this number 19 were listed as not significant, 67 as unknown significance, 35 as probably significant, and 22 as significant. Today, the number of sites in the county exceeds 190.

The archaeological significance of Angelina County is partially reflected in the following statistics. In 1993, the county contained the second highest number of important known hunter-gatherer sites in Northeast Texas (n=3) (Kenmotsu and Perttula 1993:Figure 2.3.3) and also contained at least 13 important Late Caddoan sites (n=13) (Kenmotsu and Perttula 1993:Figure 2.5.2). Unfortunately, there are major forces that continue to threaten the integrity of archaeological sites in Angelina County. These include population growth (City of Lufkin and surrounding area), highway construction, surface lignite mining, Sam Rayburn Reservoir (formerly McGee Bend), and the lumbering industry.

Although private contract archaeology firms have played a part, most of the archaeological sites known to exist in Angelina County have been identified by surveys associated with reservoir construction and in-house projects by National Forest personnel. The earliest archaeological research in the area was performed in the late 1930s and early 1940s by researchers from The University of Texas at Austin. At that time prehistoric cemeteries and mound sites were considered to be of primary importance. From the late 1940s until the mid 1970s, most of the archaeological research in East Texas was carried out in connection with reservoir construction. In 1948 Robert L. Stephenson published the results of his work at the proposed McGee Bend Reservoir in Angelina, Jasper, Nacogdoches, Sabine, and San Augustine counties (Stephenson 1948a, 1948b). At the time this was the only systematic professional major archaeological investigation in the county.

In the 1970s, Ross Fields (1979) presented an overview of the cultural resources of the Davy Crockett, Sam Houston, Angelina, and Sabine National Forests of Texas. This document provides a brief discussion of all sites in each forest, and 23 sites in Angelina County are mentioned. Another important document for this area is a cultural resource overview of the National Forests in Texas by John Ippolito (1983). Of particular relevance to this project is Ippolito's Figure 21 entitled "Drainage Systems & Probability Zones, Angelina National Forest, Texas."

Although no part of the project area is within the Angelina National Forest, Ippolito's figure covers areas within 10 miles of the City of Lufkin. He considers the Neches and Angelina rivers to be high probability areas with several streams in the county listed as medium probability areas. According to Ippolito (personal communication), there are several drainages in the county such as Hurricane Creek and Biloxi Creek that should be considered to be medium to high probability areas. Ephemeral streams such as those in the current project area are viewed by Ippolito as low probability areas.

A check of the Texas Archeological Sites Atlas revealed one previous survey in the vicinity of the current project area. This small area survey was performed for the United States Department of Agriculture, Rural Development. There is no information on the Atlas that documents the size of the project area, name of investigating firm, or date of survey. This area is approximately 452 meters southwest of the current project area.

It is beyond the scope of this report to discuss in detail the archaeological background of Angelina County, especially when numerous contract reports are available. The interested reader is referred to the statistical overview (Biesart et al. 1985), the planning document published by the THC (Kenmotsu and Perttula 1993), and other reports cited above for more detailed information regarding the archaeology of Angelina County.

METHODS

This investigation was performed on March 21 and 22, 2007. Shovel tests were excavated randomly across the project area (Figure 6). All excavated earth was screened using ¼ inch hardware cloth and recorded on a shovel test log (Appendix I). Eighteen shovel tests were excavated in the 12-acre project area, and six shovel tests were excavated along the 1000 foot water line. All tests were terminated when clay was encountered. The tests ranged in depth from 10 to 100 cm with the majority of tests (n=17) reaching clay at 40 cm or less. The 18 shovel tests in the 12-acre tract exceeds the number of shovel test per acre as required by the *Archeological Survey Standards for Texas* as recommended by the Texas Historical Commission, and the six shovel tests along the 100 foot water line also exceeds the standards for linear surveys. The project was also documented by digital photography and use of a hand held GPS.

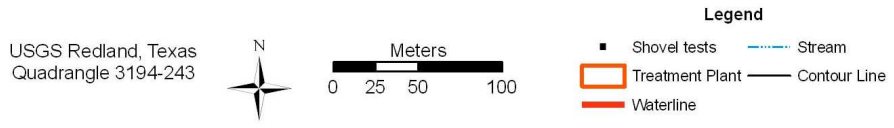
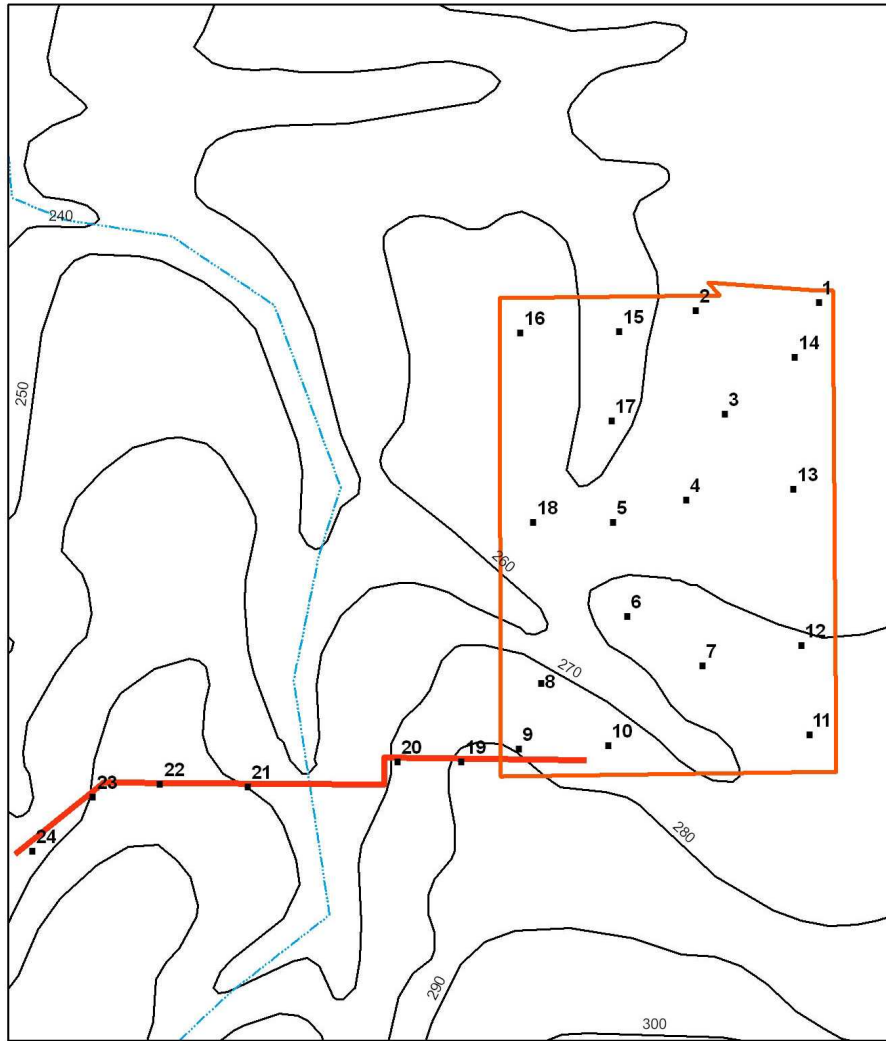


Figure 6. Shovel Tests

RESULTS AND CONCLUSIONS

The records check at TARL revealed that no previously recorded sites are present within any portion of the project area as currently defined. A review of the literature revealed that significant prehistoric and historic sites are present in Angelina County. Twenty-four shovel tests in the project area revealed a variable depth of clay between 10 and 100 cm below the existing ground surface with the majority of tests (n=17) reaching clay at 40 cm or less. Two tests (10 and 20) encountered clay at 50 cm, and one test (9) encountered clay at 60 cm. The only area where deeper sandy soils were encountered was at the southwestern portion of the plant site and along the 1000-foot water line. Here, sandy soils extended to 80 cm in two shovel tests (19 and 21) and 100 cm in two shovel tests (22 and 23). As stated above (see *Environmental Setting*), the entire project area is located in sandy soils. This was not the case in the field as shallow clays were encountered over most of the area examined. It is possible that the soil survey is incorrect for this area or the thin sandy mantle has eroded. Soil erosion is mentioned in the soil survey as a major hazard for this soil type. Although the project area is on a landform overlooking a tributary of the Angelina River, it appears that this area was not considered a suitable location for prehistoric occupation. This tributary may not have been a dependable source of water in the past, and other areas along this stream may have been selected instead.

RECOMMENDATIONS

Based on the absence of archaeological sites in the project area, it is recommended that construction be allowed to proceed as planned. It is always possible that archaeological sites are missed during any archaeological survey. Should evidence of a prehistoric or historic site in the project area be discovered during construction, all work in this area should cease immediately until the Texas Historical Commission can evaluate the situation.

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Appendix I
Shovel Test Log

Shovel Test	Depth (cm)	Soils	Comments
1	10	Clay	Low, wet field
2	20	Sandy clay loam / clay	Clearing by old road
3	10	Sandy clay loam / clay	Clearing by old road
4	10	Clay	Clearing by old road
5	10	Clay	Cleared
6	30	Sandy clay loam / clay	Cleared
7	30	Sandy clay loam / clay	Cleared
8	40	Sandy clay loam / clay	Woods
9	60	Sandy clay loam / clay	Woods
10	50	Sandy clay loam / clay	Woods
11	30	Sandy clay loam / clay	Woods
12	20	Sandy clay loam / clay	Woods
13	20	Sandy clay loam / clay	Woods
14	20	Sandy clay loam / clay	Woods
15	10	Clay	Woods, soil disturbed
16	10	Sandy clay loam / clay	Woods, soil disturbed
17	20	Sandy clay loam / clay	Woods, soil disturbed
18	20	Sandy clay loam / clay	Clearing, soil disturbed
19	80	Sandy clay loam / clay	Woods
20	50	Sandy clay loam / clay	Woods
21	80	Sandy loam / clay	Thick brush
22	100	Sandy loam / clay	Thick brush
23	100	Sandy loam / clay	Thick brush
24	30	Sandy clay loam / clay	Disturbed by old waste water treatment plant