

AN ARCHAEOLOGICAL SURVEY OF THE TEMPLE INLAND
CYPRESS POND PROSPECT WELL NUMBER 1
IN LIBERTY COUNTY, TEXAS

Permit Application 23148

by

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AN ARCHAEOLOGICAL SURVEY OF THE TEMPLE INLAND CYPRESS POND
PROSPECT WELL NUMBER 1 IN LIBERTY COUNTY, TEXAS

BVRA Project Number 04-01

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ABSTRACT

An archaeological evaluation of a proposed well site and access road (3.3 acres) in Liberty County, Texas was performed by Brazos Valley Research Associates (BVRA) in January 2004 under COE Permit Application Number 23148 with William E. Moore the Principal Investigator. This project falls under Section 404(b)(1) of the Clean Water Act of 1948 as amended (latest revision February 4, 1987). The Federal Agency involved in this project is the United States Army Corps of Engineers (COE), Galveston District. The drill site and access road are in a bottomland hardwood area. Soils vary from very firm Beaumont clay at the surface to silty clay formed in depressional areas. Standing water from recent rains was present over much of the area. No evidence of an archaeological site was found, and it is recommended that the client be allowed to proceed with drilling as planned. Copies of this report are on file at the COE, Texas Historical Commission (THC), Texas Archeological Research Laboratory (TARL); Ballard Exploration Company of Houston, Texas; and BVRA.

ACKNOWLEDGMENTS

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INTRODUCTION

Ballard Exploration Company of Houston, Texas retained BVRA to conduct a cultural resources survey of a well site and access road in Liberty County (Figure 1). The project area is depicted on the USGS 7.5' topographic quadrangle Nome, Provisional Edition 1984 (3094-122) (Figure 2). The applicant, Ballard Exploration Company, proposes to install a 1625' x 20' board road and a 350' x 350' drill site with ring and pit levees to drill and produce Temple Inland Cypress Pond Prospect Well Number 1. The proposed board road will extend from an existing road west to the proposed well site. The applicant proposes to excavate materials for the ring levee from within the proposed levee area. Approximately three acres of wetlands will be mechanically cleared to construct the road and well site. Upon abandonment of the well site, all equipment will be removed and the area restored, as closely as practicable, to pre-construction contours with the exception of the board road. The landowner has requested that the road remain in place for private use. The project area will be allowed to revegetate naturally. The applicant submitted Permit Application 23148 to the COE (Galveston District) as part of the permitting process. The project number assigned by BVRA is 04-01. The field survey was conducted on January 12, 2004 by William E. Moore, James E. Warren, Arthur Romine, and Bobby Jemison.

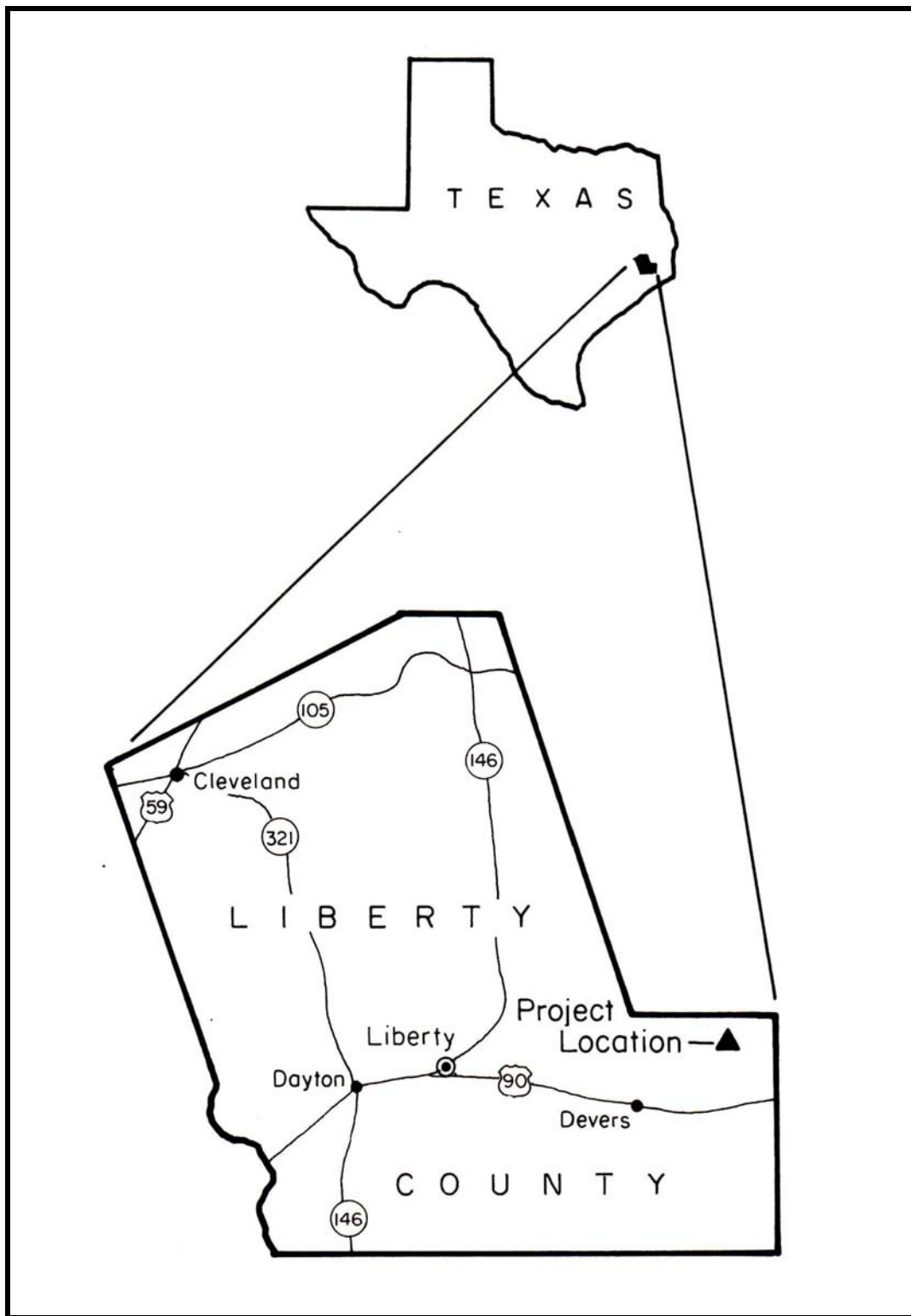


Figure 1. General Location Map

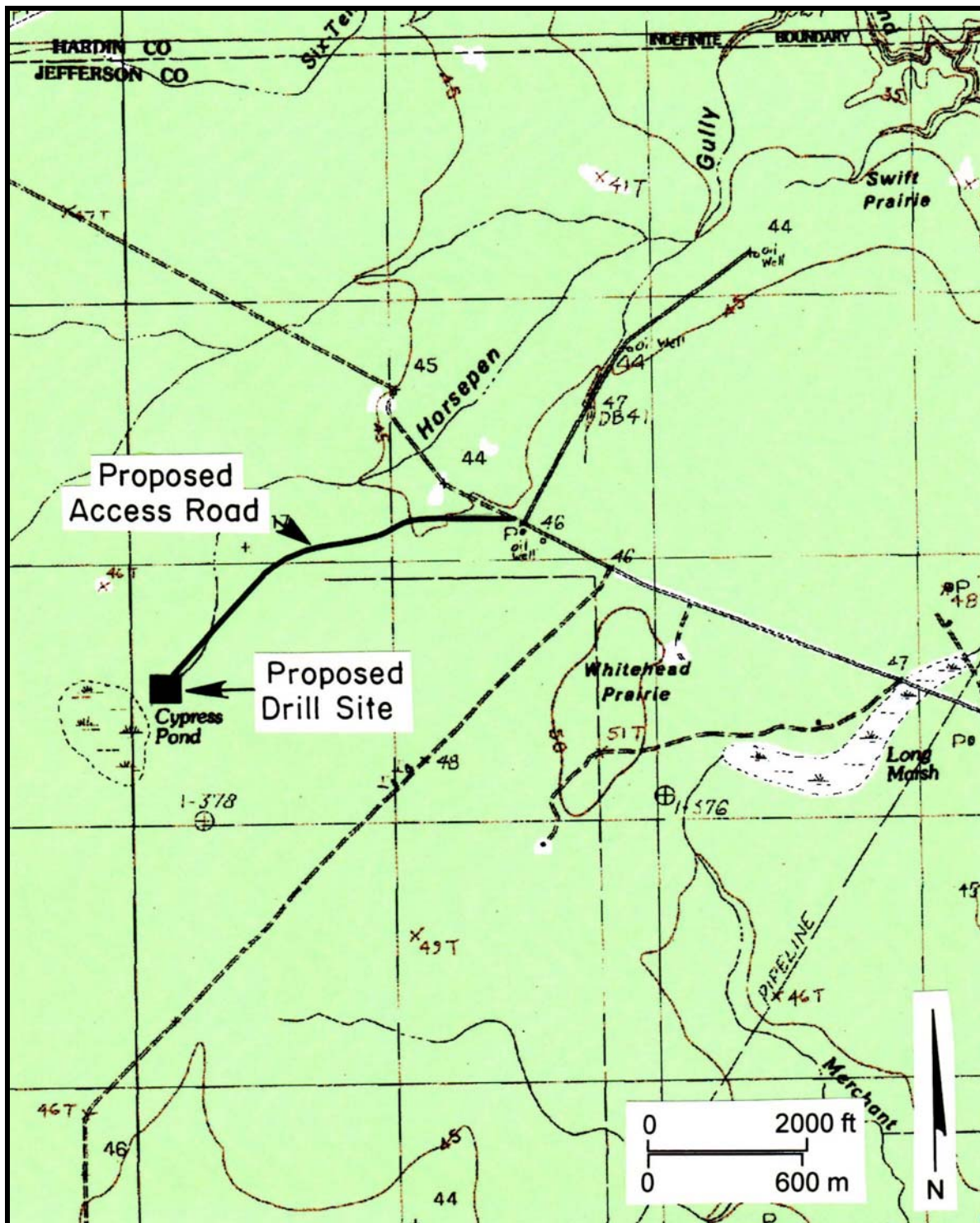


Figure 2. Project Area on Topographic Map

ENVIRONMENTAL SETTING

The following statements were taken from the published *Soil Survey of Liberty County* by Kirby L. Griffith (1996:1-2). Approximately 58% of the county lies within the Gulf Coast Prairie major land resource area, known locally as the coast prairie. The main crops produced in this area are rice and soybeans. About 42% of the county lies within the Western Gulf Coast Flatwoods major land resource area, known locally as the flatwoods. The area is slightly dissected by drainage ways. The surface has low relief and consists primarily of large, nearly level areas that have slow drainage. The flatwoods merge with the coast prairie without a noticeable change in elevation. Woodland is the major land use with both pine and hardwood timber being produced. In the southern part of the county the elevation ranges from 20 feet above sea level in contrast to 210 feet above sea level in the northern part. There are two major drainages within the boundaries of Liberty County, the San Jacinto River and the Trinity River.

In Liberty County summers are hot and humid. Winters are typically mild and are only occasionally interrupted by cold air from the north. Rainfall occurs throughout the year. In winter, the average temperature is 52 degrees Fahrenheit, and the average daily minimum temperature is 41 degrees. The average summer temperature is 82 degrees Fahrenheit, and the average daily maximum temperature is 92 degrees. Total annual precipitation is 53.6 inches. Of this, nearly 53.6 inches (54%) fall in April through September.

According to the soil survey for Liberty County (Griffith 1996:Sheet 38), the project area is located within four different soil types (Figure 3). The majority of the project area is within Beaumont clay (Ba) and Vamont silty clay, depressionnal (Vd). A small portion of the access road passes through Verland clay loam (Ve), while a very small portion of the drill site may lie within Guyton silt loam (Gu).

According to Griffith (1996:18-19), Beaumont clay is a nearly level soil found in broad areas of the coast prairie. Slopes are 0 to 1 percent. The surface layer is described as typically being very firm, dark gray clay that has strong mottles. It is about 28 inches thick and is moderately acid in the upper part and strongly acid in the lower part. The upper part of the subsoil is very firm, strongly acid, dark gray clay, and the lower part is very firm, very strongly acid, gray clay that has red and strong brown mottles throughout. This soil is poorly drained. Surface runoff and permeability are very slow. The available water capacity is high. A water table is generally found within a depth of two feet during the winter and spring.

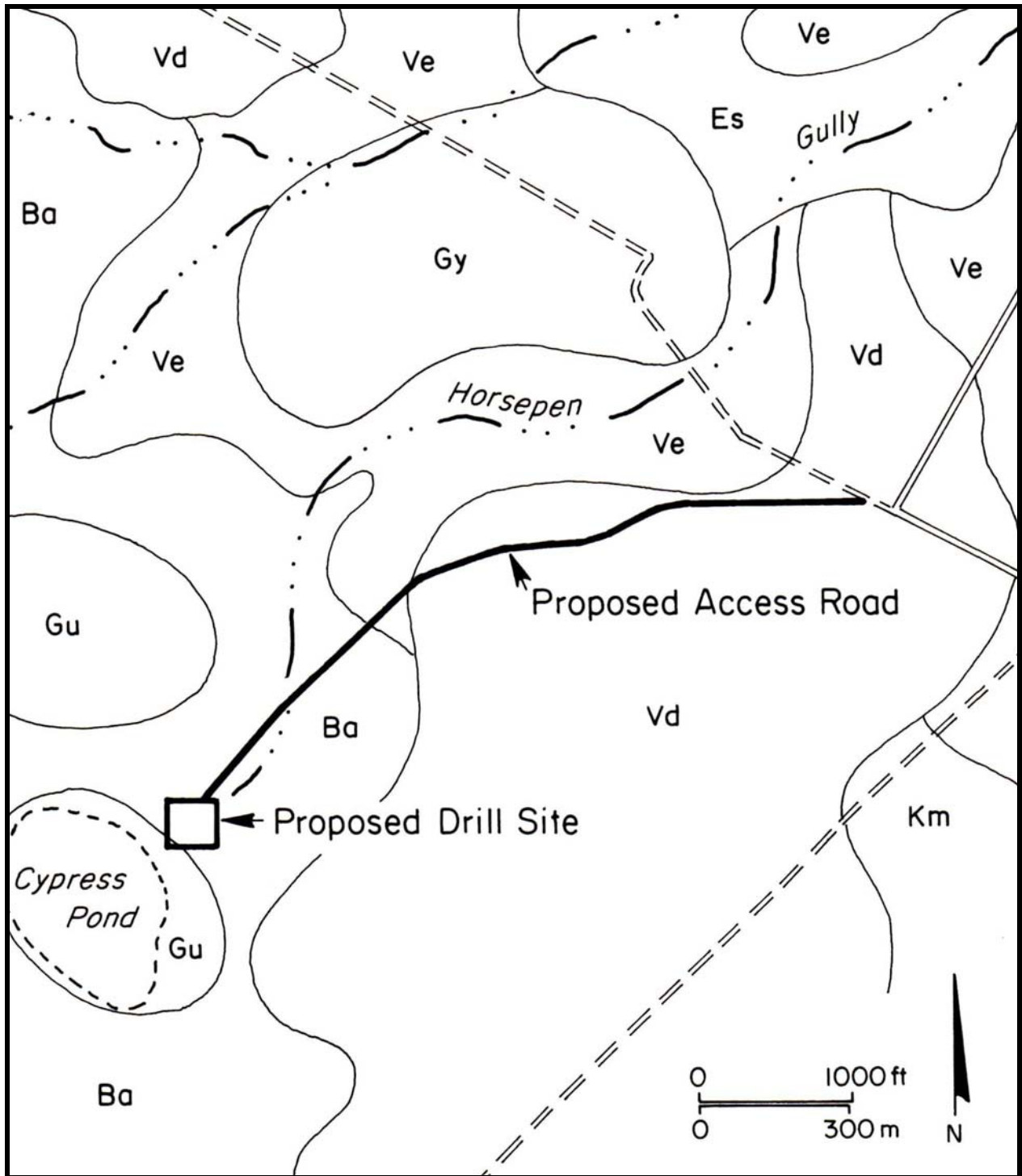


Figure 3. Project Area Soils

Also included with this soil in mapping are small areas of Bernard, Lake Charles, Verland, and Vamont soils. The Lake Charles and Bernard soils are located in the slightly higher positions on the landscape. They have a thick, very dark gray surface layer. Verland soils are in landscape positions similar to those of the Beaumont and have a surface layer of clay loam. Vamont soils are in the slightly higher positions on the landscape and are more yellow in the upper part than the Beaumont soil.

Vamont silty clay, depressional (Vd) soils are described by Griffith (1996:40) as nearly level soils formed in broad areas of the coast prairie. The surface layer is typically a very firm, moderately acid, very dark grayish-brown silty clay about 3 inches thick. The upper part of the subsoil, from a depth of 3 to 13 inches, is very firm, very strongly acid, pale brown clay. The lower part, from 13 to 60 inches, is very firm, very strongly acid, light brownish-gray clay.

Verland clay loam (Griffith 1996:40) is a nearly level soil in plane to slightly concave areas of the coast prairie. This is a clay loam that turns into clay at depths of 3 to 27 inches.

Guyton silt loam (Griffith 1996:25) is a nearly level soil found in broad, plane to slightly convex areas of uplands. The surface layer is a very friable, strongly acid silt loam about 3 inches thick. The subsurface consists of a very friable, very strongly acid, light brownish-gray silt loam.

PREVIOUS INVESTIGATIONS

Liberty County is located in the Southeast Texas Archeological Study Region of the Eastern Planning Region as defined by the Department of Antiquities Protection in Archeology in the Eastern Planning Region, Texas: A Planning Document (Kenmotsu and Perttula 1993). The county is located in the Southeast Texas cultural-geographical region (Region 6) as defined by Biesart et al. (1985:88-90) in a statistical overview. At the time the overview was published, Liberty County was 8th in the region with 36 recorded archeological sites. The 36 sites comprised 2.21% of the region and .18% of the state. As of March 4, 2003, there were 94 recorded prehistoric and historic sites in Liberty County (TARL site files). The Archeological Bibliography for the Southeastern Region of Texas (Moore 1989) cites 76 references for the county. Although many of these investigations have been small area surveys, often resulting in no sites being recorded, several projects involving larger areas have been conducted.

The earliest large project in the county was a survey of the Wallisville Reservoir in Chambers and Liberty counties. This was a major, long-term salvage project begun in the mid-1960s by Harry J Shafer (1966) for the Texas Archeological Salvage Project (TASP). Other research relevant to this reservoir include works by Aten (1967), Ambler (1970), Gilmore (1974), Fox et al. (1980), Good (1983), McIntire (1979a, 1979b, 1979c), Stokes (1985), and Weinstein et al. (1988). Aten's Ph.D. dissertation (Aten 1979) and a later publication (Aten 1983) synthesize his work at Wallisville Reservoir.

The next large-scale project was a survey of the Big Thicket National Preserve which covered six counties in Southeast Texas. This study was initiated by the Anthropology Laboratory at Texas A&M University (Shafer et al. 1975) and examined the 550 acre Loblolly Unit in Liberty County. Overviews of the historic resources of the Big Thicket area, including the Liberty County portion, were prepared by Dethloff and Treat (1975) and Treat and Dethloff (1978). Other studies involving the remainder of the Big Thicket are referenced in the bibliography by William Edward Moore cited above (Moore 1989). Other major projects involving Liberty County include the Channel to Liberty project (Prewitt et al. 1986; Nash and Rogers 1992) and a survey of the Trinity River Basin by Southern Methodist University (Richner and Bagot 1978).

In 1995, BVRA conducted a study of the Liberty Levee project for the City of Liberty (Moore 1995) that examined a 4.5 mile levee route with an average right-of-way of 50 feet (27.3 acres), two proposed borrow areas (one acre each), and a 6.6 acre detention pond. This investigation recorded five prehistoric sites (41LB88, 41LB89, 41LB90, 41LB91, and 41LB92) within the project area and a previously recorded prehistoric site (41LB7) located within the right-of-way of the existing levee. This site was assessed in 1993 by Bryan Guevin of the United States Corps of Engineers, Galveston District, and found to be destroyed. This site and the route of the existing levee were not investigated during the current survey. No new sites have been recorded in Liberty County since this study.

In 2003, Edward P. Baxter conducted an archaeological survey of ten selected landforms in the Trinity River National Wildlife Refuge (Baxter and Moore 2003). No previously unrecorded sites were identified, and one previously recorded site (41LB5) was revisited and found to be greatly disturbed.

William E. Moore authored a review of the Abstracts in Texas Contract Archeology series and published by the Texas Historical Commission from 1988 through 1992 revealed sporadic small area surveys, many resulting in negative findings. Overviews of the area are included in the works by Dillehay (1975), Ambler (1988), Aten (1979, 1983), Briggs (1971), Coastal Environments, Inc. (1977), Fox et al. (1980), Sciscenti (1972), Shafer et al. (1975), Weinstein et al. (1988), and Story, et al. (1990).

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 drill site was only partially marked with surveyors flagging tape at the time of this survey. Therefore, the field survey crew confirmed the project area location through use of a hand-held GPS. The crew walked over the entire area (100% pedestrian survey) and conducted shovel probing to determine the soil types present. Since the drill site and access road were located in a bottomland hardwood setting with clay soils at the surface and areas of standing water from recent rains, shovel tests were not excavated. A thick canopy of woods and secondary growth vegetation resulting from logging activities made photography impractical.

RESULTS AND CONCLUSIONS

A check of site records at TARL revealed no previously recorded sites in the project area. In fact, there are no sites on the entire Nome topographic quadrangle. The field survey was conducted in a low-lying, bottomland hardwood area containing standing water and clay soils at the surface. No sandy soils were observed, and no landforms (i.e., pimple mounds) rising above the bottomland setting were present. The presence of Beaumont clay (formed during the Pleistocene) at the surface over much of the project area is an indicator that archaeological sites are not likely to be present. The entire area is viewed by BVRA as a very low probability setting for significant archaeological sites.

RECOMMENDATIONS

It is recommended that Ballard Exploration Company be allowed to proceed with construction as planned with no additional archaeological investigations. It is always possible that areas containing cultural resources are missed during any archaeological survey. Should any evidence of an archaeological site be encountered during construction of the proposed water line, work in that area should cease until the situation can be evaluated by the Corps of Engineers and Texas Historical Commission in consultation with BVRA and Ballard Exploration Company.

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