

AN ARCHAEOLOGICAL SURVEY OF THE PROPOSED FAMCOR OIL, INC.
WELL PADS AND PIPELINE IN THE SAM HOUSTON NATIONAL FOREST
SAN JACINTO COUNTY, TEXAS

By

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Brazos Valley Research Associates
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Project Number BVRA 96-08

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ABSTRACT

An archaeological survey of four proposed well pads (each one acre in size except B-3 which is 1.44 acres and C-3 which is 1.72 acres), 2549.86 meters of pipeline, and 1158.1 meters of access roads was conducted by Brazos Valley Research Associates on October 12 and 13, 1996. This project was conducted for Famcor Oil, Inc. of Houston, Texas. The project area is located in the Sam Houston National Forest, San Jacinto County, Texas. This investigation was performed using the pedestrian survey method supported by shovel testing and probing. No prehistoric sites were found, and the only historic remains in the project area is an old railroad grade which is not significant. It is recommended that construction be allowed to proceed as planned.

ACKNOWLEDGMENTS

The authors would like to thank those whose cooperation made the completion of this project possible. Richard Hughart of Famcor Oil, Inc. served as our land contact and visited the project area to ensure the proper areas were examined and provided the survey crew with topographic maps and aerial photographs. Michael R. Bradle of American Archaeology Group in Lampasas, Texas served as the Project Archaeologist and was assisted by Floyd D. Kent and Julie A. Crowl. The Principal Investigator is especially grateful to the field crew for the long hours they worked over the weekend. Carolyn Spock, Head of Records, at the Texas Archeological Research Laboratory, is thanked for checking the site files for previously recorded sites. We are also grateful to John E. Ippolito and Velicia Hubbard of the United States National Forest, Lufkin District, for their assistance. Lili Lyddon of Lyddon Illustrations in Wellborn, Texas prepared the figure that appears in this report.

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INTRODUCTION

Famcor Oil, Inc. of Houston, Texas plans to construct four well pads, three access roads (1158.1 meters), and a pipeline (2549.86 meters) in the Sam Houston National Forest, south-central San Jacinto County, Texas (Figure 1). Except for B-3 which is 1.44 acres and C-3 which is 1.72 acres, the well pads are approximately one acre in size and are identified by Famcor Oil, Inc. as Famcor #B-2 Foster, Famcor #B-3 Foster (Navarro A-1 Foster), Famcor #B-4 Foster, and Famcor #C-3 Foster (Mosbacher #1 Foster). When completed, the disturbance caused by the pipeline will be 25 feet wide and 6 feet deep. The project area is located in the 2556 acre Foster Minerals lease that is part of the George Taylor survey (Abstract 292).

The project area is depicted on the 7.5' U.S.G.S. topographic quadrangle Coldspring dated 1960 and photorevised in 1976 (Figure 2). The U.T.M. coordinates for well pad Famcor #B-4 Foster, the approximate center of the project area are Northing 33 80 120 and Easting 2 95 200. This area is the property of the National Forest Service, United States Department of Agriculture and is administrated through the New Waverly District office. Wally Kingsborough is the district archaeologist, and John E. Ippolito is the archaeologist for the Forest Service holdings in Texas.

The nearest permanent stream is Turkington Bayou. The main channel of this drainage passes through the site of previously constructed well pad Famcor #A-2 Foster and crosses the access road from A-2 to proposed well pad B-2. At its nearest point, this stream is about 100 meters southwest of well pad B-2 which is located on the southern slope of a sandy ridge. Two tributaries of Turkington Bayou branch off to the north and help drain the project area. One branch crosses the proposed pipeline route and its channel is approximately 400 meters east of B-2, 300 meters east of B-3, and 300 meters west of B-4. These well pad sites are also situated on sandy ridges, while the channel of the second branch crosses the proposed pipeline route approximately 200 meters to the east of well pad B-4.

Turkington Bayou is part of a larger drainage system that is created by the San Jacinto River. This river has an East Fork and a West Fork. The closest branch of the San Jacinto River is the East Fork which is approximately 2500 meters to the west of well pad B-2. Overall, the project area is situated within an area containing numerous dry stream channels and sandy ridges. No natural springs are known to exist in the current project area (Richard Hughart, personal communication, October 15, 1996). Previous archaeological surveys in the vicinity of the current project area have identified both prehistoric and historic sites and the county contains several significant archaeological sites. Therefore, an archaeological survey was required by the State Historic Preservation Officer (S.H.P.O.), the lead review and compliance agency, before construction is allowed to proceed. In order to satisfy this requirement, Famcor Oil, Inc. contracted with Brazos Valley Research Associates to perform this service. No permit from the Texas Antiquities Committee was required for this project.

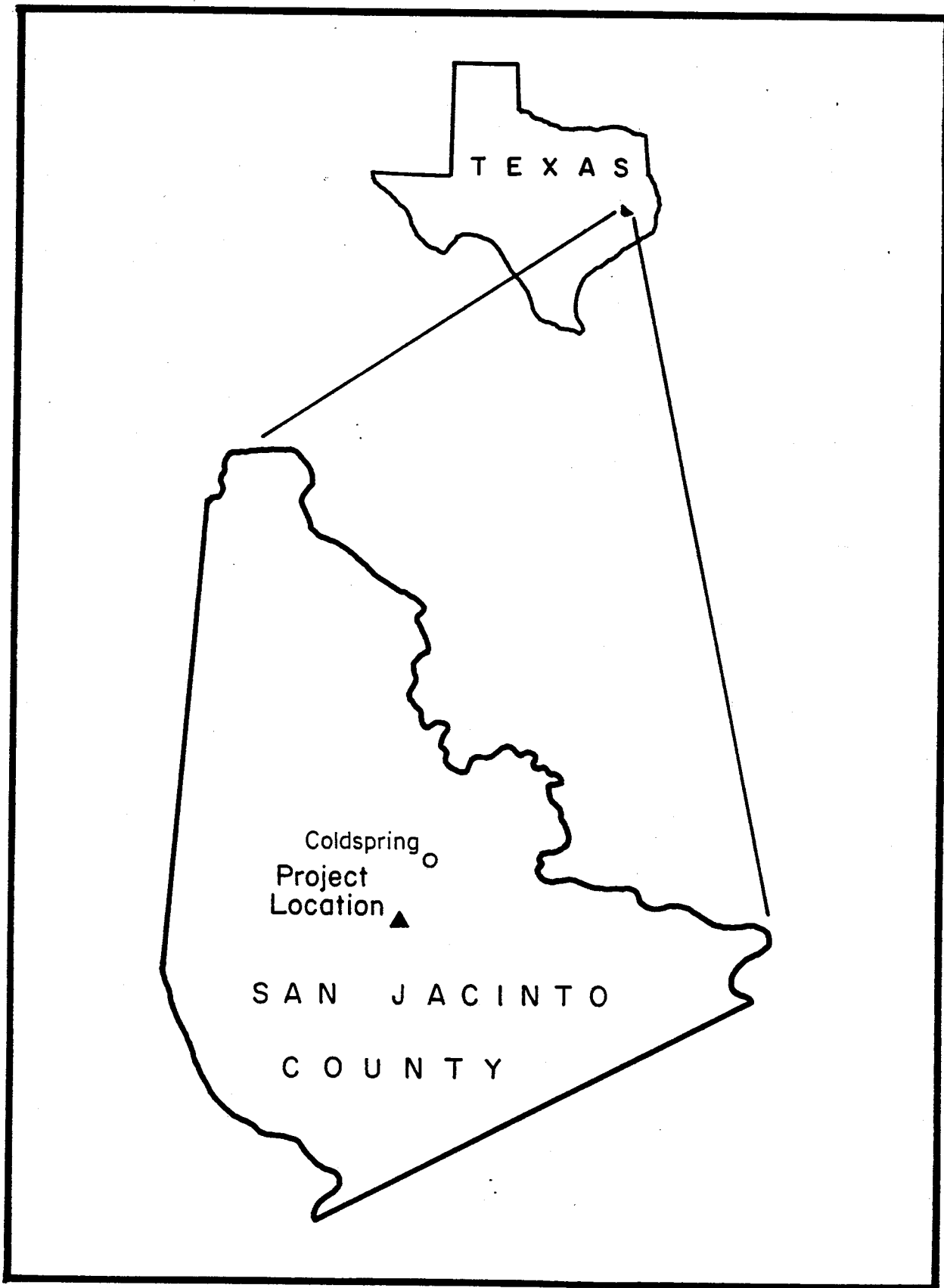


Figure 1. General Location Map.

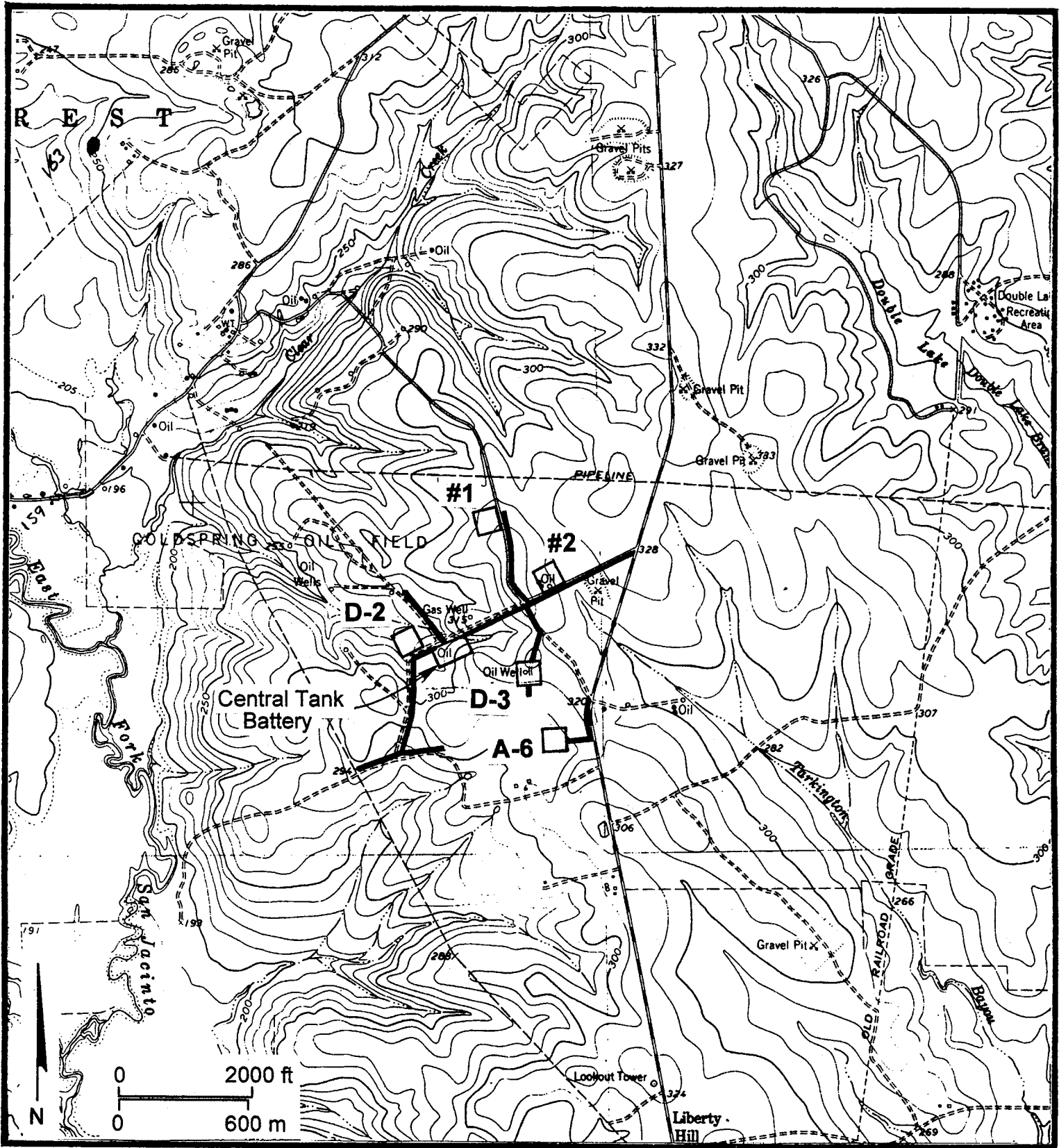


Figure 2. Project Area Map.

This well pad location is part of the Coldspring Oil Field that contains several oil and gas well pad sites. Overall, this area has been the locus of intensive oil and gas exploration as indicated by oil and gas wells, pipelines, and access roads on the topographic quadrangle. The project area is situated in the south-central portion of San Jacinto County, south of Coldspring (the county seat) and north of the Liberty Hill Cemetery. The main highway in the area is F.M. 2025 that runs north south and, at one point, is 200 meters west of well pad B-2.

ENVIRONMENTAL SETTING

General

The project area is located within the West Gulf Coast Plain physiographic province and the Austroriparian biotic province as defined by Blair (1950:98-100). The overstory vegetation in the project area is primarily large pines while the understory consists of various shrubs and forbs. A more detailed discussion of the environmental setting for the Sam Houston National Forest is presented in Ippolito's (1983) thorough overview of Texas National Forests. The surface geology is the Willis Formation that consists of various sands and clays containing some small gravels. The reader is referred to Volume I (Stratigraphy) of the Geology of Texas by Sellards et al. (1932) for a more in-depth discussion of the geology of this area. In terms of their topographic setting, the well pads are situated on sandy upland ridges overlooking Turkington Bayou and its tributaries, while the access road and pipeline cross portions of these streams and low-lying areas as well as upland ridges and divides.

Soils

The project area is depicted in the soils book for San Jacinto County (McEwen et al. 1988) on Sheet Number 75. Most of the project area is within Pinetucky fine sandy loam (PFB), 1 to 5 percent slopes, and a small portion may be in Pinetucky and Conroe soils (PGB). Pinetucky fine sandy loam is a gently sloping soil found on broad, smooth, upland plains (McEwen et al. 1988:37-38). This soil typically has a fine sandy loam surface layer about 12 inches thick and a subsoil of yellowish-brown sandy clay loam about 28 inches deep. Below this is a yellowish-brown sandy clay loam with a depth of 56 inches. This soil is moderately well drained and runoff is slow to medium. Seasonal wetness and moderately slow permeability are seen as major limitations to modern use including recreation.

Pinetucky and Conroe soils (McEwen et al. 1988:38-39) are nearly level to gently sloping soils on convex uplands that have been altered by the mechanical removal of ironstone gravel from the surface layer.

The soils appear to be mixed throughout most of the project area due to past logging, oil and gas exploration and extraction, and road building activities. Most of the soils encountered consisted of medium to fine sands, yellowish in color, with a moderate to high density of concretions. Underlying the sands, were clayey sands with dense hematitic inclusions.

The vegetation consisted of a mixed pine/hardwood secondary growth upland forest with 100% ground cover consisting of pine duff and leaves. Hardwoods observed were sweetgum, holley, and French mulberry. Most of the area just to the south of well pad B-3 and east, including the area encompassing well pad B-4, has been severely disturbed due to earlier gravel pit mining.

ARCHAEOLOGICAL BACKGROUND

Previous Investigations

San Jacinto County is located in the Southeast Texas region as defined by Biesart et al. (1985:76) in *Prehistoric Archeological Sites in Texas: A Statistical Overview* published by the Office of the State Archeologist, Texas Historical Commission. This is an area that was well documented in terms of numbers of sites in 1985 when compared to other regions of Texas. When the statistical overview was compiled, a total of 1630 prehistoric sites (8.06% of the state) was recorded in the entire region. Only four of the thirteen regions in Texas reported more sites or had a higher percentage statewide. In terms of county statistics only two counties (Chambers and Harris) had more recorded sites (132) in 1985. The 132 sites recorded in the county in 1985 consisted of 8.10% of the region and .65% of the state. The reader is referred to the overview for additional statistical information concerning San Jacinto County and its relation to the rest of Texas.

Although numerous archaeological investigations have been conducted in San Jacinto County, the vast majority has been small area surveys, often resulting in negative findings. Many of these investigations resulted from the demand placed on the landscape by the oil and gas industry. A bibliography of the Southeastern Region of Texas by William E. Moore (1989) contains a listing of all work done in San Jacinto County through 1989. In addition, an ongoing project sponsored by the Department of Antiquities Protection, Texas Historical Commission is engaged in abstracting contract reports by year. To date, volumes have been published for 1987 (Moore 1991), 1988 (Moore 1990a), 1989 (Moore 1993a), 1990 (Moore 1992a), 1991 (Moore 1992b), and 1992 (Moore 1994a).

Two overviews of the archaeology of the National Forests of Texas have been published. In 1979, Ross C. Fields (1979) prepared a report that discussed the cultural resources of each forest. This was followed by Ippolito's (1983) more extensive work. Ippolito's effort provides a comprehensive discussion of the archaeology of all four forests and is the most recent and thorough review of the archaeology of the Texas national forests available.

The first major archaeological investigation to be conducted in San Jacinto County was survey and testing in the Livingston Reservoir. The initial survey was conducted in 1963 by the Texas Archeological Salvage Project (TASP) and recorded sites within and adjacent to the proposed lake. Most of the sites located were found to occur towards the southeastern end of the lake. The results of the survey have been reported by Nunley (1963).

Two of the sites found during the Lake Livingston survey in San Jacinto County were tested in 1965. These were the Trichel site (41SJ16) excavated by TASP personnel and the Houston site (41SJ19) excavated by members of the Houston Archeological Society. Both sites have been classified as Late Archaic to Late Prehistoric in age based on the presence of dart points, arrow points, and ceramics.

The only other prehistoric site to be excavated in San Jacinto County is the Strawberry Hill site (41SJ160). This site was investigated by the Texas Highway Department in 1974 (Keller and Weir 1979). Strawberry Hill yielded a large quantity of artifacts but, according to the authors, produced little new information. It is described as a multi-component site containing both Archaic and Late Prehistoric materials.

A historic contact period Indian site in San Jacinto County dating to the mid-nineteenth century was excavated by Dick Ping Hsu (1969) through the combined efforts of the Houston Archeological Society, science students of Coldspring High School, the Texas Building Commission, and the Texas Water Development Board. Glass trade beads and silver brooches had never been reported from this section of Texas and the presence of burials and other historic and native manufactured artifacts make this a very significant site. It is hypothesized by Hsu (1969:47) that the "Alabama-Coushatta was probably the group that buried their dead in this location."

It is beyond the scope of this negative findings report to discuss every archaeological investigation in the Sam Houston National Forest. Several recent efforts, however, are worthy of mention. These include three surveys of well pad sites in the Mercy Oil Field in 1992 by James E. Corbin (1992) and Brazos Valley Research Associates (Moore 1993b, 1994b) and the Coldspring Oil Field by James E. Corbin (1994). The 1993 study by Brazos Valley Research Associates recorded prehistoric site 41SJ48, and the 1994 study by Corbin recorded prehistoric site 41SJ49.

Most recently three major works have appeared which contain detailed overviews relevant to Southeast Texas and the project area. These are *Archeology in the Eastern Planning Region, Texas: A Planning Document* by the Department of Antiquities Protection (Kenmotsu and Pertula (1993), Roger G. Moore's (1995) Ph.D. dissertation entitled *The Mossy Grove Model of Long-Term Forager-Collector Adaptations in Inland Southeast Texas*, and Volume 66 of the *Bulletin of the Texas Archeological Society*. The latter reviews the current state of Archeology in Texas and contains a chapter devoted to Southeast Texas (Patterson 1995).

Cultural Chronology

The cultural chronology of this part of Texas is, according to Story (1981), by no means completely understood. Other researchers such as Aten (1983), Bement et al. (1987), Bond and Moore (1980), Ippolito (1983), Keller and Weir (1979), Moore (1978, 1990b), Patterson (1979a, 1979b, 1979c, 1983, 1986, 1989), Shafer and Stearns (1975), Shafer et al. (1975), Story (1974, 1981), Story et al. (1990), and Wheat and Gregg (1988) have discussed the chronology of Southeast Texas and the Texas National Forests in more detail and the reader is advised to consult these sources for additional information.

FIELD METHODS

The project was divided into three phases - background and archival research, field survey, and report preparation. The background and archival research consisted of a check of the site records at the Texas Archeological Research Laboratory (TARL). The Principal Investigator performed this task.

Background and Archival Research

A check of the site records at TARL was conducted to identify any previously recorded sites, if any, in the project area. In order to better understand the nature of previous archaeological work in the region, the archival research included a review of the following documents: a statistical overview of Texas archaeology prepared by the Texas Historical Commission (Biesart et al. 1985), an overview of the National Forests in Texas by Forest Service Archeologist, John E. Ippolito (1983) a bibliography of Southeast Texas (Moore 1989), several contract reports documenting work in the Sam Houston National Forest (Moore 1993b, 1994b), and a series of reports containing abstracts for Texas contract archaeology (Moore 1990a, 1991, 1992a, 1992b, 1993a, 1994a).

Field Investigation

Before entering the field, the Principal Investigator discussed the project with William A. Martin of the Department of Antiquities Protection. Mr. Martin, who will review this project for the State Historic Preservation Officer, gave permission to begin the project on October 12, 1996. In addition, the Forest Service Archeologist, John E. Ippolito, was advised of the impending work.

The field investigation was conducted on October 12 and 13, 1996. Michael R. Bradle (Project Archaeologist) supervised the fieldwork with assistance from Julie A. Crowl and Floyd D. Kent. A 100% pedestrian survey was conducted across the entire project area. Shovel tests were excavated at each of the well pads and along the pipeline route and access roads. A minimum of four tests were dug at each well pad site except well pad C-3 which was a plugged well that had already been disturbed. Only one test was dug at this well pad site. Table 1 depicts the shovel tests according to well pad. The remaining tests were dug throughout the rest of the project area. In all, 34 shovel tests and 35 shovel probes were excavated. Excavated matrix was screened through 1/4 inch hardware cloth. Shovel test data were recorded on a shovel test log (Appendix I) and in the field notes. Tests were dug until clay was encountered. Depths of the tests varied from 10 to 58 centimeters below the ground surface, and the average depth was calculated at 28.76 centimeters. In addition to the shovel testing, all exposed areas in the project area were inspected for cultural materials.

Report Preparation

The Principal Investigator and Project Archaeologist performed this task inhouse. A draft report prepared for review by the Department of Antiquities Protection, Texas Historical Commission, the United States Forest Service, and Famcor Oil, Inc. A copy of the report, all notes, shovel test forms, and other records are on file at Brazos Valley Research Associates.

Table 1. Shovel Tests Per Well Pad

Well Pad	Shovel Test Numbers	Comments
B-2	19, 20, 21, 22	highly disturbed area due to logging.
B-3	7, 8, 9, 10	highly disturbed area due to logging.
B-4	31, 32, 33, 34	very disturbed due to former gravel pit.
C-3	2	highly disturbed; plugged well; very little soils left.

RESULTS AND CONCLUSIONS

This survey did not locate any prehistoric sites or significant historic sites within the project area. Much of the area surveyed had been previously disturbed through logging, gravel quarrying, and previous well and access road construction. The mining of gravel in this area appears to be extensive based on the presence of at least five gravel pits on the section of the topographic quadrangle surrounding the project area.

Mussel shell was noted at two locations. The first location was approximately 20 meters east of the gate on the Forest Service road that leads to well pad C-3. One small mussel shell fragment was found in the roadway. It is assumed that this shell was brought in with fill material used in the road construction. The second area in which mussel shell was encountered was on a severely deflated sandy surface at the tank batteries and collection system, approximately 50 meters west of the pipeline route where it intersects the collection facility. Three mussel shell fragments were observed. Since no cultural materials were found in association with the shell, there is not enough evidence to identify these areas as prehistoric sites.

The only indication of earlier historic activity observed was the remains of an old railroad grade that passes north south and crosses the proposed pipeline route between well pads B-4 and C-3. This railroad grade was not recorded as a site. It is depicted on the topographic quadrangle.

Although portions of the project area appears, based on the topographic map, to be likely settings for prehistoric sites, the lack of such sites could be, in part, due to the shallow, moderately well drained soils with slow to medium runoff (see Environmental Setting above). The archival research conducted for this and other projects in the Sam Houston National Forest indicates that prehistoric sites in the area are typically found on landforms with deep well-drained sandy soils such as 41SJ48 south of the current project area, located by Brazos Valley Research Associates (Moore 1993b), and 41SJ49 west of the project area on a sandy ridge above the floodplain of the East Fork of the San Jacinto River located by Corbin (1994). Site 41SJ48 is on a sandy ridge in Splendora very fine sandy loam (SpA) as defined by McEwen et al. 1988:11), and site 41SJ49 is believed by Corbin to be in Doucette loamy fine sand (DoB). Both site areas contained sandy loam to depths of at least 90 centimeters.

An apparent lack of a permanent water source in part of the project area may be another reason for the absence of sites in the area surveyed. The combination of a lack of natural springs in the area, as stated by Mr. Hughart, and the fact that much of this area is drained by intermittent streams that contain only seasonal flow should be considered.

RECOMMENDATIONS

No significant cultural resources were found during the archaeological survey documented in this report. It is, therefore, recommended that Famcor Oil, Inc. be allowed to proceed with construction as planned. The presence of an archaeologist to act as monitor during the construction phase is not considered necessary. There is always the possibility that cultural materials or features are missed during the course of any archaeological survey. Should the presence of cultural materials not discussed in this report be discovered during construction, the client is advised to cease work and contact the State Historic Preservation Officer immediately. In addition, the Forest Service archaeologist should be advised of the situation.

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Appendix I: Shovel Test Log

Test	Date	Depth	Diameter	Results
01	10-12-96	30 cm	30 cm	sterile
02*	10-12-96	30 cm	30 cm	sterile
03	10-12-96	30 cm	30 cm	sterile
04	10-12-96	20 cm	30 cm	sterile
05	10-12-96	05 cm	30 cm	sterile
06	10-12-96	05 cm	30 cm	sterile
07*	10-12-96	58 cm	30 cm	sterile
08*	10-12-96	50 cm	30 cm	sterile
09*	10-12-96	30 cm	30 cm	sterile
10*	10-12-96	40 cm	30 cm	sterile
11	10-13-96	40 cm	30 cm	sterile
12	10-13-96	40 cm	30 cm	sterile
13	10-13-96	50 cm	30 cm	sterile
14	10-13-96	50 cm	30 cm	sterile
15	10-13-96	20 cm	30 cm	sterile
16	10-13-96	20 cm	30 cm	sterile
17	10-13-96	40 cm	30 cm	sterile
18	10-13-96	10 cm	30 cm	sterile
19*	10-13-96	10 cm	30 cm	sterile
20*	10-13-96	20 cm	30 cm	sterile

Test	Date	Depth	Diameter	Results
21*	10-13-96	10 cm	30 cm	sterile
22*	10-13-96	40 cm	30 cm	sterile
23	10-13-96	30 cm	30 cm	sterile
24	10-13-96	50 cm	30 cm	sterile
25	10-13-96	30 cm	30 cm	sterile
26	10-13-96	30 cm	30 cm	sterile
27	10-13-96	30 cm	30 cm	sterile
28	10-13-96	40 cm	30 cm	sterile
29	10-13-96	30 cm	30 cm	sterile
30	10-13-96	20 cm	30 cm	sterile
31*	10-13-96	20 cm	30 cm	sterile
32*	10-13-96	20 cm	30 cm	sterile
33*	10-13-96	10 cm	30 cm	sterile
34*	10-13-96	20 cm	30 cm	sterile

* well pad location