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**ARCHAEOLOGICAL SURVEY
OF THE PROPOSED
VAN ZANDT COUNTY
WATER PIPELINE ROUTE,
VAN ZANDT COUNTY, TEXAS**

Jesse Todd, MS, MA

Prepared for:

RESOURCE MANAGEMENT AND CONSULTING COMPANY

P. O. Box 6038
Paris, Texas 75461

Prepared by:

AR CONSULTANTS, INC.
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Cultural Resources Report 2007-48
September 19, 2007

HISTORIC BUILDINGS

ARCHAEOLOGY

NATURAL SCIENCES

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ABSTRACT

During the middle of September 2007, AR Consultants, Inc. conducted an intensive pedestrian archaeological survey of approximately 4.31 miles of proposed water pipeline route which is to be constructed by the Golden Water Supply Corporation. The archaeological survey was done for Resource Management and Consulting Company which is doing the environmental permitting. The proposed pipeline route is located approximately 1.25 miles northeast of Grand Saline in Van Zandt County, Texas. This upland route crosses four upland ridges and the headwaters of four unnamed, intermittent tributaries. Part of the route parallels an abandoned railroad route and half of the route parallels farm-to-market roads. Surface visibility in the upland area was good and the subsoil was generally shallowly buried or was exposed on the surface. All of the pipeline route, except for the portion of the route adjacent to the railroad, was surveyed for cultural resources. Shovel testing was done where ground visibility was less than 50 percent but not along roads where surface exposure was good and the ground had been disturbed from road construction and buried telephone cable in places.

No cultural resources were seen on the ground surface or found in 12 shovel tests. The absence of cultural resources is attributable to the lack of perennial water. Although roads and the railroad are present, no historic sites were observed and recorded. Based upon the absence of archaeological sites, AR Consultants, Inc. recommends that Golden Water Supply Corporation be allowed to construct the pipeline. In addition, we recommend that if buried cultural materials are found during construction, work should stop in that area immediately and the Archeology Division of the Texas Historical Commission should be notified. Work should not continue until discussions with the Texas Historical Commission have been concluded.

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r-arc GrandSaline

INTRODUCTION

The Golden Water Supply Corporation intends to construct approximately 4.31 miles of water pipeline route approximately 1.25 miles northeast of Grand Saline in Van Zandt County, Texas. During the middle of September 2007, archaeologists from AR Consultants, Inc. conducted an intensive pedestrian archaeological survey of the proposed pipeline route for Resource Management and Consulting Company which is doing the environmental permitting for the Golden Water Supply Corporation. The proposed pipeline route is divided into three connected portions (Figure 1). The first portion begins south of and parallel to FM 1815 approximately 2,865 feet east of the intersection of FMs 1815 and 1829 and runs southwest to the intersection. The route then continues southwest for approximately 2,160 feet southwest of the intersection. At this point, the proposed route crosses an existing railroad berm and departs FM 1829 and parallels the northwest side of the railroad berm for about 2,365 feet. The route then crosses the berm going east for approximately 725 feet before turning south for about 1,185 feet where it terminates. The second portion begins approximately 950 feet southwest of the intersection of the railroad berm and FM 1829. The route runs at an angle to FM 1829 where it turns south and terminates approximately 1,545 feet north of Rodgers Cemetery. The third portion parallels FM 1829 on the east side and begins approximately 2,920 feet north of Rodgers Cemetery, runs south and terminates about 2,980 feet south of the cemetery. It should be noted that FM 1829 runs in a large U-shaped pattern so that the proposed pipeline route encounters it twice (Figure 1).

The archaeological survey was done after a request from the Texas Historical Commission dated August 24, 2007. The portion of the pipeline route along the old railroad berm was excluded from the survey. Although portions of the area were surveyed in 1971, the archaeological survey standards today are much stricter and the 1971 survey was for a lake and not an upland pipeline route.

The scope of the project included a records review and a summary of fieldwork done in the surrounding area, a field survey of the possible site situations, and a final report. This report was written in accordance with report guidelines adopted by the Texas Historical Commission, Archeology Division, and developed by the Council of Texas Archeologists (ND). The following report contains a brief of the natural environment and then a summary of previous investigations in the area as known from published sources. This is followed by a research design and methodology and a description of the field findings. The last chapter presents recommendations that arise from the survey. A list of references cited concludes the report.

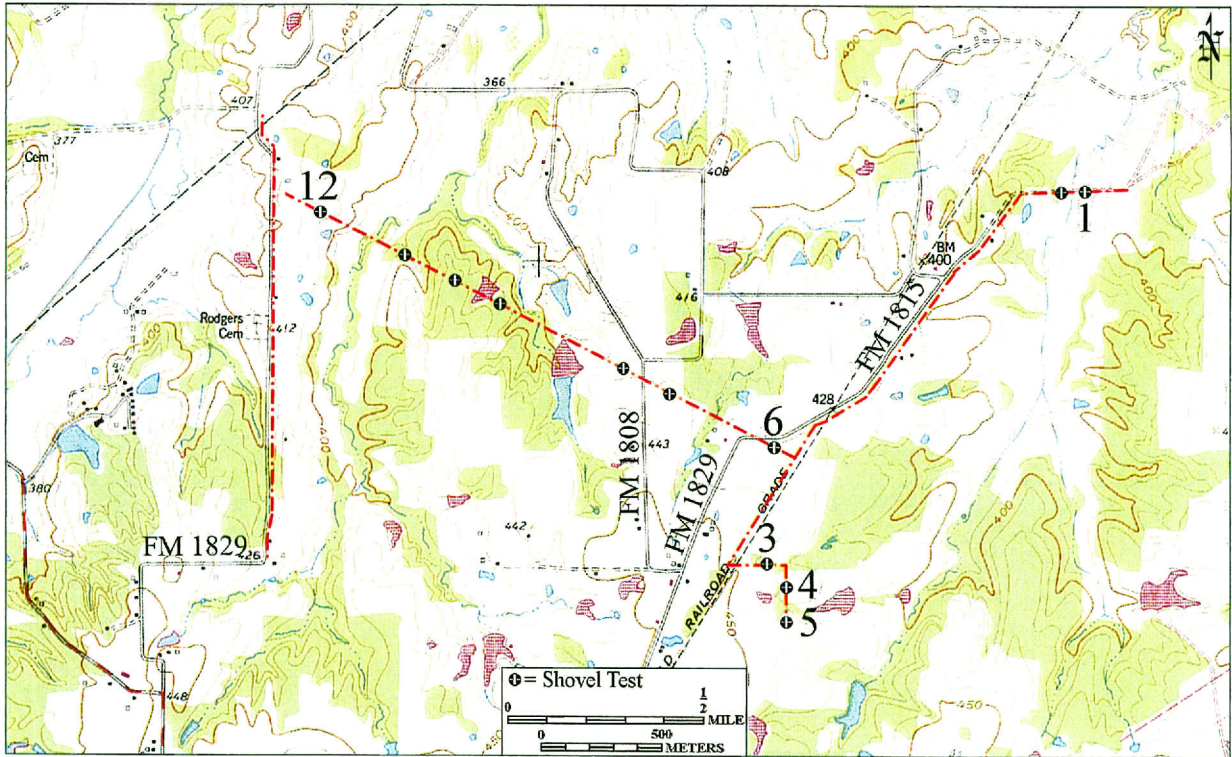


Figure 1. Proposed pipeline route and shovel test locations plotted on a portion of the Grand Saline, Texas 7.5' USGS map.

Administrative Information:

Sponsor:	Golden Water Supply Corporation with Resource Management and Consulting Company doing the environmental permitting
Principal Investigator:	Jesse Todd, MS, MA
Field Crew	Jeff Craver and Todd
Fieldwork Dates:	September 13, 2007
Project Man-days:	2
Acres Surveyed:	26.16
Sites Recorded:	none

NATURAL ENVIRONMENT

Van Zandt County lies within the Western Coastal Plain, Texas Claypan Area and the Texas Blackland Prairie. The topography ranges from gently undulating to rolling. Soils formed under timber and savannahs are generally lighter in color than those formed under prairie grasses. Numerous creeks and streams drain the area. Streams north of Canton and Wills Point flow north into the Sabine River while streams west of Wills Point and Canton drain into the Trinity River. Streams in the southeastern part of the county flow into the Neches River (Stringer 1998:1).

The underlying geology of the entire area is the undivided Wilcox Group which is an Eocene age formation (Bureau of Economic Geology 1965). This formation is composed of mostly silty and sandy clay.

The soils in the immediate area are categorized as belonging to the Woodtall-Freestone Soil Association (Stringer 1998: General Soil Map). The Woodtall-Freestone Soil Association contains very gently to sloping upland loams. The surface soils usually are loams that have a clay subsoil, and the subsoil becomes less clayey with depth. The Woodtall and Freestone soils formed under post oak, red oak, blackjack oak, hickory, sweetgum and elm trees (Stringer 1988:5). Specific soils along the proposed pipeline route consist of Freestone sandy loam with 1 to 3 percent slopes, frequently flooded Nahatche loam and Woodtall loam with 2 to 5 and 5 to 12 percent slopes (Stringer 1988:Sheets 10 and 11). The E horizon for the Freestone and Woodtall series is at 5 inches (12.5 cm) below the ground surface while the subsoil for the Freestone series is 16 inches (40 cm) and for the Woodtall is 8 inches (20 cm) below the ground surface (Stringer 1988:67, 80-81). The drainage crossed by FM 1815 and the closest one southeast of FM 1829 contain frequently flooded Nahatche loam and its subsoil is listed as being (20 cm) below the ground surface (Stringer 1988:72).

All drainages present within the study area are mapped as intermittent and the proposed pipeline route crosses their headwaters close to their mapped origins.

The study area is located in the Mixed Pine-Hardwood Forest plant community which is part of the Piney Woods region of northeast Texas (Diamond, Riskind, and Orzell 1987: Figure 1). Major timber trees are pine, oak, hickory, cedar elm, and sweet gum. Other hardwood associations are found in low, wet bottomlands. Understory vegetation includes green briar, sumac, poison ivy, yaupon, wild grape, crape myrtle, dogwood, and many other species. This is in the Austroriparian biotic province (Blair 1950: 99). The province also contains 47 mammal species, 29 snake, 10 lizard, 2 land turtles, 17 anuran and 10 urodeles species. Five mammal species, 2 snake and 8 urodeles species reach their western limit in this province.

CULTURE HISTORICAL BACKGROUND

The only major archaeological investigation carried out in Van Zandt County was the WPA excavation of the Yarbrough site which is located in the northwestern part of the county just south of the Sabine River (Johnson 1962). In addition, an archaeological reconnaissance of the floodpool for the proposed Mineola Reservoir (Malone 1972) resulted in recording ninety sites but the study indicated that site density decreased as upstream distance increased.

To summarize the archaeology of the area, it has been shown that settlement began some time during the Late Archaic period probably before the time of Christ (Story 1981; Story et al. 1990). In 1975, the Lake Fork Reservoir was surveyed by Southern Methodist University (Bruseth et al. 1977). Of the approximately 27,690 acres surveyed, 109 new recorded prehistoric sites were recorded and 21 prehistoric sites were revisited. The sites ranged in age from circa 6,000 B.C. to A.D. 1500. Thirteen sites were recommended for further research which was done by Bruseth and Perttula (1981). Site types found during excavation consisted of lithic scatters with associated storage pits, and scattered burials to possible residences. Organized cemeteries are indicated but no direct evidence was found. The analyses of the excavated sites indicated that through time, the occupation shifted away from Lake Fork Creek and its tributaries to Caney Creek and its drainages, possibly due to the climate becoming drier and the Blackland Prairie moving eastward. . No evidence of historic Native American settlement has been reported in the immediate area (Perttula 1992:177), although Indian groups are reported in the region during the 1800s.

Historic European settlement began in the early 1800s. The Tyler area, including the study area, was settled well before the Civil War (Thoms 1998, 2000). In fact, the Neches Saline to the south and Steen Saline east of Lindale provided salt for the Trans-Mississippi South during the Civil War. Historic occupation has continued to the present although numerous changes in land use and community organization have occurred over the past one hundred and fifty years.

Previous Investigations

Drainages within the study area were surveyed during the archaeological survey for the proposed Mineola Reservoir (Malone 1972), but no archaeological sites were discovered (Texas Archeological Sites Atlas 2007).

AR Consultants, Inc. (Skinner 2005) conducted an archaeological survey of two ridges west of Grand Saline Creek and south of town of Grand Saline. No archaeological sites were found on the surface or discovered in six shovel tests. Also, AR Consultants, Inc. (Skinner and Kent 2000; Todd 2006, 2007) has conducted two archaeological surveys of pipeline routes that start at Lake Tawakoni in Van Zandt County that run southwest. One site, 41VN8, was monitored during the construction of the pipeline. No significant cultural features or burials were uncovered.

RESEARCH DESIGN & METHODOLOGY

Research Design

The purpose of the research design outlined below was to insure that fieldwork made a contribution to better understanding of prehistoric and historic settlement not only for Van Zandt County, but the State of Texas as well.

It is predicted that prehistoric sites will not be present in the upland due to the significant distance from perennial water. The drainages in the area are mapped as intermittent and close to their headwaters. No evidence of reliable springs is noted on the USGS, SCS or by the earlier lake survey.

Historic sites might be present close to transportation routes, but no residences but no residences older than fifty years are shown on the 1959 Grand Saline, Texas 7.5' USGS map, the proposed pipeline route. Therefore, no historic sites are expected.

Methodology

The area of potential effect for these new lines will be a construction easement that is fifty feet wide. The pipeline will be placed in the center of the easement. It is anticipated that pipes will have three feet of fill over them and the trenches will be four feet deep. The bottom of a trench will be at least six inches wide which is the largest pipe size. Nearly all of the line will be installed in trenches excavated by trenching machines.

In order to address the Research Design questions, the creek crossings and upland areas adjacent to the creeks were surveyed and shovel tested, where appropriate, for evidence of prehistoric occupation as suggested by the Council of Texas Archeologists (2002). The portion of the pipeline route along the railroad berm was not surveyed due to the disturbance of the land during its construction. Based on the depths to the subsoil, backhoe trenching was not done. Shovel tests were excavated to approximately 35 cm below the ground surface due to the upland setting and the loamy soil was screened through a 1/4-inch hardware cloth screen. The pit walls were visually examined for cultural materials. Notes were made on the topography, vegetation, soils, and other relevant material and photographs were taken.

RESULTS

In this portion of the report, the archaeological survey is described as well as the study area. The proposed pipeline route consists of three connected portions and each portion is described separately. Shovel tests are described generally in the text and specific information is provided in Table 1. Shovel test locations are plotted on Figure 1.

From west of and adjacent to FM 1815 to southeast of railroad berm.

The survey began at a fence marking a residence boundary at the east end of FM 1815. The proposed water pipeline route begins here and runs west paralleling FM 1815 on the south side. Vegetation along this portion of the route consisted of oak and hackberry trees and understory vegetation of bermuda grass, saw green briar, berry vines and other grass species. Ground visibility ranged from less than 10 to 100 percent. The ground visibility on the ridge where the pipeline route begins is shown in Figure 2. Eye-height visibility was excellent throughout this portion of the survey.



Figure 2. The excellent ground visibility at the east beginning of proposed water pipeline route. FM 1815 is in the right side of the picture. View is to the west.

No shovel tests were excavated on the ridge because of the excellent ground visibility. However, shovel test 1 was excavated 3 m from the east bank of a mapped unnamed intermittent tributary of Caney Creek and shovel test 2 was dug 3 m from the west bank. The tributary is approximately 2 m wide and 4 m deep. Water was flowing over a sandy,

loamy clay substrate and was less than 0.25 m deep. No buried cultural materials were seen in the vertical creek banks.

Shovel test 1 uncovered 37 cm of sandy loam that contained traces of clay at the bottom of the shovel test, and shovel test 2 encountered 28 cm of clayey loam overlying sandy loam that extended to 35 cm below the ground surface. Both shovel tests were culturally sterile.

From shovel test 2 east to the next ridge, sand had been placed in large piles along the slope; therefore, no shovel tests were excavated. The ground visibility along the second ridge was about 80 percent and no shovel tests were excavated. From the ridge to where the proposed pipeline route encounters the railroad berm, the pipeline route is to be constructed in front of residences. The USGS map shows a residence southwest of the drainage but actually two wooden houses are present and are less than 50 years old. The other houses along FM 1829 also are constructed of wood and are less than 50 years old. No evidence of prehistoric occupation, knappable lithic resources, signature plants or historic structures was seen.

At the railroad berm, the proposed pipeline route continues southwest and parallels the northwest side of the berm. This portion of the route was not surveyed due to the disturbance from construction of the railroad berm.

The proposed pipeline route then turns east crossing the railroad berm and then turns south. Vegetation similar to that already described is present as well as hackberry saplings that have approximately 1 to 2 inch thick trunks. Shovel test 3 was excavated along the pipeline route although most the route had 60 to 80 percent ground visibility from cows walking adjacent to the fence which the route parallels and due to erosion. The shovel test uncovered 36 cm of sandy loam. The proposed route then turns south and two shovel tests (4 and 5) were placed in hay pastures where the ground visibility was less than 20 percent. The shovel tests uncovered 35 and 37 cm sandy loam, respectively. The area between the two hay pastures was extremely eroded and had ground visibility of approximately 90 percent (Figure 3). The sandy loam surface had scattered goethite/limonite rocks with a few pieces of petrified wood covering it.

No cultural materials older than 50 years were seen on the ground surface or found in the five shovel tests during the intensive pedestrian archaeological survey from the beginning of the proposed pipeline route south of and adjacent to FM 1815 to southeast of the railroad berm.

From the railroad berm to FM 1829 north of Rodgers Cemetery.

Survey began at the railroad berm and went northwest. The proposed pipeline route runs northeast of and parallel to a TXU electric transmission line through improved (Figure 4) and unimproved pasture. Vegetation consisted of johnson grass, saw greenbriar, berry vines, snow-on-the prairie and other grass species. Ground visibility ranged from less than 10 to 80 percent. Eye-height visibility was excellent. Although shovel tests were

excavated northeast of the existing transmission line corridor, ridges southwest of the corridor were examined. No cultural materials were seen on the ground surface of the ridges despite the excellent ground visibility (Figure 5).



Figure 3. Eroded area between the two hay pastures after proposed water pipeline route turns south. Note the good to excellent ground visibility. View is to the north.

Seven shovel tests were excavated on benches along the proposed pipeline route where the ground visibility was less than 50 percent. Shovel tests 6 through 10 encountered sandy, loamy clay that ranged from 35 to 41 cm below the ground surface. Shovel test 11 encountered 42 cm of loamy clay and shovel test 12 uncovered 37 cm of mottled loamy clay. All of the shovel tests were culturally sterile.

Three tributaries to Caney Creek were encountered during this portion of the archaeological survey. The drainage between FM 1829 and FM 1808 is approximately 2 m wide and a meter deep. No shovel tests were excavated due to the good ground visibility on both sides of the drainage. The two drainages between FM 1808 and the western FM 1829 ranged from about 2 to 3 wide and 1.5 to 2 m deep. The southeastern drainage was dry while the northeastern one contained ponded water. Both substrates consisted of sandy, loamy clay and goethite/hematite. No buried cultural materials were seen in the vertical banks. These drainages already had been surveyed during the Mineloa Reservoir survey; therefore, no shovel tests were excavated. In addition, ground visibility was good, at least 50 percent, on both sides of the drainages.



Figure 4. Improved pastured between railroad berm and FM 1829. View is to the southeast.



Figure 5. Ground visibility along slopes of ridges along the proposed pipeline route northwest of FM 1829. View is to the southeast.

East side of FM 1829 north and south of Rodgers Cemetery.

This portion of the proposed pipeline route was evaluated based upon its location and the lack of cultural materials found on the surface and in the shovel tests in the other portions of the proposed pipeline route. The proposed pipeline route runs through unimproved and improved pasture as well as in front of two residences. The northernmost residence was constructed of wood while the southern one was built of brick. No locations likely to contain prehistoric archaeological sites or knappable lithic materials were seen. Also, no standing historic features or signature plants were seen. A buried telephone cable runs parallel to FM 1829 on its east side.

Conclusions

No cultural materials were seen on the ground surface or in twelve shovel tests during the archaeological survey of the proposed Van Zandt Water Pipeline route to be constructed. The absence of prehistoric archaeological sites is probably the distance from the Sabine River which is about a mile to the north and the absence of knappable lithic resources. The absence of historic sites is probably due to the narrow width of the pipeline route which usually allows historic structure to be avoided.

Table 1. Shovel test descriptions.

ST No.	Depth (cm)	Description*
1	0-37+	Yellowish-brown (10YR5/4) sandy loam, clay at bottom of ST
2	0-28 28-35+	Very dark grayish-brown (10YR3/2) clayey loam Yellowish-brown sandy loam
3	0-36+	Yellowish-brown sandy loam
4	0-35+	Yellowish-brown sandy loam
5	0-37+	Yellowish-brown sandy loam
6	0-35+	Yellowish-brown sandy loamy clay
7	0-39+	Yellowish-brown sandy loamy clay
8	0-37+	Yellowish-brown sandy loamy clay
9	0-41+	Yellowish-brown sandy loamy clay
10	0-36+	Yellowish-brown sandy loamy clay (moist)
11	0-42+	Yellowish-brown (10YR5/8) loamy clay
12	0-37+	Yellowish-brown loamy clay with 5% strong brown (7.5YR5/8) clay mottling

* Munsell Color Chart Numbers are listed only first time used.

RECOMMENDATIONS

It is AR Consultants, Inc.'s conclusion that no prehistoric or historic (older than 50 years) cultural resources will be impacted as a result of development of the proposed pipeline route. It is consequently recommended that development proceed as planned. Should any archaeological resources be discovered during construction, work should cease in that area and the Archeology Division of the Texas Historical Commission should be contacted. Work should not continue until consultations with the Texas Historical Commission have been completed.

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