



INDEX OF TEXAS ARCHAEOLOGY

Open Access Gray Literature from the Lone Star State

Volume 2015

Article 181

2015

Bear Creek Interceptor Tarrant County, Texas

Molly A. Hall

Follow this and additional works at: <https://scholarworks.sfasu.edu/ita>

 Part of the [American Material Culture Commons](#), [Archaeological Anthropology Commons](#), [Environmental Studies Commons](#), [Other American Studies Commons](#), [Other Arts and Humanities Commons](#), [Other History of Art, Architecture, and Archaeology Commons](#), and the [United States History Commons](#)

Tell us how this article helped you.

This Article is brought to you for free and open access by the Center for Regional Heritage Research at SFA ScholarWorks. It has been accepted for inclusion in Index of Texas Archaeology: Open Access Gray Literature from the Lone Star State by an authorized editor of SFA ScholarWorks. For more information, please contact cdsscholarworks@sfasu.edu.

Bear Creek Interceptor Tarrant County, Texas

Creative Commons License



This work is licensed under a [Creative Commons Attribution-NonCommercial 4.0 International License](https://creativecommons.org/licenses/by-nc/4.0/)

AR Consultants, Inc.

Archaeological and Environmental Consulting
805 Business Parkway, Richardson, Texas 75081
Phone: (214) 368-0478
Fax: (214) 221-1519
E-mail: arcdigs@aol.com

AN ARCHAEOLOGICAL SURVEY OF THE PROPOSED

BEAR CREEK INTERCEPTOR

TARRANT COUNTY, TEXAS

Texas Antiquities Permit Number 7119

By:

Molly A. Hall, MA
Principal Investigator

Prepared for:

ALAN PLUMMER ASSOCIATES, INC.
1320 S. University Drive, Suite 300
Fort Worth, Texas 76107

Prepared by:

AR CONSULTANTS, INC.
805 Business Parkway
Richardson, Texas 75081

Cultural Resources Report 2015-05
January 14, 2015

ARCHAEOLOGICAL SURVEY OF THE BEAR CREEK INTERCEPTOR

AN ARCHAEOLOGICAL SURVEY OF THE PROPOSED

BEAR CREEK INTERCEPTOR

TARRANT COUNTY, TEXAS

Texas Antiquities Permit Number 7119

By:

Molly A. Hall, MA
Principal Investigator

Prepared for:

ALAN PLUMMER ASSOCIATES, INC.
1320 S. University Drive, Suite 300
Fort Worth, Texas 76107

Prepared by:

AR CONSULTANTS, INC.
805 Business Parkway
Richardson, Texas 75081

Cultural Resources Report 2015-05
January 14, 2015

ABSTRACT

The Trinity River Authority is proposing to construct the 5.1-mile long Bear Creek Interceptor in Tarrant County, Texas. The north end of the pipeline is in Grapevine's Parr Park and the route follows Big Bear Creek through Wall-Farrar Nature Park, Bear Creek Park, across TX 360 and TX 121, through D/FW Airport property, and terminates on the south in the Hyatt Bear Creek Golf Course. AR Consultants, Inc. (ARC) was contracted to survey the route and conducted the survey December 30, 2014 and January 8, 2015. Though the route crosses two previously recorded sites (41TR24 and 41TR26), no evidence of these sites was found in the field.

No prehistoric or historic archaeological sites were found during the survey. This follows the predictions made prior to field work which were based on the project area's location in the Big Bear Creek floodplain. Given the results of this survey, AR Consultants, Inc. recommends that further cultural resource investigations are unnecessary for this project, and requests that the Texas Historical Commission concur with this recommendation.

TABLE OF CONTENTS

Abstract..... i
 Table of Contents..... ii
 List of Figures..... ii
 Introduction..... 1
 Natural Environment..... 4
 Culture History..... 5
 Research Design & Methodology..... 8
 Results..... 9
 Recommendations..... 24
 References Cited..... 25

LIST OF FIGURES

Figure 1. The Bear Creek Interceptor route and the Wall-Farrar Nature Park survey area shown on a portion of the Euless and Grapevine, TX 7.5' USGS topographic maps.....2
 Figure 2. The pipeline route through Parr Park, facing east.....9
 Figure 3. The proposed Bear Creek Interceptor, 75-ft ROW, Wall-Farrar Nature Park survey area, previously recorded sites, and ST01-06 locations shown on a recent aerial photograph.10
 Figure 4. The proposed Bear Creek Interceptor, 75-ft ROW, previously recorded sites, and ST07-13 locations shown on a recent aerial photograph.11
 Figure 5. The proposed Bear Creek Interceptor, 75-ft ROW, previously recorded sites, and ST13-31 locations shown on a recent aerial photograph.12
 Figure 6. The proposed Bear Creek Interceptor, 75-ft ROW, previously recorded sites, and ST31-49 locations shown on a recent aerial photograph.13
 Figure 7. The proposed Bear Creek Interceptor, 75-ft ROW, previously recorded sites, and ST50-56 locations shown on a recent aerial photograph.14
 Figure 8. The pipeline route through Bear Creek Park, facing east.15
 Figure 9. Typical combination of vegetation and disturbance in the northern portion of the project area, facing east.....16
 Figure 10. Modern dump area between Big Bear Creek and Euless Grapevine Road, along the edge of site 41TR24.....16
 Figure 11. Two-track road that generally parallels the pipeline route between Euless-Grapevine Road and Mid Cities Boulevard, facing west.17
 Figure 12. An example of a concrete-lined, unmapped tributary of Big Bear Creek, facing northeast.18
 Figure 14. The pipeline route through the Hyatt Bear Creek Golf Course, facing north. The proposed pipeline will run between the fence and the cart path, parallel to existing pipelines.19
 Figure 15. Little Bear Creek just upstream from its confluence with Big Bear Creek, facing northwest.19

LIST OF TABLES

Table 1. Shovel Test Descriptions. 20

r-arc: Bear Creek Interceptor (141204)

INTRODUCTION

The Trinity River Authority is proposing to construct the 5.1-mi-long Bear Creek Interceptor in Tarrant County, Texas. The route will parallel an existing pipeline and has a 75-ft right-of-way (ROW). The route runs through 0.3 mi of Parr Park in Grapevine and continues southeast for 0.3 miles before crossing 0.3 miles of Wall-Farrar Park. From there, the route heads east across TX 121 and within 0.4 mi it continues southeast through Bear Creek Park for 0.5 mi and then turns due east to cross TX 360. The remaining 3.3 mi of the route runs southeast between TX 360 and Big Bear Creek. A 0.5 mi portion of this final leg runs through D/FW Airport Property and 0.7 mi of the leg runs through Hyatt Bear Creek Golf Course (Figure 1).

AR Consultants, Inc. (ARC) was contracted to conduct a cultural resource survey, which included archival research, to determine the prehistoric and historic archaeological presence in along the pipeline route. In the scope of work dated December 17, 2014, ARC recommended that entire route except for where it crosses Wall-Farrar Nature Park, which was surveyed by ARC in February 2014, be intensively surveyed and systematically shovel tested. The Texas Historical Commission agreed with this survey strategy. The cultural resource survey was conducted on December 30, 2014 and January 8, 2015.

The cultural resource investigation was required because the Trinity River Authority is a State entity and Texas Antiquities Permit Number 7119 was issued for the archaeological survey. Relevant legislation includes the Antiquities Code of Texas (Texas Natural Resource Code, Title 9, Chapter 191). The Archeology Division of the Texas Historical Commission will review this report on behalf of the State.

This report is written in accordance with report guidelines adopted by the Archeology Division of the Texas Historical Commission, and developed by the Council of Texas Archeologists (n.d.). The following report presents a brief description of the natural setting of the project area, followed by a discussion of the culture history and previous investigations in the region surrounding the study area. A chapter on the research design and methodology employed in the investigation is then followed by the results of the field investigation. The report concludes with recommendations followed by the references cited.

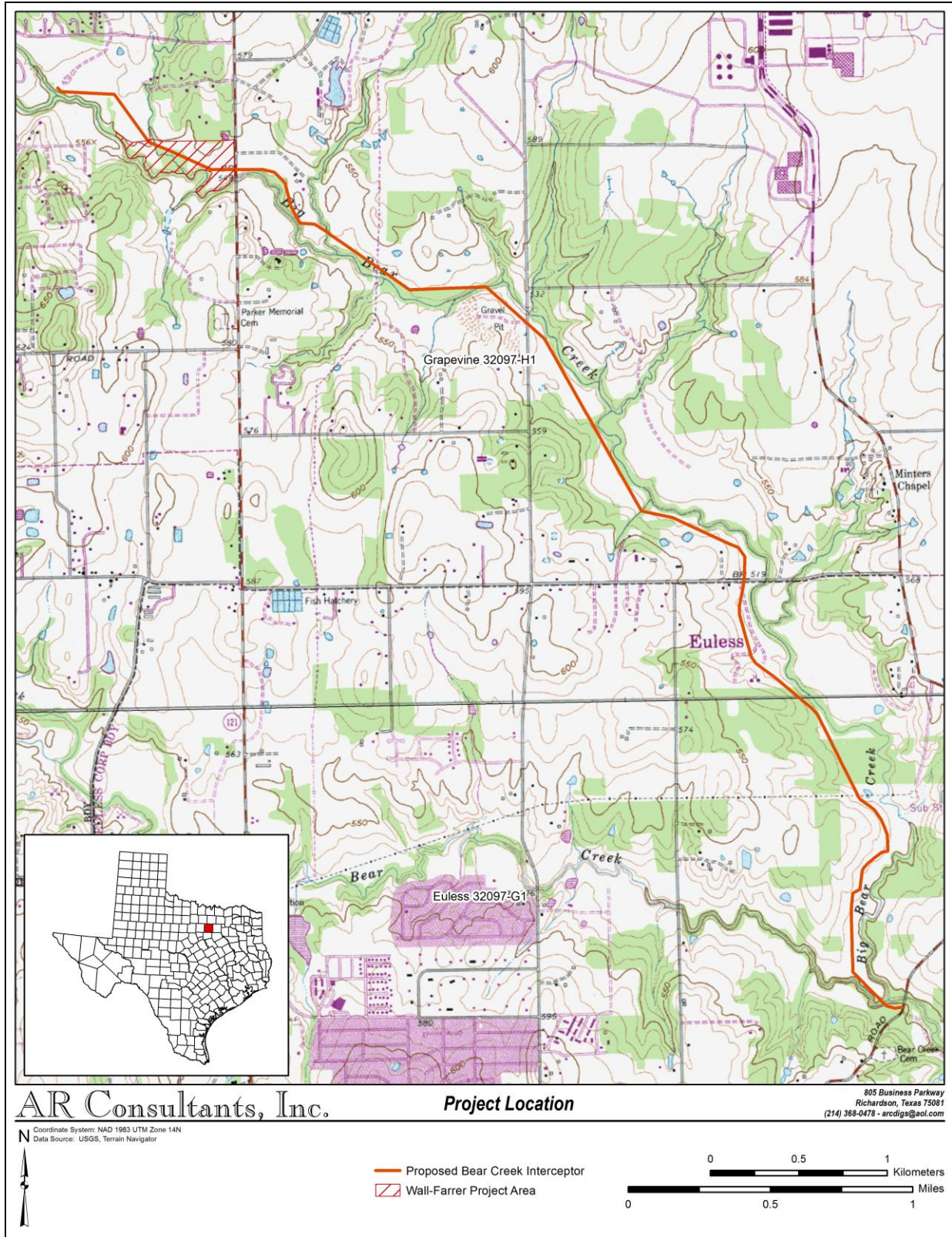


Figure 1. The Bear Creek Interceptor route and the Wall-Farrar Nature Park survey area shown on a portion of the Euless and Grapevine, TX 7.5' USGS topographic maps.

Administrative Information:

Sponsor: Trinity River Authority
Review Agencies: Archeology Division of the Texas Historical Commission
Principal Investigator: Molly A. Hall, MA
Field Crew: Nick Coleman, Molly Hall, Kandi Doming, and Katy Pocklington
Survey Dates: December 30, 2014 and January 8, 2015
Field Days: 8
Acres Surveyed: Approximately 47
Sites Recorded: None
Sites Revisited: 41TR24, 41TR26 (prehistoric)
Curation Facility: Records curated at TARL, no artifacts collected

NATURAL ENVIRONMENT

The project area straddles the divide between the Eastern Cross Timbers and Northern Blackland Prairie Ecoregions of Texas (Griffith et al. 2007). The Cross Timbers Ecoregion is a transitional zone between the prairie to the west and the forested, low hills to the east, while the Blackland Prairie was once an expanse of rolling tallgrass prairie. This region features low, stair-step hills and plains (Bureau of Economic Geology 1996).

The northern 1.8 miles of the proposed pipeline route is located almost completely within the Big Bear Creek floodplain before crossing Big Bear Creek and continuing roughly parallel to and in between TX 360 and Big Bear Creek. The remaining 3.3 miles skirts the edge of the floodplain and adjacent terrace soils. The route also crosses three unnamed, perennial tributaries of Big Bear Creek, and Little Bear Creek approximately 50 m from its confluence with Big Bear Creek.

The geology of the project area is anchored by the Upper Cretaceous-aged Woodbine Formation (Bureau of Economic Geology 1988). This formation consists mostly of sandstone with some clay and shale. Most of the pipeline route (3.1 miles) is mapped as Whitesboro loam, frequently flooded (Ressel 1981:Sheet 13). Whitesboro loam has a 26-inch-thick A horizon of dark grayish brown loam above the dark grayish brown loam B horizon. Over 1.25 discontinuous miles of the route cross Silawa fine sandy loam with 3- to 8-percent slopes. The Silawa series is an upland soil formed on ancient stream terraces and has a 6-in-thick A horizon above a red clay loam B horizon. The rest of the route is mapped on small segments of Bastsil, Crosstell, and Gasil fine sandy loams with 1- to 8-percent slopes as well as loamy Arents. Bastsil, Crosstell, and Gasil are upland soils with surface layers of pale brown to brown loam to a depth of 4-11 inches underlain by moist, yellowish red or brown clay. The Arents soil constitutes highly disturbed sediments, typically gravel quarries.

CULTURE HISTORY

A prehistoric chronology, based on Prikryl (1990), with an added historic period, for North Central Texas is presented below to provide the reader with a temporal framework for the culture history of the region.

Historic European	A.D. 1800 to Present
Protohistoric	A.D. 1600 to A.D. 1800 (Historic Native American)
Late Prehistoric	A.D. 700 to A.D. 1600
Late	A.D. 1400 to A.D. 1600
Middle	A.D. 1000 to A.D. 1400
Early	A.D. 700 to A.D. 1000
Archaic	6,000 B.C. to A.D. 700
Paleoindian	ca. 11,000 B.C. to 6,000 B.C.

The Paleoindian period is characterized as having small, nomadic bands of hunter-gatherers whose primary emphasis was the exploitation of now-extinct megafauna, such as mammoth and bison. Smaller game and plant gathering likely supplemented the Paleoindian diet (Meltzer and Bever 1995:59). As such, the archaeological record for the region consists of several distinctive styles of projectile points, such as the Clovis, Plainview, and Folsom. Currently, no Clovis points have been reported in Tarrant County, but numerous have been found in the surrounding counties (Bever and Meltzer 2007:67-70). Subsistence patterns began to change as a general drying climatic trend swept the region, leading to extinction of many of the area's large mammals toward the end of the Paleoindian period.

The Archaic period is characterized by increased alluviation of water channels and a generally wetter environment than the previous period. This change in climate resulted in modification of Native American subsistence patterns, with broad exploitation of bottomland food resources. This, in turn, resulted in clusters of seasonal settlements along large drainages, including the Trinity River and its various forks and tributaries, and a marked increase in population density. With the advent of repeated, seasonal occupation of sites along drainages came a perceived increase in territorial constrictions among different groups in the region, with several authors citing the limited use of regional lithic resources as evidence of this trend (Skinner 1981; Prewitt 1983).

The Late Prehistoric period is interpreted as a dryer period, with a focus on procurement of faunal resources, agriculture, and food preservation. The appearance of pottery and the bow and arrow help date artifact assemblages to this period (Shafer 1977). The Protohistoric period is characterized by Native American abandonment of north central Texas in the period around 1500/1600, with almost no archaeological evidence found in the region dating to this time (Skinner 1988).

The Historic European period saw widespread Anglo settlement of north central Texas beginning in the 1830s. This expansion often resulted in brutal conflicts between settlers and nomadic bands of Native Americans (Garrett 1972:24). These early conflicts gave way to various Anglo

strategies aimed at cohabitation, including peace treaties signed as early as 1843. Eventually, the entirety of north central Texas was settled, with numerous Anglo military installations established in the region. The earliest Anglo settlements in Tarrant County were Bird's Fort, established around 1840, and Lonesome Dove, settled in 1845. Lonesome Dove, located near present-day Grapevine, was the first permanent settlement in Tarrant County (Garrett 1972:55). Only 150 families and single pioneers took advantage of the Peters Colony land grants to settle in Tarrant County (Garrett 1972:57). Many of the families that obtained land through these grants maintained and farmed their land well into the mid-twentieth century.

After Texas became part of the United States in 1845, peace was short lived. The Civil War took its toll on the north central Texas population, as most of the able-bodied men left to fight for the Confederacy. Tarrant County continued to grow and prosper after the war. Fort Worth was spurred by growth of the cattle industry and the arrival of the Texas and Pacific Railway in 1876. By 1870, it is estimated that 300,000 head of cattle had been driven through Fort Worth and the primary industry throughout Tarrant County was agricultural into the 20th century. This industry was replaced by manufacturing soon after the Great Depression. Defense factories built near Grand Prairie for the development of goods for World War II attracted those seeking work. From the 1940s onward, many factories in Tarrant County continued to produce a wide variety of products, including airplanes, helicopters, mobile homes, electronics, and plastics. The development of DFW International Airport, and increased manufacturing and industrialization in the communities of Arlington, Euless, and Fort Worth, in the 1970s led to a rapid rise in the population of the surrounding communities.

Previous Investigations

Several archaeological investigations have been conducted within the Big Bear Creek Watershed. Many of the surveys found no archaeological sites (Hall 2014, Moir 1991; Skinner 1999; Whorton and Skinner 1993). The surveys which resulted in recording of sites are detailed below. During these investigations, sites ranging in time from the Paleoindian to the Historic Period have been recorded.

In 1982, Prikryl directed a survey of the Bear Creek drainage and recorded 24 new sites and revisited 10 previously recorded sites (1990). All of these sites were located on the first terrace above the narrow floodplain and contained deposits ranging in age from Paleoindian to Late Prehistoric II, with Late Archaic sites being the most common. Four of the revisited sites (41TR24-27) are within 200 m of the current project route. Site 41TR24, a thin, very disturbed lithic scatter, has been bisected by TX 360. The current project area barely nicks the northeast side of the site boundary determined in 1979. Site 41TR25, which consists of lithic debitage and burned sandstone, comes within 10 m of the project area, but is now completely beneath TX 360. Site 41TR26 consists of lithic debitage and burnt rocks. In 1983, this site was reported as mostly damaged by the construction of warehouses. This complex of buildings is still present across most of the site. Site 41TR27 is located approximately 170 m northwest of the northern end of the pipeline route and consists of a lithic deposit on a terrace at the confluence of Big Bear Creek and one of its unnamed, perennial tributaries. By 1980, site 41TR27 was essentially destroyed by housing development construction. Site 41TR82 is a sparse lithic scatter with two pieces of historic ceramic. Prikryl reported that the site was heavily damaged in 1985. Not much is known

about site 41TR83 except that lithic debitage was found in shovel tests and it is now overlain by TX 360.

In 1992, C. Reid Ferring conducted test excavations at 41TR21, located approximately 180 m east of (and across Big Bear Creek from) the central portion of the current project area. This multicomponent prehistoric site is located on a terrace approximately 1.7 meters above the Big Bear Creek floodplain. The site deposits are stratified remains of Late Archaic and Late Prehistoric occupations as indicated by chipped stone, ground stone, and ceramic artifacts.

ARC surveyed 1,210 acres of DFW airport property that was mostly in the Bear Creek Watershed (Shelton et al. 2008). This survey resulted in recording 23 archaeological sites, most of which had been disturbed and, therefore, were not recommended eligible for the NRHP. The prehistoric Armadillo site (41TR219), which is located in the uplands overlooking Bear Creek, and historic Morgan Hood Survey Pioneer Cemetery (41TR221) required further testing; however, both were ultimately determined ineligible. Based on the results of the surveys detailed above, it appears that prehistoric archaeological sites in the area tend to occur on terraces out of the floodplain or in uplands adjacent to tributaries.

In February 2014, 30 acres were surveyed by ARC for the future Wall-Farrar Nature Park (Hall 2014). Most of this property is in the Big Bear Creek floodplain and no sites were recorded. The Bear Creek Interceptor runs through this property for 530 meters.

Six historic maps dating from 1894 to 1959 were reviewed prior to the survey and no structures or features were mapped within the proposed Bear Creek Interceptor ROW (TSHD 1936, 1958; USDA 1920; USGS 1894, 1959a, 1959b). Additionally, no structures are visible in the project area on recent aerial photos.

RESEARCH DESIGN & METHODOLOGY

Research Design

Based on the research conducted prior to the survey, two hypotheses were developed. First, it was hypothesized that it is unlikely to encounter prehistoric archaeological sites along most of the route. This is because most of the route lies within or along the margins of the Big Bear Creek floodplain where there is no protection from seasonal flooding. However, the portions of the route where it crosses terrace soils has potential for prehistoric sites, as evidenced by several prehistoric sites that have been recorded previously on the first terrace of Big Bear Creek.

It was predicted that there will not be much evidence of sites 41TR24 or 41TR26. The current survey area barely overlaps the edges of these sites, as mapped in 1979 and 1983, respectively. These sites were reported by Prikryl as heavily disturbed (1990) and recent aerial photographs show several trails cutting through 41TR24 and a warehouse complex atop 41TR26.

The second hypothesis states that there was low potential for encountering historic sites in the project area. There are no structures or features shown on the historic maps in the project area and residential features are not expected to have been built in floodplains. However, historic trash scatters may be located in the drainages or where the route crosses historic roads.

Methodology

Survey was conducted in accordance with the standards set forth by the THC (n.d.). Field personnel walked the entire pipeline route (except for where it crosses Wall-Farrar Nature Park) in a single transect 23 meters wide. Shovel tests were placed every 100 m where ground visibility was below 30 percent and where slopes were less than 20 percent. Shovel tests averaged 30 cm in diameter. All sandy and loamy soils were screened through ¼" screens. The clay fill was inspected visually and broken into smaller chunks in order to determine if cultural materials were present. Shovel test matrices were described on the basis of composition, texture, and color. The Munsell Soil Color Chart (2009) was used to identify soil colors. Field personnel made notes about the ground exposure, drainages, soil types, and disturbed areas where subsoil was exposed. Photographs were taken during the survey using a GPS-equipped digital camera. Shovel test and project boundary locations were marked with a handheld GPS receiver.

RESULTS

This chapter is divided into two sections. The first describes the project area's natural setting along with results of the pedestrian survey. Conclusions derived from the survey close the chapter. Shovel tests are described generally throughout the text and are detailed in Table 1 at the end of the Survey Results section.

Survey Results

The vegetation in the wooded portions of the route are dominated by hackberry, oak, juniper, and pecan trees along with grasses, greenbrier, and other vines. Generally, the ground visibility in these areas is zero percent due to the grasses and fallen leaves. Exceptions are described below. In total, 56 shovel tests (ST) were excavated in areas with less than 30-percent ground visibility and areas that were relatively undisturbed (Figures 3-7). The northern end of the route is in Parr Park and runs between a housing development and a hike/bike trail (Figure 2). Six shovel tests were excavated in this section of the route (Figure 3 and Table 1). ST01, 02, and 04 revealed thick deposits (110-135 cm) of silty sand and sandy loam, whereas ST05 and 06 reached very dark grayish brown to dark brown mottled clay anywhere from 50-90 cm below the surface (cmbs). No artifacts were found in this portion of the route. The route then passes through Wall-Farrar Nature Park, which was surveyed by ARC in February 2014 (Hall 2014). No cultural resources were identified during this recent survey.



Figure 2. The pipeline route through Parr Park, facing east.

Image intentionally
omitted by author

Figure 3. The proposed Bear Creek Interceptor, 75-ft ROW, Wall-Farrar Nature Park survey area, previously recorded sites, and ST01-06 locations shown on a recent aerial photograph.

Image intentionally
omitted by author

Figure 4. The proposed Bear Creek Interceptor, 75-ft ROW, previously recorded sites, and ST07-13 locations shown on a recent aerial photograph.

Image intentionally
omitted by author

Figure 5. The proposed Bear Creek Interceptor, 75-ft ROW, previously recorded sites, and ST13-31 locations shown on a recent aerial photograph.

Image intentionally
omitted by author

Figure 6. The proposed Bear Creek Interceptor, 75-ft ROW, previously recorded sites, and ST31-49 locations shown on a recent aerial photograph.

Image intentionally
omitted by author

Figure 7. The proposed Bear Creek Interceptor, 75-ft ROW, previously recorded sites, and ST50-56 locations shown on a recent aerial photograph.

The pipeline route then crosses TX121 and parallels Big Bear Creek and TX360. ST07 and 08 were dug in the small, wooded area between TX 121 and the warehouse complex that was built on site 41TR26. These two shovel tests revealed dark clay on the surface. ST09 and 10 were excavated along the west and south edges of site 41TR26. Both shovel tests exposed various layers of mottled clay with some sand. No evidence of the site was found. ST11 exposed a layer of dark yellowish brown sandy loam above various dark clays, reaching the water table near 60 cmbs. The route then crosses the existing Bear Creek Park including two baseball diamonds, manicured lawns, and a walking bridge (Figure 8). No shovel tests were excavated in this portion of the route because of the existing disturbances or ground visibility greater than 60 percent (Figure 9). ST 12 was excavated just west of where the route crosses TX 360 and where ground visibility and disturbances decreased. It revealed 38 cm of dark yellowish brown sandy loam above black, compact clay. ST13 was excavated on the north side of Big Bear Creek and on the east side of TX 360, showing 80 cm of brown sandy loam.



Figure 8. The pipeline route through Bear Creek Park, facing east.

The property between Big Bear Creek and Eules Grapevine Road has been used as a dump since at least the late 1980s (Prikryl 1990:113). The area is crisscrossed with dirt roads and has piles of shingles, cardboard, wood, and other modern trash strewn about (Figure 10). The dirt roads provided great exposure across most of the pipeline route through the property. Mounds of loose dirt also indicate the area had been dozed over the past few decades. Three shovel tests (ST14-16) were excavated in this area, along the mapped edge of site 41TR24. ST14-16 revealed strong brown sandy loam above strong brown clay with some evidence of the surface disturbances continuing subsurface. No cultural resources were found on the surface or in the shovel tests on this property.



Figure 9. Typical combination of vegetation and disturbance in the northern portion of the project area, facing east.



Figure 10. Modern dump area between Big Bear Creek and Euless Grapevine Road, along the edge of site 41TR24.

Once on the east side of Eules Grapevine Road, the topography and vegetation become more consistent. A two-track road follows the general pipeline route through the wooded, southern portion of the project area between Eules Grapevine Road and the Hyatt Bear Creek Golf Course (Figure 11). Along this rough road there are dozens of small, modern trash dumps that are accompanied by loose piles of sediment indicating further disturbances. This portion of the route also crosses several unmapped intermittent drainages (several of which are lined with concrete at the crossings) that flow into Big Bear Creek (Figure 12). Between Eules Grapevine Road and Glade Road the route mostly crosses the floodplain, but skirts terrace soils as it approaches Glade Road. ST17-37 can be divided into two general types. The first has a loamy upper level and the second has clay throughout. The loamy topsoil ranged in depth from 12-60 cm and in color from yellowish red to dark brown above dark yellowish brown to black clay. The clay topsoil ranged from 14 to 50 cm thick and from dark yellowish brown to black. This clay topsoil overlaid brown to yellowish red clay. No artifacts or features were noted between Eules Grapevine Road and Glade Road.



Figure 11. Two-track road that generally parallels the pipeline route between Eules-Grapevine Road and the Hyatt Bear Creek Golf Course, facing west.



Figure 12. An example of a concrete-lined, unmapped tributary of Big Bear Creek, facing northeast.

The topography and vegetation between Glade Road and the Hyatt Bear Creek Golf Course is similar to that described above, but is mostly on terrace soils, with a small portion crossing the creek's floodplain. ST38-54 were excavated along this portion of the route and either had loamy or clay topsoil. The shovel tests with loamy upper layers reached up to 80 cmbs and ranged in color from strong brown to very dark grayish brown. The thinnest topsoil layers were found in terrace and upland settings. Shovel tests with clay upper levels were 15-50 cm thick and ranged in color from dark yellowish brown to very dark grayish brown and were sitting atop yellowish brown to very dark gray clay subsoil.

The southernmost segment of the pipeline crosses through the Hyatt Bear Creek Golf Course. The route parallels at least two existing pipe lines and generally runs between the western fence (next to TX 360) and a cart path (Figure 13). The route crosses Little Bear Creek less than 50 m from its confluence with Big Bear Creek on the golf course between two manicured sections (Figure 14). Only two shovel tests (ST55 and 56) were excavated in the golf course property, since the construction of the course significantly altered the natural topography and stratigraphy. ST55 was placed on a wooded slope near the north fence. Most of the top soil had eroded away, leaving 1 cm of very dark brown loam above the mottled clay subsoil. ST56 was placed in a wooded area near the western fence, where it was discovered that the top soil had also eroded away, leaving mottled clay on the surface. Construction gravels (presumably from the construction of TX 360) were abundant in the 30 cm excavated at this location.



Figure 13. The pipeline route through the Hyatt Bear Creek Golf Course, facing north. The proposed pipeline will run between the fence and the cart path, parallel to existing pipelines.



Figure 14. Little Bear Creek just upstream from its confluence with Big Bear Creek, facing northwest.

Table 1. Shovel Test Descriptions.

ST#	Depth (cm)	Description	Comments/ Artifacts
01	0-135	Brown (7.5YR4/3) with varying amounts of brown (7.5YR5/4) silty sand/sandy loam	None
02	0-30 30-65 65-95 95-130	Very dark grayish brown (10YR3/2) and 40% brown (10YR4/3) loam Brown (10YR4/3) loam Brown (7.5YR4/4) sandy loam Brown (7.5YR5/4) sandy loam	None
03	0-50 50	Very dark gray (10YR3/1) dense clay Root bound or clay is too thick to auger	None
04	0-20 20-35 35-90 90-110	Very dark grayish brown (10YR3/2) dense clay loam, some road gravel Brown (10YR4/3) clay loam Brown (7.5YR4/4) sandy clay loam Brown (7.5YR4/2) and 35% strong brown (7.5YR4/6) sandy clay loam	None
05	0-22 22-50 50-60	Very dark grayish brown (10YR3/2) with varying amount of light yellowish brown (10YR6/4) mottled with 30% shale chunks Brown (7.5YR4/4) sandy clay Dark brown (7.5YR3/2) and 15% brown (7.5YR4/4) clay	None
06	0-30 30-65 65-90 90-100	Very dark grayish brown (10YR3/2) brown (10YR4/3) yellowish brown (10YR5/4) brown (7.5YR4/4) mottled loam, clay loam, sandy loam Brown (10YR4/3) clay loam Strong brown (7.5YR4/6) sandy clay loam Very dark grayish brown (10YR3/2) clay	None
07	0-40 40-50	Very dark gray (7.5YR3/1) with 10% black (7.5YR2.5/1) clay Dark yellowish brown (10YR4/4) dry sand	None
08	0-18 18-48 48-55	Very dark gray (7.5YR3/1) with 20% black (7.5YR2.5/1) and 5% dark yellowish brown (10YR4/4) clay Black (7.5YR2.5/1) clay Brown (10YR4/3) sandy clay	None
09	0-5 5-11 11-31 31-50	Dark gray (10YR4/1) with 5% yellowish brown (10YR5/6) clay with sand Gray (10YR6/1) clay Dark gray (10YR4/1) with 15% gray (10YR6/1) and 15% yellowish brown (10YR5/6) clay Yellowish brown (10YR5/6) sand	None
10	0-55 55-70	Dark brown (10YR3/3) wet loamy sand with 20% brown (10YR4/3) sandy clay Gray (10YR6/1) with 5% light yellowish brown (10YR6/4) clay	None
11	0-38 38-50 50-60	Dark yellowish brown (10YR4/4) sandy loam Very dark grayish brown (10YR3/2) sandy clay Black (10YR2/1) wet clay	None
12	0-28 28-45	Very dark grayish brown (10YR3/2) sandy loam Black (10YR2/1) compact clay	None
13	0-80	Brown (10YR4/3) sandy loam	None
14	0-30 30-53	Strong brown (7.5YR5/8) sandy loam Strong brown (7.5YR5/8) clay	None
15	0-30 30-65 65-90	Mottled disturbed layer mostly sandy loam with trash Dark yellowish brown (10YR4/4) loam Yellowish red (5YR4/6) dry sandy clay	None
16	0-30 30-50	Strong brown (7.5YR5/8) sandy loam Strong brown (7.5YR5/8) with 10% reddish brown (5YR4/4) sandy clay	None
17	0-30 30-37	Dark brown (10YR3/3) slight clay loam Black (10YR2/1) loamy clay	None
18	0-30 30-40	Brown (10YR4/3) slight clay loam Very dark brown (10YR2/2) loamy clay	None

ST#	Depth (cm)	Description	Comments/Artifacts
19	0-28 28-60 60-72	Brown (10YR4/3) clay loam Dark yellowish brown (10YR4/6) sandy loam Very dark grayish brown (10YR3/2) clay	None
20	0-50 50-60	Dark yellowish brown (10YR4/6) silty loam Dark grayish brown (10YR4/2) and 20% yellowish red (5YR4/6) clay	None
21	0-50 50-57	Dark yellowish brown (10YR4/6) loamy clay Dark grayish brown (10YR4/2) clay	None
22	0-27 27-37	Dark yellowish brown (10YR4/6) loamy clay Dark brown (10YR3/3) clay	None
23	0-35 35-45	Very dark brown (10YR2/2) slightly loamy clay Very dark grayish brown (10YR3/2) with 10% reddish brown (5YR4/4) loamy clay	None
24	0-30 30-35	Yellowish red (5YR5/6) sandy loam with 70% gravels Red (2.5YR4/8) sandy clay with 70% gravels	None
25	0-27 27-60 60-90	Dark grayish brown (10YR4/2) silty loam Strong brown (7.5YR4/6) clay loam Dark yellowish brown (10YR4/6) very compact, very fine sand	None
26	0-22 22-80 80-87	Very dark gray (10YR3/1) with 50% brown (10YR4/3) loamy clay Yellowish brown (10YR5/4) compact sand Dark gray (10YR4/1) with 20% yellowish red (5YR4/6) very dry, compact sandy clay	None
27	0-41 41-46	Black (10YR2/1) loamy clay Brown (10YR4/3) with 10% red (2.5YR4/6) silty clay	None
28	0-14 14-25	Black (10YR2/1) slightly loamy clay Dark yellowish brown (10YR4/6) with red (2.5YR4/8) and 20% gray (10YR5/1) sandy clay	None
29	0-36 36-45	Brown (10YR4/3) clay loam Yellowish red (5YR4/6) sandy clay	None
30	0-12 12-20	Very dark gray (10YR3/1) loamy clay Yellowish red (5YR4/6) slightly sandy clay	None
31	0-20 20-30	Very dark grayish brown (10YR3/2) loamy clay Yellowish red (5YR4/6) loamy clay	None
32	0-38 38-46	Dark yellowish brown (10YR4/6) sandy loam Yellowish red (5YR4/6) sandy clay	None
33	0-16	Yellowish red (5YR4/6) sandy clay	None
34	0-10 10-20	Yellowish brown (10YR5/4) silty clay Yellowish red (5YR5/6) sandy clay	None
35	0-11 11-17	Dark brown (10YR3/3) slightly silty clay Red (2.5YR4/6) very sandy clay	None
36	0-30 30-70 70-80	Very dark grayish brown (10YR3/2) clay loam Black (10YR2/1) clay Very dark grayish brown (10YR3/2) loamy clay	None
37	0-10 10-23 23-28 28-56	Dark brown (7.5YR3/2) wet clay Red (2.5YR4/8) sandy clay Very dark bluish gray (Gley2 3/1) clay Dark yellowish brown (10YR3/4) sandy clay	None
38	0-10 10-40 40-60	Very dark grayish brown (10YR3/2) clay loam Dark brown (10YR3/3) clay Strong brown (7.5YR4/6) clay with 20% rocks	None
39	0-5 5-30 30-35	Very dark grayish brown (10YR3/2) clay loam Brown (10YR4/3) loamy clay Strong brown (7.5YR5/8) and 30% light gray (10YR7/1) mottled clay	None

ST#	Depth (cm)	Description	Comments/ Artifacts
40	0-29 29	Brown (7.5YR4/3) sandy clay loam Very compact clay sand and sandstone	None
41	0-25 28-35	Brown (7.5YR4/4) sandy loamy clay Yellowish red (5YR5/6) compact mottled sandy clay with 20% dark yellowish brown (10YR4/4) compact mottled sandy and pebbles	None
42	0-70	Yellowish brown (10YR5/6) sandy loam with 20-40% rocks	None
43	0-30 30-40	Brown (7.5YR4/3) loamy clay Strong brown (7.5YR4/6) with 20% red (2.5YR4/8) clay mottled	None
44	0-2 2-18 18-24	Very dark grayish brown (10YR3/2) loam Brown (7.5YR5/4) with 30% yellowish brown (10YR5/6) and 20% reddish brown (5YR5/4) mottled sandy clay Large sandstone rock	None
45	0-30	Dark brown (7.5YR3/2) with 30% strong brown (7.5YR5/6) and 20% brown (7.5YR5/2) and 10% rocks heavily mottled clay	None
46	0-30	Very dark grayish brown (10YR3/2) with 30% yellowish red (5YR4/6) and 10% strong brown (7.5YR5/6)	None
47	0-3 3-15 15-49	Duff Very dark grayish brown (10YR3/2) with 10% yellowish brown (10YR5/6) and 10% red (2.5YR5/6) sandy clay Very dark brown (10YR2/2) sandy clay	None
48	0-40	Very dark gray (10YR3/1) wet clay	None
49	0-28 28-55 55-65	Dark brown (7.5YR3/2) clay Brown (10YR4/3) loamy clay Very dark grayish brown (10YR3/2) clay	None
50	0-5 5-17 17-40 40-60 60-80	Duff Dark brown (7.5YR3/2) sandy clay Strong brown (7.5YR5/6) sandy loam Dark brown (7.5YR3/3) wet loamy clay Dark brown (10YR3/3) very wet loamy clay	None
51	0-45 45-80 80+	Very dark brown (10YR2/2) wet sandy loam Very dark gray (10YR3/1) sandy loam Water table	None
52	0-50	Dark yellowish brown (10YR3/4) sandy clay	None
53	0-37 37-55	Brown (7.5YR4/3) sandy loam with 10% dark gray (7.5YR4/1) clay Yellowish brown (10YR5/6) sandy clay	None
54	0-12 12-36 36-63 63-70	Dark yellowish brown (10YR3/4) clayey loam Dark yellowish brown (10YR4/4) with 20% yellowish brown (10YR5/8) sandy clay Dark yellowish brown (10YR3/4) sandy clay with gravels Brown (7.5YR4/4) sand	None
55	0-1 1-17	Very dark brown (10YR2/2) loam Brown (7.5YR4/4) with 20% light brownish gray (10YR6/2) clay	None
56	0-30	Brown (7.5YR4/4) with 10% very dark grayish brown (10YR3/2) mottled clay with construction gravel	None

Conclusions

No archaeological sites, features, or artifacts were identified during the survey. This was expected for historic sites, since there were no structures mapped on historic maps. Though several dumps were observed, the items in them were clearly modern. Though close to reliable water sources, the Big Bear Creek floodplain does not provide protection from flooding and was not expected to have prehistoric or historic sites. Previous investigations in the Bear Creek watershed show that prehistoric sites are primarily found on the first terrace and occasionally in the uplands, but rarely in the floodplain (Prikryl 1990:112-120; Shelton et al. 2008:137). The northern portion (between Parr Park and Eules Grapevine Road) was heavily disturbed by existing parks, modern structures, highways, and dumps. The two sites (41TR26 and 41TR24) that are nicked by the new pipeline route were nearly destroyed as early as the 1980s and it was expected that the current survey would not find evidence of them.

RECOMMENDATIONS

The purpose of this investigation was to determine if significant cultural resources are present along the proposed Bear Creek Interceptor route in Tarrant County, Texas. No archaeological sites were recorded. AR Consultants, Inc. concludes that further cultural resource investigations are unwarranted within the proposed project area and recommends that the Texas Historical Commission concur with this assessment. However, if buried cultural materials are discovered during construction, the Archeology Division of the Texas Historical Commission should be notified.

REFERENCES CITED

- Bever, Michael R. and David J. Meltzer
 2007 Paleoindians of Texas: A Third Revised Edition of the Texas Clovis Fluted Point Survey. *Bulletin of the Texas Archeological Society* 78:65-99.
- Bureau of Economic Geology
 1988 *Geologic Atlas of Texas, Dallas Sheet*. The University of Texas at Austin.
 1996 *Physiographic Map of Texas*. The University of Texas at Austin.
- Council of Texas Archeologists
 n.d. Guidelines for the Content of Cultural Resource Management Reports. Manuscript on file with the membership.
- Ferring, C. Reid
 1992 *Phase II Testing, Site 41TR21, Runway 16/34 West, Dallas/Fort Worth International Airport, Tarrant County, Texas*. Institute of Applied Sciences, University of North Texas, Denton.
- Garrett, Julia Kathryn
 1972 *Fort Worth: A Frontier Triumph*. The Encino Press. Austin.
- Griffith, Glenn, Sandy Bryce, James Omernik, and Anne Rogers
 2007 *Ecoregions of Texas*. Texas Commission on Environmental Quality, Austin.
- Hall, Molly A.
 2014 *An Archaeological Survey of the Proposed Wall-Farrar Nature Park, Tarrant County, Texas*. Cultural Resources Report 2014-12. AR Consultants, Inc., Richardson.
- Meltzer, D.J. and M.R. Bever
 1995 Paleoindians of Texas: An Update on the Texas Clovis Fluted Point Survey. *Bulletin of the Texas Archeological Society* 66:47-81.
- Moir, Randall W.
 1991 *Archaeological and Historical Survey of the Proposed Park and Nature Preserve Additions to Parr Park, City of Grapevine, Texas*. Report submitted to the City of Grapevine, Texas.
- Munsell Color
 2009 *Munsell Soil-Color Charts*. Grand Rapids, Michigan.
- Prewitt, Elton R.
 1983 From Circleville to Toyah: Comments on Central Texas Chronology. *Bulletin of the Texas Archeological Society* 54:201-238.
- Prikryl, Daniel
 1990 *Lower Elm Fork Prehistory, A Redefinition of Culture Concepts and Chronologies along the Trinity River, North-Central Texas*. Report 37, Office of the State Archeologist, Texas Historical Commission, Austin.
- Ressel, Dennis D.
 1981 *Soil Survey of Tarrant County, Texas*. U.S. Department of Agriculture, Soil Conservation Service in cooperation with the Texas Agricultural Experiment Station.
- Shafer, Harry J.
 1977 Late Prehistory in Central Texas. *Bulletin of the South Plains Archeological Society* 3:18-24.
- Shelton, Rebecca, Cody S. Davis, and S. Alan Skinner
 2008 *An Archaeological Survey for Chesapeake Energy Corporation at DFW International Airport, Dallas and Tarrant Counties, Texas*. Cultural Resources Report 2008-25. AR Consultants, Inc., Dallas.
- Skinner, S. Alan
 1981 Aboriginal Demographic Changes in Central Texas. *Plains Anthropologist* 26(92):111-118.
 1988 Where Did All the Indians Go? *The Record of the Dallas Archeological Society*, Fiftieth Anniversary Edition. 42(3):101-104.
 1999 *Cultural Resource Survey of Kimzey Park, Colleyville, Texas*. Cultural Resources Report 99-40. AR Consultants, Dallas.
- Texas Archeological Sites Atlas
 2014 Search for cultural resources near the current project area. Texas Historical Commission internet site, <http://nueces.thc.state.tx.us>, accessed December 29, 2014.
- Texas Historical Commission
 n.d. *Archeological Survey Standards for Texas*. www.thc.state.tx.us.

- Texas State Highway Department (TSHD)
1936 General Highway Map, Tarrant County, Texas.
1958 General Highway Map, Tarrant County, Texas.
United States Department of Agricultural (USDA)
1920 Soils Map, Tarrant County.
United States Geological Survey (USGS)
1894 *Fort Worth, TX* 1:125,000 topographic map.
1959a *Eules, TX* 1:24,000 topographic map, photorevised 1981.
1959b *Grapevine, TX* 1:24,000 topographic map, photorevised 1981.
Whorton, Brenda B. and S. Alan Skinner
1993 *Cultural Resources Survey of Bear Run Park, Grapevine, Texas*. Cultural Resources Report 93-6. AR Consultants, Dallas.