



INDEX OF TEXAS ARCHAEOLOGY

Open Access Gray Literature from the Lone Star State

Volume 2016

Article 154

2016

Cultural Resources Survey Conducted During February 2016 South Eagle Ford Zone Atascosa, La Salle, and McMullen Counties

Phil Schoch

Reign Clark

Ron Ralph

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.

Cultural Resources Survey Conducted During February 2016 South Eagle Ford Zone Atascosa, La Salle, and McMullen Counties

Creative Commons License



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

**CULTURAL RESOURCES SURVEY CONDUCTED DURING FEBRUARY 2016
SOUTH EAGLE FORD ZONE
ATASCOSA, LA SALLE, AND MCMULLEN COUNTIES**

Authors:

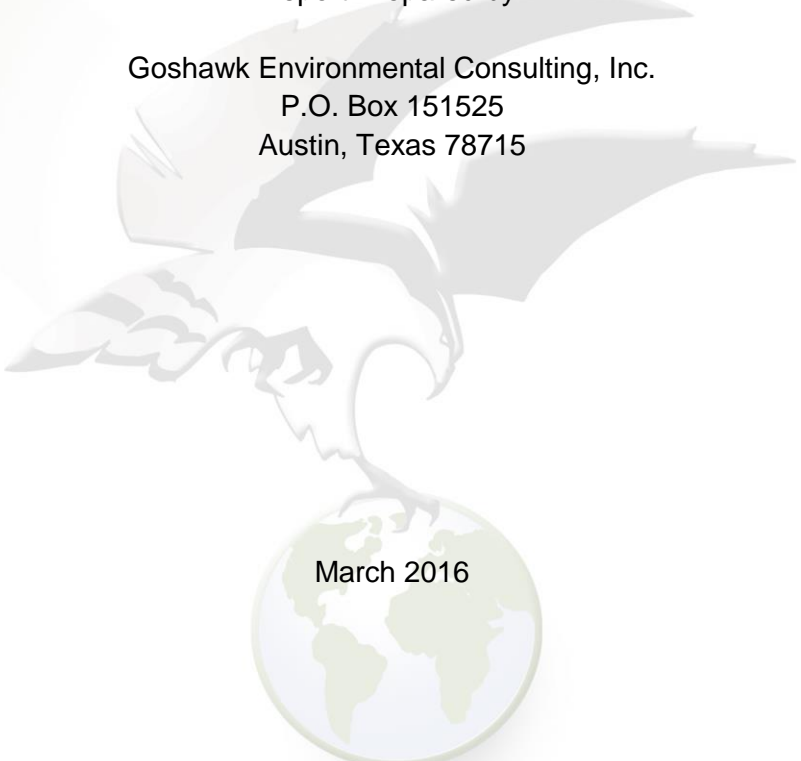
Phil Schoch, Reign Clark, and Ron Ralph

Report Prepared for:

EOG Resources, Inc.
19100 Ridgewood Parkway
San Antonio, TX 78259

Report Prepared by:

Goshawk Environmental Consulting, Inc.
P.O. Box 151525
Austin, Texas 78715



March 2016



MANAGEMENT SUMMARY

During the month of February 2016, Goshawk Environmental Consulting, Inc. (Goshawk) conducted one cultural resources survey within the Eagle Ford Play, South Eagle Ford Zone, at the request of EOG Resources, Inc. (EOG). The project subjected to cultural resources investigation was the Cuellar Unit #11H Flowline. The Area of Potential Effect (APE) was a 75-foot (23-meter [m]) wide right-of-way (ROW), consisting of a 50-foot (15-m) wide permanent easement and a 25-foot (8-m) wide temporary construction easement. The investigation was conducted by Goshawk archeologist Phil Schoch with Mitch Juenke. Phil Schoch served as primary author and Reign Clark and Ron Ralph served as contributing authors for this report of investigations.

The cultural resources survey was performed according to the Council of Texas Archeologists survey standards; in compliance with the Texas Historical Commission's (THC) Rules of Practice and Procedure, Chapter 26, Section 27; and under the general guidelines of the Register of Professional Archaeologists. Site files on the THC's Archeological Sites Atlas website database were consulted prior to the commencement of the field effort for previously recorded site locations; references to previous archeological surveys undertaken; and place names of interest in the vicinity of the project.

Streams potentially under the United States Army Corps of Engineers (USACE) jurisdiction that cross the APE were assessed by an ecologist via desktop and field reviews prior to commencement of the cultural resources survey. As per the established procedure of due diligence, any segment of an APE that falls within an area potentially under federal jurisdiction, or any portion of an APE that falls within a 328-foot (100-m) radius of a known cultural site would be subjected to a cultural resources survey. Any segment of an APE to be surveyed under this protocol was labeled as a "review area" and was subjected to cultural resources survey.

A cultural resources survey was conducted within two review areas. Shovel testing and surface inspection did not identify any significant cultural deposits within the review areas. Based on these results, it is Goshawk's opinion that no significant cultural resources will be impacted by construction within the surveyed portions of the proposed ROW. Goshawk recommends that the project be allowed to proceed as planned, with the caveat that construction be limited to the surveyed ROW. In the unlikely event that cultural resources (including human remains) are discovered, all construction or maintenance activities should be immediately halted and both the USACE and an archeologist should be notified.



CONTENTS

MANAGEMENT SUMMARY II

CONTENTS III

1.0 INTRODUCTION 1

2.0 ENVIRONMENTAL CONTEXT OF THE SOUTH EAGLE FORD ZONE 1

 2.1 LAND USE..... 1

 2.2 GEOLOGY AND PHYSIOGRAPHY 4

 2.3 PROJECT AREA SOILS 4

 2.4 FLORA AND FAUNA 4

 2.5 CLIMATE 5

3.0 CULTURAL CONTEXT OF THE SOUTH EAGLE FORD ZONE..... 5

 3.1 PREHISTORY..... 5

 3.2 HISTORIC PERIOD (A.D. 1750 TO PRESENT) 8

 3.3 CULTURAL RESOURCES OF THE SOUTH EAGLE FORD ZONE 10

4.0 METHODOLOGY 11

5.0 CUELLAR UNIT #11H FLOWLINE 12

 5.1 ARCHIVAL RESEARCH..... 12

 5.2 SURVEY RESULTS 12

 5.3 RECOMMENDATIONS 13

6.0 DISCUSSION 19

7.0 CONCLUSIONS AND RECOMMENDATIONS..... 19

8.0 REFERENCES CITED 20



1.0 INTRODUCTION

During the month of February 2016, Goshawk Environmental Consulting, Inc. (Goshawk) conducted one cultural resources survey within the Eagle Ford Play, South Eagle Ford Zone, at the request of EOG Resources, Inc. (EOG). The South Eagle Ford Zone includes portions of Atascosa, Dimmit, Duval, Frio, Jim Wells, La Salle, Live Oak, Maverick, McMullen, Webb, and Zavala Counties (Figure 1-1). The project subjected to a cultural resources survey was the proposed Cuellar Unit #11H Flowline right-of-way (ROW) (Figure 1-2). The Area of Potential Effect (APE) was a 75-foot (23-meter [m]) wide ROW, consisting of a 50-foot (15-m) wide permanent easement and a 25-foot (8-m) wide temporary construction easement.

2.0 ENVIRONMENTAL CONTEXT OF THE SOUTH EAGLE FORD ZONE

The Eagle Ford Shale Region covers a large portion of south and southeast Texas, totaling approximately 22,000 miles² (35,406 kilometers² [km²]). This region of Texas can be broken down into zones reflecting biologic, geologic, physiographic, and cultural diversity within the Eagle Ford Shale. The South Eagle Ford Zone is an area characteristic of the Tamaulipan Biotic Province (Blair 1950). This zone is defined by semi-arid brush land exhibiting a series of level to gently rolling uplands, which supports mixed thorny trees, shrubs, cacti, and grasses. This area extends north from Laredo, Texas into Zavala County and eastward across La Salle, McMullen, and Live Oak Counties. The zone extends northeastward to the central portion of Atascosa County (see Figure 1-1).

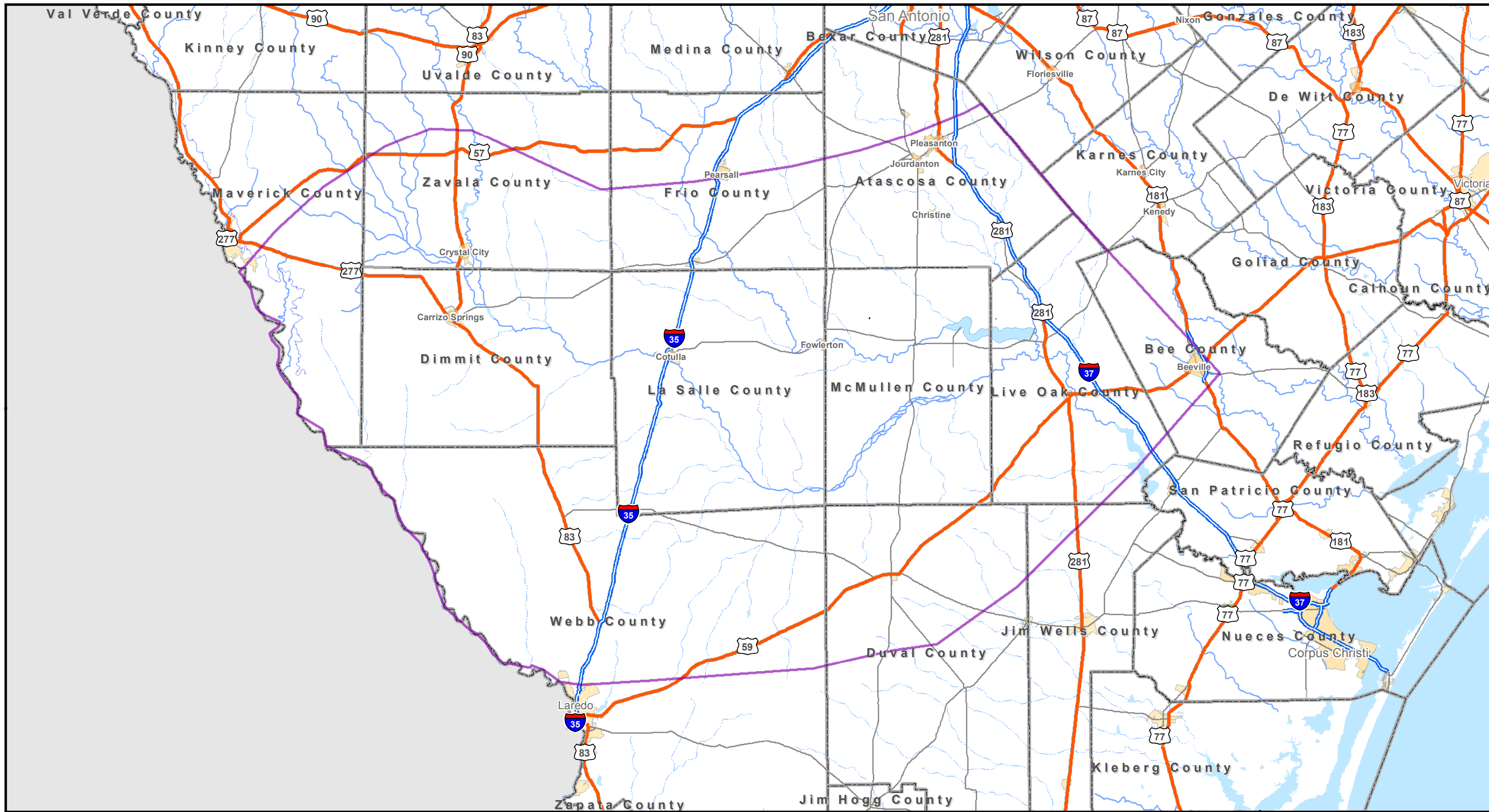
Streams within the South Eagle Ford Zone generally drain southwest toward the Rio Grande River or east and northeast toward the Frio and Nueces Rivers. The northern boundary of the South Eagle Ford Zone corresponds with Blair's division between the Tamaulipan and Texan Biotic Provinces. This division falls along where Atascosa County meets Wilson and Karnes Counties.

2.1 LAND USE

Currently, cattle ranching, crop cultivation, oil and gas field development, and lease hunting are the most common uses for land falling within the South Eagle Ford Zone. Many of the land uses lead to clearing omnipresent invasive thorn brush so development can proceed. The persistent problem of invading brush and cacti is often addressed by "chaining," whereby a heavy chain is dragged across the landscape by bulldozers, uprooting unwanted brush. Additionally, large senderos are often cut to facilitate wildlife management and seismic surveys. Root plowing, using a large tracked bulldozer and a dragging blade, is also used to clear brush.

All clearing methods are disruptive to archeological sites. Poor soil conservation practices have resulted in the depletion of top soil, exposing clay pans across much of the area. Many of the soils originally mapped by the Natural Resources Conservation Service (NRCS) had pronounced A-horizons over distinct clays. It is thus particularly noteworthy that A-horizons across much of the survey area are virtually non-existent, indicating disturbances and erosion of topsoil. Thin gravel outcrops with sand over clay are common across the uplands, while shallow, alluvial clay, and clay loams blanket most areas along the creeks. The areas that are most likely to contain intact, stratified soil deposits and significant archeological sites are located along the rivers and larger creeks, including: the Cibolo and Esperanza Creeks, the Frio River, and the Dull Flats Stream Complex.





Source: ESRI, Maps & Data 10.2, 2013, EIA, 2011
 Projection: NAD 1983 UTM 14N

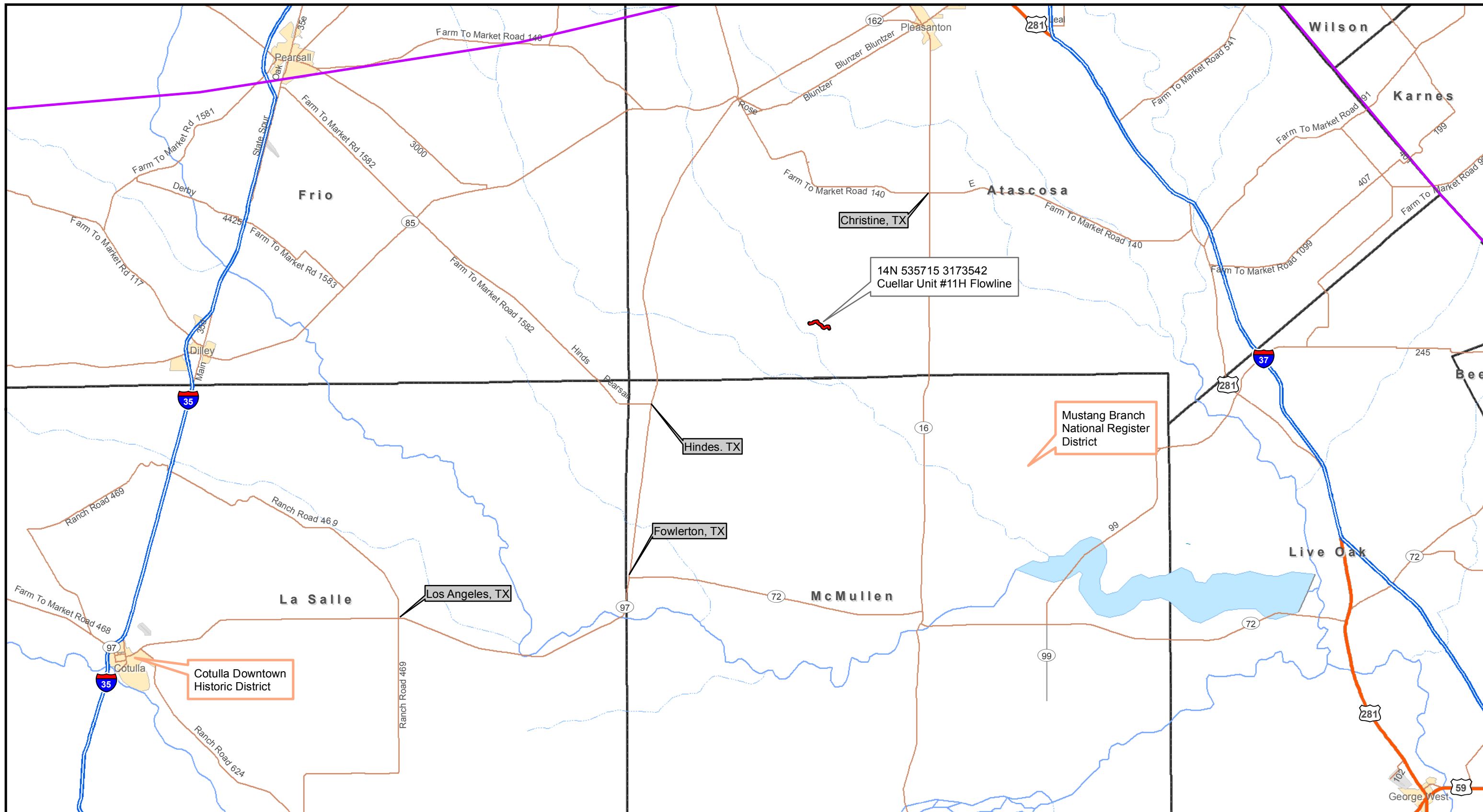
0 5 10 20 30 40 50 Kilometers
 0 2.5 5 10 15 20 25 30 Miles

Figure 1-1
 Vicinity Map

South Eagle Ford Zone

South Eagle Ford Zone Perimeter

Date: 10 March 2016



Source: ESRI, Maps & Data 10.2, 2013
 Projection: NAD 1983 UTM 14N

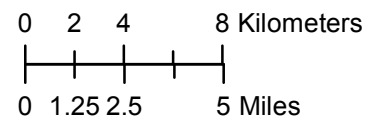
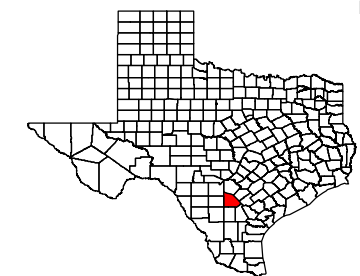


Figure 1-2
 Project Locations
 Atascosa County, Texas

South Eagle Ford Zone

- Boundary of South Eagle Ford Zone
- Proposed Flowline Alignment



Date: 11 March 2016

2.2 GEOLOGY AND PHYSIOGRAPHY

Geology within the South Eagle Ford Zone consists of recent alluvium and fluvial terrace deposits overlying older Eocene Yegua Formations (Barnes 1976). Alluvium or floodplain deposits consist of gravels, sand, clay, silt, and organic materials. Additionally, a variety of igneous and sedimentary rock washed down from the Rocky Mountains to the northwest and was deposited as lag gravels on low terraces. Recent alluviums were deposited during the Pleistocene, flanking streams. The surrounding fluvial terrace deposits consist of the same clay and clay loam soils, but often contain discontinuous sheets or pavements of let-down gravels. These concentrations of stone were of great interest to prehistoric populations as source material for tools.

Other major geological formations are Quaternary alluvium and the undivided Manning/Wellborn Sandstone/Caddell Formations of the Jackson Group. These formations are composed of sandstones, clay, tuff, and siltstone; some are fossiliferous and one contains fossil wood. Remnants of Uvalde Gravel lay southeast of the project area and was prized as a source of lithic material to prehistoric peoples (Barnes 1976, Harshbarger, et al 2010). Uvalde Gravel occurs as deposits, up to 30 feet (9 m) thick, or as lag gravel on rounded hills. Much of the Holocene-aged alluvial deposits have eroded away due to land clearing and maintenance practices within the South Eagle Ford Zone.

2.3 PROJECT AREA SOILS

The Web Soil Survey of the NRCS (NRCS 2016), the Atascosa County Soil Survey (Dittmar, et al., 1980), the La Salle County Soil Survey (Gabriel, et al., 1994), and the McMullen County Soils Survey (Harshbarger, et al., 2010) were consulted for this project. Soils generally encountered consisted of clay, clay loam, and sandy loam along benches and terraces adjacent to smaller streams. In situ clay soils are commonly found on the wider floodplains of named creeks. Occasionally, expansive outcrops of chert gravels and cobbles are found on eroded uplands and shoulder slopes. These outcrops were used by prehistoric native groups as raw material quarries for tool making.

2.4 FLORA AND FAUNA

The native tree species in the South Eagle Ford Zone include mesquite, huisache, pecan, live oak, Texas wild olive, and Texas persimmon. Common shrubs and succulents in the region include prickly pear, fiddlewood, desert yaupon, agave, yucca, and autumn sage. Native grass species include sideoats grama, slender grama, buffalograss, inland sea-oats, plains lovegrass, and little bluestem (Gould 1978; Texas Parks and Wildlife Department [TPWD] 2016a).

There are at least 61 mammal species, 57 reptile species, and 22 amphibian species within the South Eagle Ford Zone (Schmidly 2004). Common small mammals in this region include several species of rats, mice, and bats; the Texas pocket gopher, the eastern mole, the eastern cottontail rabbit, and the Mexican ground squirrel (Blair 1950). Medium to large mammals include white-tailed deer, American hog-nosed skunk, and armadillo. The Virginia opossum is another mammalian species and the only marsupial located in the ecoregions. Rare or extinct mammalian species in the area include ocelot, jaguar, javelina, bison, and jaguarondi (TPWD 2016b).

Reptile species within the region include the western box turtle, Texas banded gecko, Texas spiny lizard, red racer, Western diamondback rattlesnake, and diamond-backed water snake (Blair 1950,



TPWD 2016a). Rare reptilian species include the Texas tortoise, indigo snake, and Texas horned lizard (TPWD 2016b). Despite the drier climate within the Tamaulipan Biotic Province, the region is host to three species of water-loving urodeles (salamanders and newts) and 18 species of anurans (frogs and toads) (Blair 1950; Davis 1978). The dominant bird species near the APE include raptors, songbirds, doves, gulls, and terns (Bryan, et al. 2006). The rare Cactus Ferruginous pygmy-owl is also occasionally found within the ecoregion (TPWD 2016a, TPWD 2016b).

2.5 CLIMATE

The Tamaulipan Biotic Province is characterized by semi-arid, megathermal conditions; and although moisture levels are low, temperatures allow for certain plant growth to occur year-round (Blair 1950). This area exhibits a tropical, sub-humid climate averaging 98 degrees Fahrenheit in July, with a yearly average high of 83 degrees. Low temperatures average 42 degrees in January, with a yearly average low of 60 degrees. Only one year in two has an annual low temperature below 28 degrees Fahrenheit (Gabriel, et al., 1994). Rainfall is bimodal, with early and late summer accounting for 65 percent of the yearly average of 22 inches (56 centimeters [cm]). The growing season averages 250 days in this portion of Texas.

3.0 CULTURAL CONTEXT OF THE SOUTH EAGLE FORD ZONE

The South Eagle Ford Zone is located in the South Texas Archeological Region where nomadic hunter-gatherer groups migrated seasonally, following resources and sharing cultural traits with other groups. This is evident in the dispersal of point types and ceramic styles across the region (Prewitt 1995). Open camps are the most common type of archeological site found in the South Texas Archeological Region. These camps can be shallow or deeply buried; are often adjacent to streams; and usually contain clustered archeological material such as burned rocks, lithic debris, hearths, or middens. Bone and shell are less common in the assemblages, as organics rarely survive due to the alkaline nature of the soils.

Notable work in South Texas archeological research has been conducted by Fox et al. (1974), Mallouf et al. (1977), Mercado et al. (1996), Hall et al. (1986), Black (1989), and Hester (1980). However, the lack of intensive investigations, high rate of looting, and levels of erosion that occur throughout South Texas have left barriers to fully understanding and dating the periods of occupation in the area (Perttula 2004).

The following cultural background is divided into several periods in this portion of the state: Paleoindian (9500 to 6000 B.C.), Early Archaic (6000 to 2500 B.C.), Middle Archaic (2500 B.C. to A.D. 400), Late Archaic (A.D. 400 to 700), Late Prehistoric (A.D. 700 to 1750), and Historic (A.D. 1750 to present) (Aten 1983; Perttula 2004; Turner and Hester 1999). Some scholars include another period, the Protohistoric, but it will not be included in this survey due to the lack of a useful definition and contextual information available in this region.

3.1 PREHISTORY

3.1.1 *Paleoindian Period (ca. 9500 to 6000 B.C.)*

Recent archeological evidence indicates prehistoric people may have occupied this area prior to the Paleoindian Period. However, the controversial sites that show evidence of an earlier period of



habitation have not yet been widely accepted by the archeological community. For this reason, the prehistoric period will begin with Paleoindian.

Beginning around 9500 B.C., the Paleoindian spans over 3,000 years to about 6,000 B.C., and is the earliest identified cultural period in the vicinity of the South Eagle Ford Zone (Ensor and Ricklis 1998). According to some authors, the Paleoindian Period begins approximately 1,200 years earlier (10,700 B.C.) in the South Texas region. It has been postulated that this is most likely due to the earlier habitation of the Paleoindian Clovis peoples coming north from central Mexico (Perttula 2004).

The Paleoindian Period coincides with the decline of the Wisconsinan Glaciation, and is characterized by a relatively cool, moist climate that encouraged the development of now-extinct species of Pleistocene megafauna, such as bison. This period is sometimes called the Big Game Hunting Tradition (Willey 1966), due to a presumed heavy reliance on megafauna as a food source by Paleoindian peoples during the earlier portion of the period. Environmental changes that brought about the extinction or dislocation of megafauna precipitated a shift toward smaller game, creating the transition into the Archaic (Aten 1983:146-148; Willey and Phillips 1958:107).

Temporally diagnostic tool types attributed to this period include a variety of finely chipped, sometimes fluted, lanceolate projectile point styles, such as Clovis, Folsom, Plainview, and Scottsbluff (Meltzer and Bever 1995; Prikryl 1990; Willey 1966). The Paleoindian projectile point types show a transitional change between the earlier Paleoindian points and the Early Archaic. By the late Paleoindian Period, unfluted lanceolate projectile points such as Plainview, Golondrina, and Angostura were more common (Story, et al. 1990).

3.1.2 Archaic Period (6000 B.C. to A.D. 400)

Following the close of the Pleistocene, the South Texas region experienced a trend toward a warmer and drier climate. It has been postulated that this climate shift was at least partially responsible for the extinction of megafaunal species. The archeological record of this period exhibits evidence of a gradual diversification in subsistence patterns. This is the beginning of the Archaic, which is divided into three time periods: the Early Archaic (6050 to 2500 B.C.), the Middle Archaic (2500 to 1000 B.C.), and the Late Archaic (1000 B.C. to A.D. 400) (Aten 1983:152-157; Perttula 2004; Turner and Hester 1999).

Few Archaic sites are recorded on the Upper Texas Coast (Aten 1983:153; Story 1985:28-29). Story (1985:31–34) suggests site density was low on the coastal plain during this period. Archaic sites tested or excavated near the modern shoreline generally consist of shell-bearing sites with varying degrees of lithic tools and debitage, shell or bone tools, and the bones of fish, mammals, and reptiles (Ambler 1967, 1970, 1973; Aten 1979, 1983; Ensor 1998; Howard et al. 1991). Inland sites tend to contain more lithic artifacts and debitage, with terrestrial mammal bones comprising the bulk of the inland faunal assemblages. Archaic patterns in tool-making for the South Texas region are centered on corner-notching technology and triangular points, moving away from the basal-notching technology.



3.1.2.1 Early Archaic Period (6000 to 2500 B.C.)

Late Paleoindian unfluted lanceolate projectile points such as Plainview, Golondrina, and Angostura were replaced by un-stemmed triangular points and basal or corner notched points in the Early Archaic. The Early Archaic in the South Texas region is significantly shorter than in other regions due to the onset of specific regional cultural patterns occurring around 2500 B.C. These cultural patterns emphasized un-stemmed dart points and smaller bifacial and unifacial beveled tools (Perttula 2004). Additionally, the archeological record indicates the diet of the people in this area consisted of turtles, snails, and freshwater mussels. Land snails (*Rabdotus* sp.) are often present at prehistoric sites, but there is debate regarding whether the prehistoric peoples were consuming them or if the snails were merely “cleaning up” after the group moved out of the area.

3.1.2.2 Middle Archaic Period (2500 to 1000 B.C.)

The Middle Archaic is more thoroughly represented in the archeological record for the South Texas region than the Early Archaic. During this time period, the triangular Tortugas and Abasolo points were developed. In addition, the archeological record shows the development of smaller, unifacial, distally beveled tools that show a high amount of reworking and re-sharpening. Evidence supports that these common tools were used in wood-working (Perttula 2004).

During this period, most open campsites were placed in flood-prone zones along low terraces; and while information concerning their diet is scant, numerous types of fuel materials have been identified including mesquite, acacia, oak, and hackberry (Perttula 2004). There is also significant data concerning treatment of the dead, especially later in the period (Patterson et al. 1998). Cemeteries were commonly used, and most contained grave goods such as points, flakes, cores, and sandstone pieces (Perttula 2004; Hall et al. 1986). One such cemetery, Loma Sandia, is dated to the late Middle Archaic and is located in Live Oak County (Taylor and Highley 1995). With its hundreds of burials and thousands of artifacts, it remains one of the most studied archeological sites in South Texas.

3.1.2.3 Late Archaic Period (1000 B.C. to A.D. 400)

In general, Late Archaic sites in the South Texas region show a marked increase in site utilization and heavy dependence on seasonal base camps. Artifact assemblages suggest a more efficient exploitation of local resources with physical evidence of various maintenance, extractive, and processing tasks were used. Assemblages characterizing these technological activities include a variety of dart point styles, a suite of ground and polished stone tools, and the beginning use of ceramics.

3.1.3 Late Prehistoric Period (A.D. 400 to 1750)

The Late Prehistoric period in the South Texas Region saw a continuation of many of the same cultural and subsistence patterns in place during the Late Archaic (e.g. cemeteries and burned rock features) with two very significant technological adaptations: a heavier reliance on ceramics by certain groups and the introduction of the bow and arrow (Ensor 1998).



3.2 HISTORIC PERIOD (A.D. 1750 TO PRESENT)

3.2.1 *Historic Native Groups in the Area*

Early Spanish expeditions in Texas afford the primary evidence of the relevant historic Indian tribes in the South Texas Region during the late sixteenth through early eighteenth-centuries. Initial exploration of the Gulf of Mexico and the American Southwest was accomplished by Spanish explorers Alonso Alvarez Piñeda (1519) and Alvar Nuñez Cabeza de Vaca (1528). Following Piñeda's initial maritime effort to map the Gulf Coast, the earliest exploration of the South Texas Region was accomplished by de Vaca, who shipwrecked in the Gulf of Mexico in 1528 along with other members of an expedition led by Pánfilo de Narváez (Weddle 1985).

De Vaca's account served as the basis upon which subsequent explorations of the region were conducted by Hernando de Soto (1539) and Luis de Moscoso (1542). By 1561, Spain was facing increasing difficulties in maintaining its few colonies in Florida. The relatively poor economic prospects for these colonies and increasing competition from other colonial powers quelled the Spanish Crown's interest in colonizing their Florida territories which included Texas. As a result, the Texas Gulf Coast remained relatively uninhabited by Europeans for the next two centuries until the threat of increased French exploration in the territory stimulated the Spanish government to establish more permanent settlements in the area (Weddle 1991). In 1685, René Robert Cavelier and Sieur de la Salle established Fort St. Louis along the Gulf Coast (Gilmore 1984, Tunnel and Ambler 1967). However, by late 1688 or early 1689, Fort St. Louis was no longer in use due to disease, starvation, and Indian attacks (Bruseth and Turner 2005).

Spanish expeditions to the South Texas Region include the 1689 expedition of Governor Alonso de León; the 1691 to 1692 expedition of Governor Domingo Terán de los Ríos; the Espinosa-Olivares-Aguirre expedition of 1709; Ramón's expedition of 1716; Alarcón's expedition of 1718; and Rivera's inspection tour of 1727 (Campbell 1983; Foster 1995). The Indians encountered during those journeys included indigenous Sanan speakers and displaced and migrating tribes from well outside the region. These include the Jumano of west Texas, the Wichita-speaking Yojuane of north central Oklahoma, and the Simaomo and Tusonibi of northeastern Mexico (Campbell 1979). According to Chapa, an early historian who documented the annihilation of over 160 groups during the 1600s, many other tribes were decimated by European disease in Coahuila and Nueva Leon (Foster 2008:108).

3.2.2 *European Settlement (ca. 1750)*

Although there were no permanent Spanish settlements established in the areas now known as La Salle and McMullen Counties, Spaniards traversed the area at various times. Alonso De León passed through the area in 1689 and 1690, as did Diego Ortiz Parrilla in 1766. In the early 1800s, the Old Laredo-San Antonio road passed eastward of the survey area. A large waterhole on Esperanza Creek was the meeting place where presidio soldier escorts passed off their charges before returning to their posts in Laredo and San Antonio (Leffler 2014).

3.2.3 *La Salle and McMullen Counties*

After Mexican independence in 1810, the Mexican government issued land grants to citizens for settlement. In 1834, Jesús Cárdenas received 31,500 acres (12,748 hectare [ha]) of land along the



Nueces River, including about 10,000 acres (4,047 ha) in what became La Salle County. After the Texas revolution, La Salle County became disputed land, as it lay between the Rio Grande and the Nueces River. It became a haven for outlaws due to the lack of an established government (Leffler 2014). The Treaty of Guadalupe Hidalgo on 2 February 1848 ended the Mexican War and recognized the 1845 annexation of Texas to the United States (Russell 2010:210).

The area now known as McMullen County was originally granted to Benjamin Drake Lovell and John G. Purnell by the Mexican state of Coahuila in 1825, but it was never settled. In 1828, the same land was assigned to John McMullen and James McGloin who intended to settle 200 families. None of the families ever occupied the area, and by the time of the Texas Revolution, the area was still inhabited predominantly by native people.

La Salle County was formed from the Bexar District in 1858, with early villages established along the San Antonio to Laredo road – the old Camino Real. In the same year, McMullen County was officially established from parts of Bexar, Atascosa, and Live Oak counties. The United States Army established an outpost, Fort Ewell, in 1852 at the road crossing on the Nueces River, but abandoned it in 1854. The town of Guajoco was established near the outpost and grew larger when the army deserted the post. By 1871, Guajoco had a post office, a saloon, a general store, a stagecoach stop and roughly 60 inhabitants.

From cattle, to cotton, to oil and gas, the boom and bust cycle has repeated itself in south Texas, and has never been an easy place to live. During the early years, more than 25 ranches were established with the ranch headquarters, which was often a stopping point for cattle buyers. Small communities grew to be the principal regional population centers. One such ranch was Waugh's Rancho, which was established in 1861 and granted a post office charter in 1879. Another was Luka, a small settlement just west of present day Cotulla, the county seat. The 1870 census showed 69 inhabitants in La Salle County; however, by 1880, the county's population had grown to 789. La Salle County, named for René Robert Cavellier, Sieur de La Salle, now covers over 1,517 miles² (3,929 km²) of south Texas (Leffler 2014).

Formal organization of La Salle County occurred in 1880 with Stuart's Rancho, near Guajoco, designated as its first seat of government. Native American groups retired westward as the railroad began building south to the Rio Grande Valley. About the same time, James J. and Andrew J. Dull, two steel-magnet brothers from Harrisburg, Pennsylvania, purchased La Salle County land, including much of W. A. Waugh's property, to put together a vast ranch. The Dull brothers later sold 240,000 acres (97,125 ha) of their Dull Ranch, to B. L. Naylor and Judge A. H. Jones. Naylor died in 1910 and Jones in 1912.

3.2.4 Fowlerton History

The history of eastern La Salle County and western McMullen County is steeped in actors and actions larger than life. At the turn of the 20th century, a couple of shrewd businessmen, the Fowler brothers, decided to form a land company and promote the dry cactus and mesquite covered country along the Frio River in La Salle and McMullen Counties as the "Wintergarten." They attracted more than 2,000 buyers, many of whom migrated from the east coast for the chance to own a plot of fertile



farmland for as little as \$25 down and \$10 a month. Many have called the brothers “swindlers,” but some historians maintain that they did have a vision of the area as a farming utopia. The Fowler brothers happened to tour the county just prior to one of the “wet” cycles when almost any crop could grow (Troesser 2014).

Before Judge A. H. Jones died, he had contracted with the Fowler brothers to develop 100,000 acres (40,469 ha) around what would eventually become the town of Fowlerton, Texas. The Fowler brothers, in conjunction with the Naylor & Jones Land Co., laid out the town on a grid system and over 200 miles (322 km) of roads were built. Lots were divided up, some as small as 1/16 acre (0.4 ha), as well as numerous farm plots of anywhere from 1 to 100 acres (1 to 40 ha) or more. When a 10 to 160-acre (4 to 65-ha) tract of farmland was purchased, the buyer automatically received a lot in Fowlerton. After the railroad was constructed in 1912, growth of the town increased, supporting several lumber yards. Between 1913 and 1915 a cotton gin, large rail depot, hotels, two banks, department stores, and schools were all built.

There was a seafood restaurant with fresh oysters and shrimp brought in from the coast, and many free flowing artesian wells (some containing salt). The “Artesian Route”, as described on the San Antonio Uvalde and Gulf Railroad (SAU&G Railroad) advertisements, referred to the new farming center with crops of cotton and Egyptian wheat to faraway markets. At the height of the Fowlerton heyday, some 2,000 to 4,000 people called the vicinity home. Over the years a series of droughts, plus using saline artesian well water, forced all the farmers to leave the county (Troesser 2014).

3.3 CULTURAL RESOURCES OF THE SOUTH EAGLE FORD ZONE

Atascosa County lists 262 archeological sites, many of which are associated with the development of the San Miguel Mine in the 1980s. According to the Texas Historical Commission’s (THC) Archeological Sites Atlas (Atlas), the Atascosa County Courthouse in Jourdanton, Texas is the only designated State Antiquities Landmark (SAL). The county courthouse was completed in 1912 and represents the Mission Revival style of architecture. The county courthouse is also listed on the National Register of Historic Places (NRHP), along with the Korus Farmstead and the Frederick and Sallie Lyons House. There are 132 recorded historic cemeteries and 50 historical markers in the county (THC 2016b).

La Salle County lists more than 252 recorded archeological sites. According to the Atlas, only one site has been designated as a SAL, the La Salle County Courthouse in Cotulla, Texas. The county courthouse is also listed on the NRHP, along with the Cotulla Downtown Historic District. There are 20 recorded historic cemeteries and 19 historical markers in the county (THC 2016b).

McMullen County lists over 889 recorded archeological sites, many of which are associated with work for the Choke Canyon Reservoir. According to the Atlas, no sites have been designated as a SAL. The Mustang Branch National Register District (NRD) site (41MC163) is the only prehistoric NRHP-listed site, and is based mainly on an ephemeral Paleoindian component. Designated in 1978, the Mustang Branch Site NRD encompasses 24.7 acres² (10 ha²) of agricultural lands along the confluence of San Miguel Creek and Mustang Branch, close to, and within the Choke Canyon Reservoir in eastern McMullen County. The NRD includes campsites, chipping-quarrying areas,



middens, and lithic scatters; all of which contributed to its NRD designation. There are 6 recorded historic cemeteries and 23 historical markers in the county (THC 2016b).

4.0 METHODOLOGY

The cultural resources survey was performed in compliance with the National Historic Preservation Act of 1966 (NHPA), as amended (16 U.S.C. 470 et seq., P.L. 89-665, 80 Stat. 915), and the implementing regulations 36 CFR 800. The survey complied with the National Environmental Policy Act (NEPA) of 1969; the NEPA of 1974 (PL 81-190, 83 Stat. 915, 41 USC 4321, 1970); the Archeological and Historic Preservation Act of 1974 (PL 93-291); the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (48 Fed. Reg. 44716-42, Sept. 29, 1983); the National Register Bulletin Series of the National Park Service; and the Archeological Resources Protection Act of 1979.

The survey conformed to standards of the United States Department of the Interior (1977) and the guidelines set forth by the Council of Texas Archeologists (1995) and the Register of Professional Archeologists (2016). The cultural resources investigation consisted of archival research, pedestrian survey, shovel testing, and preparation of a report suitable for review by the United States Army Corps of Engineers (USACE), the regulatory agency responsible for oversight in most situations.

Streams potentially under USACE jurisdiction that crossed the APE were assessed by an ecologist via desktop and field reviews prior to the commencement of the cultural resources survey. As per the established procedure of due diligence, any segment of an APE that falls within an area potentially under federal jurisdiction, or any portion of an APE that falls within a 328-foot (100-m) radius of a known cultural site would be subjected to a cultural resources survey. Any segment of an APE to be surveyed under this protocol would be labeled as a "review area". Unless otherwise noted, the APE consisted of a 75-foot (23-m) wide ROW, comprised of a 50-foot (15-m) wide permanent easement and a 25-foot (8-m) temporary construction easement.

During the survey effort, the ground surface within the established review areas was visually inspected on foot. Shovel tests were administered in the portions of the review areas that harbored the greatest potential for temporally stratified soil deposits. Shovel tests, typically 12 inches (30 cm) in diameter, were excavated to sterile substratum. The shovel probe matrix was sifted through ¼-inch (0.6-cm) hardware cloth. If soils of high clay constituency were encountered, the matrix was hand sorted. Shovel test locations were recorded with hand-held Global Positioning System (GPS) units and transferred to topographic maps. If present, newly discovered or revisited sites were documented using standard State of Texas site recording forms and plotted by GPS coordinates for entry into the Atlas database.

Shovel testing was conducted to ascertain the horizontal and vertical limits of any cultural manifestation discovered within the review area. Hand-drawn sketch maps were produced for any cultural site recorded or revisited. The field effort reported herein was performed on private property and was funded by a private source. No artifacts were collected during the survey. If present, artifact assemblages were photographed in the field and left where found.



5.0 CUELLAR UNIT #11H FLOWLINE

Goshawk conducted a cultural resources survey of the proposed $\pm 7,488$ -foot (2,282-m) Cuellar Unit #11H Flowline ROW in Atascosa County, Texas. Two review areas were identified within the proposed ROW, based upon the presence of two potentially regulated Waters of the US (WATERS). The cultural resources survey was conducted within two review areas, totaling approximately 2.4 acres (1 ha), and included shovel testing and surface inspection. A field investigation was conducted by Goshawk archeologists Phil Schoch with Mitch Juenke on 10 February 2016.

The proposed Cuellar Unit #11H Flowline ROW was located approximately 11 miles (18 km) southeast of Christine, Texas. From its western terminus, the proposed ROW heads east-northeast down the toe slope of an upland landform and crosses Macho Creek (Review Area). The proposed ROW continues east from Macho Creek, turns southeast, and traverses relatively flat terrain before crossing Live Oak Creek. The proposed ROW continues southeast, before terminating on relatively flat terrain. The ROW is located on the San Miguel Ranch, Texas, United States Geological Survey (USGS) topographic quadrangle (Figure 5-1). The dominant local land use was for rangeland, oil and gas development, and recreational hunting.

5.1 ARCHIVAL RESEARCH

Archival research, conducted using the THC's Atlas online database, identified one archeological site (41AT21) located 0.5 mile (0.8 km) southwest of the ROW. This site is discussed in detail below. According to the Atlas, the nearest NRHP-listed property is the Atascosa County Courthouse, located in the town of Jourdanton, Texas, approximately 16.9 miles (27.2 km) north-northeast of the proposed ROW. The Atascosa County Courthouse was designed by renowned courthouse architect Henry T. Phelps. The nearest NRD is the Mustang Branch NRD, located 13.6 miles (21.9 km) west of the proposed ROW. Designated in 1978, the Mustang Branch NRD is comprised of campsites, chipping and quarrying areas, middens, and lithic scatters; all of which contributed to its NRD designation.

5.1.1 Site 41AT21

Site 41AT21 was documented in 1973 as a Late Prehistoric open campsite. The site was mapped on the east and west terraces of Lagunillas Creek, adjacent to an existing road. The artifact assemblage included flakes and a bone tempered pot sherd. It was noted that the site was eroding from the banks of the creek near the road. The initial evaluation concluded this site required further testing to determine its eligibility for listing on the NRHP.

5.2 SURVEY RESULTS

A cultural resources survey was conducted in two review areas within the proposed Cuellar Unit #11H Flowline ROW on 10 February 2016. The review areas were established within the current proposed ROW at crossings of Macho Creek and Live Oak Creek.

5.2.1 Review Area 1

Review Area 1 was established at a crossing of Macho Creek. The tributary was well-defined within the ROW and had a width of approximately 13 to 16 feet (4 to 5 m) (Photo 5-1). Vegetation within the review area consisted of very large honey mesquite, prickly pear cactus, small Texas persimmon,



acacia, and various grasses and forbs (Photo 5-2). Surface visibility within the review area was variable, averaging between 10 and 30 percent, and up to 100 percent north of the creek (Photo 5-3).

Four shovel tests were conducted within Review Area 1 (Figure 5-1). The shovel tests were placed in locations most likely to contain intact, temporally stratified deposits; which, were along the flat spots of the terraces and on top of the ridge overlooking the stream. Soils were composed primarily of shallow, grayish brown or yellow brown clay loam overlying dark brown clay. Argillic clays and an exposed gravel bed were visible on the north side of the tributary. Shovel tests were dug to depths between 8 and 22 inches (20.3 and 55.9 cm) below the surface (Table 1). All shovel tests administered within Review Area 1 yielded entirely negative results.

5.2.2 Review Area 2

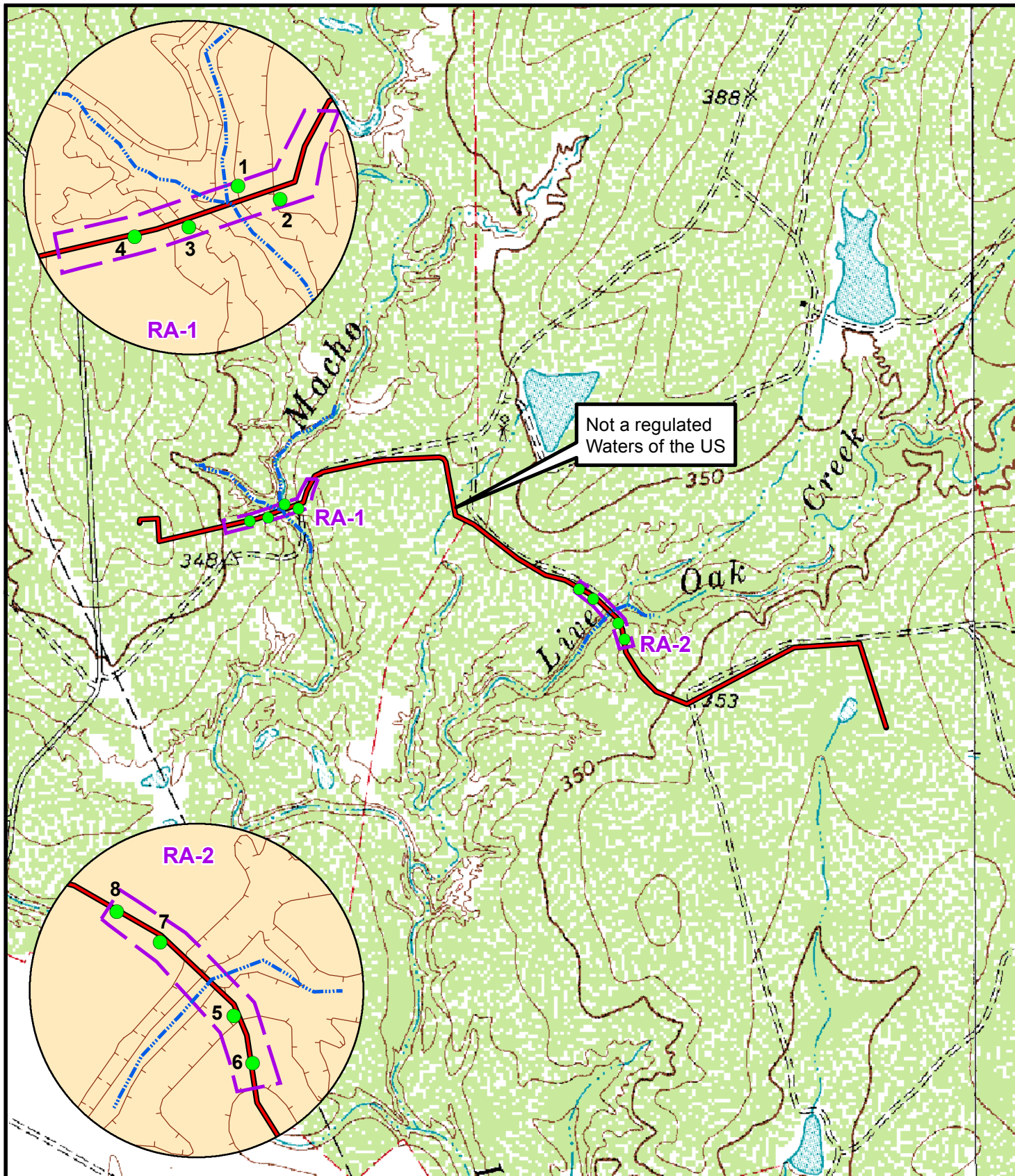
Review Area 2 was established at a crossing Live Oak Creek. The tributary was well-defined within the proposed ROW and had a width of approximately 12 feet (3.7 m) (Photo 5-4). Vegetation within the review area consisted of very large honey mesquite, prickly pear cactus, small Texas persimmon, and various grasses and forbs (Photo 5-5). Surface visibility within the review area was highly variable and averaged between 20 and 80 percent south of the creek (Photo 5-6).

Four shovel tests were conducted within Review Area 2 (see Figure 5-1). The shovel tests were placed in locations most likely to contain intact, temporally stratified deposits; which, were on top of the ridge overlooking the stream. Soils were composed primarily of shallow, grayish brown clay loam overlying clay. Shovel tests were dug to depths between 10 and 14 inches (25.4 and 35.6 cm) below the surface (see Table 1). All shovel tests administered within Review Area 2 yielded entirely negative results.

5.3 RECOMMENDATIONS

Goshawk conducted a cultural resources survey consisting of an intensive surface inspection and a total of eight shovel tests within the proposed Cuellar Unit #11H Flowline ROW. No cultural resources were observed on the surface and no artifacts were recovered from shovel testing. Therefore, it is Goshawk's opinion that construction of the Cuellar Unit #11H Flowline, as proposed, will cause no impacts to significant cultural resources within the surveyed portions of the ROW. Goshawk recommends that construction be allowed to proceed as planned. In the unlikely event that cultural resources (including human remains) are discovered, all construction or maintenance activities should be halted immediately and the USACE and an archeologist should be notified.





Map Source: USGS, San Miguel Ranch, Texas Quadrangle.

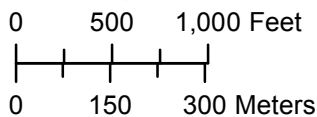






Figure 5-1
Shovel Test Locations
Atascosa County, Texas

Cuellar Unit #11H Flowline

LEGEND

-  Flowline(s)
-  Waters of the US
-  Negative Shovel Test
-  Review Areas

Date: 15 March 2016





Photo 5-1: Macho Creek Crossing ROW, Review Area 1, Facing Southeast



Photo 5-2: Typical Vegetation in Review Area 1, Facing Southeast





Photo 5-3: Typical Surface Visibility within Review Area 1



Photo 5-4: Live Oak Creek Crossing ROW, Review Area 2, Facing Northwest





Photo 5-5: Typical Vegetation in Review Area 2, Facing West



Photo 5-6: Typical Surface Visibility within Review Area 2



Table 5-1: Cuellar Unit #11H Flowline Shovel Test Data (Zone 14, NAD 1983)

Report ST#	ST#	WP#	Easting	Northing	Depth (cm)	Soil Color	Soil Composition	Artifacts	Review Area	Comments
1	PS1	433	535033	3173781	0-15	Light grayish brown	Clay loam	None	1	No gravel
					15-25	Dark grayish brown	Clay	None		Clay at 15 cm. Less sand content. No gravel
2	PS2	434	535065	3173770	0-25	Dark yellow brown	Clay loam	None	1	No gravel. Some small clay mottling at 20 cm
					25-50	Dark brown	Clay loam/ clay	None		Some CaCO3 visible in soil at 50 cm. Mottled clay loam & clay till 50 cm
					50-55	Dark brown	Clay	None		Clay
3	PS3	435	534996	3173749	0-20	Yellow brown	Clay loam	None	1	Lots of cobbles & gravel over surface. Shallow clay loam over eroded gravel bed in test.
4	PS4	436	534954	3173742	0-15	Light reddish brown	Clay loam	None	1	Shallow clay loam. Some gravel & cobbles
					15-30	Dark brown	Clay	None		Clay gravel bed. Heavy cobble & gravel content
5	PS5	437	535795	3173508	0-30	Light grayish brown	Clay loam	None	2	Very compact w/ cobbles & gravel
					30-40	Grayish brown	Clay	None		Dense clay overlying gravel bed
6	PS6	438	535809	3173472	0-25	Yellow brown	Sandy clay loam	None	2	Adjacent road & brush line. No C. R. Very large cobbles in test
					25-35	Dark yellow brown	Sandy clay	None		Large cobbles & gravel
7	PS7	439	535739	3173564	0-15	Grayish brown	Clay loam	None	2	Some gravel
					15-25	Dark grayish brown	Clay loam/ clay	None		Mottled clay loam & clay. Very firm at 25 cm.
8	PS8	440	535706	3173587	0-15	Light yellow gray brown	Clay loam	None	2	No gravel
					15-25	Dark grayish brown	Clay	None		Dense clay. No gravel

*2.5 cm = 1 inch



6.0 DISCUSSION

The goal of the cultural resource surveys was not only to locate and record sites, but to provide conclusions and site recommendations, based on NRHP criteria of significance (36 CFR 60.4), and the requirements of Section 106 and 36 CFR 800. According to the NRHP “The quality of significance in American history, architecture, archeology, engineering, and culture is present in district, sites, materials, workmanship, feeling, and association that:

- a. are associated with events that have made a significant contribution to the broad patterns of our history;
- b. are associated with the lives of persons significant in our past;
- c. embody distinctive characteristics of a type, period, or method of construction; represent the work of a master; possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction; or
- d. have yielded, or may be likely to yield, information important in prehistory or history.”

7.0 CONCLUSIONS AND RECOMMENDATIONS

During the month of February 2016, Goshawk conducted one cultural resources survey within the Eagle Ford Play, South Eagle Ford Zone. The project subjected to cultural resources investigation was the proposed Cuellar Unit #11H Flowline. During the survey, eight shovel tests were placed near potentially jurisdictional streams and upon the adjacent slopes, according to due diligence protocol. No significant cultural deposits were documented within the survey areas as a result of the shovel testing and surface survey.

Based on the results of the investigation, it is Goshawk’s opinion that no significant cultural resources will be impacted by construction within the surveyed portions of the proposed ROW. Goshawk recommends that the project be allowed to proceed as planned with the caveat that construction be limited to the surveyed ROW. In the unlikely event cultural resources (including human remains) are discovered, all construction or maintenance activities should be immediately halted and both the USACE and an archeologist should be notified.



8.0 REFERENCES CITED

Ambler, J.R.

- 1967 *Three Prehistoric Sites near Cedar Bayou, Galveston Bay Area*. Archeology Research Program 8. Texas State Building Commission, Austin.
- 1970 *Additional Archeological Survey of the Wallisville Reservoir Area, Southeast Texas*. Survey Report 6. Texas Archaeological Salvage Project, The University of Texas, Austin.
- 1973 *Excavation in the Trinity River Delta: The Lost River Phase*. Texas Archeological Survey, The University of Texas, Austin.

Arnn, John Wesley III

- 2012 *Land of the Tejas: Native American Identity and Interaction in Texas, A.D. 1300 to 1700*. The University of Texas Press, Austin.

Aten, L.E.

- 1979 *Indians of the Upper Texas Coast: Ethnohistoric and Archaeological Frameworks*. Ph.D. dissertation, Department of Anthropology, The University of Texas at Austin.
- 1983 *Indians of the Upper Texas Coast*. Academic Press, New York.

Barnes, Virgil E.

- 1976 *Geologic Atlas of Texas: Crystal City – Eagle Pass Sheet*. Bureau of Economic Geology, Dolan Hoye Eargle Memorial Edition, The University of Texas at Austin.

Black, S.L.

- 1989 *South Texas Plains*. In *From the Gulf to the Rio Grande: Human Adaptation in Central, South, and Lower Pecos Texas*, edited by T.R. Hester, S.L. Black, D.G. Steele, B.W. Olive, A.A. Fox, K.J. Reinhard, and L.C. Bement, pp. 39–62. Research Series No. 33. Arkansas Archeological Survey, Fayetteville.

Blair, Frank W

- 1950 *The Biotic Provinces of Texas*. *Texas Journal of Science*, 2(1).

Bruseh, J. E. and Toni S. Turner

- 2005 *From a Watery Grave: The Discovery and Excavation of La Salle's Shipwreck, La Belle*. The Texas Historical Commission, Austin.

Bryan, Kelly, T. Gallucci, G. Lasley, M. Lockwood and D. H. Riskind

- 2006 *A Checklist of the Birds of Texas*. 7th Edition, Technical Series No. 32, Texas Parks and Wildlife Department, Natural Resources Program, Austin., Texas.



Campbell, T.N.

- 1979 *Ethnohistoric notes on Indian Groups Associated with Three Spanish Missions at Guerrero, Coahuila. Archaeology and History of the San Juan Bautista Mission Area, Coahuila and Texas, Report No. 3. Center for Archaeological Research, University of Texas at San Antonio.*
- 1983 Espinosa, Olivares and Colorado River Indians, 1709. *La Tierra* 10(2):2–12.

Cooper, B

- 1974 A Fluted Point from McMullen County, Texas. *La Tierra* 1(3):18.

Council for Texas Archeologists (CTA)

- 1995 *Council of Texas Archeologist Guidelines: Guidelines for Cultural Resources Management Reports.* Distributed by the Council for Texas Archeologists, Austin.

Davis, W. B.

- 1978 *The Mammals of Texas.* Texas Parks and Wildlife Department, Bulletin 41:1-298.

Dittmar, Glenn W; Jack W Stevens

- 1980 Soil Survey of Atascosa County, Texas. United States Department of Agriculture, Soil Conservation Service in cooperation with the Texas Agricultural Experimentation Station.

Ensor, H.B.

- 1998 Summary and Conclusions. In *Eagle's Ridge: A Stratified Archaic and Clear Lake Period Shell Midden, Wallisville Lake Project, Chambers County, Texas*, edited by H.B. Ensor, pp. 453–469. Geo-Marine, Inc., Plano.

Ensor, H.B., and R.R. Ricklis

- 1998 Archaeological Background: Culture History, Previous Research, and Formulation of Research Design. In *Eagle's Ridge: A Stratified Archaic and Clear Lake Period Shell Midden, Wallisville Lake Project, Chambers County, Texas*, edited by H.B. Ensor, pp. 13–25. Geo-Marine, Inc., Plano.

Foster, W.C.

- 1995 *Spanish Expeditions into Texas, 1689–1768.* University of Texas Press, Austin.
- 2008 *Historic Native Peoples of Texas.* University of Texas Press, Austin.

Fox, Daniel E., Robert J Mallouf, Nancy O'Malley, and William M Sorrow

- 1974 *Archaeological Resources of the Proposed Cuero I Reservoir, DeWitt and Gonzales Counties, Texas.* Texas Historical Commission and Texas Water Development Board Archaeological Survey Report 12. Austin.



Gabriel, Wayne J., Daniel Arriaga and Jack W. Stevens

1994 *Soil Survey of La Salle County, Texas*. U. S. Department of Agriculture, Soil Conservation Service in cooperation with the Texas Agricultural Experiment Station and the Texas State Soil and Water Conservation Board. Data compiled in 1988. Temple, Texas.

Gilmore, Kathleen

1984 La Salle's Fort St. Louis in Texas. *Bulletin of the Texas Archeological Society* 55:61-72.

Gould, Frank W.

1978 *Common Texas Grasses: An Illustrated Guide*. Texas A & M University Press, College Station, Texas.

Hall, Grant D., T. R. Hester and Stephen L. Black

1986 *The Prehistoric Sites at Choke Canyon Reservoir, Southern Texas: Results of Phase II Archaeological Investigations, Choke Canyon Series #10*. Center for Archaeological Research, University of Texas at San Antonio.

Harshbarger, Clark K., Jon Wiedenfeld, and Gary Harris

2010 Soil Survey of McMullen County, Texas. United States Department of Agriculture, Natural Resources Conservation Service, in cooperation with the Texas AgriLife Research.

Hester, T.R.

1980 A Survey of Paleoindian Archeological Remains along the Texas Coast. In *Papers on the Archeology of the Texas Coast*, edited by L. Highley and T.R. Hester, pp. 1–12. Special Report No. 11. Center for Archaeological Research, The University of Texas at San Antonio.

Howard, M.A., G.L. Bailey, C.B. Bousman, K.M. Gardner, and R.C. Fields

1991 *National Register Testing at the Spanish Moss Site (41GV10) and 41GV53, Galveston County, Texas*. Reports of Investigations Number 77. Prewitt and Associates, Inc., Austin.

Leffler, John

2014 "LA SALLE COUNTY," *Handbook of Texas Online* (<http://www.tshaonline.org/handbook/online/articles/hcl04>), (accessed June 2014). Published by the Texas State Historical Association.

Mallouf, R. F., B. F. Baskin, and K. L. Killen

1977 *A Predictive Assessment of Cultural Resources in Hidalgo and Willacy Counties, Texas*. Archaeological Survey Report. No. 23. Office of the State Archaeologist, Texas Historic Commission, Austin.



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—82.

Mercado-Allinger, Patricia A.; Nancy A. Kenmotsu; and Timothy K. Perttula

1996 *Archeology in the Central and Southern Planning Region, Texas: A Planning Document*. Cultural Resources Management Report 7, Division of Antiquities Protection, Texas Historical Commission, Austin.

Natural Resources Conservation Service (NRCS)

2016 <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>, (accessed February 2016 and March 2016).

Patterson, L.W., J.D. Hudgins, S.M. Kindall, W.L. McClure, Maryann. Marek, T. Nuckols, and R.L. Gregg

1998 Additional Excavations at the Bowser Site, 41FB3, Fort Bend County, Texas. *Houston Archeological Society*, Report No. 18, Houston.

Perttula, Timothy K.

2004 *The Prehistory of Texas*. Texas A&M University Press, College Station.

Prewitt, E.R.

1995 Distribution of Typed Projectile Points in Texas. *Bulletin of the Texas Archeological Society* 66:83—174.

Prikryl, D.J.

1990 *Lower Elm Fork Prehistory: A Redefinition of Cultural Concepts and Chronologies along the Trinity River, North-Central Texas*. Office of the State Archeologist, Report 37. Texas Historical Commission, Austin.

Register of Professional Archaeologists (RPA)

2016 Code of Conduct and Standards of Research Performance. Register of Professional Archaeologists website. <http://rpanet.org/?page=CodesandStandards> (accessed March 2016).

Russell, Phillip

2010 *The History of Mexico: From Pre-Conquest to Present*. Routledge Taylor and Francis Group, New York and London.

Sager, Rebecca and Scott Justin

2013 *Cultural Resources Survey of the Proposed ±20,617-foot WTMB-Gaddis to Jarratt Gathering Pipeline, La Salle County, Texas*. Goshawk Environmental Consulting, Inc., Austin, Texas.



Schmidly, David J.

2004 *The Mammals of Texas*. Revised edition, University of Texas Press, Austin.

Story, D.A.

1985 *Adaptive Strategies of Archaic Cultures of the West Gulf Coastal Plain*. in *Prehistoric Food Production in North America*, edited by R.I. Ford, pp. 19–56. Anthropological Papers No. 75. Museum of Anthropology, University of Michigan, Ann Arbor.

Story, Dee Ann, J. A. Guy, B. A. Burnett, M. D. Freeman, J. C. Rose, D. C. Steele, B. W. Olive and K. J. Reinhard

1990 *The Archeology and Bioarcheology of the Gulf Coastal Plain: Volume I*. Research Series No. 38. Arkansas Archeological Survey, University of Arkansas, Fayetteville, Arkansas.

Taylor, Anna Jean and Cheryl Lynn Highley

1995 *Archeological investigations at the Loma Sandia Site (41LK28): A Prehistoric cemetery and Campsite in Live Oak County, Texas*. Two volumes, Studies in Archeology 20, Texas Antiquities Committee Permit No. 228, Texas Archeological Research Laboratory, The University of Texas at Austin.

Texas Historical Commission

2016a “Rules and Regulations” <http://www.thc.state.tx.us/project-review/statutes-regulations-rules#state> (accessed February 2016).

2016b *Archeological Site Atlas* (accessed February 2016).

Texas Parks and Wildlife Department (TPWD)

2016a *Ecoregion 6-South Texas Brush Country. Plant Guidance by Ecoregions*. http://www.tpwd.state.tx.us/huntwild/wild/wildlife_diversity/wildscapes/ecoregions/ecoregion_6.phtml (accessed March 2016).

2016b *Nongame and Rare Species Program: Federal/State Threatened and Endangered Species*. https://tpwd.texas.gov/huntwild/wild/wildlife_diversity/nongame/listed-species/ (accessed March 2016).

Troesser, John

2014 *History in a Pecan Shell*. Texas Escapes Online Magazine (Texas Escapes.com), <http://www.texasescapes.com/SouthTexasTowns/Fowlerton-Texas.htm> (accessed February 2014).

Tunnel, Curtis D., and J. Richard Ambler

1967 *Archeological Excavations at Presidio San Augustin de Ahumada*. Texas State Building Commission, Archeological Program Report No. 6. Austin.



Turner, E.S. and T.R. Hester

1999 *A Field Guide to Stone Artifacts of Texas Indians*. Gulf Publishing, an Imprint of Rowman and Littlefield Publishers, Inc., Lanham, Maryland.

U.S. Department of the Interior

1977 Recovery of Scientific Prehistoric, Historic, and Archeological Data: Methods, Standards, and Reporting Requirements (36 CFR Part 66, Proposed). Federal Register (42 FR 81184), 19 January 1977.

Weddle, R.S.

1985 *Spanish Sea: The Gulf of Mexico in North American Discovery, 1500–1685*. Texas A&M University Press, College Station.

1991 *The French Thorn: Rival Explorers in the Spanish Sea, 1682–1762*. Texas A&M University Press, College Station.

Willey, G.R.

1966 *An Introduction to American Archaeology*. Prentice-Hill, Englewood, New York.

Willey, G.R., and Philip Phillips

1958 *Method and Theory in American Archaeology*. University of Chicago Press, Chicago, Illinois.

