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Cultural Resources Report for the Salt Creek Midstream, LLC Proposed Quito Draw Pipeline Project on University Lands, UT System Property in Ward County, Texas

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CULTURAL RESOURCES REPORT FOR THE SALT CREEK MIDSTREAM, LLC PROPOSED QUITO DRAW PIPELINE PROJECT ON UNIVERSITY LANDS, UT SYSTEM PROPERTY IN WARD COUNTY, TEXAS

Texas Antiquities Permit No. 9011

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ABSTRACT

Enercon Services, Inc. (ENERCON), in support of Salt Creek Midstream, LLC, conducted an intensive archeological survey for the proposed Quito Draw Pipeline Project. The proposed pipeline is approximately 19.3 miles (31.1 km) in length, located near Barstow and Pyote, Texas in Ward County. This report encompasses only the University Lands, UT System property segment of the proposed Quito Draw Pipeline Project which is approximately 11.8 miles (19.0km) in length. The University Lands, UT System property segment of the project area is depicted on the United States Geological Survey (USGS) Wink South, Tex. (1968), Soda Lake NE, Tex. (1968), and Soda Lake SE, Tex. (1968) 7.5 Minute Quadrangle maps. The construction corridor consists of a 50 foot (15m) wide permanent pipeline right-of-way (ROW) and a 50 foot (15m) wide temporary workspace corridor. The entire 50 foot (15m) wide ROW will be cleared of vegetation and the eight-inch gas pipeline will be installed in an open cut trench. The cultural resources survey corridor and area of potential effect (APE) was 100 foot (30m) wide for the entire 11.8 mile (19.0km) length of the pipeline segment through the University Lands, UT System property segment of the project, for a total of 143.03 acres (57.88 hectares).

The survey of the University Lands, UT System, a political subdivision of the State of Texas, property, was completed under Texas Antiquities Permit No. 9011. The initial cultural resources field investigation on University Lands, UT System property was conducted October 7, 2018 to October 9, 2018 by Christopher Flowers and Gary D. Edington and consisted of an intensive pedestrian survey utilizing transects spaced no greater than 15m apart with shovel tests in areas which had the potential for buried cultural resources. The field investigation was conducted in accordance with the Texas Historical Commission (THC) Archeological Survey Standards for Texas. The entire project was supervised by Gary D. Edington, an ENERCON archeologist who meets the U.S. Secretary of the Interior's Professional Qualification Standards for archeology as set forth in 36 CFR 61.

The initial cultural resources investigation of the proposed Quito Draw Pipeline Project on University Lands, UT System property resulted in the observation of one isolated find (IF). IF#1 consists of a mottled pink and white tertiary chert flake. Ground Surface Visibility (GSV) at the location of IF#1 averaged around 65 percent. Five shovel tests were excavated in the vicinity of IF#1, all of which were negative for cultural resources. A pedestrian survey grid at 3-5m intervals at the location of IF#1 failed to identify any additional cultural materials and the location was noted as an isolated find. IF#1 lacks important information potential and is not recommended as eligible for the National Register of Historic Places (NRHP) or designation as a State Antiquities Landmark (SAL), and no further work is recommended at the location of IF#1.

Prior to the initial survey, a site file check was conducted which resulted in the determination that no previously recorded sites are within the APE, or within 1-mile of the APE on University Lands, UT System property. Unfortunately, the Atlas was updated after the site file check was completed. A post facto site file check was conducted which resulted in the determination that seven previously recorded sites are recorded within 1-mile of the APE. Two of which, 41WR106 and 41WR107, are recorded within the APE and were partially impacted by the construction of the Quito Draw Pipeline on University Lands, UT System property. The field crew did not know 41WR106 and 41WR107 were recorded adjacent to the APE prior to fieldwork and these site locations were not observed during the initial survey. Prior to this Cultural Resources Report being presented to THC construction began on both the Quito Draw and Olifant 12-Inch pipelines. Thus, a post facto revisit of 41WR106 and 41WR107 was conducted on February 22, 2020 by J. Matthew Oliver and Gary D. Edington to assess the impact damage to both sites. Both sites, 41WR106 and 41WR107 were negatively impacted by the construction of the Quito Draw and Olifant 12-inch Pipelines on University Lands, UT System property. At site 41WR106 it appears that less than two percent of the previously recorded site area has been destroyed while at site 41WR107 it appears that approximately four percent of the site has been destroyed by the clearing of the Quito Draw and Olifant 12-inch pipelines.

The cultural resources investigations did not result in finding any additional historic or prehistoric artifacts, features, cultural lenses, or sites over 50 years of age on University Lands, UT System property. Therefore, it is recommended that the project will have no effect on any additional historic property that may qualify for inclusion in the NRHP or determination as a SAL on University Lands, UT System property. No further cultural resources investigations are recommended for the Quito Draw Pipeline Project on University Lands, UT System property. If cultural material, including sites, features, or artifacts that are 50 years old or older are encountered within the ROW during maintenance activities of the Quito Draw and Olifant Pipelines on University Lands, UT System property, work in the area must cease and the THC (512-463-5853) must be immediately be notified.

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INTRODUCTION

Enercon Services, Inc. (ENERCON), in support of Salt Creek Midstream, LLC, conducted an intensive archeological survey for the proposed Quito Draw Pipeline Project. The proposed pipeline is approximately 19.3 miles (31.1km) in length, located near Barstow and Pyote, Texas in Ward County (Figure 1). This report encompasses only the University Lands, UT System property segment of the proposed Quito Draw Pipeline Project which is approximately 11.8 miles (19.0km) in length. The University Lands, UT System property segment of the project area is depicted (Figures 2.1 to 2.5) on the United States Geological Survey (USGS) Wink South, Tex. (1968), Soda Lake NE, Tex. (1968), and Soda Lake SE, Tex. (1968) 7.5 Minute Quadrangle maps (USGS 1968a, 1968b, 1968c). The construction corridor consists of a 50 foot (15 m) wide permanent pipeline right-of-way (ROW) and a 50 foot (15m) wide temporary workspace corridor. The entire 50 foot (15m) wide ROW will be cleared of vegetation and the eight-inch gas pipeline will be installed in an open cut trench. The cultural resources survey corridor and area of potential effect (APE) was 100 foot (30m) wide for the entire 11.8 mile (19.0km) length of the pipeline segment through the University Lands, UT System property segment of the project, for a total of 143.03 acres (57.88 hectares).

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The initial cultural resources investigation of the proposed Quito Draw Pipeline Project on University Lands, UT System property resulted in the observation of one isolated find (IF). IF#1 consists of a mottled pink and white tertiary chert flake. Ground Surface Visibility (GSV) at the location of IF#1 averaged around 65 percent. Five shovel tests were excavated in the vicinity of IF#1, all of which were negative for cultural resources. A pedestrian survey grid at 3-5m intervals at the location of IF#1 failed to identify any additional cultural materials and the location was noted as an isolated find. IF#1 lacks important information potential and is not recommended as eligible for the National Register of Historic Places (NRHP) or designation as a State Antiquities Landmark (SAL), and no further work is recommended at the location of IF#1.

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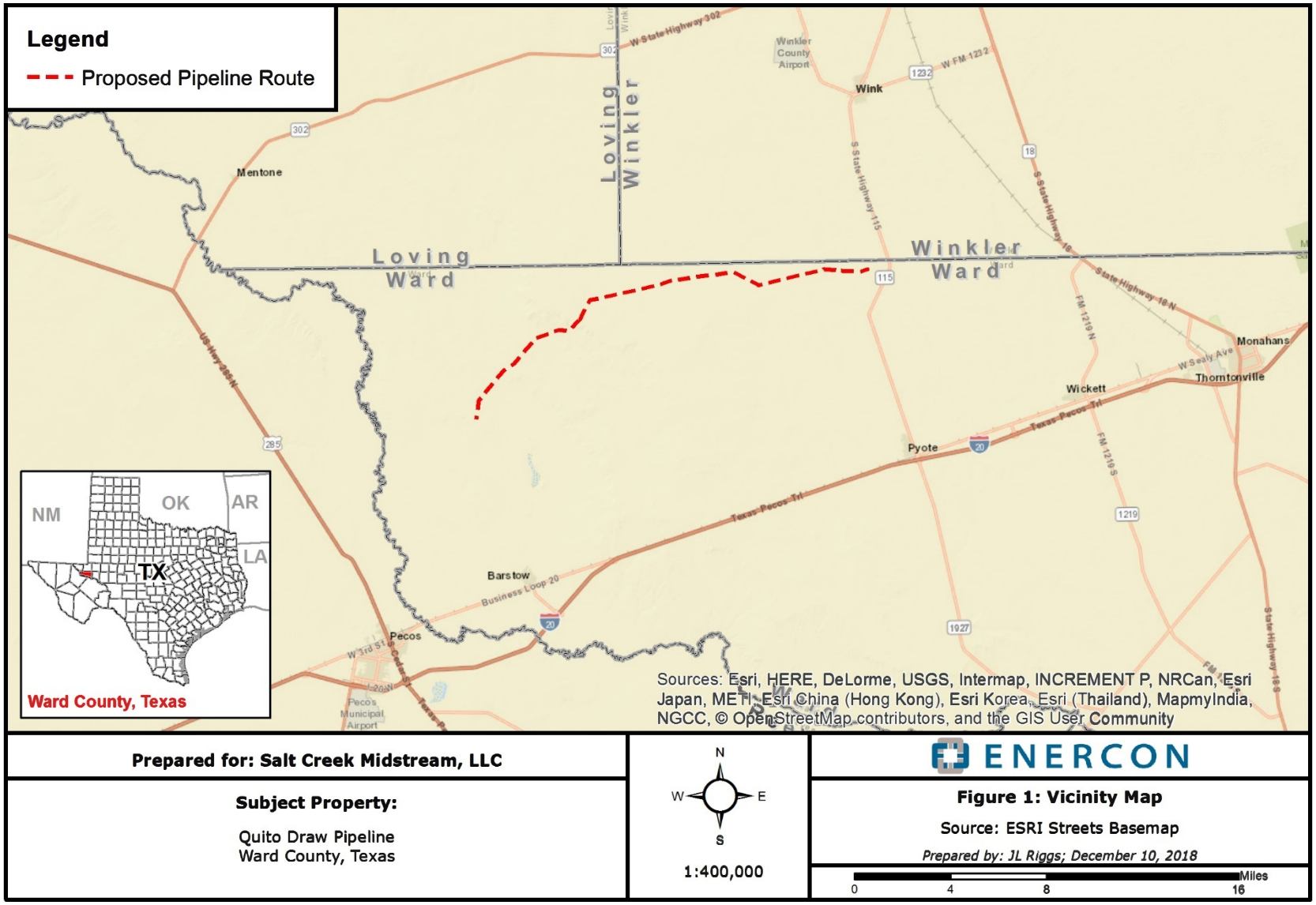
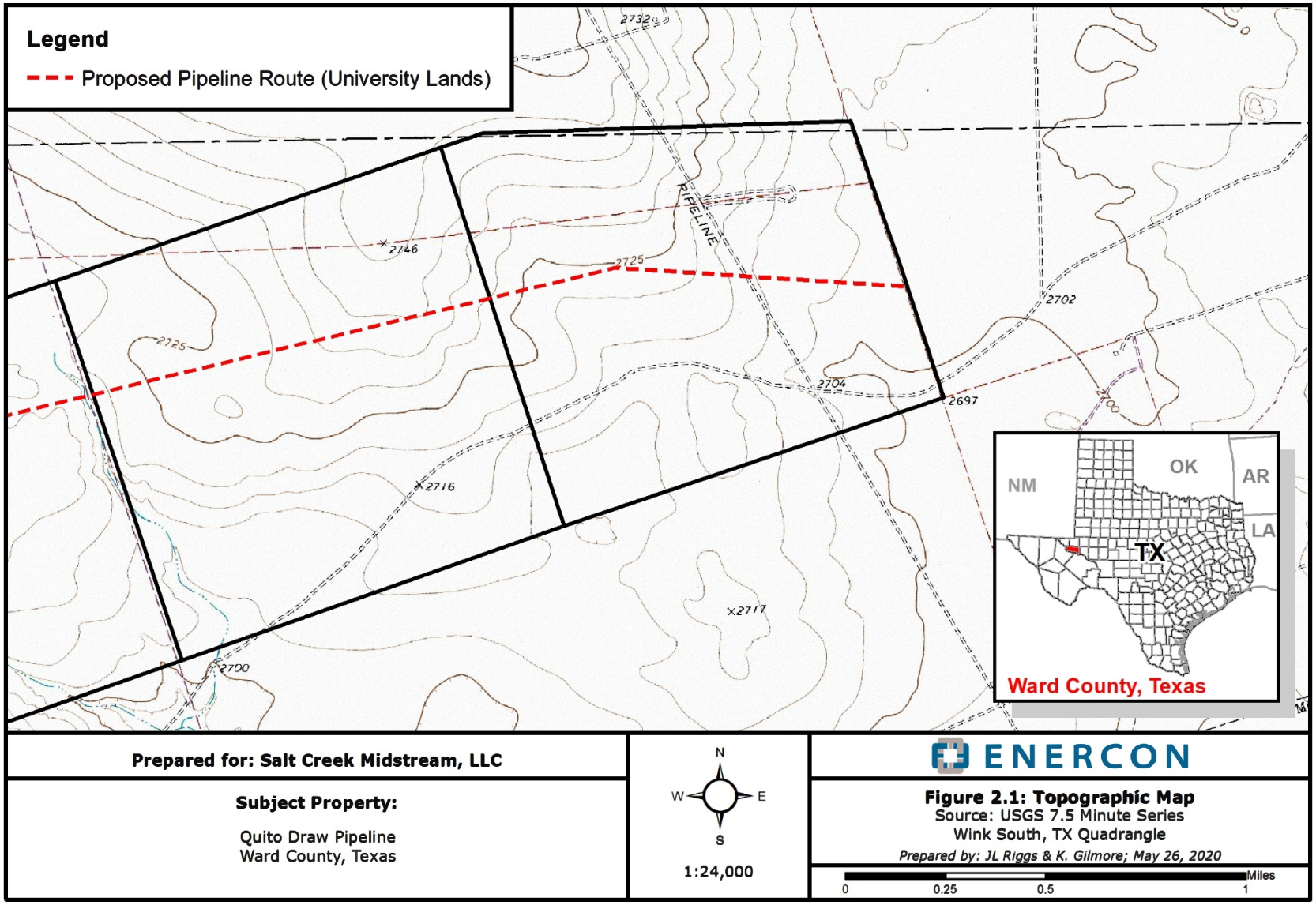
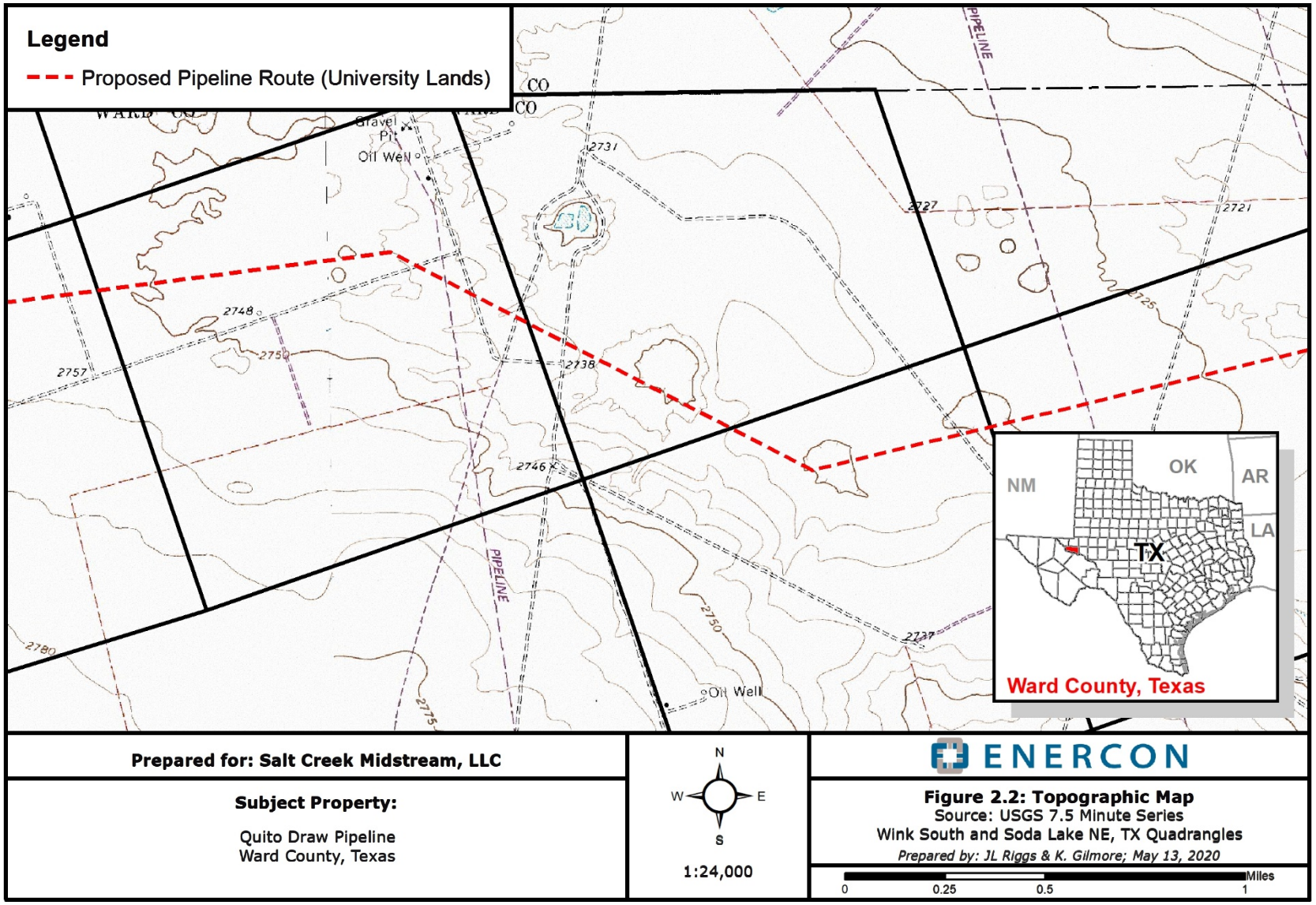
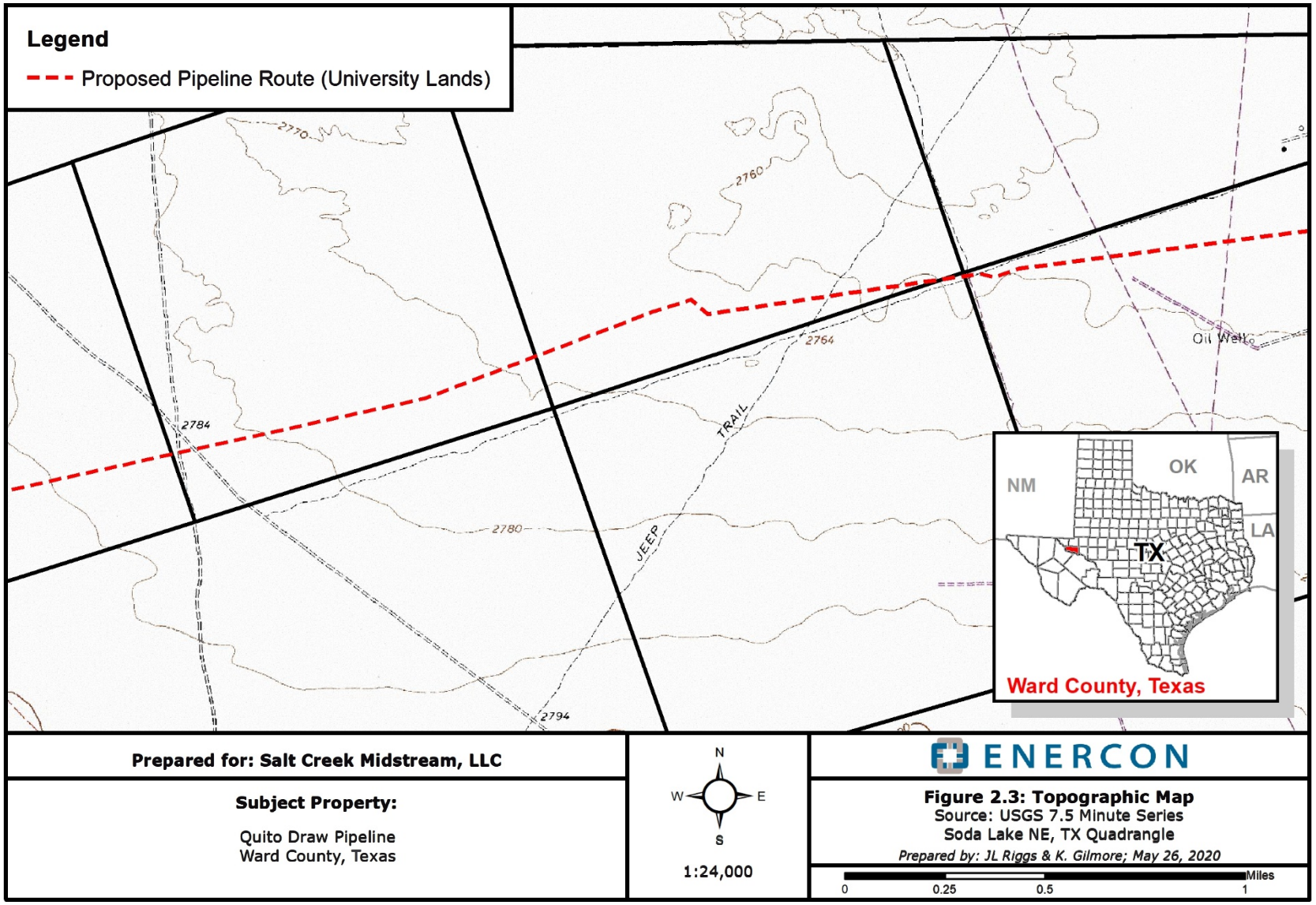
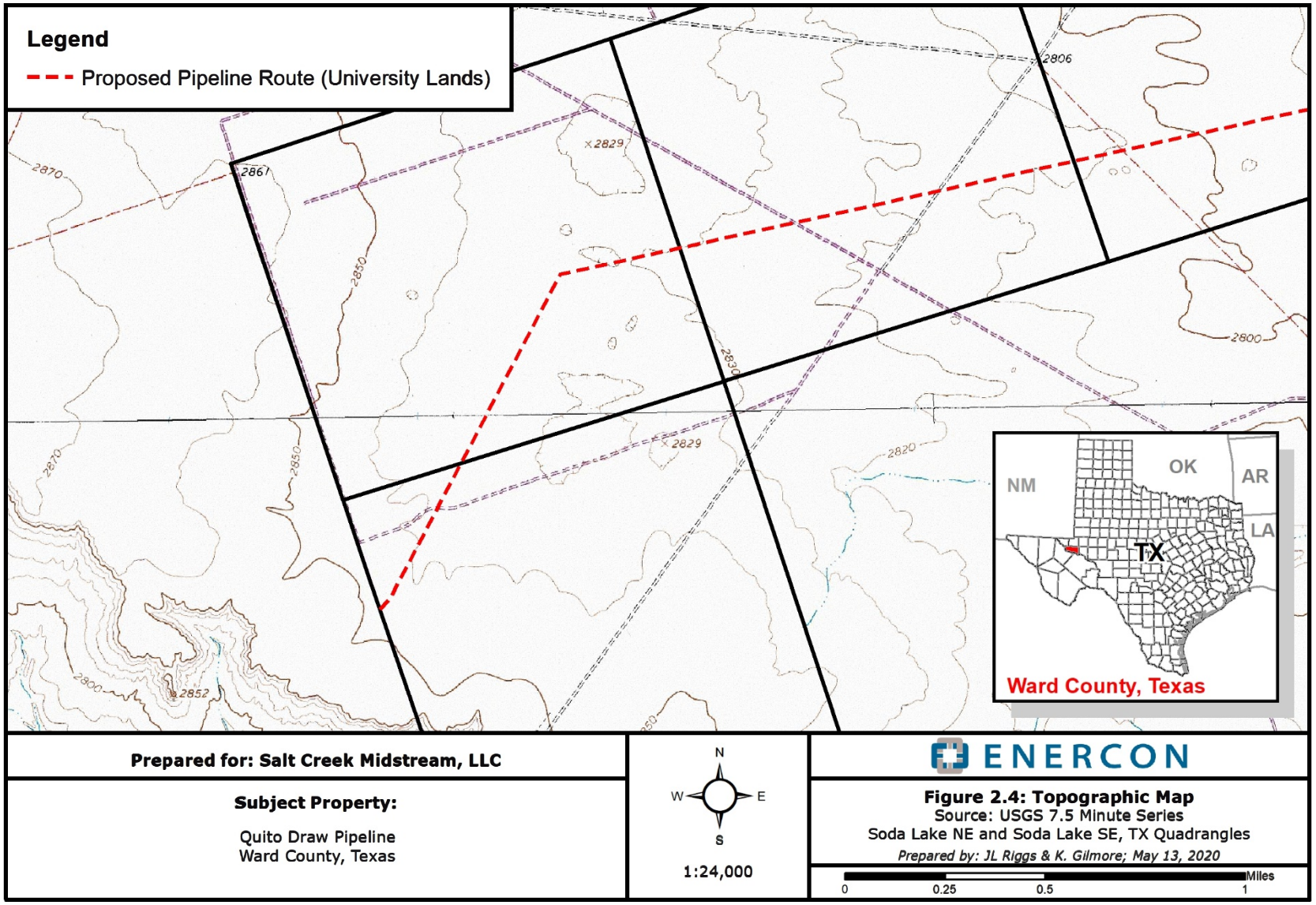

Legend
Proposed Pipeline Route
Loving
Winkler
Loving
Ward
Winkler
Ward
Mentone
Wink
Winkler County Airport
Monahans
Thorntonville
Wickett
Pyote
Barstow
Pecos
Pecos Municipal Airport
W State Highway 302
W FM 1232
S State Highway 115
S State Highway 18
State Highway 18 N
FM 1219 N
FM 1219 S
W Sealy Ave
Texas Pecos Trl
Business Loop 20
US Hwy 285 N
NM
OK
AR
LA
TX
Ward County, Texas
Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community
Prepared for: Salt Creek Midstream, LLC
Subject Property:
Quito Draw Pipeline
Ward County, Texas
N
W
E
S
1:400,000
ENERCON
Figure 1: Vicinity Map
Source: ESRI Streets Basemap
Prepared by: JL Riggs; December 10, 2018
0
4
8
16
Miles


Legend
Proposed Pipeline Route (University Lands)
PIPELINE
2732
2746
2725
2725
2702
2704
2697
2716
2717
2700
NM
OK
AR
LA
TX
Ward County, Texas
Prepared for: Salt Creek Midstream, LLC
Subject Property:
Quito Draw Pipeline
Ward County, Texas
N
W
E
S
1:24,000
ENERCON
Figure 2.1: Topographic Map
Source: USGS 7.5 Minute Series
Wink South, TX Quadrangle
Prepared by: JL Riggs & K. Gilmore; May 26, 2020
0
0.25
0.5
1
Miles


Legend
Proposed Pipeline Route (University Lands)
CO
CO
Gravel Pit
Oil Well
Oil Well
PIPELINE
PIPELINE
2731
2727
2721
2725
2748
2750
2757
2738
2746
2750
2737
2780
2775
NM
OK
AR
LA
TX
Ward County, Texas
Prepared for: Salt Creek Midstream, LLC
Subject Property:
Quito Draw Pipeline
Ward County, Texas
N
W
E
S
1:24,000
ENERCON
Figure 2.2: Topographic Map
Source: USGS 7.5 Minute Series
Wink South and Soda Lake NE, TX Quadrangles
Prepared by: JL Riggs & K. Gilmore; May 13, 2020
0
0.25
0.5
1
Miles


Legend
Proposed Pipeline Route (University Lands)
2770
2760
2764
2784
2780
2794
TRAIL
JEEP
Oil Well
NM
OK
AR
LA
TX
Ward County, Texas
Prepared for: Salt Creek Midstream, LLC
Subject Property:
Quito Draw Pipeline
Ward County, Texas
N
W
E
S
1:24,000
ENERCON
Figure 2.3: Topographic Map
Source: USGS 7.5 Minute Series
Soda Lake NE, TX Quadrangle
Prepared by: JL Riggs & K. Gilmore; May 26, 2020
0
0.25
0.5
1
Miles


Legend
Proposed Pipeline Route (University Lands)
2806
2829
2861
2870
2850
2830
2800
2820
2852
NM
OK
AR
LA
TX
Ward County, Texas
Prepared for: Salt Creek Midstream, LLC
Subject Property:
Quito Draw Pipeline
Ward County, Texas
N
W
E
S
1:24,000
ENERCON
Figure 2.4: Topographic Map
Source: USGS 7.5 Minute Series
Soda Lake NE and Soda Lake SE, TX Quadrangles
Prepared by: JL Riggs & K. Gilmore; May 13, 2020
0
0.25
0.5
1
Miles

At site 41WR106 it appears that less than two percent of the previously recorded site area has been destroyed. At site 41WR107 it appears that approximately four percent of the site has been destroyed by the clearing of the Quito Draw and Olifant 12-inch pipelines. The cultural resources surveys did not result in finding any additional historic or prehistoric artifacts, features, cultural lenses, or sites over 50 years of age on University Lands, UT System property. Therefore, it is recommended that the project will have no effect on any additional historic property that may qualify for inclusion in the NRHP or determination as a SAL on University Lands, UT System property. No further cultural resources investigations are recommended. If cultural material, including sites, features, or artifacts that are 50 years old or older are encountered within the ROW during maintenance of the two projects, work in the area must cease and the Texas Historical Commission (512-463-5853) must be immediately be notified.

ENVIRONMENTAL BACKGROUND

The study area is situated within the Chihuahuan Basins and Playas sub-ecoregion of the Chihuahuan Deserts ecoregion (Griffith et al. 2007). The Chihuahuan Basins and Playas are part of the larger Chihuahuan Deserts which extend from the Madrean Archipelago of Arizona in the west to the Edwards Plateau of west-central Texas. The boundaries of this area are defined by an arid climate with some of the lowest precipitation rates in Texas, with annual rainfall recorded at eight to fourteen inches (20 to 36 centimeters [cm]), which support desert scrub-shrub vegetation dominated by creosote bush on the alkaline or gypsiferous soils (Griffith et al. 2007). The elevation of the Chihuahuan Basins and Playas range from 1,200 to 4,500 feet (366 to 1,372m) above mean sea level (amsl) with local relief varying from 25 to 500 feet (8 to 152m) (Griffith et al. 2007:10). The major drainage of the approximately 12,625 square mile (32,699 square km) ecoregion is the Pecos River which carries runoff from New Mexico to the north (Griffith et al. 2007:8-9). Otherwise, the ecoregion is primarily internally drained, resulting in alkaline soils, but an efficient recharge rate of local aquifers.

The presence of the quality groundwater did not go unnoticed by settlers and early 20th century inhabitants who made use of the abundant groundwater with irrigation wells with flow rates between several hundred to 2000 gallons per minute (Griffith et al. 2007:9). The primary crops on these irrigated agricultural fields have included cotton, pecans, alfalfa, tomatoes, onions, chili peppers, and the famous melons, particularly cantaloupe from Reeves County (Griffith el al. 2007; Geiser 2010). Prehistoric and protohistoric populations made use of irrigation in the region in the past (Long 2010, Dethloff and Nall 2010). The ranching and irrigation based agricultural practices developed from the late 19th to 20th century in the region have altered the native environment. In the El Paso area to the west aquifer drawdown has resulted in an over a 100 foot (30m) decline in ground water levels from those recorded at the turn of the 20th century and salt build up in soils has led to the abandonment of Pecos Valley agricultural fields which were previously productive farmlands in the 1900s (Griffith et al. 2007:9). The agricultural and industrial uses of the Pecos River in New Mexico and Texas have reduced the river, which was described by early observers as being 4 to 15 feet (1.2 to 4.6m) deep, and up to 100 feet (30m) wide, and as fast, deep and wide (Griffith et al. 2007:9; Hayter 2010), into a gentle, slow, shallow and narrow channel. As an example, the early history of settlement in the region of modern Pecos, Texas was related to the encampments of cowboys in the region due to the safe ford for cattle across the mighty Pecos River to the east of the modern town site (Smith 2010a). The historic to modern grazing practices in the region have also altered the environment. The former grasslands which supported cattle have been reduced by overgrazing to desert shrub lands suitable only for sheep and goats (Griffith et al. 2007:8).

The desert setting of the study area results in relatively sparse vegetation and excellent GSV. The dominant creosote bush is an example of the resilient regional flora which can tolerate the diurnal temperature range, low moisture conditions, and high evapotranspiration rates of the region. Additional ecotones include the

high saline environments of the playas where saltbush and alkali sacaton may be found along the margins of these dry saltpans and playas (Griffith et al. 2007:8). Honey mesquite, yucca, and mixed grasses are found intermittently in the region.

The study area ranges from approximately 2,703 feet to 2,848 feet (824 to 868m) amsl. The eastern boundary of the University Lands, UT System property segment has the lowest elevation, with the highest point occurring near the western boundary of the University Lands, UT System property segment of the project area.

According to the United States Department of Agriculture (USDA), the proposed project on University Lands, UT System property crosses five mapped soil units which are presented alphabetically in Table 1. The soils primarily consist of gravelly loam derived from decomposed gypsum and/or sandstone and sandy alluvial and eolian deposits. The majority of the soils are not considered prime farmland primarily due to salinity, gravel content, or depth to bedrock (USDA 2020).

Table 1. Soils in the APE by Arability, Parent Material, and Depth to Restrictive Feature*

Soil	Arability	Parent Material	Depth to Restrictive Feature
Delnorte gravelly soils, undulating	Not prime farmland	Pleistocene-age gravelly alluvium derived from igneous and sedimentary rock	5-20 inches (13-51cm)
Pyote soils, undulating	Not prime farmland	Sandy alluvium and/or sandy eolian deposits	>80 inches (>203cm)
Sharvana soils, nearly level	Prime farmland	Calcareous, loamy eolian deposits from the Blackwater Draw Formation of Pleistocene age	8-20 inches (20-51cm)
Wickett and Sharvana fine sandy loams, gently sloping	Not prime farmland	**Wickett**=Loamy eolian deposits and/or sandy eolian deposits **Sharvana**=Calcareous, loamy eolian deposits from the Blackwater Draw Formation of Pleistocene age	**Wickett**=20-40 inches (51-102cm) **Sharvana**=8-20 inches (20-51cm)
Wickett and Sharvana soils, gently undulating	Not prime farmland	**Wickett**=Loamy eolian deposits and/or sandy eolian deposits **Sharvana**=Calcareous, loamy eolian deposits from the Blackwater Draw Formation of Pleistocene age	**Wickett**=20-40 inches (51-102cm) **Sharvana**=8-20 inches (20-51cm)

* from USDA 2020

Ward County has a subtropical-semi desert climate with relatively short mild winters and long hot summers. The average daily temperature is 46 Fahrenheit (°F) in the winter and 83°F in the summer (Orton 1975). Annual rainfall averages about 12 inches (30cm) with the majority of rainfall occurring between May and October, with a long growing season for crops from April through November. The average humidity ranges from 40 to 65 percent due to a general paucity of thunderstorms and heavy rainfall and the fact that only one-third of winters averaging any measurable snowfall (Orton 1975).

ARCHEOLOGICAL BACKGROUND

Based on the archeological record, people have inhabited the region for the last 12,000 years. The archeological chronology has commonly been broken into five temporal periods. The dates assigned to those periods differ between authors but generally include the Paleoindian Period (ca. 10,000 to 6,000 B.C.), Archaic Period (ca. 6,000 B.C. to A.D. 500), Late Prehistoric Period (ca. A.D. 500 to 1500), Protohistoric Period (ca. A.D. 1500 to 1700), and Historic Period (ca. A.D. 1700 to 1950) (adapted from Boyd 2004; Perttula 2004; Raily 2016:54). A summary of the culture history of the region is presented below. For additional information on the cultural history of the region and a more detailed review, the reader is directed to the works by Railey (2013, 2016) and Turner, Hester, and McReynolds (2011).

Paleoindian Period

Evidence for prehistoric occupation of the area is relatively scarce in the Paleoindian Period (ca. 10,000 to 6,000 B.C.). It is probable that earlier sites have been lost to erosion due to the geological context of the area (Boyd 1997:7). Paleoindian sites are more common and more reliably dated on the eastern Edwards Plateau and southern High Plains, although sites and isolated artifacts have been recorded. Although there is growing evidence for an earlier human presence in the Americas, Clovis is the first well-defined cultural horizon in the region. The remains of large herbivores are found in association with Clovis artifacts but there is more recent research supporting the procurement of smaller animals and plants during this time. The Clovis projectile points are lanceolate in shape and have fluted bases. Subsequent Paleoindian projectile points include Folsom and Plainview (Turner, Hester, and McReynolds 2011:45). These projectile points were typically hafted to spears, which were often thrown with the aid of atlatls. The Shifting Sands site, a Winkler County Folsom occupation site which has produced evidence beyond the isolated points, represents research into the Paleoindian tradition in proximity to the project vicinity (Hofman, Amick and Rose 1990).

Archaic Period

With the extinction of megafauna, the Archaic Period (ca. 6,000 B.C. to A.D. 500) is generally defined by broader subsistence practices and an increase in intensity of resource exploitation. The climate transitioned from the dryer Altithermal in the Early Archaic through the Late Holocene Wet Period to the relatively dry in the Late Archaic Medieval Period (Railey 2016:59-83). Additionally, temperatures appear to have increased which resulted in changes to the biotic community and the subsequent subsistence strategies of the Archaic Period populations of the region. Fire cracked rock (FCR) and oxidized rock is relatively common during this period and likely results from hearths and ovens. Although resource exploitation is inferred to be more intense, subsistence appears to be focused on seasonal mobility tied in part to bison hunting (Boyd 1997). Campsites and rock shelters have been identified from this period, mostly from the Late Archaic. Projectile points are normally barbed spear or dart points, and plant-processing tools increase through time (Johnson and Holliday 2004). There is an increase in the number of recorded sites in the region attributed to the Late Archaic in terms of both diagnostic points and radiocarbon dates (Railey 2016:75, 86). The overall inference is an increase in the population of the region during the Late Archaic (Railey 2016:75).

Late Prehistoric Period

The Late Prehistoric or Ceramic Period (ca. A.D. 500 to 1500) is marked by the presence of ceramics and smaller projectile points indicating the switch from atlatl and spear to the bow and arrow (Johnson and Holliday 2004). This period is also known as the Formative Period in the nearby western Trans-Pecos because of the area's inclusion within the Jornada Mogollon culture of the greater Southwest archeological region (Railey 2016:83; Miller and Kenmotsu 2004). Due to further drying of the climate, bison appear to

become scarcer in this region. Trading is inferred to have occurred with Southwestern groups including the Jornada Mogollon (Boyd 1997). Brownware pottery was imported from the Puebloans and habitation structures from this period include pit houses. Campsites were still likely used during parts of the year and would be representative of seasonal mobility. Subsistence practices in the Southern High Plains of the Texas Panhandle to the northeast included the introduction of maize by A.D. 1000 (Drass 2008), and maize has been found in caves to the west in the Guadalupe Mountains, and to the south on the Marfa Plain (Railey 2016:99-101, 132). However, the region continued to be dominated by mobile hunter-gatherers (Railey 2016:132), and regional subsistence in Ward County does not include evidence of cultivated resources (Railey 2016:99-101, 132). In the latter part of the period, prestige goods like Olivella shell beads, turquoise, non-local pottery, and obsidian become more common.

Protohistoric Period

The Protohistoric Period (ca. A.D. 1500 to 1700) begins with direct and indirect European influences in the region. This period is also known as the Post-Formative Period in the nearby western Trans-Pecos and New Mexico (Railey 2016:134-140). European settlement did not begin to seriously disrupt aboriginal habitation until after A.D. 1700. European diseases, probably introduced by explorers and early traders, did have impacts as early as A.D. 1528. At least 30 epidemics were recorded among Texas tribes between A.D. 1528 and 1890 (Ewers 1974). Further to the west in the project region Railey defines this era as the Post-Formative Native Americans (After A.D. 1450). There is widespread abandonment of the villages and associated lifestyle on the southern High Plains, the Jornada Mogollon and even the Casa Grandes Region (Railey 2016:134). There is limited evidence of sites dating to the Post Formative Period in the study region and in Southeast New Mexico (Railey 2016:137). With the abandonment of the village lifeway, the nomadic bison hunters either did not leave a record that is temporally recognizable via radiocarbon dating, or material culture that can only be attributed to this era. Railey refers to this as a 'low archaeological visibility" problem for sites from the Post-Formative Period (2016:140). Whether populations totally abandoned the region remains unclear.

Historic Period (A.D. 1700 to 1950)

Spanish explorers began expeditions in the Gulf of Mexico beginning in the early 1500s followed by Catholic missionaries accompanied by Spanish soldiers. The Spanish, while teaching locals Christianity and farming, attempted to make loyal Spanish citizens. The first missions were established in Mexico, but were later built in California, Arizona, New Mexico, and Texas (Campbell 2003:36-38). The French, partially to stem the advance of the Spanish, wanted to increase their fur trading territory and gain control of the Mississippi River valley. By 1682, LaSalle, a Frenchman, launched an expedition down the Mississippi River that claimed all of the lands drained by the river for France followed by a colonization effort to settle the mouth of the Mississippi River. Subsequent to the French incursion into the region, the Spanish increased the rate of establishing settlements in Texas (Campbell 2003:41-45, 48).

The Spanish mission system did not expand during the 18th century. Native American attacks and a lack of colonists contributed to the decline of Spanish settlement in Texas. In 1762, the Spanish acquired Louisiana from the French, which slowed the need to settle east Texas. In 1800, Spain ceded Louisiana to France, who then sold it to the United States. From 1800 to the 1820s, the population of Texas decreased as a result of the effects of the Mexican Revolution. In 1821, Mexico finally became an independent nation, separate from Spain. This newly independent country encouraged Anglo-American settlement within Texas; this effort was led by Stephen F. Austin. Austin came to an agreement with the Mexican government in which he would bring settlers to Texas and, in return, he would be rewarded with land and money. By 1830, ten thousand Anglo-Americans, mostly from the American southeast, had settled in Texas (Campbell 2003:105-110).

Texas operated as an independent nation for 10 years (1836 to 1846) and during this time, the Mexican government never truly recognized its independence. In 1846, Texas was annexed by the U.S. and it was now up to the U.S. government to settle the border dispute with Mexico. The Mexicans claimed the international border as the Nueces River, while the U.S. claimed the Rio Grande as the demarcation line. After two years of skirmishes and an attack on Mexico City, the United States succeeded in its efforts; with the treaty of Guadalupe Hidalgo. Mexico recognized the Rio Grande as the border and ceded the entire southwest to the Pacific Ocean to the U.S. (McComb 1989:57).

At the time of annexation by the U.S., west Texas was relatively unexplored territory, home to various Native American groups. Settlers began slowly pushing into this territory in the mid-19th century. In 1848, the U.S. Army stationed troops in west Texas and created travel routes through this new territory, which would become corridors for pioneers traveling to California. These included the Chihuahua Trail, which led from Mexico to Indianola, Texas, and Horsehead Crossing and Castle Gap in Crane County, all of which were utilized as trade networks during the prehistoric period as well as forming part of a historic transportation corridor linking Mexico, the U.S. and Canada. Castle Gap functioned as a primary route for the U.S. Cavalry, California Forty-niners, cattle drives, stagecoaches, and wagon trains.

During the Civil War, Texas was a large contributor to the Confederacy, but differed significantly from other southern states. Texas was a frontier state, with a diversified population of Mexicans, Anglo-Americans, and Native Americans. The state also had a large European immigrant population, many of whom were small farmers. Two-thirds of the farmers in the state were non-slave holding, which meant that the agricultural economy was maintained following the Civil War. In addition, cattle ranches were a large industry, resulting in economic diversity. Thus, Texas was not as negatively impacted economically as other southern states during post-Civil War Reconstruction (Campbell 2003:209, 213).

The Native American groups of Texas saw the defeat of the Confederacy and the weakening of Texas as a chance to regain lands they had lost. During this period, the Comanche and Apache occupied the areas of west Texas. In response to this increase of Native American attacks, the U.S. sent troops to reoccupy several forts. By 1874, a major campaign was initiated in Texas that took away Native Americans' horses, destroyed their villages, and forced them to return to their reservations. The consolidation of Native Americans on reservations allowed Anglo-Americans to settle permanently in west Texas (Campbell 2003:291, 295).

Following these campaigns, the military sent troops to conduct detailed expeditions of the former Native American lands. By 1876, several of the counties northeast of the project area were surveyed by parties from Fort Concho. Ranchers moved into these areas and began raising large herds of cattle, as the demand for beef had risen after the Civil War. New cattle trails developed throughout west Texas, where large herds were driven hundreds of miles north to the mid-western railroad routes. In 1881, the Texas and Pacific Railway extended their rail lines through west Texas; up to this point, rail transportation was only available in east Texas. Between the 1870s and 1890s, 8,000 miles of railway track were laid, connecting the entire state. The new railroads significantly reduced the time and distance it took the cattle industry to transport their herds to market (Campbell 2003:297, 306).

The expansion of the railroad connected the rural communities of west Texas with the booming cities to the east. Towards the end of the nineteenth century, cattle ranchers began to fence off their herds and create small communities on the frontier. In 1895, a law was passed that broke up these larger ranches, allowing farmers to purchase smaller tracts of land. This led to the end of open-range ranching and attracted additional settlers. West Texas communities generally grew slowly due to poor soil conditions and the difficulty of accessing water. People began to farm corn and cotton on the newly settled land, but ranching was still the dominant economic activity of west Texas at the end of the 19th century.

Ward County is an area consisting of 836 square miles (1,345 square km) of primarily flat lands on the southern margin of the High Plains of southwest Texas, which was formally designated by the Texas Legislature in 1887 and named in honor of prominent Texas statesman Thomas William Ward. Prior to formal organization as a county, the area had a population totaling only 75 residents in 1890 (Justice and Leffler 2010). The previous year, in 1889, the Texas Legislature passed an act to encourage irrigation and development in West Texas which drew the interest of the Rhode Island capitalist George E. Barstow, who, along with other developers promoted a town site in western Ward County on the Texas and Pacific Railway in 1891 (Hazelwood 2010). Ward County was then formally organized with the town of Barstow named as the county seat in 1892, and by 1893, a red sandstone County Courthouse had been constructed at Barstow. Irrigation based agriculture was successful during the first decade and by 1904 the area was noted for crops of melons, grapes, peaches and pears. By 1900, Barstow had a population of 1,103 and Ward County had a population of 1,451 (Hazelwood 2010; Justice and Leffler 2010). The dam constructed on the Pecos River near Barstow collapsed in 1904 and the resulting flood ruined the fields with salt laden water. The subsequent droughts in the region in 1907 and 1911 also took their toll on the local orchard and vineyard economy and by 1911 the fruit industry was in decline, and by 1918, the short-lived fruit industry in Ward County had ceased (Hazelwood 2010; Justice and Leffler 2010). Agriculture did continue, as cotton production increased from 3,000 acres reported in 1910 to 10,000 acres reported in 1920 (Justice and Leffler 2010). In 1926, random drilling resulted in the discovery of the Hendrick Oilfield in central Winkler County, immediately north of Ward County. The rapid development of the of the Hendrick Oilfield brought growth to eastern and central Ward County (Smith 2010b). The shifting of county economic activity in the region from irrigation-based agriculture, to oil and gas development resulted in a population and economic shift from the west to the eastern portion of the county. In 1924, Barstow had declined in population from 1,103 in 1910, to an estimated 490 in 1924 and 468 in 1930 (Hazelwood 2010). While in the east, the community of Monahans had an estimated 89 residents in 1905, a population of 378 in 1910 and 816 residents in 1930 (Justice 2010). Monahans, which was incorporated in 1928, replaced Barstow as the County Seat in 1938. By 1940, the population of Monahans was 3,944 (Justice 2010). The population of Ward County was 9,575 in 1940, increased to 13,346 in 1950, and subsequently to 14,917 in 1960, before declining to 13,019 in 1970, then reporting 13,976 in 1980 (Justice and Leffler 2010). The current July 1, 2019 population estimate for Ward County is 11,998 (United States Census Bureau [USCB] 2020).

Pyote, Texas, located approximately seven miles south-southeast of the proposed APE experienced similar economic development in the late 1920s due to the Hendrick Oilfield. The population of Pyote in 1925 was a reported 100, which swelled by 1928 to 3,500, as the community was the shipping and distribution hub for the regions oil activity (Smith 2010b). The local boom in Pyote was relatively short and the completion of a Texas-New Mexico Railway spur from Monahans to Kermit in 1929, with a three mile branch to Wink (Smith 2010b; Justice 2010; Cravens 2010). By 1930, the Texas-New Mexico Railway connected to Lovington New Mexico (Cravens 2010), and this eastern Ward County railway connection effectively ended the oil-shipping boom in Pyote (Smith 2010b, Justice 2010). By 1931, the population of Pyote had decreased to 1,097. Pyote was not incorporated until 1933, but by 1941, only 201 residents were still living in the recently incorporated town (Smith 2010b). The lands to the west and south of Pyote are primarily relatively flat University Lands, UT System property. The topography, uninhabited lands status and climate were suitable for the rapid development of the of the Pyote Army Airfield, which would be renamed the Pyote Air Force Station. Construction of the base of 2,745 acres of University Lands, UT System property one mile southwest of Pyote began on September 5, 1942 (Colwell 2010). The base came to be known as the "Rattlesnake Bomber Base" by the servicemen stationed there due to its remote location, topography and the lack of other dominant fauna of the region. Servicemen began moving into the uncompleted base within one month of the initiation of construction and by October of 1944, the base was home to over 6,500 residents (Colwell 2010). In fact, the base had grown to become the largest bomber-training base in the U.S. within four months of its opening, as the home of the Nineteenth Bombardment Group, on January 5, 1942 (Colwell 2010). The triangular arrangement of two 8,400-foot runways, aprons, and some ancillary taxiways can still be seen on aerials today. Other than a few other features, the "Rattlesnake Bomber Base

Museum" and a portion of the barracks which became the West Texas Children's Home in 1966, and later the West Texas State School in 1990 (Smith 2010c), not much of the base is present since its deactivation in the mid-1960s.

BACKGROUND RESEARCH

Prior to field investigations, an address-restricted records search was conducted online at the Texas Archeological Sites Atlas (the Atlas) to locate previously recorded archeological sites, archeological surveys, NHRP properties, and SALs near the project area. This research was conducted to determine if any known resources could be affected, as well as the types of resources in the area, and the probability of encountering the resources during fieldwork. A site file check was conducted on October 2, 2018 by Michael Margolis, an ENERCON archeologist who meets the U.S. Secretary of the Interior's Professional Qualification Standards for archeology as set forth in 36 CFR 61, which resulted in the determination that no sites had been previously recorded within the APE, or within 1-mile of the APE on University Lands, UT System property. Based on the Atlas, there were two mapped projects within 1-mile of the APE on University Lands, UT System property. Unfortunately, the Atlas was updated after the site file check was completed. A post facto site file check was conducted on December 17, 2019 by Cody M. Kiker, which resulted in the determination that seven previously recorded sites are recorded within 1-mile of the APE (Table 2).

Table 2. Previously recorded Cultural Resource Sites within 1-Mile of the APE

Trinomial	***Resource Type***	***Distance to APE***	***NRHP/SAL Status***
41WK99	Prehistoric oxidized rock scatter	4,850 feet (1,478m)	Eligible
41WK102	Multicomponent scatter	5,030 feet (1,533m)	Eligible
41WR105	Prehistoric oxidized rock and lithic scatter	460 feet (140m)	Not eligible
41WR106	Prehistoric oxidized rock and lithic scatter	Adjacent to APE	Eligible
41WR107	Archaic oxidized rock and lithic scatter	Adjacent to APE	Eligible
41WR108	Multicomponent scatter	1,530 (466m)	Eligible
41WR109	Late Prehistoric artifact and oxidized rock scatter	3,720 feet (1,134m)	Eligible

Site **41WK99** is a prehistoric oxidized rock scatter with five thermal features recorded by Lone Mountain Archaeological Services, Inc. (Lone Mountain) in 2017. The site consists of approximately 200 pieces of oxidized rock. No other artifacts were observed. The five thermal features are oxidized rock concentrations consisting of 45 to 80 pieces of oxidized rock each. Three of the five thermal features displayed staining, and four of the five thermal features contained charcoal. A trowel test in one of the features revealed staining to 10cm depths. GSV at the site averaged 80 percent. The site was recommended as eligible for the NRHP and was determined eligible by the SHPO on October 3, 2017. The site is recorded approximately 4,850 feet (1,478m) from the APE and will not be impacted by the construction of the Quito Draw Pipeline.

Site **41WK102** is a multicomponent scatter recorded by Lone Mountain in 2017 and consists of approximately 10,000 oxidized rock fragments, 20 lithic artifacts, and 20 20th century artifacts. The lithic assemblage included: a primary flake; five secondary flakes; six tertiary flakes; three cores; a hammerstone;

a chopper; an indeterminate metate; and two manos. The 20th century assemblage included: five pull-tab beverage cans; five wood plank fragments; and ten metal fragments. Nineteen thermal features were observed at the site, all of which were oxidized rock concentrations without associated artifacts. Three of the thermal features were trowel tested which revealed buried oxidized rock and carbon staining to 10cm depths. GSV at the site averaged 80 percent. The site was recommended as eligible for the NRHP and was determined eligible by the SHPO on October 3, 2017. The site is recorded approximately 5,030 feet (1,533m) from the APE and will not be impacted by the construction of the Quito Draw Pipeline.

Site **41WR105** is a prehistoric oxidized rock and lithic scatter with a single thermal feature recorded by Lone Mountain in 2017. The site consists of approximately 700 fragments of oxidized rock scattered throughout the site and a gray chert secondary flake. The thermal feature is a concentration of approximately 500 oxidized rock fragments. A trowel test in the feature revealed oxidized rock fragments at 6cm depths. GSV at the site averaged 80 percent. The site was recommended as ineligible for the NRHP and was determined ineligible by the SHPO on October 3, 2017. The site is recorded approximately 460 feet (140m) from the APE and will not be impacted by the construction of the Quito Draw Pipeline.

Site **41WR106** is a prehistoric lithic and oxidized rock scatter with six thermal features recorded by Lone Mountain in 2017. The site consists of approximately 1,000 oxidized rock fragments and 15 lithics. The lithic assemblage included: ten secondary flakes; two tertiary flakes; a multidirectional core; and two basin metate fragments. All six thermal features are concentrations of oxidized rock with approximately 200 to 400 fragments each. A trowel test in one of the thermal features revealed oxidized rock fragments at 10cm depths. GSV at the site averaged 80 percent. The site was recommended as eligible for the NRHP and was determined eligible by the SHPO on October 3, 2017. The site is recorded adjacent to the APE and was impacted by the construction of the Quito Draw Pipeline. This is due to the Atlas being updated after the initial file search. Site 41WR106 was revisited during a post facto survey and the results are discussed in the results section of this report.

Site **41WR107** is an Archaic Period lithic and oxidized rock fragment with one thermal feature recorded by Lone Mountain in 2017. The site consists of approximately 300 oxidized rock fragments and 22 lithic artifacts including: nine secondary flakes; three tertiary flakes; five pieces of angular shatter; three cores; a scraper; and a reworked Archaic projectile point/knife (PPK) fragment. The thermal feature is an oxidized rock concentration of approximately 200 oxidized rock fragments. A trowel test in the feature revealed oxidized rock fragments at 10cm depths. GSV at the site averaged 80 percent. The site was recommended as eligible for the NRHP and was determined eligible by the SHPO on October 3, 2017. The site is recorded adjacent to the APE and was impacted by the construction of the Quito Draw Pipeline. This is due to the Atlas being updated after the initial file search. Site 41WR107 was revisited during a post facto survey and the results are discussed in the results section of this report.

Site **41WR108** is a multicomponent scatter with two thermal features recorded by Lone Mountain in 2017. The site consists of a surface scatter of approximately 5,000 oxidized rock fragments, nine lithic artifacts, and 33 20th century artifacts. The lithic assemblage included: two secondary flakes; two tertiary flakes; a core; a metate; and three manos. The 20th century assemblage included: a metal bucket with handles; 10 wood planks; and 22 metal fragments. The thermal features are oxidized rock concentrations and carbon staining is present in one of them. GSV at the site averaged 80 percent. The site was recommended as eligible for the NRHP and was determined eligible by the SHPO on October 3, 2017. The site is recorded approximately 1,530 feet (466m) from the APE and will not be impacted by the construction of the Quito Draw Pipeline.

Site **41WR109** is a Late Prehistoric Period artifact and oxidized rock scatter with four thermal features recorded by Lone Mountain in 2017. The site consists of approximately 150 oxidized rock fragments; a secondary flake; two tertiary flakes; a piece of angular shatter; two scrapers; four metates; two manos; and

four Chupadero Black on White sherds. The thermal features are oxidized rock concentrations and two of the four displayed staining. A trowel test in one of the features revealed oxidized rock fragments at 10cm depths and a groundstone fragment. GSV at the site averaged 85 percent. The site was recommended as eligible for the NRHP and was determined eligible by the SHPO on October 3, 2017. The site is recorded approximately 3,720 feet (1,134m) from the APE and will not be impacted by the construction of the Quito Draw Pipeline.

Four previous archeological studies were located within 1-mile of the study area and are designated in the THC Atlas as numbers 8400009229, 8500080377, 8500060944, and 8500080967. These studies, and the overall background research of the region suggests that the study area is located within a larger area where climatic conditions, burrowing rodents, and the effects of ranching and oil and gas exploration have each affected the cultural landscape leading to two types of general settings. Wind erosion and extensive bioturbation from rodent burrowing, and sheep and cattle grazing have exposed the upper surface of the landscape within the Chihuahuan Basins and Playas. With the exception of a few geomorphological locations, archeological sites of all ages may be located on the exposed ground surface and/or were never buried (Hall 2006:2-7). The majority of archeological sites are located on eroded surfaces and therefore lack vertical integrity and stratigraphy (Hall 2006:2-15). While intact archeological deposits may be encountered where depositional processes, such as (a) colluvial; (b) eolian sand deposits associated with the playa margins; (c) upland playa and lake fill deposits; and (d) within and adjacent to extant and/or extinct draws and/or drainages of Late-Pleistocene to early Holocene age (Hall 2006:2-7, 2-11; Johnson and Holliday 2004:285, 290, 294). Within the University Lands, UT System property segment of the proposed Quito Draw Pipeline Project the former setting is predominant, and many sites would be expected to be resting on the surface, or ephemerally exposed by shifting sand dunes.

METHODOLOGY

The cultural resources field investigation followed the THC's *Archeological Survey Standards for Texas*. The project area was surveyed by using parallel pedestrian transects spaced no more than 15m apart. The entire APE of the proposed project was subjected to pedestrian survey for cultural resources.

Shovel testing density within the survey followed minimum standards outlined by the THC and the Council of Texas Archeologists' practices and procedures, which call for 16 shovel tests per mile in settings which have the potential for buried deposits. Shovel testing was not required in areas with slopes greater than 20 percent, or which did not exhibit potential for buried deposits. Shovel tests are not excavated in areas with standing water, or in areas in which underground utilities are present.

Shovel tests generally measure 30cm in diameter and are excavated by hand digging to bedrock, a stratigraphic deposit (e.g. subsoil) that was determined to be below Holocene aged deposits, or to 80-100cm (dependent on soil matrix consistency and hardness). All shovel test fill was passed through ¼ inch mesh screen or gone through by hand if the soil would not pass through the screen. Shovel tests were excavated in arbitrary 10cm levels unless stratigraphic changes were observed.

The cultural resources field investigation of the APE exceeded the minimum standards outlined by the THC and the Council of Texas Archeologists' practices and procedures (13 TAC 26.5 and 26.20).

RESULTS

The initial cultural resources field investigation of the Quito Draw Pipeline Project University Lands, UT System study area was conducted on October 7, 2018 to October 9, 2018 by Christopher Flowers and Gary D. Edington. The cultural resources survey corridor was 100 foot (30m) wide for the entire 11.8 miles (19.0km) length of the pipeline segment through the University Lands, UT System lands (Appendix A). The total area inspected during the cultural resources survey of the study area was 143.03 acres (57.88 hectares).

During the initial fieldwork, the weather was seasonal with low temperatures in the upper 50s°F and daily highs ranging from the upper 70s to lower 90s°F with clear to partly cloudy skies and relatively low winds. The University Lands, UT System property is located approximately 2.0 miles (3.2km) west of the intersection of County Road 120 and State Highway 115 and extends west-southwest through the uplands. The eastern segment of the study area from the east boundary to an existing lease road approximately 6.2 miles (9.9km) west, consists of flat to gently undulating upland terrain with vegetation typically composed of desert scrub-shrub chaparral and sand dunes dominated by creosote bush, mesquite and thin grasses with general GSV ranging from 35 to 95 percent, averaging 80 percent (Figures 3 to 6). The west segment of the study area from the existing lease road approximately 6.2 miles (9.9km) west of the eastern boundary consists of gently undulating to rolling terrain with vegetation typically composed of desert scrub-shrub dominated by creosote bush in rocky and gravelly upland settings, and mesquite and thin grasses in sand dune settings with general GSV ranging from 35 to 90 percent, averaging 85 percent (Figures 5 to 8). The APE crosses numerous existing pipeline and lease road ROWs (Appendix A). The initial cultural resources investigation of the proposed Quito Draw Pipeline Project on University Lands, UT System property resulted in the observation of one IF. IF#1 consists of a mottled pink and white tertiary chert flake (Figures 9 to 11). Five shovel tests were excavated in the vicinity of IF#1, all of which were negative for cultural resources (Figures 10 to 11; Appendix B). GSV at the location of IF#1 averaged around 65 percent. A pedestrian survey grid at 3-5m intervals at the location of IF#1 failed to identify any additional cultural materials and the location was noted as an isolated find.

Figure 3. General overview of the eastern segment of the study area, facing east.

Figure 4. General overview of the eastern segment of the study area, facing west.

Figure 5. General overview of the study area, facing east from the existing lease road approximately 6.2 miles (9.9km) west of the eastern boundary of University Lands, UT System property.

Figure 6. General overview of the study area, facing west from the existing lease road approximately 6.2 miles (9.9km) west of the eastern boundary of University Lands, UT System property.

Figure 7. General overview of the western segment of the study area, facing east-northeast.

Figure 8. General overview of the western segment of the study area, facing west-southwest.

Figure 9. IF#1, a mottled pink and white tertiary chert flake, facing down.

Figure 10. Representative shovel test (ST2) in the vicinity of IF#1, a mottle pink and white tertiary chert flake, facing down. Note the high GSV.

Figure 11. Representative shovel test (ST4) in the vicinity of IF#1, a mottled pink and white tertiary chert flake, facing down. Note the moderate GSV.

Prior to the initial survey, a site file check was conducted by Michael Margolis, which resulted in the determination that no previously recorded sites are within the APE, or within 1-mile of the APE on University Lands, UT System property. Unfortunately, the Atlas was updated after the site file check was completed. A post facto site file check was conducted on December 17, 2019 by Cody M. Kiker, which resulted in the determination that seven sites were previously recorded within 1-mile of the APE. Two of which, 41WR106 and 41WR107, are recorded within the APE and were partially impacted by the construction of the Quito Draw and Olifant 12-inch Pipelines on University Lands, UT System property (SEARCH 2019:11, Appendix C). The field crew was not aware that sites 41WR106 and 41WR107 were recorded adjacent to the APE prior to fieldwork and these locations were not observed during the initial survey. The normal ENERCON cultural survey methodology would have entailed positively relocating all previously recorded sites within 200m of the APE and verifying that the sites did not extend into the vicinity of the APE for the current project. Prior to this Cultural Resources Report being presented to THC construction began on both the Quito Draw and Olifant 12-Inch pipelines. Thus, ENERCON was not able to examine sites 41WR106 and 41WR107 prior to construction of the two pipelines.

A post facto revisit of 41WR106 and 41WR107 was conducted on February 22, 2020 by J. Matthew Oliver and Gary D. Edington to assess impacts to both sites. For the site revisit pedestrian transects at 3 to 5 m intervals were conducted at each site location, and orange flagging tape was used to mark all artifacts or areas of potential artifacts.

Site **41WR106** is a sparse lithic scatter of oxidized rock with two concentrations situated on the southern margin of a playa on a relatively flat plain with multiple exposed gravels on the ground surface (Figures 12 to 23; Appendix A, C, D). The site was originally recorded in 2017 by Lone Mountain Archaeological Services, Inc. (Lone Mountain) during their survey of the West Kermit Phase 2 3D Seismic Project (McCormack and Boggess 2017). Vegetation in the vicinity of the site consists of mesquite, creosote bush, yucca, prickly pear, thin mixed grass, and broomweed. Ground surface visibility averaged 90 percent throughout the site (Figures 12 to 19, 22, 23). Artifacts observed during the revisit of the site included hundreds of fragments of oxidized caliche and two oxidized sandstone fragments. The oxidized rock fragments were scattered throughout the site and two discrete loci of sparsely concentrated oxidized rock scatters were observed (Figures 16 to 19). These are likely the thermal features described by the previous investigators as they consisted of multiple fragments of gray oxidized caliche. No identifiable rock ovens were observed during the revisit of the site. Both oxidized rock concentrations measure approximately 5 by 5 feet (1.5 by 1.5m). Although six thermal features were discussed in the original site form, this revisit resulted in the observation of only two potential features. The site datum installed by Lone Mountain archeologists was relocated adjacent to the most identifiable concentration (Figure 22 and 23). The two oxidized sandstone fragments observed during this revisit could be the basin metate fragments described by the previous investigators, but they did not display any evidence of ground stone technology (Figures 16 and 17). Additionally, a quartzite primary flake (Figures 20 to 21); and a brown quartzite multidirectional core were observed at the site. No shovel tests or trowel tests were excavated at the site during the revisit as the presence of subsurface cultural deposits was already verified by the previous investigators. No diagnostic artifacts were observed during the revisit of the site. When the site was originally recorded it was estimated that 50 to 60 percent of the site remained intact with wind erosion, water erosion, and bioturbation having affected the site resulting in a deflation and it was noted that all the features were disarticulated (McCormack and Boggess 2017;15-16). Based on Lone Mountain's report and site form, the construction of a Quito Draw and Oliphant pipeline ROW along the northwest edge of the boundary has impacted less than two percent of the site location (McCormack and Boggess 2017).

Figure 12. General overview of 41WR106, facing east. The orange flagging tape marks observed artifact locations.

Figure 13. General overview of 41WR106, facing east-southeast. The orange flagging tape marks observed artifact locations.

Figure 14. General overview of 41WR106, facing south from the Quito Draw ROW. The orange flagging tape marks observed artifact locations.

Figure 15. General overview of 41WR106, facing south-southwest along the Quito Draw pipeline ROW. The orange flagging tape marks observed artifact locations.

Figure 16. Overview of the first oxidized rock concentration from 41WR106, including the two sandstone fragments, facing down.

Figure 17. General overview of the first oxidized rock concentration from 41WR106, including the two sandstone fragments, facing northwest.

Figure 18. Overview of the second oxidized rock concentration from 41WR106, facing down.

Figure 19. General overview of the second oxidized rock concentration from 41WR106, facing southeast.

Figure 20. Ventral face of the quartzite primary flake from 41WR106, facing down.

Figure 21. Dorsal face of the quartzite primary flake from 41WR106, facing down.

Figure 22. General overview of site 41WR106 site datum placed by Lone Mountain, facing east.

Figure 23. General overview of site 41WR106 site datum placed by Lone Mountain, facing down.

Site **41WR107** is an Archaic Period (8,000 B.P. to 1,500 B.P.) lithic and oxidized rock scatter situated on the northern margin of a playa on a relatively flat plain with multiple exposed gravels on the ground surface (Figures 24 to 37; Appendix A, C, D). The site was originally recorded in 2017 by Lone Mountain Archaeological Services, Inc. during their survey of the West Kermit Phase 2 3D Seismic Project (McCormack and Boggess 2017:15-18). The previous investigators used existing two-tracks as the north, east and south edges of the site. Vegetation in the vicinity of the site consists of mesquite, creosote bush, yucca, prickly pear, thin mixed grass, and broomweed. GSV averaged 90 percent throughout the site (Figures 24 to 31, 36 to 37). Artifacts observed during the revisit of the site included approximately 500 fragments of oxidized caliche; a modified pink chert projectile point/knife (PPK); a brown-gray quartzite modified primary flake; a black chert core fragment; a brown quartzite primary flake (Figures 32 to 35). The specific morphology of the modified PPK (Figures 32 to 33) resembles an Archaic Period PPK (Turner and Hester 1985:134), which is the same temporal designation the previous investigators selected. Additionally, a datum was relocated adjacent to the PPK. The oxidized rock fragments were sparsely scattered throughout the site and only one light concentration of oxidized caliche was observed (Figures 36 and 37). This concentration measures approximately 5 by 10 feet (1.5 by 3m). No identifiable thermal features or rock ovens were observed during the revisit of the site, in contrast to the single thermal feature recorded by the previous investigators. No shovel tests or trowel tests were excavated at the site during the revisit as the presence of subsurface cultural deposits was already verified by the previous investigators. The site likely dates to the Archaic Period based on the presence of the Archaic PPK. At the time of recording Lone Mountain estimated that 55 percent of the site remained intact, with wind erosion, water erosion, bioturbation, deflation and the previous oil field activity having impacted the site prior to recording in 2017 (McCormack and Boggess 2017:15-18). The 41WR107 revisit revealed that the southeast portion of the site has been impacted by the clearing for the Olifant 12-inch pipeline. It is estimated that approximately 561m^2 of the mapped site area was cleared. Lone Mountain originally reported the site size as 15,865m^2 (95 by 167 m). Thus, it appears that approximately four percent of the site has been destroyed by the clearing of the Quito Draw and Olifant 12-inch pipelines.

Figure 24. General overview of 41WR107, facing southwest-west from the Olifant 12-inch pipeline ROW. The orange flagging tape marks observed artifact locations.

Figure 25. General overview of 41WR107, facing west from the Olifant 12-inch ROW. The orange flagging tape marks observed artifact locations.

Figure 26. General overview of 41WR107, facing northwest from the two-track south boundary of the site. The orange flagging tape marks observed artifact locations.

Figure 27. General overview of 41WR107, facing east-northeast from the west boundary of the site.

Figure 28. General overview of 41WR107, facing east-northeast along the north boundary from the northwest corner of the site.

Figure 29. General overview of 41WR107, facing west-southwest along the north boundary of the site.

Figure 30. General overview of impacted portion of 41WR107, facing north from the Olifant 12-inch pipeline ROW.

Figure 31. General overview of impacted portion of 41WR107, facing northwest from the Olifant 12-inch pipeline ROW across the southeast corner of the original Lone Mountain site boundary.

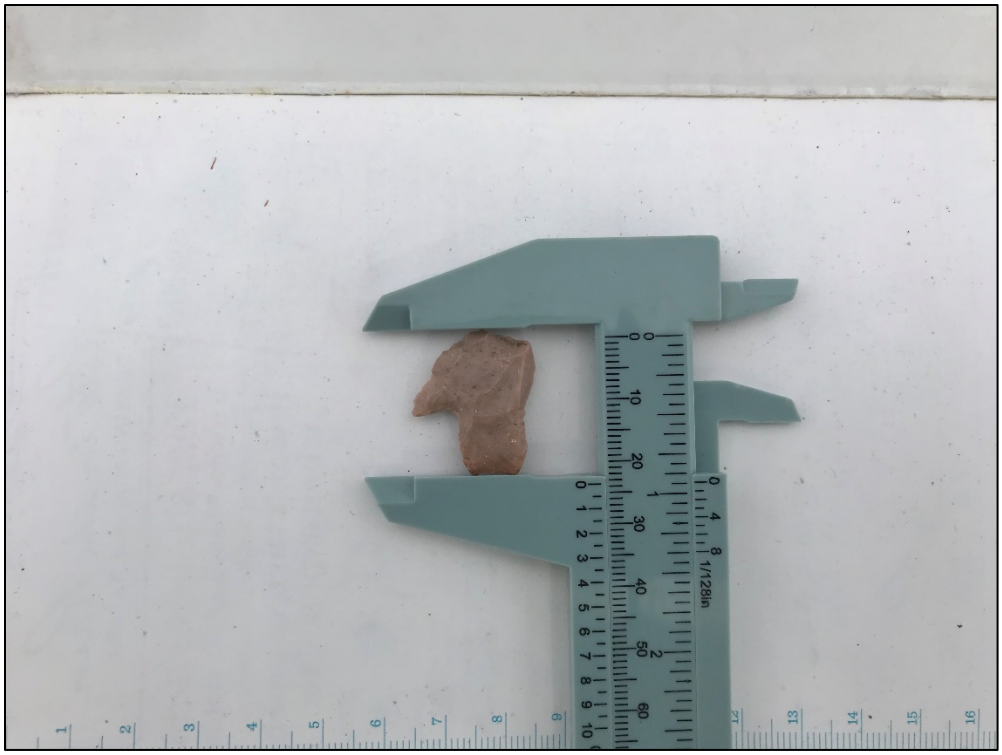


Figure 32. Obverse view of the modified Archaic Period PPK originally reported by Lone Mountain at 41WR107, facing down.

Figure 33. Reverse view of the modified Archaic Period PPK originally reported by Lone Mountain at 41WR107, facing down.

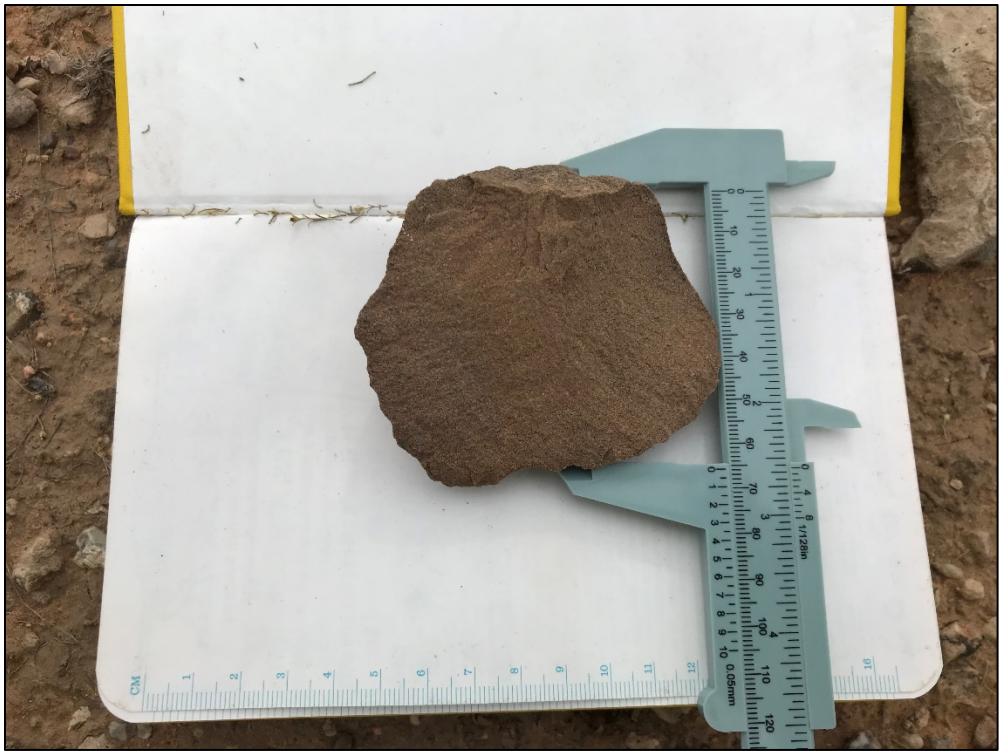


Figure 34. Ventral face of a brown quartzite primary flake from 41WR107, facing down.

Figure 35. Ventral face of a brown-gray quartzite primary flake from 41WR107, facing down.

Figure 36. Overview of the oxidized rock concentration from 41WR107, facing down.

Figure 37. Overview of the oxidized rock concentration from 41WR107, facing east.

RECOMMENDATIONS

ENERCON, in support of Salt Creek Midstream, LLC, conducted an intensive archeological survey for the proposed Quito Draw Pipeline Project. The proposed pipeline is approximately 19.3 miles (31.1km) in length, located near Barstow and Pyote, Texas in Ward County. This report encompasses only the University Lands, UT System property segment of the proposed Quito Draw Pipeline Project which is approximately 11.8 miles (19.0km) in length. The University Lands, UT System property segment of the project area is depicted on the USGS Wink South, Tex. (1968), Soda Lake NE, Tex. (1968), and Soda Lake SE, Tex. (1968) 7.5 Minute Quadrangle maps. The construction corridor consists of a 50 foot (15m) wide permanent pipeline ROW and a 50 foot (15m) wide temporary workspace corridor. The entire 50 foot (15m) wide ROW will be cleared of vegetation and the eight-inch gas pipeline will be installed in an open cut trench. The cultural resources survey corridor and APE was 100 foot (30m) wide for the entire 11.8 mile (19.0km) length of the pipeline segment through the University Lands, UT System property segment of the project, for a total of 143.03 acres (57.88 hectares).

The survey of the University Lands, UT System, a political subdivision of the State of Texas, property, was completed under Texas Antiquities Permit No. 9011. The initial cultural resources field investigation on University Lands, UT System property was conducted October 7, 2018 to October 9, 2018 by Christopher Flowers and Gary D. Edington and consisted of an intensive pedestrian survey utilizing transects spaced no greater than 15m apart with shovel tests in areas which had the potential for buried cultural resources. The field investigation was conducted in accordance with the THC Archeological Survey Standards for Texas. The entire project was supervised by Gary D. Edington, an ENERCON archeologist who meets the U.S. Secretary of the Interior's Professional Qualification Standards for archeology as set forth in 36 CFR 61.

The initial cultural resources investigation of the proposed Quito Draw Pipeline Project on University Lands, UT System property resulted in the observation of one IF. IF#1 consists of a mottled pink and white tertiary chert flake. GSV at the location of IF#1 averaged around 65 percent. Five shovel tests were excavated in the vicinity of IF#1, all of which were negative for cultural resources. A pedestrian survey grid at 3-5 m intervals at the location of IF#1 failed to identify any additional cultural materials and the location was noted as an isolated find. IF#1 lacks important information potential and is not recommended as eligible for the NRHP or designation as a SAL, and no further work is recommended at the location of IF#1.

Prior to the initial survey, a site file check was conducted which resulted in the determination that no previously recorded sites are within the APE, or within 1-mile of the APE on University Lands, UT System property. Unfortunately, the Atlas was updated after the site file check was completed. A post facto site file check was conducted which resulted in the determination that seven previously recorded sites are recorded within 1-mile of the APE. Two of which, 41WR106 and 41WR107, are recorded within the APE and were partially impacted by the construction of the Quito Draw Pipeline on University Lands, UT System property. The field crew did not know 41WR106 and 41WR107 were recorded adjacent to the APE prior to fieldwork and these site locations were not observed during the initial survey. Prior to this Cultural Resources Report being presented to THC, construction began on both the Quito Draw and Olifant 12-Inch pipelines. Thus, a post facto revisit of 41WR106 and 41WR107 was conducted on February 22, 2020 by J. Matthew Oliver and Gary D. Edington to assess the impact damage to both sites. Both sites, 41WR106 and 41WR107 were negatively impacted by the construction of the Quito Draw and Olifant 12-inch Pipelines on University Lands, UT System property. At site 41WR106 it appears that less than two percent of the previously recorded site area has been destroyed, while at site 41WR107 it appears that approximately four percent of the originally recorded site area has been destroyed by the clearing of the Quito Draw and Olifant 12-inch pipelines.

The cultural resources investigations did not result in finding any additional historic or prehistoric artifacts, features, cultural lenses, or sites over 50 years of age on University Lands, UT System property. Therefore, it is recommended that the project will have no effect on any additional historic property that may qualify for inclusion in the NRHP or determination as a SAL on University Lands, UT System property. No further cultural resources investigations are recommended for the Quito Draw Pipeline Project on University Lands, UT System property. If cultural material, including sites, features, or artifacts that are 50 years old or older are encountered within the ROW during maintenance activities of the Quito Draw and Olifant Pipelines on University Lands, UT System property, work in the area must cease and the THC (512-463-5853) must be immediately be notified.

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1968c *Soda Lake SE Quadrangle, Texas* 7.5 Minute Series (Topographic) Photorevised 1981 United States Department of the Interior Geological Survey. Washington, D.C.

APPENDIX A:

AERIAL MAPS SHOWING CULTURAL RESOURCES

Contains Confidential Cultural Resource Locations

NOT FOR PUBLIC DISTRIBUTION

REDACTED

APPENDIX B:

Shovel Test Log

Contains Confidential Cultural Resources Locations

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APPENDIX C:

SEARCH Letter Report To Bill Martin:

Contains Confidential Cultural Resources Locations

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APPENDIX D:

STATE OF TEXAS ARCHEOLOGICAL SITE UPDATE FORMS:

Contains Confidential Cultural Resources Locations

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