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Cultural Resource Survey West Texas Gas Proposed Benedum EP 46-19 ROW and Pump Station University Lands Crockett County, Texas

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NEGATIVE FINDINGS
Cultural Resource Survey

West Texas Gas Proposed
Benedum EP 46-19 ROW and Pump Station

University Lands
Crockett County, Texas

Report prepared for

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ABSTRACT

In early April 2015, Turpin and Sons Inc. (TAS) archeologists assessed the cultural resource potential of a 2.1-mile long, 100-foot wide West Texas Gas (WTG) Benedum EP 46-19 ROW and pump station on University Lands (UL) in north central Crockett County. The proposed ROWs consist of an E-W poly line (0.6-miles long) and a N-S steel line (1.5-mile long) starting at an existing station and running south and southeast to an extant gas plant. The proposed pump station is located at their junction. The survey was sponsored by WTG as part of their permitting process to install pipelines and a pump station on UL, and authorized by Texas Antiquities Permit 7243, Jeff Turpin, Principal Investigator. About 28 acres were surveyed in total, including the 2-acre area of the proposed pump station.

The area has been disturbed by detrimental land management practices. No archeological sites were added to the inventory and the route does not pass through any previously recorded sites, therefore, cultural resources present no impediment to installation of the pipelines and pump station on University Lands.

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INTRODUCTION

In early April 2015, Turpin and Sons Inc. (TAS) archeologists assessed the cultural resource potential of the proposed 2.1-mile long, 100-foot wide West Texas Gas Benedum EP 46-19 ROWs in north central Crockett County (Figs. 1, 2). The survey was sponsored by WTG as part of their permitting process to install two pipelines and a pump station on University Lands, and was authorized by Texas Antiquities Permit 7243, Jeff Turpin, Principal Investigator.

Figure 1. Project location map (source: National Geographic TOPO!).

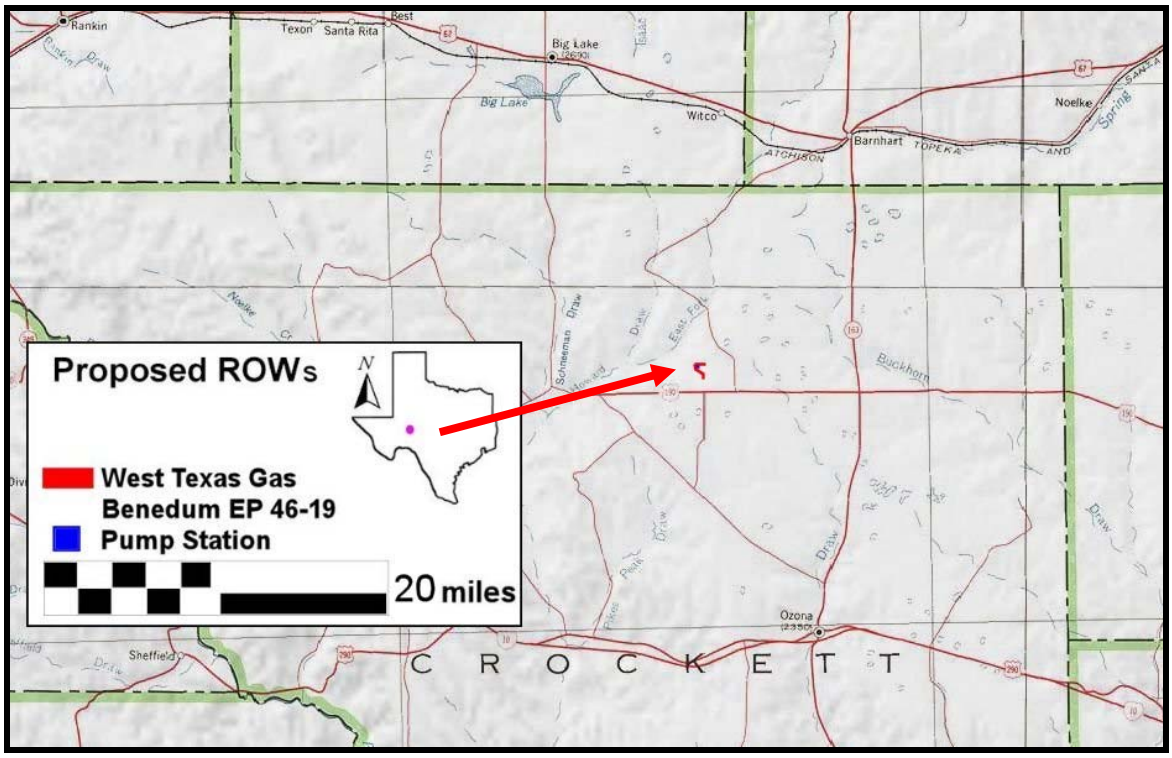

Figure 2. Project location in Crockett County (source: National Geographic TOPO!).

The proposed WTG Benedum EP 46-19 ROWs are generally located about 20.75-miles southeast of the town of Big Lake, 16.5-miles southwest of Barnhart, and less than 1-mile north northwest of the intersections of Hwy 190/29 and Crockett County Road (CR) 204 on the Schneeman Draw NE USGS quad map (Fig. 3). The proposed route crosses Block 46, Sections 19-22 of University Lands (Fig. 4). The ROW runs across gently undulating rocky grasslands with some young mesquite and juniper and quite a few rocks in most places, probably the result of grazing by resident sheep (Fig. 5). The survey found no intact cultural material or historical features in the path of the ROW, so the proposed installation will not affect significant cultural resources.

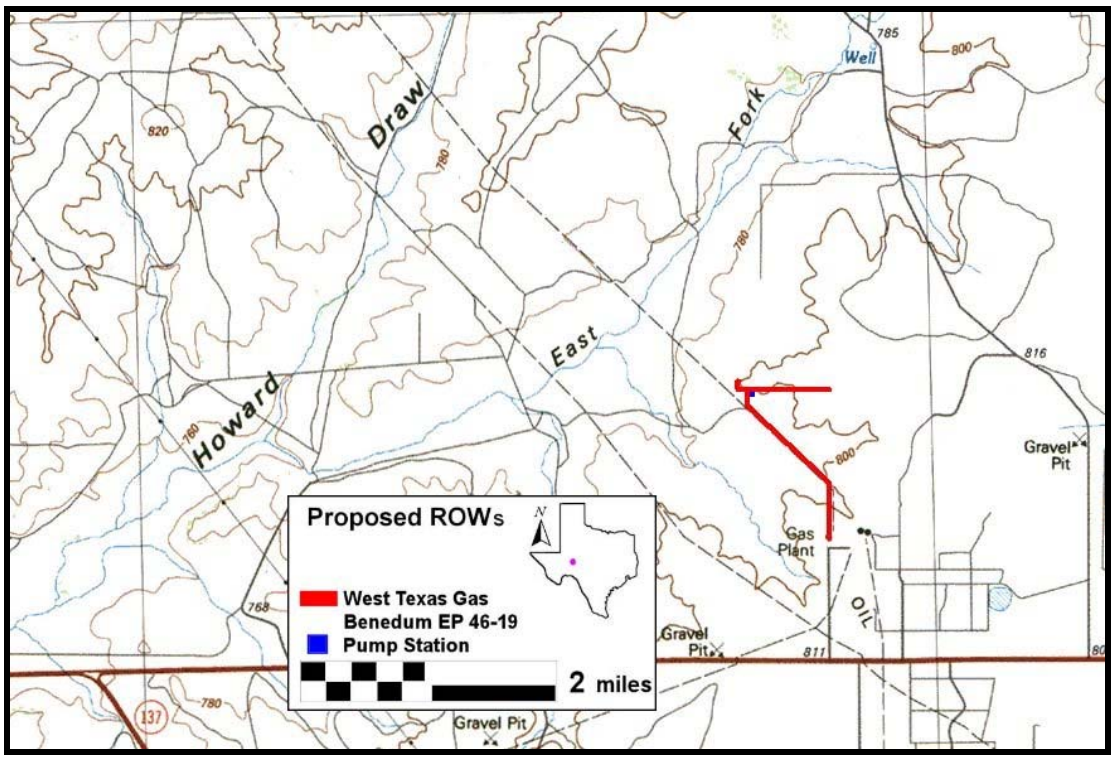

Figure 3. ROW is on USGS QUAD Map Schneeman Draw NE.

This cultural resource assessment consisted of an archival search, an intensive pedestrian survey, and preparation of a report suitable for review in accordance with the Texas Historical Commission's Archeological Survey Standards for Texas. The investigations also conform to guidelines and standards set forth in the National Historic Preservation Act although there is no Federal involvement.

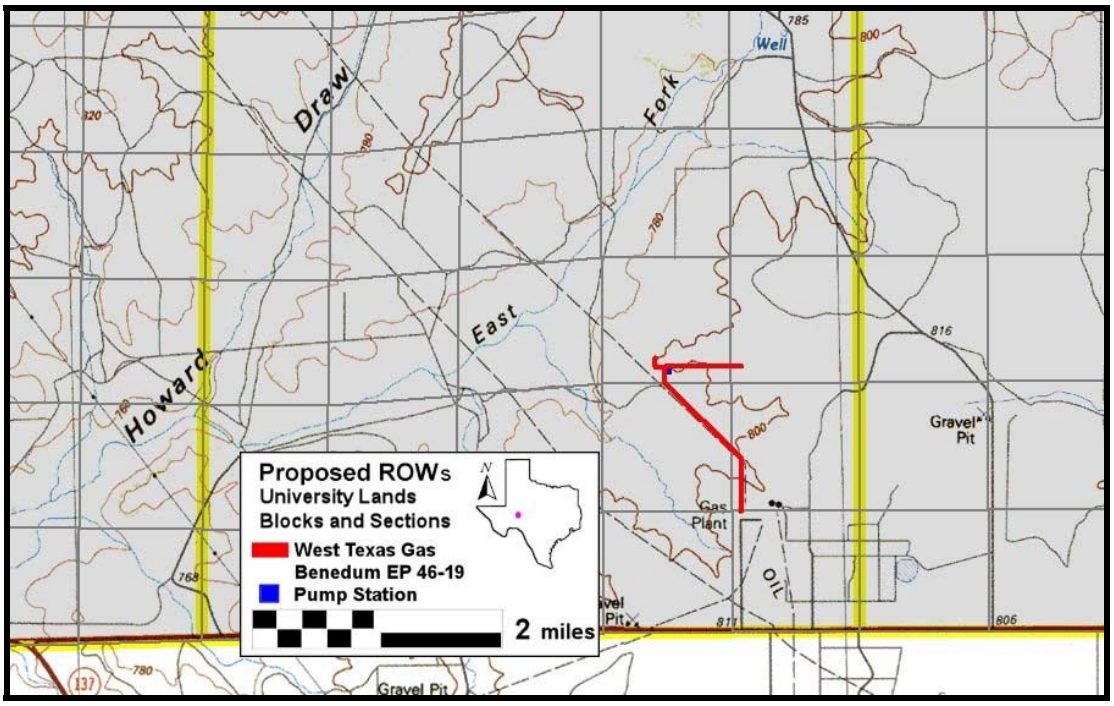

Figure 4. Location on University Lands Block 46.

Figure 5. Typical terrain is rocky and relatively flat with some grasses and dense brush.

ENVIRONMENTAL CONTEXT

The project area is classified as part of the Edwards Plateau Section of the Great Plains Province of the Interior Plains which is described as mesas, plateaus, and limestone ridges and hills with deep canyons and nearly level to gently sloping valley floors (Fig. 6). This description does not provide an accurate context for prehistoric adaptations in the area of the current survey. The deep canyons with proximity to the Pecos River are southwest of the area of interest. The proposed ROW crosses broad flat grasslands with sparse vegetation, thin soils and rock outcrops. Drainages sometimes support more clump grasses, but for the most part they are also sparsely vegetated.

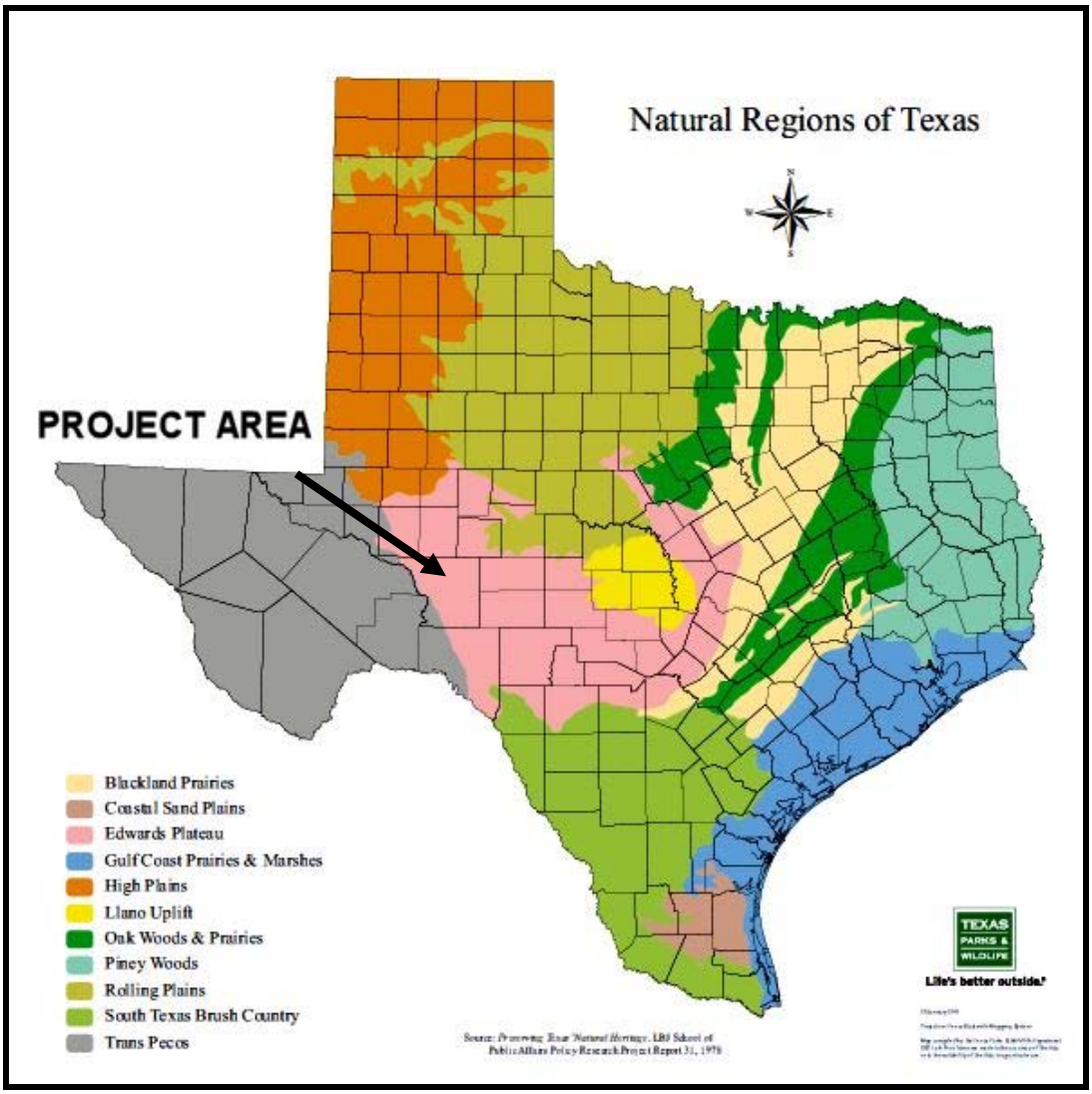

Figure 6. Natural Regions of Texas (source: Texas Parks and Wildlife).

Hydrology

Hydrology is the dominant factor in prehistoric and early historic settlement patterns in the study area. The proposed route and pump station begin at an existing station on small undulating rocky hills and cross three ephemeral tributaries to East Fork Howard Draw, which drains into the Pecos River in the Rio Grande Basin (USDA/EDNA). Casual water made it possible for people and animals to exploit the high dry uplands between the permanent springs, such as Grierson, Flat Rock, Howards Well, Escondido, Government Canyon, O-9 Well and the Pecos River (Brune 1981). The interfluvial divide between the Pecos/Rio Grande and Concho river basins is just north of the project area (Ferguson 1986). Big Lake, the largest playa in Texas, is perched atop the divide. Since record keeping began, the lake has filled on an average of every 20 years. The archeological record demonstrates occupation of the lake shores from Paleoindian through early historic times.

Soils

The majority of the mapped soils for the proposed ROWs and pump station include Ector-Rock outcrop complex 1 to 15 percent slopes (loamy residuum weathered from limestone) and Mailtrail very gravelly clay loam 1 to 8 percent slopes (gravelly loamy alluvium; Fig. 7; USDA/NRCS). The eastern leg of the E-W poly line lies in Texon-Ozona complex 0 to 3 percent slopes (silty and clayey alluvium and marl derived from limestone). The southern tip of the N-S steel line is Noelke-Ector complex 0-5 percent slope, which is loamy and gravelly loamy residuum weathered from limestone. The steel line also transects three drainage areas that contain Angelo Silty clay loam 0 to 2 percent slopes (loamy alluvium weathered from limestone).

Plants and Animals

Vegetation is very sparse and, in years with sufficient precipitation, consists of a plant community of shrubs and short or mid grasses including juniper, mesquite, lotebush, live oak, Texas oak, sumac, Texas prickly pear,

tasajillo, kidneywood, netleaf hackberry, agarito, yucca, sotol, catclaw, Mexican persimmon, various gramas, threeawn, Texas wintergrass, little bluestem, Halls panicum, buffalo grass, cedar sedge, two-leaved senna, mat euphorbia, rabbit tobacco and hairy tridens. Scrub mesquite and juniper have infested disturbed sections of the project area, to the detriment of range grasses in areas that have been cleared and overgrazed and where there has been extensive energy production.

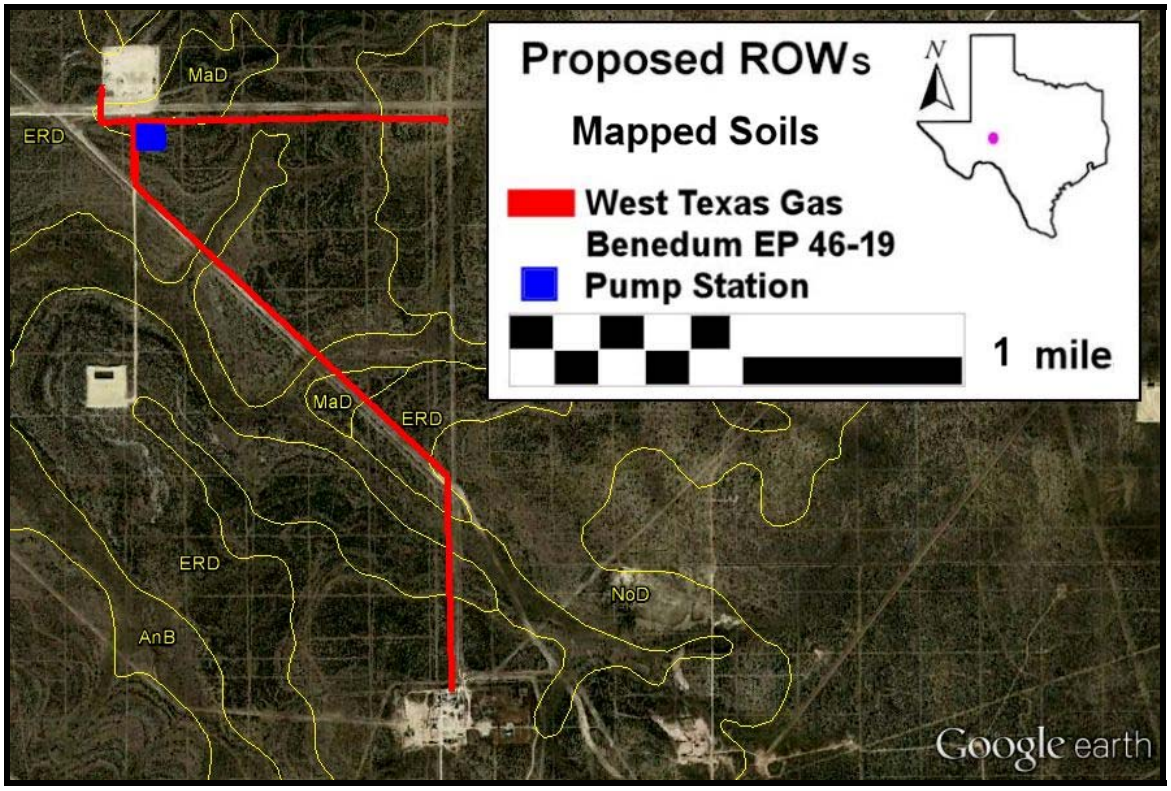

Figure 7. Mapped soils of proposed ROW (source: Google Earth/NRCS).

Deer are the dominant wild species in the region today but archeological and historical evidence indicate that the faunal community was large and diverse prior to the introduction of domesticated animals. The bison kill site in the bed of the Big Lake testifies to more benign grassland before 8000 years ago, followed by a period of severe drought that would have driven herd animals north to the Plains (Turpin et al. 1997). Pioneers camping on the shores of the Big Lake mention a wide variety of long-gone game, including bears, antelope and bison (Prine 1920). Although no faunal studies have been done in the immediate

vicinity of the study area, it can be assumed that the composition of the faunal community in general was equally fluid and dependent on the vagaries of climate and rainfall.

Climate

Temperature ranges can be extreme ranging from a record low of 1 degree to a record high of 110 degrees, with an average of 49.6 degrees F in winter and 77 degrees in summer. The average annual total precipitation is about 18.22 inches (Western Regional Climate Center). Of this, about 14.76 inches, or 77 percent, usually falls in April through October. Texas is prone to severe droughts that, like the filling of Big Lake, are cyclical events. The high dune face on the northern side of the lake resulted from an extremely long dry spell with constant winds from the south-southwest sometime after about 8000 B.P. and was preceded by yet another undated period of dune accretion that has since stabilized. Many of the semi-buried hearths sites recorded during the recent block surveys would have been buried by wind-blown sediment during such periods of sparse vegetation and low rainfall.

CULTURAL CONTEXT

Crockett County is in a transitional zone between three defined cultural areas: the Southern Plains on the north and the Eastern Trans-Pecos and the Lower Pecos to the west and east respectively. The many studies in Crockett County have shown that the most applicable chronology is that of the Lower Pecos where radiocarbon analyses have refined the sequence (Table). For the purposes of this report, however, only the major divisions are relevant since no temporal diagnostics were found.

Table. Time periods in prehistory.

Period	Subperiod	Radiocarbon Years (BP)	Trans-Pecos
Paleoindian		<12,000-9,800	<12,000-8500
	Aurora	14,500-11,900	
	Bonfire	10,700-9,800	
Late Paleoindian		9,400-9,000	
	Oriente	9,400-8,800	
Early Archaic		9,000-6,000	8,500-1,000
	Viejo	8,900-6,500	
Middle Archaic		6,000-3,000	
	Eagle Nest	5,500-4,100	
	San Felipe	4,100-3,200	
Late Archaic		3,000-1,000	
	Cibola	3,150-2,300	
	Flanders	2,300??	
	Blue Hills	2,300-1,300	
Late Prehistoric		1,000-350	
	Flecha	1,320-450	
	Infierno (phase)	450-250	
Historic		350-0	

Crockett County has almost 1600 recorded sites, some attributable to the efforts of avocational archeologists such as the Iraan Archeological Society and the Texas Archeological Society's 1976 field school, some to commercial highway transmission and pipeline surveys, and some to ongoing inventory of University Lands. Fifty-seven of these sites have been designated State

Antiquities Landmarks and seven National Register sites include the Live Oak Creek Archeological District, the Ft. Lancaster Ruins, Crockett County Courthouse, the Irma and Wilma Carson House, and Turkey Roost Petroglyph site (41CX233). Most of the recorded sites are prehistoric occupation or camp sites (Atlas). Recent surveys in advance of seismic exploration on University Lands added 400+ sites in Crockett County alone.

The sites in Crockett County are typically burned rock features and lithic scatters on the flats, lithic procurement sites, and rock shelters and rock art in the canyons. Excavations have concentrated on burned rock features, resulting in a skewed inventory of radiocarbon dates that show a time depth of only 1980 years (see Turpin 2000 for a complete listing). The sample was obviously biased toward more recent features, given that much older sites are found in counties to the north and south. The pipelines of interest here are in an upland environment where eroded hearths are the common feature, so the potential for enlarging the chronology of occupation is limited.

Previous Investigations

The general area of potential effect (APE) was previously surveyed in 2011 by TAS, Inc. for the Pangea West Seismic Shoot under TAC permit 6037 (Burgess and Turpin 2011). Part of the steel line ROW parallels an existing pipeline; during September and October 2011, TRC conducted Phase I archeological and historic structures surveys on University Lands in Reagan and Crockett counties, TAP 6184. The investigations are associated with the Lone Star NGL Pipeline, LP (Lone Star) West Texas Gateway project (Thomas et al. 2012; Atlas). There are very few previously recorded archeological sites in the vicinity of the project area (Fig. 10; Appendix). The closest sites are just to the west of the proposed ROWs on the East Fork Howard Draw and are primarily remnant hearth fields characterized by clusters of burned rock, lithic scatters, and open camps. This survey demonstrated that no intact features or artifact concentrations will be disturbed by construction as the ROW does not pass through any previously recorded sites, nor were any new sites found.

METHODS

Prior to field work, the county site files and maps on the Texas Historical Commission's (THC) Archeological Site Atlas were searched for previously recorded site locations and references to archeological surveys undertaken in the vicinity of the proposed pipeline. Pedestrian survey of a total of 2.1-miles was conducted along the centerline of the ROW, totaling 28 acres including the area for the proposed pump station. Lack of or the extremely disturbed nature of the topsoil negated the need to dig shovel tests.

RESULTS OF THE SURVEY

Existing pipelines and previous grubbed lines from the 2011 Lone Star NGL Pipeline, LP (Lone Star) West Texas Gateway project and Pangea West Seismic project crossed the proposed ROWs, as well as a few ephemeral drainages, tributaries of East Fork Howard Draw. The proposed poly and steel lines begin at the planned pump station just south of an existing station, the poly line heading east from that point and the steel line going south and southeast terminating at an existing gas plant (Figs. 8-9). The area contained minimal topsoil with a plethora of mesquite brush and no attractive resources that might have drawn large numbers of prehistoric or early historic people. No previously recorded sites impinge on the APE and no new sites were found.

Figure 8. Photo facing northwest, proposed pump station located under southeast corner of existing station.

Figure 9. Transect terminates at extant gas station.

CONCLUSIONS

Survey of the proposed pipeline produced no new site recordings and no previously recorded sites in or near the APE. Shallow soils present a poor context for preservation and site integrity, which was further compromised by detrimental land management practices, including modern clearing for energy production, grazing, and hunting. Therefore, cultural resources present no impediment to installation of the proposed 2.1-miles of WTG Benedum EP 46-19 pipeline in the surveyed ROWS or the construction of a pump station on the 2 acres allocated for that purpose.

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APPENDIX

NOT FOR PUBLIC DISSEMINATION

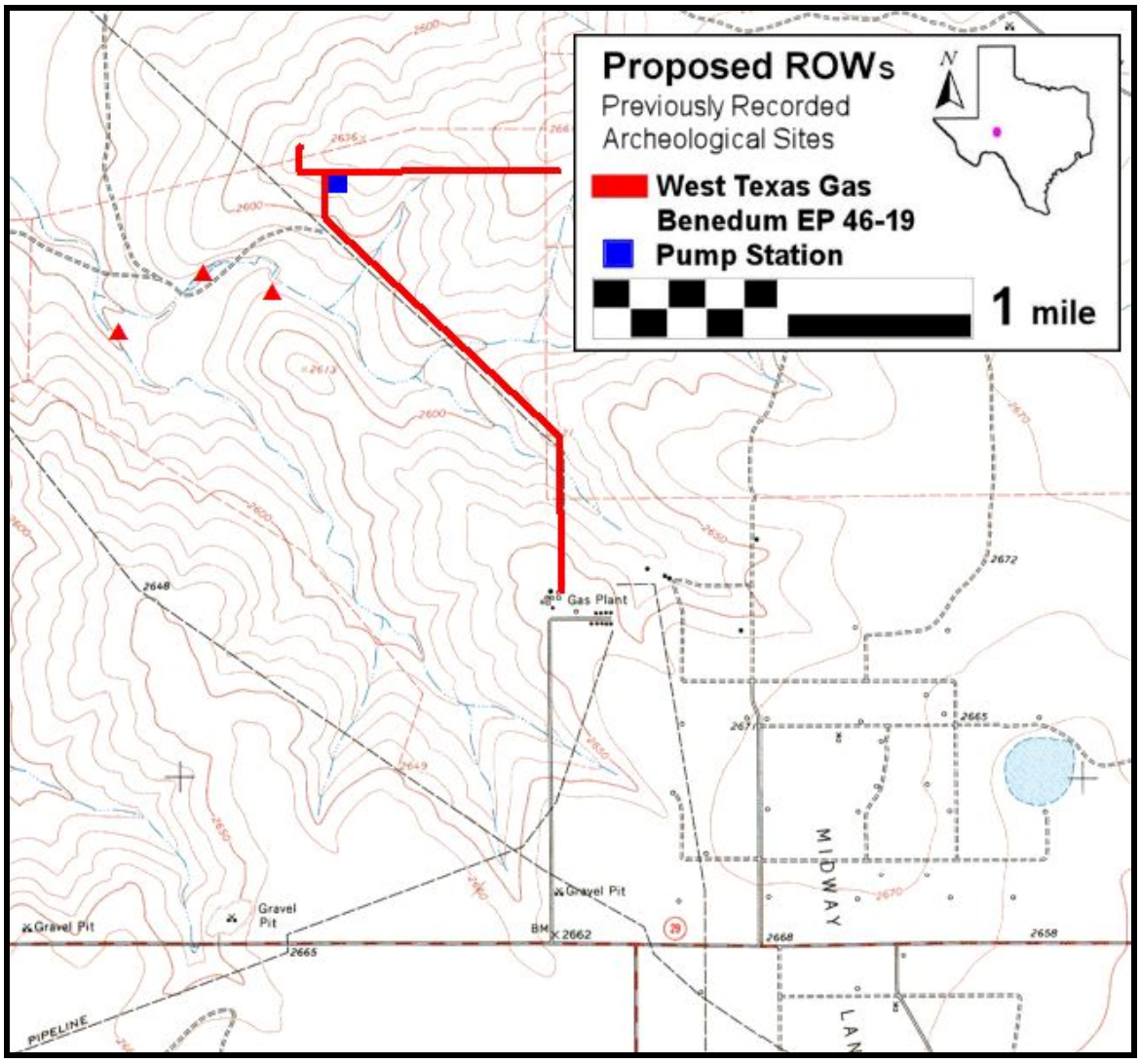

Figure 10. Previously Recorded Sites (Source: Texas Archaeological Site Atlas database).