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Intensive Cultural Resources Survey For Portions Of The Proposed 17-Mile El Paso Natural Gas Mainline Expansion Project On Public Lands In El Paso And Hudspeth Counties, Texas

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Intensive Cultural Resources Survey For Portions Of The Proposed 17-Mile El Paso Natural Gas Mainline Expansion Project On Public Lands In El Paso And Hudspeth Counties, Texas

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INTENSIVE CULTURAL RESOURCES SURVEY
FOR PORTIONS OF THE PROPOSED 17-MILE
EL PASO NATURAL GAS MAINLINE
EXPANSION PROJECT ON PUBLIC LANDS IN
EL PASO AND HUDSPETH COUNTIES, TEXAS

FEBRUARY 2018

PREPARED FOR
El Paso Natural Gas Company, LLC

PREPARED BY
SWCA Environmental Consultants

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GAS MAINLINE EXPANSION PROJECT ON PUBLIC LANDS IN
EL PASO AND HUDSPETH COUNTIES, TEXAS**

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ABSTRACT

On behalf of El Paso Natural Gas Company, LLC (EPNG), SWCA Environmental Consultants (SWCA) conducted an intensive cultural resources survey on a portion of the proposed 17.0-mile-long (27.4-kilometer [km]) EPNG Mainline Expansion Project (Project) that crosses public lands administered by the Texas General Land Office (GLO) and the Clint Independent School District (CISD) in El Paso and Hudspeth Counties, Texas. Investigations were conducted in support of EPNG's filing of a standard 7c application with the Federal Energy Regulatory Commission (FERC). The 17-mile proposed project is one component of a larger project that includes construction in the states of Arizona, New Mexico, and Texas. Project activities would occur at three distinct locations along the EPNG's existing South Mainline system including construction and operation of a new 17-mile-long loop line and construction and operation of two new compressor stations. In Texas, the proposed project consists of the construction of an approximate 17-mile, 30-inch outside diameter loop line extension in El Paso and Hudspeth Counties, Texas. This report addresses only the portions of the 17-mile loop extension on Texas public lands.

The public lands component of the project includes 1.85 miles of 300-foot-wide corridor (67.3 acres) on three GLO properties (i.e., parcels 0003.000.00.00-HU-TX, 0004.000.00.00-HU-TX, and 0125.000.00.00-EP-TX) and 0.15 mile of 300-foot-wide corridor (5.5 acres) on one CISD property (parcel 0064.000.00.00-EP-TX). Cultural resources investigations were conducted on the public lands to comply with the Antiquities Code of Texas, as the agencies administering those lands are political subdivisions of the State of Texas. Additionally, as the project is subject to FERC review and the project may cross waters of the U.S. under jurisdiction of the U.S. Army Corps of Engineers, work was performed in support of EPNG's compliance with Section 106 of the National Historic Preservation Act (54 U.S.C. 306108) and its implementing regulations (36 Code of Federal Regulations [CFR] 800).

Impacts associated with the construction of the pipeline will occur within a variable width construction right-of-way (ROW) measuring 60 feet wide in residential areas and 180 feet wide in dunal areas, but averaging 90 feet wide. For the 2.0 miles of cultural resources survey on public lands, SWCA investigated a 300-foot-wide corridor to give EPNG options for the ultimate centerline placement. The anticipated typical depth of construction impacts is approximately 6 feet below ground surface, although, in dunal areas, the depth of impacts will be approximately 9 feet; however, subsurface impacts are anticipated to extend up to 12 feet below ground surface via subsurface bores to avoid impacts to areas with existing infrastructure and drainages. The project area of potential effects (APE) on public lands consists of approximately 10,500 feet (2.0 miles) of 300-foot-wide survey corridor encompassing 72.7 acres, which includes 7.3 acres of permanent 30-foot-wide ROW and 12.1 acres of construction corridor. Included within the 300-foot-wide survey corridor are proposed access roads for the project that consist of existing 15- to 25-foot-wide gravel access roads for several previously constructed pipelines that parallel the current APE.

Investigations included a cultural resources background review and literature search of the APE and an intensive pedestrian survey of the APE augmented with shovel testing. SWCA's background review indicated that 11 previous cultural resources surveys have been conducted within a 1-mile radius of the APE. Seven of the 11 previously surveyed project areas intersect the APE or are adjacent to (within 300 feet of) the APE; the remainder of the previous survey areas are within the 1-mile buffer, but due to their distance to the APE, will not be traversed by the planned construction. None of the seven previous cultural surveys intersect or are adjacent to the four public land parcels discussed in this report.

The review also indicates that 40 previously recorded archaeological sites are within a 1-mile buffer of the APE; however, only four sites (i.e., 41EP868, 41EP4768, 41EP5490, and 41HZ234) appear to be intersected by, or within 300 feet of, the APE. None of these four sites are located within any of the public lands. The closest previous site to a public land parcel is 41HZ234, which is located just within the

northern boundary of the 300-foot-wide survey corridor but is several hundred feet outside the northern boundary of parcel 0004.000.00.00-HU-TX on private property. Because of the current survey effort, SWCA recorded one new archaeological site (41HZ803). Owing to the paucity or commonality of recovered assemblages, lack of features, lack of unique character, and/or lack of contextual integrity, this resource possesses negligible research value and is unlikely to contribute new or important information regarding local and/or regional prehistory. Consequently, no further work is recommended for 41HZ803.

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INTRODUCTION

On behalf of El Paso Natural Gas Company, LLC (EPNG), SWCA Environmental Consultants (SWCA) conducted an intensive cultural resources survey on a portion of the proposed 17.0-mile-long (27.4-kilometer [km]) long EPNG Mainline Expansion Project (Project) that crosses public lands administered by the Texas General Land Office (GLO) and the Clint Independent School District (CISD) in El Paso and Hudspeth Counties, Texas (Figure 1). Investigations were conducted in support of EPNG's filing of a standard 7c application with the Federal Energy Regulatory Commission (FERC). The 17-mile proposed project is one component of a larger project that includes construction in the states of Arizona, New Mexico, and Texas. Project activities would occur at three distinct locations along the EPNG's existing South Mainline system including construction and operation of a new 17-mile-long loop line and construction and operation of two new compressor stations. In Texas, the proposed project consists of the construction of an approximate 17-mile, 30-inch outside diameter loop line extension in El Paso and Hudspeth Counties, Texas. This report addresses only the portions of the 17-mile loop extension on Texas public lands.

The public lands component of the project includes 1.85 miles of 300-foot-wide corridor (67.3 acres) on three GLO properties (i.e., parcels 0003.000.00.00-HU-TX, 0004.000.00.00-HU-TX, and 0125.000.00.00-EP-TX) and a 0.15-mile-long by 300-foot-wide corridor (5.5 acres) on one CISD property (parcel 0064.000.00.00-EP-TX) (Figure 2). Cultural resources investigations were conducted on the public lands to comply with the Antiquities Code of Texas, as the agencies administering those lands are political subdivisions of the State of Texas. Additionally, as the project is subject to FERC review and the project may cross waters of the U.S. under jurisdiction of the U.S. Army Corps of Engineers, work was performed in support of EPNG's compliance with Section 106 of the National Historic Preservation Act (54 U.S.C. 306108) and its implementing regulations (36 Code of Federal Regulations [CFR] 800).

Impacts associated with the construction of the pipeline will occur within a variable width construction right-of-way (ROW) measuring 60 feet wide in residential areas and 180 feet wide in dunal areas, but averaging 90 feet wide. For the approximately 2.0 miles of cultural resources survey on public lands, SWCA investigated a 300-foot-wide corridor to give EPNG options for the ultimate centerline placement. The anticipated typical depth of construction impacts is approximately 6 feet below ground surface, although, in dunal areas, the depth of impacts will be approximately 9 feet; however, subsurface impacts are anticipated to extend up to 12 feet below ground surface via subsurface bores to avoid impacts to areas with existing infrastructure and drainages. The project area of potential effects (APE) on public lands consists of approximately 10,560.04 feet (2 miles) of 300-foot-wide survey corridor encompassing 72.7 acres, which includes 7.3 acres of permanent 30-foot-wide ROW and 12.1 acres of construction corridor. Access roads to the pipeline ROW are expected to be used by EPNG and its contractors during the construction phase of the project.

The goal of the investigation was to locate cultural resources within the APE, establish vertical and horizontal site boundaries as appropriate, and evaluate the significance and eligibility of all recorded sites for designation as State Antiquities Landmarks (SALs) and for inclusion on the National Register of Historic Places (NRHP). This investigation, including reporting, followed the guidelines and procedures outlined in the following documents: 1) Council of Texas Archeologists (CTA) standards for cultural resources survey; 2) Antiquities Code of Texas (and the THC's *Rules of Practice and Procedure for the Antiquities Code of Texas*); 3) NHPA (as amended); 4) Archaeological and Historic Preservation Act of 1974; 5) Archaeological Resources Protection Act of 1979, as amended (if required); 6) Title 36 of the CFR (Parts 60–66 and 800); and 7) *Archeology and Historic Preservation: The Secretary of*

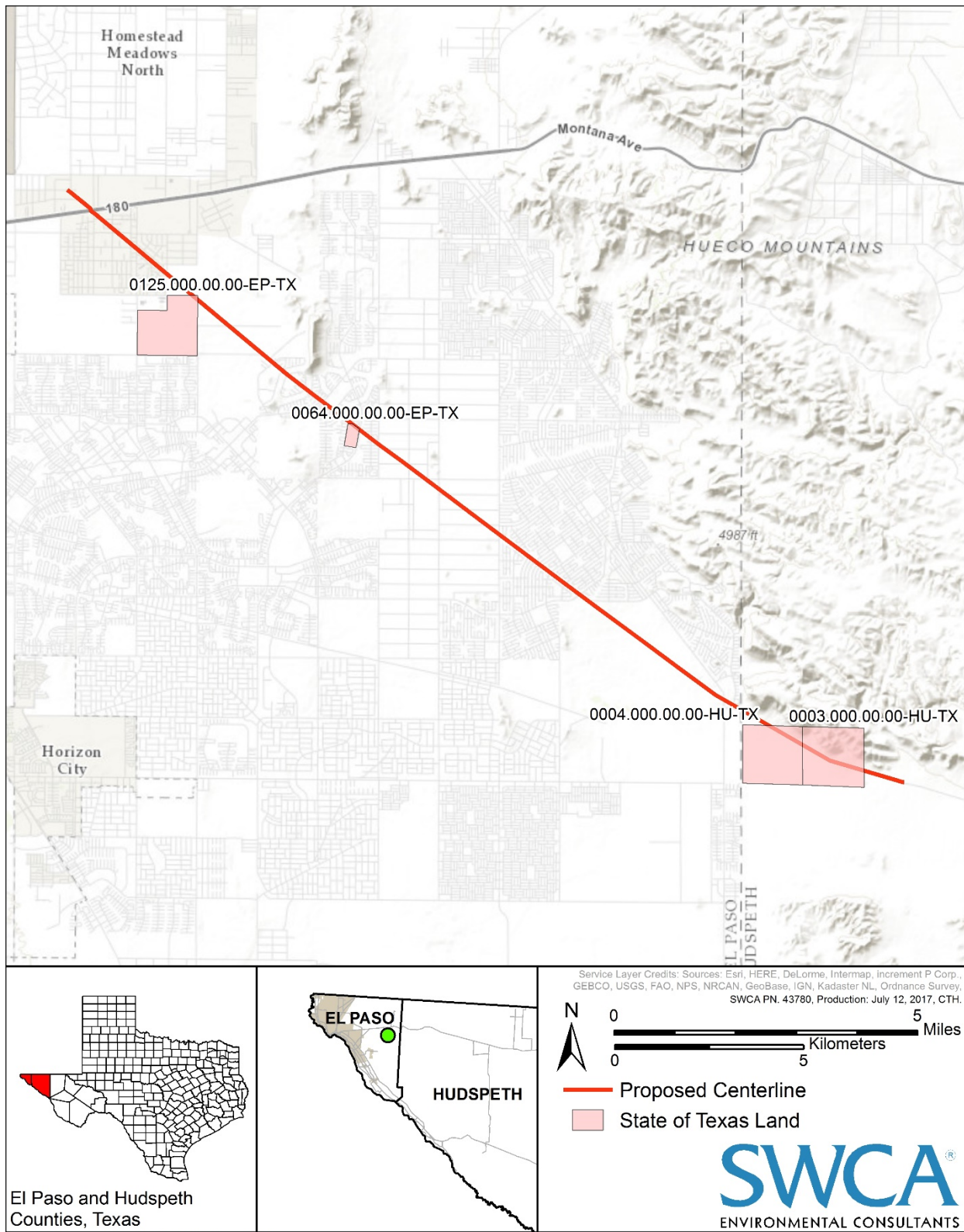


Figure 1. Project vicinity map.



Figure 2. APE on aerial imagery.

the Interior’s Guidelines; and the FERC *Guidelines for Reporting on Cultural Resources Investigations for Natural Gas Projects* (FERC 2017). This overall approach helped to ensure that all project-related impacts were investigated thoroughly for their potential to affect cultural resources and documented accordingly.

Project Personnel

Kimberly Parker served as Project Manager, while Brandon S. Young was the Principal Investigator. Ashley Eyeington served as Crew Chief, while Robert Brush provided field support. Miles Martin, Ashley Eyeington, and Brandon S. Young prepared the report. Christian Hartnett processed the geographic information system (GIS) data and Carole Carpenter expertly produced all field and report graphics. Lauri Logan conducted the technical edits and compiled the report.

ENVIRONMENTAL SETTING

The APE is in the Hueco Bolson of far west Texas in the Basin and Range physiographic province, which is characterized by parallel mountain chains separated by interior draining basins. The Hueco Bolson covers approximately 2,500 square miles, or 1.6 million acres in New Mexico, Texas, and Chihuahua. Downthrown fault blocks underlie the Hueco Bolson and are adjoined by uplifted fault blocks that formed ranges like the adjacent Hueco and Franklin Mountains. Sediments have eroded from these mountain ranges for millions of years and been deposited in the Hueco Bolson. These areas support Chihuahuan desert scrub vegetation such as creosote bush (*Larrea tridentata*), blackbrush (*Flourensia cernua*), sotol (*Dasyliirion texanum*), and prickly pear (*Opuntia* spp.) (Figure 3).



Figure 3. Typical creosote and yucca observed in the APE.

In addition, the APE is located within the Chihuahuan Desert Level III ecoregion (Griffith et al. 2007). This desert ecoregion is a continuation of the basin and range ecoregions to the west and north. It is the northernmost portion of the southernmost desert in North America, extending over 500 miles south into Mexico. The APE can be further divided into the Chihuahuan Basins and Playas regions and the

Chihuahuan Desert Grassland Level IV ecoregions (Griffith et al. 2007). The Chihuahuan Basin and Playas region encompass the northern half of the APE and is defined as the Hueco Bolson, discussed above. This region consists of basins, fans, and footslopes of alluvium and erosional material from the surrounding mountains and ridges (Griffith et al. 2007). The southern half of the APE is in the Chihuahuan Desert Grasslands. This region consists of fine-textured soils in plateaus, intermountain basins, or alluvial fans. Due to the higher annual precipitation, the region has areas of rich grassland which is typically utilized for grazing and ranching (Griffith et al. 2007).

Disturbances across the APE vary in extent and severity. The most prominent disturbance is the oil and gas development associated with petroleum exploration and expansion, which includes: well pads; crude oil, hydrogen sulfide, and holding tanks; surface and buried pipelines; and other disturbances, including overhead and buried utilities and transmission line corridors with associated vegetation clearing, earth moving, and gravel access roads. Additionally, multiple hiking, biking, and equestrian trails, as well as large amounts of non-historic refuse piles can be observed throughout the APE.

Geology

The project route on the northern two parcels of public land traverses broad Quaternary (Holocene age) sand deposits, undivided, that consist of accumulations of windblown sand (i.e., dunes, sand sheets, and dune ridges). Sands are composed of fine- to medium-grained quartz with silty inclusions (Barnes 1983). In contrast, the southern two parcels of public land consist of alluvial fan deposits with areas of the El Paso Formation and Bliss Sandstone, undivided (Barnes 1983). The alluvial fan deposits consist of Holocene colluvium with some areas including older deposits. The El Paso Formation and Bliss Sandstone are encountered along the mountains and ridges at the southern terminus of the project area. The El Paso Formation consists of limestone, dolomite, and sandstone that overlies the older Bliss Sandstone (Barnes 1983).

Soils

Soils within the APE on the public land parcels consist of either the Culberspeth–Chilicotal complex, 1 to 8 percent slopes (GLO parcels) or Dune land (CISD and GLO parcels) (Natural Resources Conservation Service [NRCS] 2017). Dune land consists of dunal formations consisting of fine sand and silt; these dune formations are dynamic and shift and change shape over time due to prevailing winds and some limited water erosion (Figure 4). The Culberspeth series consists of very shallow, well-drained soils that are formed from alluvium and colluvium from mainly limestone sources; a typical profile exhibits approximately 5 centimeters (cm) of gravelly loam overlying a slightly more clayey gravelly loam from 5 to 20 cm below surface (cmbs) that in turn overlies caliche/indurated calcium carbonate. Soils of the Chilicotal series are very deep soils that formed in loamy gravelly sediments from the adjacent igneous mountains and are found on alluvial fans and fan remnants. A typical profile exhibits 5 cm of very gravelly fine sandy loam overlying extremely gravelly loam to a depth of 101 cm, which in turn overlies extremely gravelly sandy loam to at least a depth of 200 cm (NRCS 2017).



Figure 4. Typical dune observed in the APE.

CULTURAL SETTING

This portion of the report provides a cultural background for the APE. This cultural background is presented to provide context and for use in interpreting any cultural resources encountered during the cultural resources survey.

Prehistoric Background

The prehistoric portion of the historical record in the New World consists of the period between when humans first entered the new world to the time of widespread European settlement and colonization of the United States. The end of the prehistoric period may therefore changes from region to region.

Pre-Clovis Period

The timing of initial human occupation in the Americas has been the subject of numerous debates in American archaeology. In simplified terms, the debate has been between so-called “Clovis First” proponents, who maintained that Clovis represents the earliest culture in the Americas, and a “pre-Clovis” faction that maintained that humans had resided in the Americas prior to the development of Clovis culture. This issue has been debated since at least the middle of the twentieth century. Throughout the debate, several sites, including Meadowcroft Rockshelter in Pennsylvania (Adovasio et al. 1983:163-189) and the Shriver Site in Missouri (Regan and Evans 1976; Regan et al. 1978) have been put forth as early human occupations based on an association with human-made artifacts. However, issues with these and other sites have prevented their widespread acceptance.

Cracks in the Clovis First model became more visible in the 1980s and 1990s with the publication of work from Monte Verde in Chile (Dillehay 1984; Quivira and Dillehay 1988) and the Big Eddy Site in

southwestern Missouri (Lopinot et al. 1998, 2000), among others. In the last two decades evidence from both genetics (Gilbert et al. 2008; Tamm et al. 2007) and archaeology (Halligan et al. 2016; Jenkins et al. 2012; Waters et al. 2011) for pre-Clovis occupation has become overwhelming.

Little is known about the technology of these pre-Clovis peoples. Waters et al. (2011:1602) note that “in general, the Buttermilk Creek Complex tools and cores are small and lightweight.” The tool kit is described as containing “bifaces made through core reduction including end thinning, a lanceolate-like preform, a discoidal core, bladelets, radially broken tools, a variety of edge-modified tools (notches, graters, and scrapers), and ground hematite” (Waters et al. 2011:1602). In addition, research at Paisley Caves in Oregon indicates that Western Stemmed points were earlier than and contemporaneous with Clovis and that the Western Stemmed Tradition constitutes “an indigenous development in the far western United States” (Jenkins et al. 2012:227).

Paleoindian Period

The Paleoindian period covers the end of the Pleistocene and early part of the Holocene. An emerging consensus places the cutoff between the two geological periods around 11,700 years ago (International Commission on Stratigraphy 2017). One of the unique aspects of the period is the association with extinct species that died off at the end of the last Ice Age. Horse, camel-like animals, mammoth, mastodon, a large species of bison (e.g., *Bison antiquus*) have been found associated in early sites. Based on faunal assemblages, the early Paleoindian period had more equitable climates with cool summers, mild winters, and abundant precipitation (Johnson and Holliday 2004:285). Toward the end of the Paleoindian period, the moist, mild summers and winters gradually became warmer and drier with increased aridity that had noticeable changes in the flora and fauna (Quigg et al. 1993). With the changes in climate, the groups adapted to these changes by increasing their reliance on small game and wild plant resources (Quigg et al. 1993; Johnson and Holliday 2004).

Early Paleoindian is typically defined as the Pleistocene-era patterns marked by the Clovis and Folsom assemblages. The Late Paleoindian era is the Holocene cultures that gradually developed into Archaic patterns. Besides these basic partitions, the Paleoindian period is generally further divided into subperiods based on stylistic intervals and toolkits, often called techno-complexes, rather than social constructs as is common in later parts of the cultural chronology. In part the convention stems from the relative lack of substantial assemblages from the earliest inhabitants. Accordingly, the chronology of point styles forms the basis that has gradually been fleshed out with other assemblage data.

These technocomplexes are: Clovis (11,500 to 11,000 B.P.), Folsom (10,800 to 10,300 B.P.), Plainview (ca. 10,000 B.P.), and Firstview period (ca. 8,600 B.P.) (Bousman et al. 2004; Johnson and Holliday 2004). The Plainview and Firstview complexes are sometimes grouped under the Plano Period (10,200 to 7,500 B.P.) along with Agate Basin, Hell Gap, Milnesand, Cody, and Frederick Complexes (Hofman 1989; Quigg et al. 1993). The long-held notion of a clean sequence, particularly the Clovis-Folsom-Plainview model, is currently viewed as overly simplistic.

Archaic Period

The APE is often considered part of the Western Trans-Pecos area, which includes the El Paso area and adjacent Hueco Bolson (Miller and Kenmotsu 2004). North-to-south-trending mountains such as the Franklin and the Hueco Mountains are separated by wide intermontane desert basins with gradually sloping colluvial fans. The Archaic coincides with the spread of rugged Chihuahuan Desert scrub, although the micro-environmental diversity ranged from alpine settings to barren flats.

Variouly called the Chihuahua Archaic tradition, the Cochise tradition, or the Desert Archaic, the period is an 8,000-year cultural trajectory of very gradually increasing population density coinciding with increased social and technical complexity. Several chronological sequences have been developed for the regional Archaic period, but different areas have variations in cultural developments that impose difficulties in devising a unified scheme. Nevertheless, while acknowledging regional variation, the Archaic from 9000 to 1000 B.P. is divided into Early, Middle, and Late Archaic subperiods. MacNeish (1993) subdivides the Archaic into phases, including the Gardner Springs (8000 to 6300 B.P.), Keystone (6300 to 4600 B.P.), Fresnal (4600 to 2900 B.P.), and Hueco (2900 to 2000 B.P.) phases. These generally correlate with the tripartite division of Early, Middle, and Late Archaic: the Gardner Springs phase correlates with the Early Archaic, Keystone phase with the Middle Archaic, and the final two are divisions of the Late Archaic.

The Early Archaic spanned roughly two to three millennia from 8000/9000 B.P. to 6000 B.P., although there are different chronological schemes within the region. Miller and Kenmotsu (2004:220) begin the period between 8000 and 8500 B.P., whereas MacNeish (1993) begins the period at 8,000 years ago, while still other regional chronologies begin the Archaic by 9000 B.P. Researchers, however, acknowledge the current lack of data to refine the sequence. Although the radiocarbon database from the area is relatively robust, Miller and Kenmotsu (2004:220) note that from the Western Trans-Pecos only 11 dates fall within the Early Archaic, and of these 11, only a single date was clearly associated with cultural materials. This paucity of dates indicates the lack of archaeological components attributable to the period. Given these shortcomings, most of what is known of the period is a sequence of projectile point styles, many of which are cross-dated from better known sequences in adjacent areas. Stemmed points also found in the Lower Pecos and Central Texas, such as the Uvalde point, are diagnostic artifacts of the period, as well as styles such as Jay and Bajada that are not found in adjacent areas of Texas. Miller and Kenmotsu (2004:221) describe a change in raw material use patterns during the Early Archaic in which coarser-grained materials are used for points, a distinctive shift from the use of only high quality siliceous material in Paleoindian assemblages. Small hearths with burned rock or caliche indicate the growing use of thermal-retaining elements.

The Middle Archaic from 6000 B.P. to 4000 B.P., is only slightly better represented in the archaeological record, coincides with the peak of arid conditions and landform stabilization. Whereas Early Archaic sites are often buried, Middle Archaic sites are frequently exposed on landform surfaces (Miller and Kenmotsu 2004:223). During the period, indications of semi-permanent settlements begin to emerge. The Keystone Dam site in El Paso County contains over 20 residential structures dating from approximately 4500 to 3800 B.P. (O'Laughlin 1980). Ashy areas probably represented interior hearths, and daub that was found around the structures indicate a jacal-type superstructure. Although no clear evidence of agriculture has been discovered, the increased presence of ground stone artifacts suggest an increased use of plant resources. Although site distribution patterns of the period need substantial refinement, the advent of semi-permanent settlements perhaps marks a shift towards a more intensive exploitation of localized resources as the overall carrying capacity of the landscape declined during the hot, dry period. The proliferation of projectile point styles during the period observed by some researchers indicate either increased mobility or interaction (e.g., Mallouf 1985).

The Late Archaic from 4000 to 1000 B.P. marks the advent of new lifeways, a notable departure from preceding patterns and a transition to full agricultural, sedentary societies in the subsequent Late Prehistoric times. Beginning around 4500 B.P. but increasing dramatically shortly after 4000 B.P., the record shows an increase in radiocarbon data from rockshelters, structures, and open sites, reaching maximum between 3200 B.P. and the onset of Puebloan times around 1000 B.P. (Miller and Kenmotsu 2004:Figure 7.16, Figure 7.22). In some areas within the Trans-Pecos, the Late Archaic terminates earlier than others. While in some areas Archaic hunter-gatherer traditions continued throughout the period, in the El Paso and other areas in the western Trans-Pecos, the transition to sedentary agriculturalists

occurred over a long period, beginning in the preceding Middle Archaic as previously noted. Accordingly, the end of the Archaic can be variously defined at around 2000 B.P. in some areas, or 1000 B.P. in others. Radiocarbon data from the western Tran-Pecos reveal a dramatic increase in dates from structures around 2000 B.P. (Miller and Kenmotsu 2004: Figure 7.16), marking a fitting demarcation between Archaic and Late Prehistoric patterns in that area.

The Late Archaic is divided into the Fresnal and Hueco phases. The Fresnal phase (4000 to 3200 B.P., a revision of MacNeish's dates of 4600 to 2900 B.P.) is identified by an increase in the quantity and stylistic variation of stone tools, larger occupational areas suggestive of longer occupations by larger populations, and more intensive subsistence patterns, among other traits. MacNeish (1993) claims the rise of horticulture or agriculture marks the start of the Fresnal phase, but a more recent compilation of direct dates on cultigens contradicts this assertion. Miller and Kenmotsu (2004:Figure 7.16) show cultigens appear in the archaeological record just after 3000 B.P., but did not show up in substantial quantities until 2200 to 1800 B.P., coinciding with the previously noted terminus for the Late Archaic in the western Trans-Pecos. Projectile points diagnostic of the period include expanding stemmed, corner and side-notched points ranging from small specimens resembling arrow points to larger broad-bladed styles (Miller and Kenmotsu 2004:Figure 7.11). As this phase progressed, variation of point types and technology increased, suggesting to some researchers expanded trade and contact with other groups.

In the Hueco phase from 3200 to 2000 B.P. (Miller and Kenmotsu 2004: Figure 7.16), site distribution patterns indicate populations spread into more diverse ecological settings, both moisture-rich and arid areas (Miller and Kenmotsu 2004:226). The Hueco phase coincides with a prominent increase in dated components in both rockshelters and open areas (Miller and Kenmotsu 2004: Figure 7.16). Dated cultigens such as maize, beans, and squash occur during the phase, but the data does not support agricultural dependence, or at least such an inference is equivocal (Miller and Kenmotsu 2004:226-228). Not until the succeeding Late Prehistoric, beginning roughly 2000 B.P. in the western Trans-Pecos, does a spike in dated cultigens suggest a more substantive role of cultigens in subsistence. This spike corresponds with the advent of pithouses. There is a marked increase in the amount of perishable goods that have been uncovered by archaeologists from this phase, including basketry, twined and twilled matting, sandals, gourd vessels, and even human hair (Lynn 1976:16). Lithic tools include projectile points (Hueco, San Pedro, Hatch and Armijo points), drills, flake knives, core scrapers, manos and metates. Expanding contact with other areas can be seen in the elaborate shell ornaments found from this period.

Formative, Ceramic, or Late Prehistoric Period

The Formative period, also referred to as the Ceramic or Late Prehistoric period, is traditionally divided into Mesilla, Dona Ana, El Paso, and Protohistoric phases. All share common archaeological traits such as ceramics, permanent to semi-permanent architecture, and reliance on domesticated cultigens, among other aspects. Lehmer (1948) defined the local cultural developments as part of the Jornada Mogollon cultural complex, a regional manifestation of widespread interaction spheres.

Mesilla Phase

The Mesilla or Pithouse phase (ca. 2000 to 900 B.P.) of the Jornada Mogollon Formative period is most notably marked by the introduction of ceramics, as well as continued use of small semi-subterranean houses, an apparent increased reliance on cultigens, and larger communities. El Paso Brown ceramics appear possibly as early as 1800 B.P. The latter half of the phase is noted by continued production of local brownwares, but also the introduction of Mimbres Black-on-white and other nonlocal ceramics, a pattern indicative of increased regional interaction/influence.

True pithouses occur in the Mesilla phase (Lehmer 1948; Miller et al. 2017). However, most domestic structures associated with this phase are shallow and basin shaped, reminiscent of the earlier Archaic “huts” (Hard 1983b). Sites increase in size during the Mesilla phase and components of this period are more numerous than earlier deposits (Carmichael 1986; Whalen 1977). Mauldin (1994, 1995) demonstrates that this pattern may be a function of the low frequency of diagnostic artifacts present on Archaic sites, however.

The Mesilla phase is further subdivided into early and late subphases. The Early Mesilla phase (2000 to 1400 B.P.), called the Early Pithouse phase by Whalen (1980), is noted by the profundity of El Paso Brown ceramics and the characteristic pithouse form and layout. Most settlements from this period contain 15 to 50 structures within a “town” or group. The remains of these clustered settlements indicate specific-use structures and thus, increased complexity and sedentism. The structures themselves were small and shallow, with almost all of them being round in planview. The cooking hearths and dumping areas were located outside of the structures (Foster 1993:9).

The Late Mesilla phase (1400 to 900 B.P.) is better documented than the earlier phase, perhaps in part due to pithouse construction methods that left more visible archaeological traces. Most of the population continued to live in small communities composed of numerous pithouse structures. Nearby, short-term campsites, hunting sites, and a greater variety in overall village size have also been noted for the phase (Foster 1993:10). This variety of sites indicates a remaining reliance on hunting as well as agriculture, but ethnobotanical remains reveal a more scheduled exploitation of seasonal plant resources and thus, cultural complexity. Architecturally, the later pithouses are larger and constructed deeper into the ground. This in turn has led to better preservation of the sites. These later pithouses also vary in plan between round and square, often are composed of several rooms or chambers, and include an interior cooking hearth (Peterson and Brown 1994:72).

Mauldin (1995, 1994; Mauldin et al. 1994), citing radiocarbon and obsidian hydration dates from regional sites, demonstrates a major change in site distribution patterns during the latter portion of the Mesilla phase, between circa 1300 to 1000 B.P. This change, which may involve a major shift in settlement, mobility, and subsistence, is not reflected in any of the traditional stylistic markers commonly used to assign sites and occupations to phases. For example, during this period, Mimbres Black-on-white appears to come into the area after 1250 B.P., though they generally are not common.

Whalen (1977, 1978, 1981, 1986), using survey and testing data, proposed a site typology based on site size and material assemblage. He suggests artifact variety and site size allow residential sites to be distinguished from camps. Residential sites are larger, and have an assemblage that includes ceramics, ground stone, and lithics. Camps, conversely, are smaller and lack one of three artifact categories. Whalen’s (1977, 1978) work recorded Mesilla phase sites in all environmental zones within his surveys. Based on the wide distribution of different types of sites, he suggests subsistence was derived primarily from hunted and gathered resources, though supplemented by agriculture. Carmichael (1986), though using different criteria for defining residential sites, draws similar conclusions from data obtained from Mesilla phase sites in Fort Bliss survey areas.

Hard (1983a) has outlined a settlement/subsistence model of seasonal rounds and activities from an ecological perspective. Hard argues that winter and spring residential sites are located near montane alluvial fans to take advantage of water and fuel resources. The central basin would have been used in a logistical manner in Hard’s model. During the summer and fall, Hard (1983a) suggests a use of the central basin for short-term residences.

Dona Ana Phase

The subsequent, comparatively brief, Doña Ana phase from 900 to 800 B.P. marks the introduction of Puebloan communities/structures and ever-widening interaction spheres evidenced by new regional ceramics styles.

The Dona Ana phase, first introduced by Lehmer (1948) and extensively employed by Carmichael (1986; see also Kegley 1982), is essentially equivalent to Whalen's (1978) designation of the Early Pueblo period. Carmichael (1986) provides the most recent synthesis for this period. Based on survey data, he argues that it was during this 100-year phase that prehistoric occupation was at its height in the region. While several researchers have questioned the ability of archaeologists to distinguish Dona Anna phase occupations given overlapping definitional characteristics (see Mauldin 1993; Miller 1989, 1993), Hard et al. (1994) have recently argued that this phase can be discerned with a detailed focus on ceramic attributes, provided there are sufficient sample sizes and detailed documentation of ceramic attributes. However, as discussed by Mauldin (1995), it is unclear if this designation reflects any significant adaptive change in settlement, subsistence, or mobility.

During the Dona Ana phase, tool types remained the same as in the Mesilla phase. Pithouse structures continue to be built in small villages and nonperishable items such as matting, netting, fur pouches, and basketry are found in abundance. El Paso Brownware remains the dominant ceramic type and agricultural practices continue to flourish and become the main subsistence method. Scarborough (1986, 1992), working at a Dona Ana phase site on Meyer Range, presents the most detailed evidence on this period (see also Miller 1989, 1990). This study clearly suggests a subsistence base using a variety of plants, including evidence for increased agriculture over the preceding Mesilla phase.

Change at the end of the phase came with the introduction of new technologies, such as the unit pueblo and adobe construction. This architecture brought habitation up to the surface, as adobe surface structures grew to include eight to ten rooms. This spread of structure space necessitated an increase in site size and change in agricultural field locale. These changes involved increased group cooperation and many have suspected that supra-kinship habitation was required to fulfill these expanding needs (Foster 1993:11).

El Paso Phase

The following 200-year El Paso phase (A.D. 1250 to 1300/1350) is the local manifestation of Puebloan sedentism. To the west, the Puebloan societies, which reached their highest levels of organization in Pueblo III, collapsed around A.D. 1250 to 1300. The subsequent Pueblo IV timeframe from A.D. 1300 to 1600 is generally seen as one of abandonment, stylistic decline, and competing macroeconomic spheres. The El Paso phase from around A.D. 1200 to 1400 is the terminal period of the Jornada Mogollon in western Texas (see Miller and Kenmotsu 2004:238-240). Pithouses were abandoned around A.D. 1250 to 1300 and a perceived increased agricultural specialization coincided with the rise of multi-room pueblo blocks from A.D. 1300 to 1400 (Miller and Kenmotsu 2004:238-240). The Jornada Mogollon pattern ends and the archaeological record shows a drastic decline in radiocarbon dates from A.D. 1400 to 1500 (Miller and Kenmotsu 2004:258). Agriculture is by now a primary basis of subsistence economy. A vast economic and political regional network flourishes, in part fostered by the preeminence of Casas Grandes to the west. Local technologies, such as ceramics, become more sophisticated. By A.D. 1300/1350 a region-wide dispersal of population centers mark the terminus of the El Paso phase.

The late ceramic occupation, termed the El Paso phase, is distinguished from the preceding Mesilla phase by the development of locally made painted pottery (El Paso Polychrome). Intrusive ceramics also change, with Mimbres wares being replaced by Chupadero Black-on-white as the major type, and a series

of wares from the north (e.g., Lincoln Black-on-red; Three Rivers Terrecotta), south (e.g., Ramos Polychrome), and the west (e.g., Gila Polychrome) occur in the region.

Regional survey data suggest that the most intensive prehistoric use of the region may have occurred during the El Paso phase. This period is marked by more and larger sites, greater artifact densities, clustered settlement pattern (Carmichael 1986; Whalen 1977, 1978), and water-control features (Scarborough 1986). Pueblos are present along the Rio Grande, and both the western and eastern margins of the Hueco Bolson have large El Paso Phase settlements. Along the western Bolson, Whalen (1977) found that nearly half of the El Paso Phase villages were situated along low gradient alluvial fans, with many additional sites present near alluvial fans with playas. On the eastern margin of the Hueco Bolson, villages associated with alluvial fans are documented as well (Whalen 1978). Whalen (1978) suggests that this location, in well-watered areas, hints at an agricultural focus during this period. Although direct data on subsistence is limited, ethnobotanical and faunal data from a variety of excavations in the region support Whalen's view. Agriculture becomes more important during this period, although wild plants and animals, including fish, continued to play an important subsistence role (Bradley 1983; Foster et al. 1998; O'Laughlin 1977).

The actual degree of sedentism present during the El Paso phase is unclear, as is the pattern of mobility. Mauldin (1986) has developed a settlement and subsistence model for the El Paso phase, which is based on Hard's (1983a) Mesilla phase work, but assumes that agricultural dependence is somewhat greater. He suggests a dichotomy between primary and secondary villages whereby primary villages are in well-watered areas near mountain slopes. Mauldin (1986) argues that these sites will have a fluctuating population throughout the year and a high intensity of use. Subsistence is primarily based on agriculture. Secondary villages, located both along mountain slopes and in the central basin associated with playas, represent late summer residential occupations with a focus on gathering and hunting. While several researchers (e.g., Browning et al. 1992) have used the model to describe El Paso phase distributions, it has not been subject to any degree of testing.

Scarborough (1986, 1992) has recently excavated an El Paso/Dona Ana phase site, the Meyer Pithouse Village, which dates to the late thirteenth century. His work reveals the use of deep, quadrilateral pithouses and formalized trash disposal patterns suggesting a somewhat sedentary system. Corn, cultivated beans, and bottle gourd were present along with a substantial amount of rabbit bone. Other early El Paso phase sites have been excavated as well (see Kegley 1982; Miller 1989). These sites are characterized by pithouses, rather than pueblo architecture, though they do have El Paso Polychrome and Bichrome ceramics. The change in ceramics, then, is not accompanied by a shift to pueblo architecture, suggesting this shift may not take place until after A.D. 1250 in areas (see Brook 1980; Mauldin et al. 1994).

Several later El Paso phase sites have been excavated. These include the Hot Well site, a multi-room pueblo and reservoir located near the eastern edge of the Hueco Bolson (Brook 1970; Scarborough 1986). Bradley (1983) presents excavation results from La Cabrana, a small pueblo located near the Rio Grande. O'Laughlin has recently excavated the Fire Cracker site on the lower alluvial fans of the Franklin Mountains. O'Laughlin et. al. (1988) and O'Laughlin and Martin (1989) excavated one El Paso phase site and tested several others on the Loop 375 Project. Other sites have been excavated as well (see Lehmer 1948; Browning et al. 1992; Brook 1966, 1970, 1971, 1980). These excavations suggest a settlement pattern focused along lower alluvial fans or the Rio Grande. Some pueblo sites in the area may comprise well over 100 rooms (Brook 1970), though most have less than 10.

Proto-Historic Period or Phase

Although recognized as a poorly understood portion of the regional cultural chronology, Miller (2001) synthesizes an increasing body of data to span the critical gap between archaeology and ethnohistory. The period from the end of the El Paso phase until the Historic era appears to be a time of collapsing interaction spheres. The relatively few archaeological sites of this age in the area may be the result of abandonment, decreased archaeological visibility as local societies reverted to a more mobile hunter-gatherer lifeway, or both. Droughts, disease, and other stresses also played roles in the abandonment of large areas (Peterson and Brown 1994:79).

Historic Background

Hernan Gallegos of the 1581 Chamuscado-Rodriguez expedition traveled up the Rio Grande and explored the interior of the region throughout what is now El Paso and Hudspeth Counties. His accounts, however, mention no contact with native groups, and he and his party left the region soon after arriving (Peterson and Brown 1994:80). Shortly afterwards, in 1582, the Antonio de Espejo expedition traveled the same route and encountered a group they called the “Caguates,” who were most likely the Sumanas or Mansos who moved into the area after the 1400 to 1550 drought (Peterson and Brown 1994:80). This group was again described in 1598 by Juan de Onate. He is the European who named the group the Mansos, which meant “tame” Indians. Ironically, in the late seventeenth century after a hundred years of colonial interaction, this was the same group who led numerous revolts against the Spanish resulting in many deaths on both sides (Peterson and Brown 1994:81).

After Onate, expeditions did not pass through western Texas again until the 1620s, when Franciscan Father Custodian Alonso de Benavides traveled through the area recording of the conditions of Native life. Benavides encountered the Mansos near what is today El Paso, and further inland, “discovered” and named the Sumana tribe. He described these people as ferocious and formidable, untrustworthy and harassing (Peterson and Brown 1994:82). The Mansos tribe, after long experience with the Spaniards became less hospitable over time. Based on his travels, Father Benavides soon sent a report to the Spanish government suggesting that religious sects be set up throughout the area, with a minimum of 15 to 20 soldiers each. In the mid-1650s, Spanish mission settlements started to occupy the area around El Paso. By 1685, the region had 10 Franciscan friars who traveled to numerous Spanish ranches and farmsteads in the area (Peterson and Brown 1994:83).

The Native Americans who moved into region during the sixteenth and seventeenth centuries were of the Jumano culture, relations of the Mansos and Sumana tribes who were decimated during the Pueblo Revolt of 1680 (Fox 1983:22). In the early eighteenth century, the Jumano were taken over by the raiding Apache who remained in the area until being pushed to the south and west by the Comanche in the late eighteenth century. These groups were granted ‘ownership’ of the land in the area by the Spanish settlers in return for Spanish planting rights. This mission and farming period continued through the eighteenth century and into the nineteenth century.

BACKGROUND REVIEW AND SURVEY METHODS

Background Review

SWCA conducted a thorough background literature review of the APE. An SWCA archaeologist reviewed the *Nations South Well* (3106-442), *Helms West Well* (3106-441), *Clint NE* (3106-414), and the *Padre Canyon* (3105-323) U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle maps on

the THC online Texas Archeological Sites Atlas (Atlas) database (THC 2017), including searching for pertinent records pertaining to the APE. These sources provided information on the nature and location of previously conducted cultural resources surveys, previously recorded historic and/or prehistoric archaeological sites, NRHP districts and properties, SALs, Official Texas Historical Markers, Registered Texas Historic Landmarks, cemeteries, and local neighborhood surveys within or near the APE. Additionally, SWCA examined the Texas Department of Transportation Texas Historic Overlay Maps, a mapping/GIS database with historical maps and resource information covering most portions of the state (Foster et al. 2006).

A review of the THC’s Atlas indicated that eight previous cultural resources surveys have been conducted within 1 mile of the APE (Table 1). Only one of the eight previously surveyed project areas is adjacent to (within 300 feet of) the APE. In 1981, the Lyndon Baines Johnson (LBJ) School of Public Affairs sponsored an area survey. Located within the confines of the small area survey is previously identified archaeological site 41HZ234. The site was recorded previous to the 1981 survey and is discussed in further detail below. The remainder of the previous survey areas are within the 1-mile buffer, but due to their distance from the APE, will not be traversed by the planned construction.

Table 1. Previous Cultural Resources Surveys

Project Name	Project Type	Project Location	Fieldwork Date	Texas Antiquities Permit No.	Agency	Firm
Montana View Wastewater Line	Survey	Within 1 mile	2015	7153	El Paso County	TRC
Frontera Juarez	Survey	Within 1 mile	2007	4739	Texas GLO	Raba-Kistner
Unstated	Survey	Within 1 mile	1995	–	Bureau of Land Management	Unknown
Natural Area Surveys	Survey	Within 300 feet	1981	–	LBJ School of Public Affairs	Unknown
Unstated	Survey	Within 1 mile	1993	–	FERC	Unknown
Unstated	Survey	Within 1 mile	1992	–	Unstated	Unknown
Unstated	Survey	Within 1 mile	1994	–	FERC	Unknown
Padre Canyon Area	Survey	Within 1 mile	2014	6760	GLO	Four Corners Research, Inc.

The review also indicates that 23 previously recorded archaeological sites are within a 1-mile buffer of the APE (Table 2). These sites consist of a wide variety of historic and prehistoric site types, but are typically prehistoric campsites with thermal (i.e., fire-cracked rock) features or historical scatters. No data could be found on eight of the 23 sites (41HZ2533–41HZ2540), likely due to their recent identification and a delay in the data being added to THC’s Atlas. Of the 23 total previously recorded archaeological sites, only one site (41HZ234) is within 300 feet of the APE (Figures 5a–5d). Site 41HZ234 is located outside of the 300-foot-wide survey corridor and is several hundred feet outside of the northern boundary of parcel 0004.000.00.00-HU-TX on private property. It was recorded by the University of Texas in 1976 as a rockshelter with a hearth feature. Site 41HZ234 has no official recommendation for inclusion in the NRHP or as an SAL, but the site is well outside of the current APE and should not be affected by the proposed project.

Table 2. Previously Recorded Archaeological Sites

Site Trinomial	Site Type	Distance from APE	NRHP and/or SAL Eligibility	NRHP and/or SAL Recommendations
41EP255	Prehistoric open campsite, exposed hearth	Within 1 mile	None stated	None on site form
41EP256	Prehistoric open campsite	Within 1 mile	None stated	None on site form
41EP314	Prehistoric open campsite, exposed hearth	Within 1 mile	None stated	Further investigations
41EP4768	Prehistoric lithic, burned rock scatter	Within 1 mile	Undetermined	No further work within area of potential effects (APE). Further investigations beyond APE.
41HZ234	Prehistoric sandstone bedrock shelter with small talus	Within 300 feet	None stated	Further investigations
41HZ240	Historic Old Padre Mine	Within 1 mile	None stated	No further investigations
41HZ501	Prehistoric open campsite, exposed hearth	Within 1 mile	Potentially eligible (1992); Not eligible (1994)	No further investigations
41HZ502	Prehistoric open campsite, exposed hearth	Within 1 mile	Not eligible	No further investigations
41HZ503	Historic scatter	Within 1 mile	Not eligible	No further investigations
41HZ507	Prehistoric lithic scatter	Within 1 mile	Not eligible	No further investigations
41HZ508	Historic trash scatter	Within 1 mile	Not eligible	No further investigations
41HZ515	Prehistoric open campsite, thermal features	Within 1 mile	Undetermined	Further investigations
41HZ516	Prehistoric open campsite, thermal features	Within 1 mile	Undetermined	Further investigations
41HZ517	Prehistoric open campsite, thermal features	Within 1 mile	None stated	None on site form
41HZ794	Prehistoric open campsite, thermal features	Within 1 mile	None stated	No further investigations
41HZ2533	No site form	Within 1 mile	No site form	No site form
41HZ2534	No site form	Within 1 mile	No site form	No site form
41HZ2535	No site form	Within 1 mile	No site form	No site form
41HZ2536	No site form	Within 1 mile	No site form	No site form
41HZ2537	No site form	Within 1 mile	No site form	No site form
41HZ2538	No site form	Within 1 mile	No site form	No site form
41HZ2539	No site form	Within 1 mile	No site form	No site form
41HZ2540	No site form	Within 1 mile	No site form	No site form

Note: Gray highlighted cells indicate sites that either intersect or come within 300 feet of the proposed corridor.

Restricted Information
Not for Public Disclosure

Figure 5a. Previous archaeological project areas and previously recorded archaeological sites within 1-mile of the APE (map sheet 1 of 4).

Restricted Information
Not for Public Disclosure

Figure 5b. Previous archaeological project areas and previously recorded archaeological sites within 1-mile of the APE (map sheet 2 of 4).

Restricted Information
Not for Public Disclosure

Figure 5c. Previous archaeological project areas and previously recorded archaeological sites within 1-mile of the APE (map sheet 3 of 4).

Restricted Information
Not for Public Disclosure

Figure 5d. Previous archaeological project areas and previously recorded archaeological sites within 1-mile of the APE (map sheet 4 of 4).

Cultural Resources Survey Methods

SWCA's investigations consisted of an intensive pedestrian survey of the APE located on the public lands. The survey was of sufficient intensity to determine the nature, extent, and, if possible, significance of cultural resources discovered within the APE. The survey complied with applicable standards as defined in 13 Texas Administrative Code 26.20 and met all THC minimum archaeological survey standards for such projects with all exceptions thoroughly documented.

The intensive pedestrian field survey consisted of SWCA archaeologists walking the existing easement utilizing transects spaced no more than 100 feet (30 m) apart, which equals three (3) parallel transects across the 300-foot-wide survey corridor. Access roads to the pipeline ROW are expected to be used by EPNG and its contractors during the construction phase of the project. If the access road is an existing public roadway, or is constructed of asphalt or concrete, no examination for cultural resources occurred. For any existing dirt or gravel access road that requires no improvements (e.g., widening, straightening or grading for addition of gravel or sand), SWCA conducted only a visual examination of both road sidewalls up to 50 feet (15 meters [m]) from the road centerline. For any access road that will require new construction, or where improvements (e.g., widening, straightening, or grading for addition of gravel or sand) will be required during the course of the project to make the roadway suitable for heavy machinery, SWCA conducted visual examination and shovel testing along its extent, with the tests alternating to either side of the roadway.

CTA standards indicate a minimum of 16 shovel tests per mile on individual survey transect; however, SWCA observed that the surface-visibility percentage was high enough throughout portions of this APE that less intensive shovel testing was applied. Similarly, in areas where the survey corridor was collocated with existing pipelines, those previously disturbed areas were not shovel tested. Shovel tests were excavated in 20-cm arbitrary levels to a 1-m depth unless soil conditions or bedrock preclude reaching that depth. All matrix was screened through ¼-inch mesh for artifact recovery. SWCA plotted each shovel test using a sub-meter accurate global positioning system (GPS) receiver, and recorded each test on appropriate project field forms in tablets to expedite recoding during survey investigations.

When archaeological sites were encountered in the APE during the investigation, they were explored as much as possible with consideration to the boundaries of the APE. All discovered sites were assessed regarding their potential significance so that recommendations can be made for proper management (i.e., avoidance, non-avoidance, or further work). Shovel tests were excavated per THC standards to define horizontal and vertical site boundaries. SWCA completed appropriate State of Texas Archaeological Site Data Forms for each site discovered during the investigations. SWCA produced a detailed plan map of each site and plotted locations on USGS 7.5-minute topographic quadrangles and relevant project maps. SWCA conducted a non-collection survey; artifacts, including temporal diagnostics, were tabulated, analyzed, and documented in the field, but not collected to reduce curation costs; however, as per the terms of the Antiquities Permit, all paperwork and photographs generated during the survey will be curated at an approved curatorial facility.

CULTURAL RESOURCES SURVEY RESULTS

On October 27 and 28, 2017, two SWCA archaeologists conducted a 100 percent intensive cultural resources survey of the 300-foot-wide survey corridor centered on approximately 2.0 miles of proposed pipeline alignment centerline that crosses public lands (Appendix A). The intensive cultural resources investigations examined a total of 72.8 acres within the survey corridor. The general setting of the APE is rural and isolated with no residential areas and extensive industrial development within the surrounding oil and gas fields on public lands. Disturbances across the APE vary in extent and severity. The most

prominent disturbance is the oil and gas development associated with petroleum exploration and expansion, which includes well pads; crude oil, hydrogen sulfide, and holding tanks; surface and buried pipelines; and other disturbances, including overhead and buried utilities and transmission line corridors with associated vegetation clearing, earth moving, and gravel access roads (Figure 6). Additionally, multiple hiking, biking, and equestrian trails, as well as large amounts of recent refuse piles, can be observed throughout the APE (Figure 7).

Surface investigations involved carefully examining the ground surface throughout the APE looking for cultural materials. Subsurface investigations involved the excavation of 48 shovel tests throughout the public lands APE (Appendix B). Although investigations involved three transects within the 300-foot survey corridor, field conditions—such as exposed bedrock, broad deflated areas, and existing disturbances (i.e., previously cleared pipeline corridor)—limited where shovel testing occurred. Shovel testing typically terminated at bedrock, although several shovel tests revealed deep sand to 100 cmbs. The results for each public land parcel are summarized below in detail. Results are presented from north to south.



Figure 6. Example of existing gravel roads and paralleling pipelines near parcel 0003.000.00.00-HU-TX, view northeast.



Figure 7. Example of trails and refuse piles identified near parcel 0125.000.00.00-EP-TX, view southeast.

Clint Independent School District (CISD)

Parcel 0064.000.00.00-EP-TX

Parcel 0064.000.00.00-EP-TX is owned by CISD and is approximately 4.05 miles southwest of the Deerfield Park Drive and Whitetail Deer Drive intersection in southwest Homestead Meadows South, Texas (see Appendix A).

The area within parcel 0064.000.00.00-EP-TX is mapped as Dune lands soils. Dune land consists of dunal formations consisting of fine sand and silt (NRCS 2017). The sand dunes encountered within parcel 0064.000.00.00-EP-TX were small coppice dunes ranging in height from 2 to 6 feet in height. Dense scrub brush vegetation occurred across the dunes (Figure 8). The primary disturbances within parcel 0064.000.00.00-EP-TX include the previous construction of existing oil and gas field infrastructure (e.g., access roads and pipelines), with natural disturbances including wind erosion/scouring. Due to three parallel existing pipelines being located within the northeastern portion of the 300-foot-wide survey corridor, shovel testing occurred on only two transects outside of these previous disturbances. A third transect was excavated north of parcel 0064.000.00.00-EP-TX due to a proposed access road alignment that extended outside of the 300-foot-wide survey corridor.



Figure 8. Overview of parcel 0064.000.00.00-EP-TX, facing southeast.

The background review and literature search indicated that no previously recorded sites or cultural resources surveys are within or immediately adjacent to the APE on parcel 0064.000.00.00-EP-TX. The closest previous survey is located 1 mile northwest and was a linear survey conducted in 1995 for the Bureau of Land Management. No archaeological sites are associated with this previous survey. The nearest known recorded sites to parcel 0064.000.00.00-EP-TX are 41EP255 and 41EP256 (see Table 2), both of which are more than 0.5 mile to the southeast of the parcel and proposed APE. Sites 41EP255 and 41EP256 were both recorded as prehistoric campsites. Due to their distance from the APE, sites 41EP255 and 41EP256 will not be affected by the proposed project.

During the current survey effort, four shovel tests (AE223–AE224 and RB50–RB51) (Appendix B) were excavated within parcel 0064.000.00.00-EP-TX. A typical shovel test consisted of a single stratum of strong brown (7.5YR 4/6) sand, terminating at a depth of 100 cmbs. Shovel tests were placed judgmentally due to the dynamic coppice dune environment present. Surface and subsurface investigations within the survey corridor revealed no cultural materials. Based on the negative survey results, the planned project should not impact any cultural resources on the CISD parcel and no additional work is considered warranted.

Texas General Land Office

Parcel 0125.000.00.00-EP-TX

Parcel 0125.000.00.00-EP-TX is owned by the State of Texas and is approximately 0.68 mile southwest of the Deerfield Park Drive and Whitetail Deer Drive intersection in southwest Homestead Meadows South in the northern end of the Project (see Appendix A).

The APE within parcel 0125.000.00.00-EP-TX is mapped as Dune lands. Dune land consists of dunal formations consisting of fine sand and silt (NRCS 2017). The sand dunes across 0125.000.000-EP-TX ranged in size from 5 to 15 feet in height and had little to no vegetation cover (Figure 9). Primary manmade disturbances within the parcel include the previous construction from existing oil and gas field infrastructure (e.g., access roads and pipelines). Natural disturbances include wind erosion/scouring. Due to three parallel existing pipelines within the northeastern portion of the 300-foot-wide survey corridor, shovel testing occurred on only two transects that were outside the previous disturbances.



Figure 9. Overview of parcel 0125.000.00.00-EP-TX, facing northeast.

The background review and literature search indicated that no previously recorded archaeological sites or surveys are within or immediately adjacent to the APE. The closest two previous cultural surveys are 0.7 mile west of the APE. Both surveys were linear in nature and, although they cross parcel 0125.000.00.00-EP-TX, they do not intersect the project area. The closest recorded site to parcel 0125.000.00.00-EP-TX is 41EP4768 (see Table 2), which is located 0.27 mile north-northwest of the parcel. Site 41EP4768 was recorded as a prehistoric lithic and burned rock scatter. At the time of identification it was recommended as UNDETERMINED for the NRHP or as an SAL and more work was recommended if the site were to be impacted outside of the previous survey area. Due to its distance from the APE, site 41EP4768 will not be affected by the current proposed project.

Surface and subsurface investigations within the survey corridor on this parcel revealed no cultural materials. Ground surface visibility at the time of survey was almost 100 percent (see Figure 9) and the surface examination of the APE did not identify any cultural materials. Subsurface investigations involved the excavation of four shovel tests (i.e., AE221–AE222 and RB48–RB49) (Appendix B) within parcel 0125.000.00.00-EP-TX, none of which contained any buried cultural materials. A typical shovel test consisted of strong brown (7.5YR 4/6) sand terminating at 100 cmbs. Based on the negative survey results, the planned project would not impact any cultural resources on GLO parcel 0125.000.00.00-EP-TX and no additional work is warranted.

Parcel 004.000.00.00-HU-TX

Parcel 0004.000.00.00-HU-TX is owned by the State of Texas and is located approximately 0.31 mile east of the Horizon Boulevard and Connelly Road intersection and 13.15 miles southwest of Homestead Meadows South, Texas (see Appendix A).

The APE within parcel 0004.000.00.00-HU-TX is mapped as the Culberspeth-Chilicotal complex soil series. The Culberspeth series consists of very shallow, well-drained soils that are formed from alluvium and colluvium from mainly limestone sources. Vegetation across the parcel consisted of creosote and cacti with common exposures of caliche bedrock. The thin scrub brush and shallow bedrock provided ground surface visibility of 50 to 100 percent (Figure 10). The primary disturbances within parcel 0004.000.00.00-HU-TX include the previous construction of existing oil and gas field infrastructure (e.g., access roads and pipelines). Natural disturbances include wind erosion/scouring. Due to the high ground surface visibility shovel test intervals were extended to 150 m, and only two transects were excavated because three existing pipelines and a large two-lane gravel access road encompass the northeastern half of the 300-foot-wide corridor.



Figure 10. Overview of parcel 0004.000.00.00-HU-TX, facing northeast.

The background review and literature search indicated that no previously recorded sites or cultural surveys intersect the APE on parcel 0004.000.00.00-HU-TX. Although no cultural features intersect the APE, there is an adjacent cultural survey and archaeological site located north on the neighboring property. Both the previous survey and archaeological site are located outside of the 300-foot-wide survey corridor and are several hundred feet outside the northern boundary of parcel 0004.000.00.00-HU-TX on private property. The area survey was conducted in 1981 and sponsored by the LBJ School of Public Affairs. Previously identified site, 41HZ234, is located within the confines of the area survey. Site 41HZ234 was recorded by the University of Texas in 1976 as a rockshelter with a hearth feature. Site 41HZ234 has no official recommendation for inclusion in the NRHP or as an SAL, but the site is well outside of the current APE and should not be negatively impacted by the proposed project.

Surface and subsurface investigations within the survey corridor on this parcel revealed no cultural materials. Ground surface visibility at the time of survey ranged from 50 to 100 percent (see Figure 10) and the surface examination of the APE did not identify any cultural materials. Subsurface investigations involved the excavation of 14 shovel tests (AE213–AE217 and RB38–RB45) (Appendix B), none of which contained any cultural materials. A typical shovel test consisted of a single stratum of brown (7.5YR 5/4) to reddish yellow (7.5YR 8/4) silt loam to sand to depths ranging from 15–30 cmbs overlying caliche bedrock. Based on the negative survey results, the planned project would not impact any cultural resources on GLO parcel 0004.000.00.00-HU-TX and no additional work is warranted.

Parcel 003.000.00.00-HU-TX

Parcel 0003.000.00.00-HU-TX is approximately 1.29 miles east of the intersection of Horizon Boulevard and Connelly Road, 13.15 miles southwest of Homestead Meadows South, Texas, in the southern end of the APE (see Appendix A).

The area within parcel 0003.000.00.00-HU-TX is mapped as the Culberspeth-Chilicotal complex soil series. The Culberspeth series consists of very shallow, well-drained soils that are formed from alluvium and colluvium from mainly limestone sources (NRCS 2017). Vegetation across the APE consisted of creosote and cacti with caliche bedrock exposed at the surface. The thin scrub brush and shallow bedrock provided high ground surface visibility (50–100 percent) across the parcel (Figure 11). The primary disturbances within the APE on parcel 0003.000.00.00-HU-TX include the previous construction from existing oil and gas field infrastructure (e.g., access roads and pipelines). Natural disturbances include wind erosion/scouring. Due to the ground surface visibility in excess of 50 percent with shallow bedrock usually occurring above 30 cmbs, shovel test intervals were extended to 150 m. Only two transects were excavated because of the presence of three existing pipelines and a large two-lane gravel access road encompassing the northeastern half of the 300-foot-wide corridor.



Figure 11. Overview of parcel 0003.000.00.00-HU-TX, facing west.

The background review and literature search indicated that no previous cultural surveys or recorded sites intersect or are adjacent to the APE on parcel 0003.000.00.00-HU-TX. A number of previously conducted cultural surveys were conducted east and southeast of the parcel. Previous surveys consist of five linear and area surveys that were completed between 1981 and 1994. As a result of these previous surveys 18 archaeological sites have been recorded within 1 mile of the APE on parcel 0003.000.00.00-HU-TX. The nearest recorded sites to the APE is a cluster of six sites (i.e., 41HZ240, 41HZ507, 41HZ508, and 41HZ2538–41HX2540), all located within 3,000 feet of the APE (see Figure 5d). These sites are well outside of the APE and, therefore, will not be affected by the currently proposed project.

Subsurface investigations involved the excavation of 28 shovel tests (AE119–201, 207–211, 218–220 and RB16–24, 32–37, 46–47) (Appendix B) within the APE on parcel 0003.000.00.00-EP-TX. None of the 28 shovel tests contained any cultural materials. A typical shovel test consisted of a single stratum of brown (7.5YR 5/4) to reddish yellow (7.5YR 8/4) silt loam to sand to depths ranging from 15–30 cmbs overlying caliche bedrock. Although no subsurface cultural materials were discovered, one newly identified historic archaeological site was observed during pedestrian survey between shovel tests. Surficial investigations revealed a small scatter of historic debris (i.e., a colorless glass bottle, the base of a green glass bottle, and assorted tin cans). The historic scatter was recorded as newly identified site 41HZ803 and is discussed in more detail below.

Site 41HZ803

Site 41HZ803 is a historical artifact scatter located near the eastern terminus of the APE on parcel 0003.000.00.00-HU-TX, approximately 2.25 miles east northeast of the FM 1281 and Gas Line Road intersection in west-central Hudspeth County, Texas (Figure 12). The site measures approximately 19 m north-south by 34 m east-west and is situated on a gentle, southwestern-trending slope, south of the Hueco Mountains. Vegetation in the area consisted of creosote and cactus, providing nearly 100% ground surface visibility (Figure 13). The site area was observed to have been heavily impacted by natural and artificial disturbances. Natural disturbances consisted of heavy wind erosion and water erosion from the steep foot slopes to the east. Substantial artificial disturbances included three paralleling pipelines to the northeast, a large gravel access road leading to a large facility south of the site, evidence of cattle ranching, and land clearing activities associated with oil and gas production.

SWCA initially identified the site south of the centerline during pedestrian survey between shovel tests. Artifacts on the surface consisted of portions of a colorless glass bottle, the base of a green glass bottle, and a scatter consisting of assorted cans (Figures 14). Approximately 15 cans, 10 pieces of colorless glass shards and bottle fragments, and 10 pieces of green glass shards and bottle fragments were encountered across the site. The base of the green glass bottle is embossed with MONAHAN'S TEX (Figure 15). John Dunagan opened a Coca Cola bottling plant in Monahans, Texas, in 1927, which became very prominent for the area (Olien 2017). The can scatter consisted of sanitary, food, and tobacco cans. Archaeologists observed one pipe and cigarette tobacco tin with the name "Prince Albert" embossed on the base of the can. During 1948–1950, Prince Albert Tobacco cans featured this style embossing on the base (Figure 16).

Due to the presence of historic cultural materials, SWCA excavated shovel tests to determine the horizontal and vertical extent of the cultural deposit. In all, SWCA excavated six shovel tests (RB19–RB24) at the site, reaching depths of 30 cmbs before terminating at caliche bedrock (see Appendix B). A typical shovel test consisted of a single strata that exhibited a reddish yellow (7.5YR 8/4) sand. All shovel tests were negative for cultural materials or features, and the site was recorded as surficial in nature. Site 41HZ803 is an historic artifact scatter, likely dating to the mid-twentieth century. Based on a lack of subsurface materials or cultural features, the surficial nature of the artifact scatter, and the lack of an unusual artifact assemblage, this site has no potential to provide additional information that may

contribute to the understanding of local and/or regional history. As such, it is SWCA's opinion that site 41HZ803 is NOT ELIGIBLE for the NRHP or SAL designation and no further work is recommended.

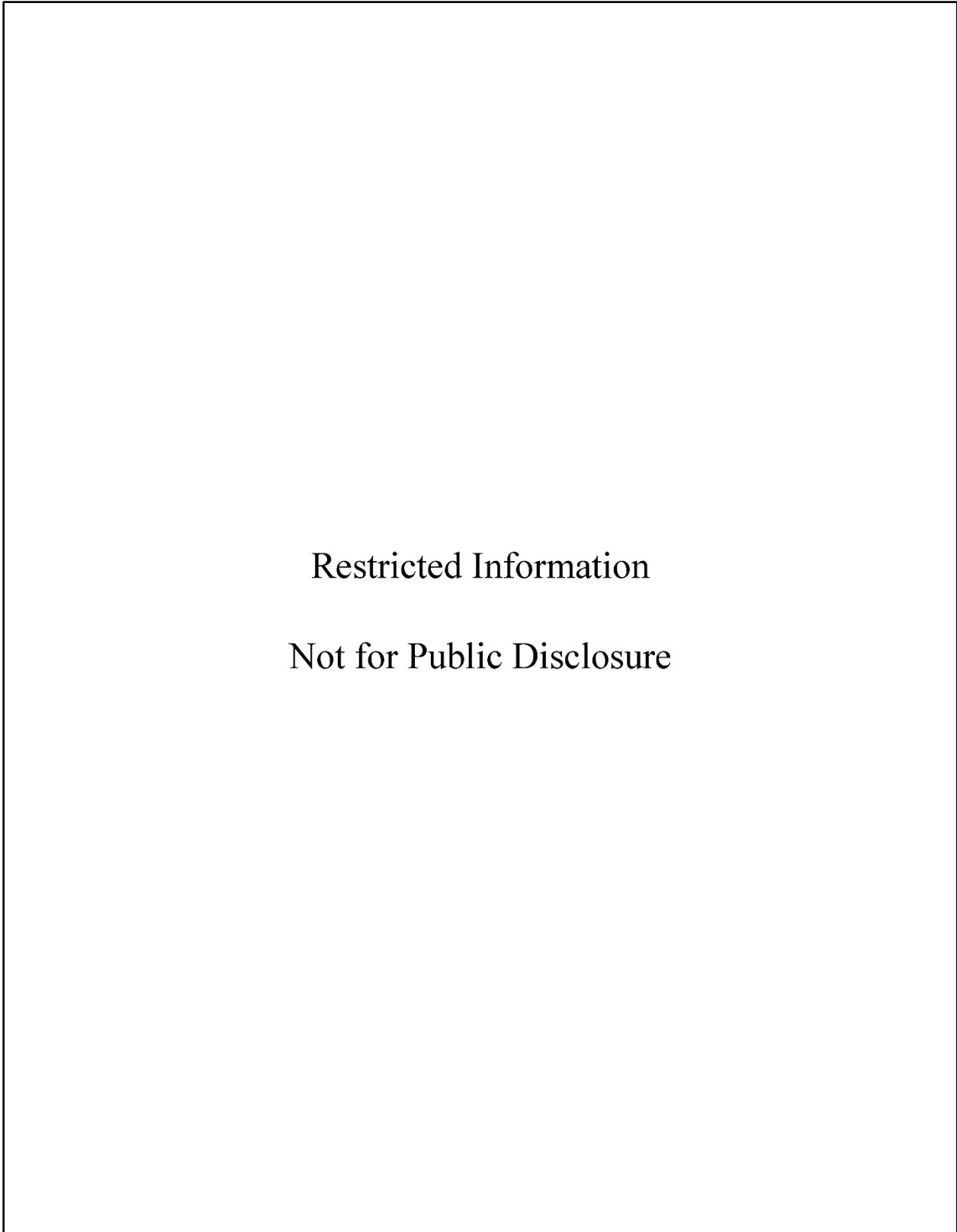


Figure 12. Site map of 41HZ803.



Figure 13. Overview of site 41HZ803, view north.



Figure 14. Colorless glass shards observed on ground surface.



Figure 15. Base of green glass bottle embossed with MONAHAN'S TEX.



Figure 16. Prince Albert tin, ca. 1948–1950, at 41HZ803.

SUMMARY AND RECOMMENDATIONS

On October 27 and 28, 2017, SWCA conducted an intensive cultural resources survey on portions of the proposed approximately 17.0-mile-long EPNG Mainline Expansion Project that cross public lands in El Paso and Hudspeth Counties, Texas. The APE includes a 300-foot-wide environmental survey corridor that would span approximately 2.0 miles of public lands. Impacts associated with the construction of the pipeline will occur within a variable width construction ROW measuring 60 feet wide in residential areas, 180 feet wide in dunal areas, but averaging 90 feet wide throughout the remainder of the APE. Proposed subsurface impacts would extend to a minimal typical depth of approximately 6 feet below ground surface, although, in dunal areas, the depth of impacts will be approximately 9 feet; however, subsurface impacts are anticipated to extend up to 12 feet below ground surface via subsurface bores to avoid impacts to areas with existing infrastructure and drainages.

Prior to fieldwork, SWCA's investigations included a cultural resources background review and literature search. A review of the THC's Atlas indicated that eight previous cultural resources surveys have been conducted within 1 mile of the APE. Only one of the eight previously surveyed project areas is adjacent to (within 300 feet of) the APE. An area survey was conducted in 1981 sponsored by the LBJ School of Public Affairs. The remainder of the previous survey areas are within the 1-mile buffer, but due to their distance from the APE, will not be traversed by the planned construction.

The review also indicates that 23 previously recorded archaeological sites are within a 1-mile buffer of the APE. These sites consist of a wide variety of historic and prehistoric site types, but are typically prehistoric campsites with thermal features or historic scatters. No data could be found on eight of the 23 sites (i.e., 41HZ2533–41HZ2540), likely due to their recent identification and a delay in the data being added to THC's Atlas. Of the 23 total previously recorded archaeological sites, only one site (41HZ234) is within 300 feet of, the APE. Site 41HZ234 is located outside of the 300-foot-wide survey corridor and is several hundred feet outside the northern boundary of parcel 0004.000.00.00-HU-TX on private property. It was recorded by the University of Texas in 1976 as a rockshelter with a hearth feature. No recommendations were made for the site's NRHP or SAL eligibility; however, the site is well outside of the current APE and would not be affected by the proposed project.

As a result of the recent survey effort, SWCA excavated 48 shovel tests and identified one newly recorded historic archaeological site (41HZ803). Site 41HZ803 is a historic debris scatter consisting of colorless and green glass, and assorted sanitary food and tobacco tin cans. Owing to the paucity or commonality of recovered assemblages, lack of features, lack of unique character, and/or lack of contextual integrity (i.e., surface site only), this resource possesses negligible research value and is unlikely to contribute to the understanding of local and/or regional history. Consequently, it is the opinion of SWCA that site 41HZ803 is NOT ELIGIBLE for the NRHP or for SAL designation and no further work is recommended for this site.

In accordance with the Antiquities Code of Texas and Section 106, 36 CFR 800.4 of the NHPA, SWCA has made a reasonable and good faith effort to identify archaeological sites and historic properties within the investigated APE. Based on the negative shovel test results and the negligible research value of 41HZ803, the planned project will have no effect on cultural resources. SWCA recommends that because no cultural resources would be impacted by the Project, no further archaeological investigations within the APE are warranted for the assessed portion of the EPNG Mainline Expansion Project on these State of Texas public lands.

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Appendix A

Survey Results



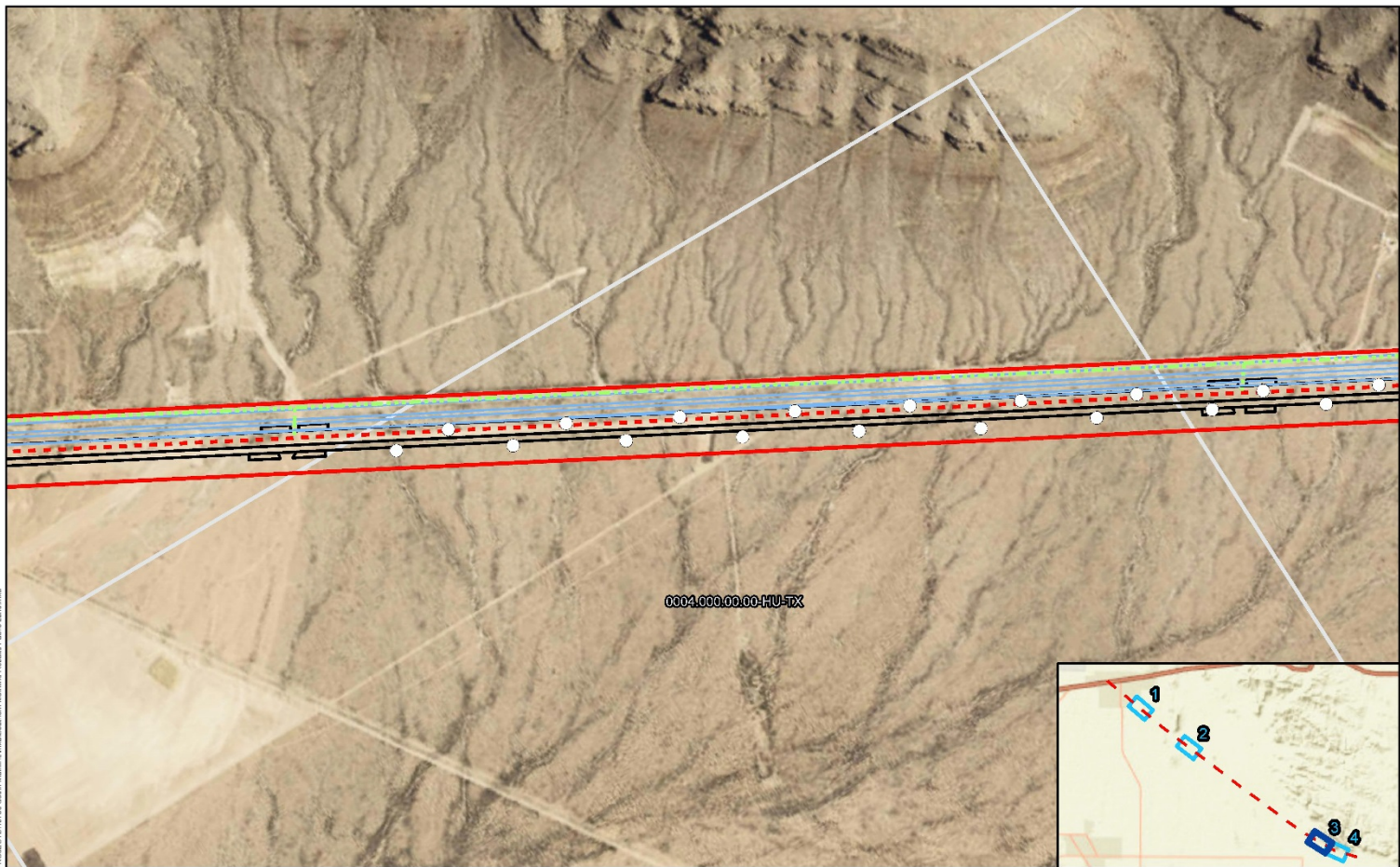
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<p>Page 1 of 4</p>	<p>Figure 1. Results Map</p>															



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Page 3 of 4

○ Negative Shovel Test

--- Centerline

--- Access Road

Existing Pipeline

Footprint

Parcel Boundary

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Scale:	1:7,000
Created By:	JTankeot
Approved By:	WNorm
SWCA Project No.:	43785
Date Produced:	12/11/2017
NAD 1983 UTM Zone 13N	

0 350 700 Feet

0 100 200 Meters

Restricted Information
Not for Public Disclosure

Appendix B

Shovel Test Data for All Public Land Parcels

Intensive Cultural Resources Survey for Portions of the Proposed 17-Mile El Paso Natural Gas Mainline Expansion Project on Public Lands

Trinomial	Parcel	Shovel Test Number	Level	Depth	Munsell	Munsell Color	Texture	Inclusion %	Inclusion Type	Comments
NA	0003.000.00.00-HU-TX	AE199	1	0-15	7.5YR 5/4	Brown	Silt Loam	5-10%	Gravels, Pebbles	No cultural material encountered. Terminated at bedrock.
NA	0003.000.00.00-HU-TX	AE200	1	0-30	7.5YR 5/4	Brown	Silt Loam	5-10%	Gravels, Pebbles	No cultural material encountered. Terminated at bedrock.
NA	0003.000.00.00-HU-TX	AE201	1	0-30	7.5YR 5/4	Brown	Silt Loam	5-10%	Gravels, Pebbles	No cultural material encountered. Terminated at bedrock.
NA	0003.000.00.00-HU-TX	AE207	1	0-15	7.5YR 5/4	Brown	Silt Loam	5-10%	Gravels, Pebbles	No cultural material encountered. Terminated at bedrock.
NA	0003.000.00.00-HU-TX	AE208	1	0-15	7.5YR 5/4	Brown	Silt Loam	5-10%	Gravels, Pebbles	No cultural material encountered. Terminated at bedrock.
NA	0003.000.00.00-HU-TX	AE209	1	0-15	7.5YR 5/4	Brown	Silt Loam	5-10%	Gravels, Pebbles	No cultural material encountered. Terminated at bedrock.
NA	0003.000.00.00-HU-TX	AE210	1	0-15	7.5YR 5/4	Brown	Silt Loam	5-10%	Gravels, Pebbles	No cultural material encountered. Terminated at bedrock.
NA	0003.000.00.00-HU-TX	AE211	1	0-30	7.5YR 5/4	Brown	Silt Loam	5-10%	Gravels, Pebbles	No cultural material encountered. Terminated at bedrock.
NA	0004.000.00.00-HU-TX	AE212	1	0-15	7.5YR 5/4	Brown	Silt Loam	5-10%	Gravels, Pebbles	No cultural material encountered. Terminated at bedrock.
NA	0004.000.00.00-HU-TX	AE213	1	0-15	7.5YR 5/4	Brown	Silt Loam	5-10%	Gravels, Pebbles	No cultural material encountered. Terminated at bedrock.
NA	0004.000.00.00-HU-TX	AE214	1	0-15	7.5YR 5/4	Brown	Silt Loam	5-10%	Gravels, Pebbles	No cultural material encountered. Terminated at bedrock.
NA	0004.000.00.00-HU-TX	AE215	1	0-30	7.5YR 5/4	Brown	Silt Loam	5-10%	Gravels, Pebbles	No cultural material encountered. Terminated at bedrock.
NA	0004.000.00.00-HU-TX	AE216	1	0-15	7.5YR 5/4	Brown	Silt Loam	5-10%	Gravels, Pebbles	No cultural material encountered. Terminated at bedrock.
NA	0004.000.00.00-HU-TX	AE217	1	0-15	7.5YR 5/4	Brown	Silt Loam	5-10%	Gravels, Pebbles	No cultural material encountered. Terminated at bedrock.
NA	0003.000.00.00-HU-TX	AE218	1	0-15	7.5YR 5/4	Brown	Silt Loam	5-10%	Gravels, Pebbles	No cultural material encountered. Terminated at bedrock.
NA	0003.000.00.00-HU-TX	AE219	1	0-15	7.5YR 5/4	Brown	Silt Loam	5-10%	Gravels, Pebbles	No cultural material encountered. Terminated at bedrock.
NA	0003.000.00.00-HU-TX	AE220	1	0-15	7.5YR 5/4	Brown	Silt Loam	5-10%	Gravels, Pebbles	No cultural material encountered. Terminated at bedrock.

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Trinomial	Parcel	Shovel Test Number	Level	Depth	Munsell	Munsell Color	Texture	Inclusion %	Inclusion Type	Comments
NA	0125.000.00.00-EP-TX	AE221	1	0-100	7.5YR 4/6	Strong Brown	Sand	NA	NA	No cultural material encountered. Terminated at depth.
NA	0125.000.00.00-EP-TX	AE222	1	0-100	7.5YR 4/6	Strong Brown	Sand	NA	NA	No cultural material encountered. Terminated at depth.
NA	0064.000.00.00-EP-TX	AE223	1	0-100	7.5YR 4/6	Strong Brown	Sand	NA	NA	No cultural material encountered. Terminated at depth.
NA	0064.000.00.00-EP-TX	AE224	1	0-100	7.5YR 4/6	Strong Brown	Sand	NA	NA	No cultural material encountered. Terminated at depth.
NA	0003.000.00.00-HU-TX	RB16	1	0-30	7.5YR 8/4	Reddish Yellow	Sand	10-20%	Calcium Carbonate, Gravels, Large Rock Fragments	No cultural material encountered. Terminated at bedrock.
NA	0003.000.00.00-HU-TX	RB17	1	0-30	7.5YR 8/4	Reddish Yellow	Sand	10-20%	Calcium Carbonate, Gravels, Large Rock Fragments	No cultural material encountered. Terminated at bedrock.
NA	0003.000.00.00-HU-TX	RB18	1	0-30	7.5YR 8/4	Reddish Yellow	Sand	10-20%	Calcium Carbonate, Gravels, Large Rock Fragments	No cultural material encountered. Terminated at bedrock.
41HZ803	0003.000.00.00-HU-TX	RB19	1	0-30	7.5YR 8/4	Reddish Yellow	Sand	10-20%	Calcium Carbonate, Gravels, Large Rock Fragments	No cultural material encountered. Terminated at bedrock.
41HZ803	0003.000.00.00-HU-TX	RB20	1	0-30	7.5YR 8/4	Reddish Yellow	Sand	10-20%	Calcium Carbonate, Gravels, Large Rock Fragments	No cultural material encountered. Terminated at bedrock.
41HZ803	0003.000.00.00-HU-TX	RB21	1	0-30	7.5YR 8/4	Reddish Yellow	Sand	10-20%	Calcium Carbonate, Gravels, Large Rock Fragments	No cultural material encountered. Terminated at bedrock.
41HZ803	0003.000.00.00-HU-TX	RB22	1	0-30	7.5YR 8/4	Reddish Yellow	Sand	10-20%	Calcium Carbonate, Gravels, Large Rock Fragments	No cultural material encountered. Terminated at bedrock.
41HZ803	0003.000.00.00-HU-TX	RB23	1	0-30	7.5YR 8/4	Reddish Yellow	Sand	10-20%	Calcium Carbonate, Gravels, Large Rock Fragments	No cultural material encountered. Terminated at bedrock.
41HZ803	0003.000.00.00-HU-TX	RB24	1	0-30	7.5YR 8/4	Reddish Yellow	Sand	10-20%	Calcium Carbonate, Gravels, Large Rock Fragments	No cultural material encountered. Terminated at bedrock.
NA	0003.000.00.00-HU-TX	RB32	1	0-30	7.5YR 8/4	Reddish Yellow	Sand	10-20%	Calcium Carbonate, Gravels, Large Rock Fragments	No cultural material encountered. Terminated at bedrock.

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Trinomial	Parcel	Shovel Test Number	Level	Depth	Munsell	Munsell Color	Texture	Inclusion %	Inclusion Type	Comments
NA	0003.000.00.00-HU-TX	RB33	1	0-30	7.5YR 8/4	Reddish Yellow	Sand	10-20%	Calcium Carbonate, Gravels, Large Rock Fragments	No cultural material encountered. Terminated at bedrock.
NA	0003.000.00.00-HU-TX	RB34	1	0-30	7.5YR 8/4	Reddish Yellow	Sand	10-20%	Calcium Carbonate, Gravels, Large Rock Fragments	No cultural material encountered. Terminated at bedrock.
NA	0003.000.00.00-HU-TX	RB35	1	0-30	7.5YR 8/4	Reddish Yellow	Sand	10-20%	Calcium Carbonate, Gravels, Large Rock Fragments	No cultural material encountered. Terminated at bedrock.
NA	0003.000.00.00-HU-TX	RB36	1	0-30	7.5YR 8/4	Reddish Yellow	Sand	10-20%	Calcium Carbonate, Gravels, Large Rock Fragments	No cultural material encountered. Terminated at bedrock.
NA	0003.000.00.00-HU-TX	RB37	1	0-30	7.5YR 8/4	Reddish Yellow	Sand	10-20%	Calcium Carbonate, Gravels, Large Rock Fragments	No cultural material encountered. Terminated at bedrock.
NA	0004.000.00.00-HU-TX	RB38	1	0-30	7.5YR 8/4	Reddish Yellow	Sand	10-20%	Calcium Carbonate, Gravels, Large Rock Fragments	No cultural material encountered. Terminated at bedrock.
NA	0004.000.00.00-HU-TX	RB39	1	0-30	7.5YR 8/4	Reddish Yellow	Sand	10-20%	Calcium Carbonate, Gravels, Large Rock Fragments	No cultural material encountered. Terminated at bedrock.
NA	0004.000.00.00-HU-TX	RB40	1	0-30	7.5YR 8/4	Reddish Yellow	Sand	10-20%	Calcium Carbonate, Gravels, Large Rock Fragments	No cultural material encountered. Terminated at bedrock.
NA	0004.000.00.00-HU-TX	RB42	1	0-30	7.5YR 8/4	Reddish Yellow	Sand	10-20%	Calcium Carbonate, Gravels, Large Rock Fragments	No cultural material encountered. Terminated at bedrock.
NA	0004.000.00.00-HU-TX	RB43	1	0-30	7.5YR 8/4	Reddish Yellow	Sand	10-20%	Calcium Carbonate, Gravels, Large Rock Fragments	No cultural material encountered. Terminated at bedrock.
NA	0004.000.00.00-HU-TX	RB44	1	0-30	7.5YR 8/4	Reddish Yellow	Sand	10-20%	Calcium Carbonate, Gravels, Large Rock Fragments	No cultural material encountered. Terminated at bedrock.
NA	0004.000.00.00-HU-TX	RB45	1	0-30	7.5YR 8/4	Reddish Yellow	Sand	10-20%	Calcium Carbonate, Gravels, Large Rock Fragments	No cultural material encountered. Terminated at bedrock.

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Trinomial	Parcel	Shovel Test Number	Level	Depth	Munsell	Munsell Color	Texture	Inclusion %	Inclusion Type	Comments
NA	0003.000.00.00-HU-TX	RB46	1	0-30	7.5YR 8/4	Reddish Yellow	Sand	10-20%	Calcium Carbonate, Gravels, Large Rock Fragments	No cultural material encountered. Terminated at bedrock.
NA	0003.000.00.00-HU-TX	RB47	1	0-30	7.5YR 8/4	Reddish Yellow	Sand	10-20%	Calcium Carbonate, Gravels, Large Rock Fragments	No cultural material encountered. Terminated at bedrock.
NA	0125.000.00.00-EP-TX	RB48	1	0-40	7.5YR 8/4	Reddish Yellow	Sand	NA	NA	No cultural material encountered.
NA	0125.000.00.00-EP-TX	RB48	2	40-100	7.5YR 5/8	Strong Brown	Sandy Loam	NA	NA	No cultural material encountered. Terminated at depth.
NA	0064.000.00.00-EP-TX	RB51	1	0-40	7.5YR 8/4	Reddish Yellow	Sand	NA	NA	No cultural material encountered.
NA	0064.000.00.00-EP-TX	RB51	2	40-100	7.5YR 5/8	Strong Brown	Sandy Loam	NA	NA	No cultural material encountered. Terminated at depth.