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Final Report A Phase I Cultural Resources Survey of the Break Point Project Fort Bend County, Texas

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FINAL REPORT
A PHASE I CULTURAL RESOURCES SURVEY
OF THE BREAK POINT PROJECT
FORT BEND COUNTY, TEXAS

Prepared for

Gulf South Pipeline Company, LP

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ABSTRACT

Perennial Environmental Services, LLC (Perennial), on behalf of Gulf South Pipeline Company, LP (Gulf South), a subsidiary of Boardwalk Pipeline Partners, LP (Boardwalk), conducted an intensive cultural resources survey of the proposed Break Point Project (Project) located in Rosenberg in Fort Bend County, Texas. The Project will involve the hydrostatic testing of the existing line. The hydrostatic test will require temporary workspace in order to complete the proposed activities.

The proposed Project construction will include the excavation of the existing pipeline and in order to complete a hydrostatic test of the line. Temporary workspace within the defined Project area will be utilized for construction vehicular traffic and equipment storage during the testing activities. Ground disturbance will be minimal outside of the existing corridor; however, limited excavation activities will be necessary at the margins of the existing right of way (ROW).

The proposed Project may require the usage of a Nationwide Permit (NWP) issued by the US Army Corps of Engineers (USACE). As such, portions of the Project fall under the jurisdiction of the USACE. Additionally, the proposed Project is regulated by the Federal Energy Regulatory Commission (FERC). Cultural resources surveys were conducted for the approximately 3.4-acre Project area in accordance with Section 106 of the National Historic Preservation Act (NHPA). The survey was designed to inventory and assess cultural resources across the Project. These efforts involved both surface and subsurface archaeological survey.

The area of potential effect (APE) is considered the entirety of the Project area. The APE measures approximately 3.4 acres with depths of impact extending to the depth of the existing pipeline (4.0 to 6.0 ft [1.2 to 1.8 m]) within the permanent easement, and 0.6 to 1.0 ft (0.1 to 0.3 m) within the temporary workspace areas. Perennial conducted the intensive Phase I archaeological investigation within the boundaries of the Project. Abby Peyton served as the Principal Investigator (PI) for the Project and Zachary Overfield, Michael Maddox, and Miles Martin conducted the fieldwork on January 22, 2016.

The survey investigations resulted in entirely negative findings with no cultural resources observed along the ground surface or within any of the ten shovel tests excavated across the Project. Overall, the Project area was found to be covered by bermudagrass and small stands of hardwoods and scrub brush. The typical shovel test profiled consisted of a dark grayish brown sandy loam from (0-11.8 in [0-30 cmbs]) on top of a gray clay (11.8-39.4 [30-100 cmbs]). Based on the negative survey results recorded during the investigation, it is the professional opinion of the Principal Investigator that the Project will have no adverse effect on significant cultural resources listed on or considered eligible for listing on the NRHP. No further work is recommended for the Project.

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INTRODUCTION

Perennial Environmental Services, LLC (Perennial), on behalf of Gulf South Pipeline Company, LP (Gulf South), a subsidiary of Boardwalk Pipeline Partners, LP (Boardwalk), conducted an intensive cultural resources survey of the proposed Break Point Project (Project) located in Rosenberg in Fort Bend County, Texas (Figures 1 and 2). The Project will involve the hydrostatic testing of the existing line. The hydrostatic test will require temporary workspace in order to complete the proposed activities.

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PROJECT AREA DESCRIPTION

The Project area is located immediately south of Foerster School Road in Fort Bend County, Texas. The Project is located within the USGS 7.5-minute Kendleton, Texas topographic quadrangle. The Project environmental setting is primarily characterized by open pasture with some scrub brush and few stands of small hardwoods. Land use in the surrounding area consists primarily of rangeland and agricultural activities. The geographic setting can be described as a flat coastal plain.

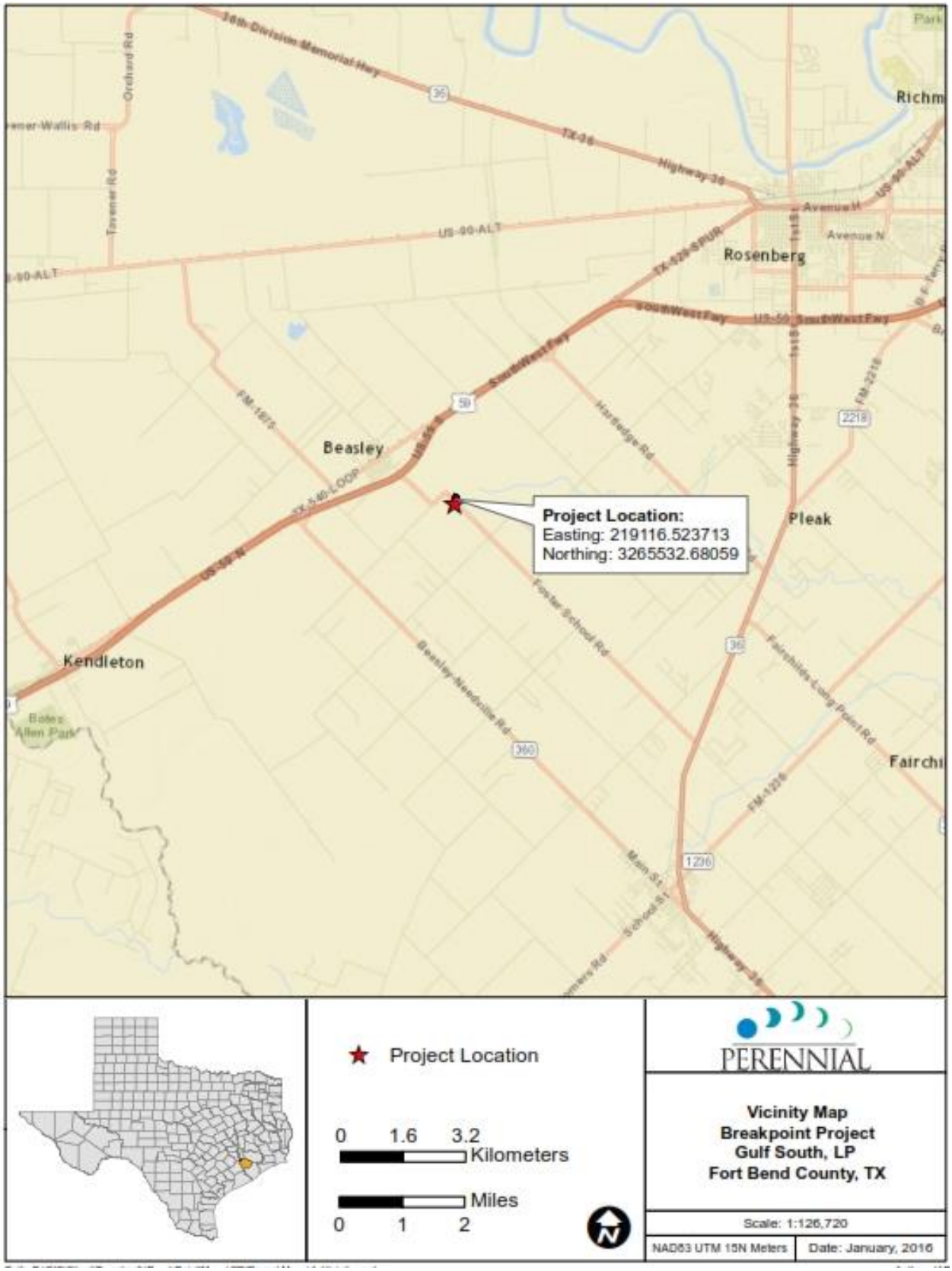

Figure 1. Project vicinity map.

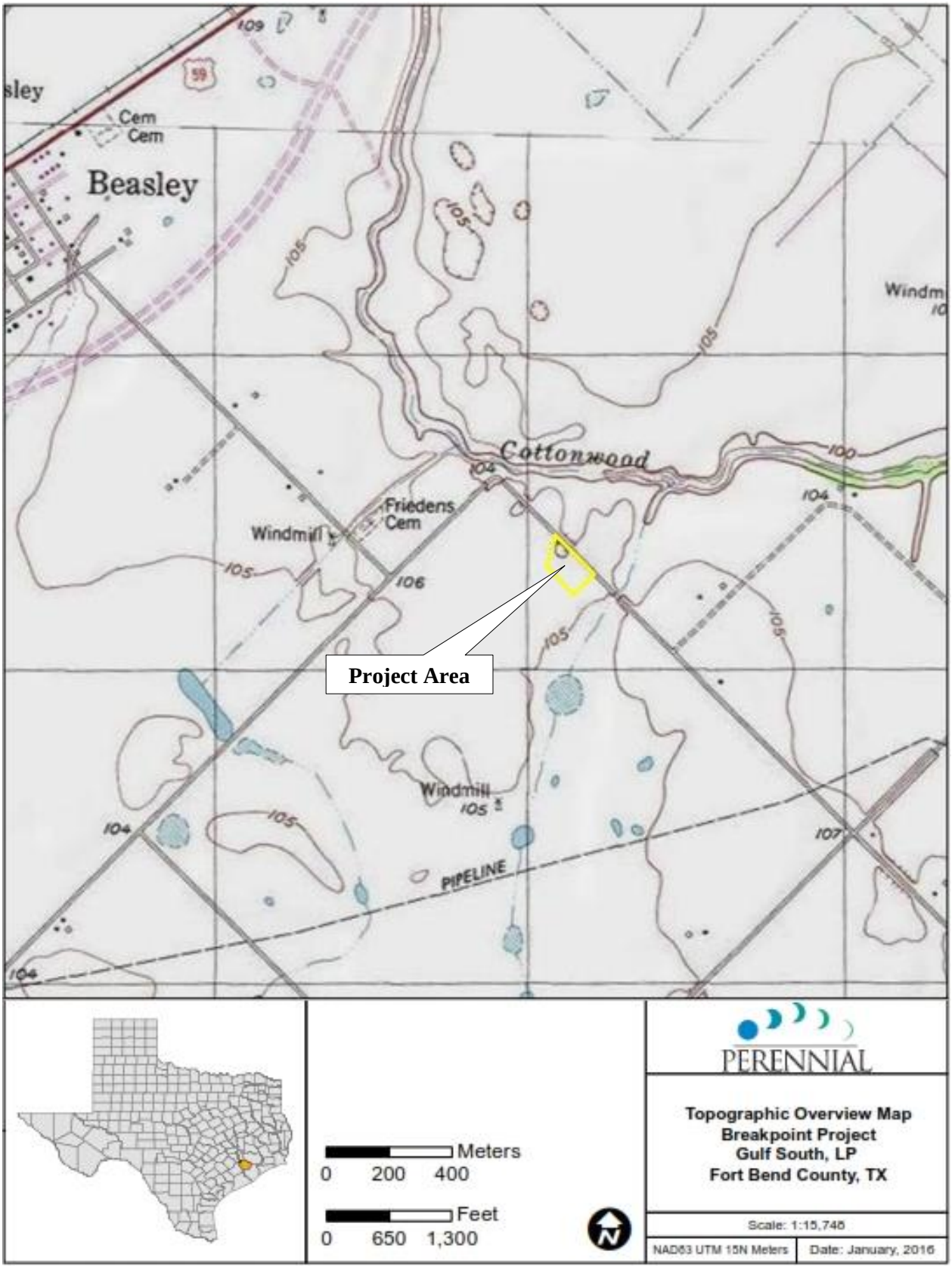

Figure 2. Topographic overview of Project area.

The Project is located within the Northern Humid Gulf Coastal Prairies of the Western Gulf Coast Plain. This Western Gulf Coast Plain ecoregion is represented by relatively flat topography and savanna vegetation. Fertile soils in this region are widely used for soybean, cotton and rice production (Griffith et al. 2004). The Northern Humid Gulf Coastal Prairies subregion are characterized by poorly drained Quaternary-age deltaic soils with diverse grasslands including big bluestem, little bluestem, Indiangrass, brownseed paspalum, and switchgrass and marginal forested areas including Loblolly Pines and historical Longleaf Pines in the northern portion of the region (Griffith et al. 2004). The majority of the coastal prairies in this sub-region have been converted to agricultural, aquacultural, and other urban land uses.

Cottonwood Creek is located approximately 0.35 mi (0.56 km) north of the Project area, and an unnamed tributary of Cottonwood Creek is located 0.05 mi (0.08 mi) to the southeast. Cottonwood Creek discharges into Big Creek approximately 3.92 mi (6.31 km) east of the Project area. Big Creek meanders southeast for approximately 18 miles, where it feeds into the Brazos River.

Geologically, the Project is underlain by the Beaumont Formation (Qbs). These areas include predominately yellowish-brown to brownish-gray very fine to fine quartz sand with minor gravels intermixed. The Beaumont Formation is typically comprised of Late Pleistocene-age deposits (USGS 2016).

Two soil series are mapped within the Project area, Fordtran loamy fine sand, 1 to 4 percent slopes and Edna fine sandy loam, 0 to 1 percent slopes. The Fordtran soil series is classified as an alfisol, and forms on terraces, coastal plains, and river valleys (NRCS 2016). The Fordtran series formed within Pleistocene age sandy and loamy alluvium from igneous, metamorphic, and sedimentary rock (NRCS 2016). This series is very deep, moderately well drained, and very slowly permeable (NRCS 2016). The Edna soil series is classified as an alfisol, and forms on flats of coastal plains (NRCS 2016). The Edna series formed within loamy fluviomarine deposits derived from the Beaumont Formation of Pleistocene age, and is located on ancient meander ridges (NRCS 2016). The Edna soil series is classified by Abbott (2001) as loamy ancient alluvium with a low geoarchaeological potential. The Fordtran soil series is not discussed by Abbott (2001), however, it possess similar characteristics as the Edna soil series, also forming in ancient Pleistocene alluvium.

METHODS

BACKGROUND REVIEW

Prior to initiating fieldwork, Perennial conducted a records and literature review of the Texas Historical Commission (THC)'s Texas Archeological Sites Atlas (Atlas) online database and the NRHP database to identify previously recorded cultural resource sites, historic structures, properties listed in the NRHP, designated historic districts, or State Antiquities Landmarks (SAL)

which could potentially be affected by the proposed undertaking. Previously recorded cultural resource site forms, reports of archaeological investigations, general historical documents, and secondary sources concerning the background of the area were reviewed. The records search included a review of all previously recorded site forms, cemetery data, and surveys on file within a 1.0-mi (1.6-km) review radius of the Project.

In addition to a records and literature search, archaeologists gathered information from secondary sources concerning the prehistoric and historic background of the area. Documents associated with the history of the area were used to model prehistoric and historic settlement patterns in relation to the landscape and terrain characteristics as well as cultural patterns and regional trends. National Resources Conservation Service (NRCS) soil data, US Geological Survey (USGS) 7.5-minute topographic quadrangles, aerial photographs, and contemporary geologic and physiographic features were also examined.

FIELD METHODS

Perennial's investigations consisted of an intensive pedestrian survey and shovel testing efforts within the Project APE. Perennial staff archeologists examined the ground surface as well as erosional profiles and exposures for cultural resources. Subsurface investigations involved the excavation of a series of shovel tests across the Project area. In addition to the shovel testing, the staff archeologists completed a series of pedestrian survey transects across Project.

Shovel tests measured approximately 11.8 inches (in) (30 centimeters [cm]) in diameter and were excavated to a maximum depth of 3.3 ft (1.0 m). In some cases, shovel tests were terminated at shallower depths due to the presence of compact clays encountered within the shovel tests. The matrix from each shovel test was screened through 0.25-in (6.0-millimeter [mm]) mesh. If dense, clays were encountered and could not be successfully screened, the clay matrix was trowel-sorted and visually inspected. For each shovel test, Perennial recorded the following information on standardized shovel test forms: location, maximum depth, and the number of soil strata. For each soil stratum, thickness, texture, color, and the presence or absence and nature of cultural materials were recorded. During field survey, the archaeologist was equipped with a handheld sub-meter GeoXT Trimble Global Positioning System (GPS) device, topographic maps and aerial photographs of the workspace, a digital camera, as well as shovel test and photographic logs, and daily journal forms.

The Texas State Minimum Archeological Survey Standards (TSMASS) require a minimum of 2 shovel tests per 1 acre for area surveys measuring 3.0 to 10.0 acres in size. As such, a minimum of 6 shovel tests are required for the 3.4-acre project area. An existing buried utility corridor bisected the Project area down the center running approximately southwest-northeast. As such, subsurface tests were spaced to avoid this significant disturbance. In addition to the subsurface testing, staff archeologists traversed the entire Project in order to observe the modern ground

surface for cultural materials between shovel test intervals. Pedestrian survey transects were intended to provide adequate coverage of the space between shovel tests.

RESULTS

BACKGROUND REVIEW

Background research conducted on the THC's Atlas website indicated that no previously recorded archaeological sites are mapped within a 1.0 mi (1.6-km) radius of the Project area (Atlas 2016). However, one cemetery is located 0.35 mi (0.56 km) west of the Project area. The cemetery is known as the Friedens United Church of Christ cemetery and occupies a 2.23 acre (0.9 hectare) area. The earliest burial dates to 1921 (Fort Bend County 2016). The cemetery is well outside the Project area and will not be adversely effected by the proposed Project construction activities. Additionally, based upon the Atlas review the Project has not been previously surveyed for cultural resources. There are no additional surveys mapped on the Atlas within 1.0 mi (1.6 km) of the Project area.

FIELD SURVEY

Perennial field archaeologists conducted an intensive surface and subsurface cultural resources investigation of the proposed Project on January 22, 2015 (Figure 3). The purpose of the investigation was to identify and evaluate all cultural resources within the Project area. The Project is located within improved ranchland in close proximity to Cottonwood Creek. The landscape is primarily dominated by bermudagrass with few small stands of live oaks. Natural grasses are scarce, although still present to a small degree. The geographic setting is characterized by both upland landforms and flat low-lying inundated recesses. An existing pipeline bisects the Project area, running southwest-northeast, creating a swath of disturbance along the corridor. The existing pipeline is the subject of the proposed hydrostatic test.

The field survey was initiated at the northernmost corner and conducted primarily along a 164.0-ft (50-m) grid, although 98.4-ft (30-m) spacing was also utilized. Due to the high density of the rangeland grasses, ground surface visibility (GSV) was reduced to less than 10 percent across the majority of the Project area. The shovel testing program was spaced to avoid testing within disturbed locations, such as, the existing pipeline corridor and the low-lying inundated portions (Figures 4-7).

A total of ten shovel tests were excavated across the Project (Table 1). All ten shovel tests were terminated at approximately 15.7 to 40.9 in (40.0 to 104.0 cm) below the surface due to very compact clay soils with extensive redoximorphic features. All ten shovel tests were negative for cultural materials, and no cultural materials of any kind were observed on the surface.

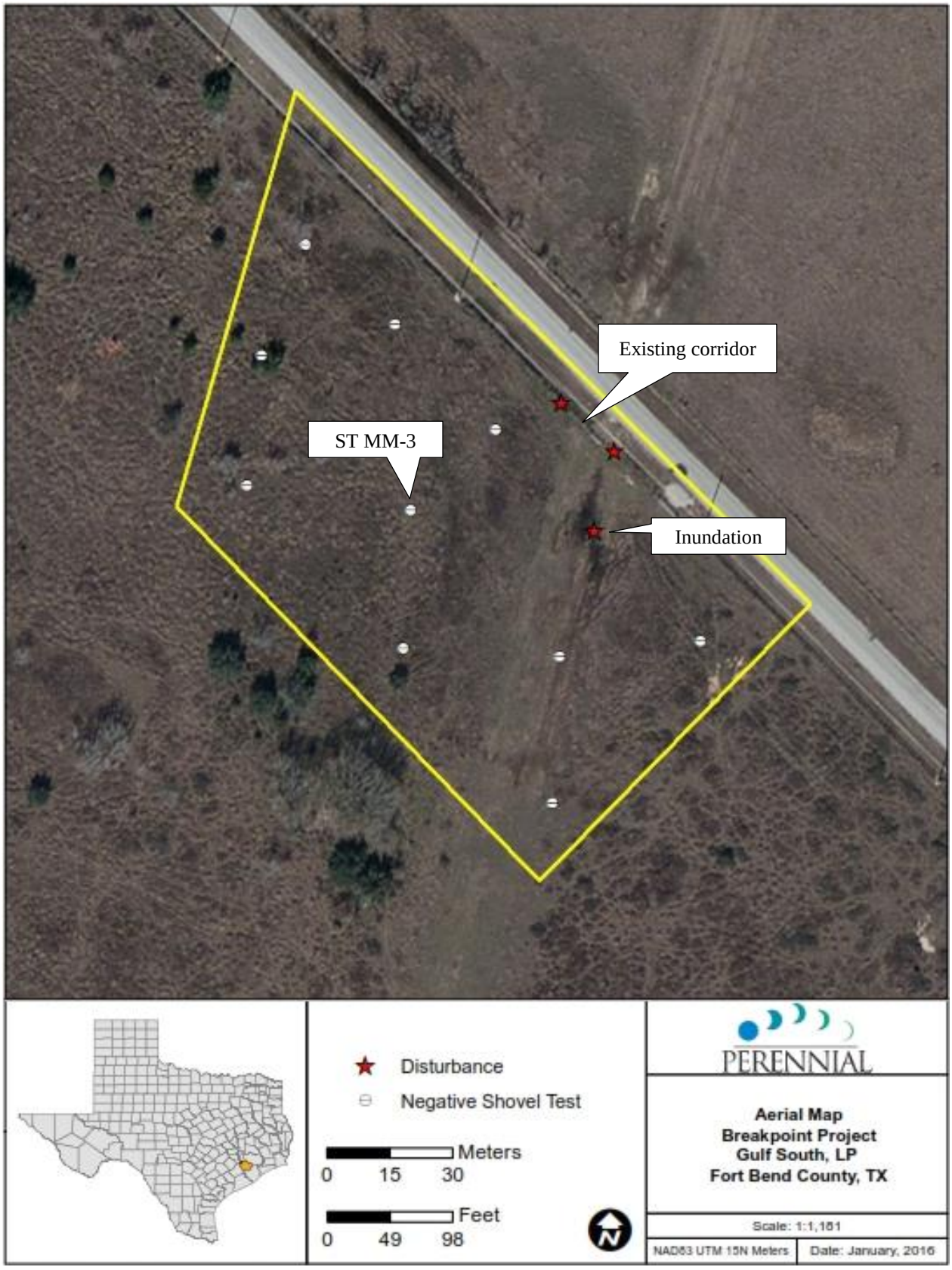

Figure 3. Survey results map.

Figure 4. Project area overview, proposed hydrostatic test location, poor surface visibility, facing south

Figure 5. Existing pipeline corridor overview, proposed hydrostatic test location, facing south.

Figure 6. Representative view of inundation common across the eastern and northern Project area, facing north.

Figure 7. Representative soil profile (0-37.4 in [0-95.0 cm] below surface) with shovel test MM-3 depicted.

Table 1. Break Point Project shovel testing results.

Shovel Test Pit	*Level*	*Depth (cmbs)*	*Results*	*Munsell Color (Moist)*	*Texture*	*Description*	*Reason for Termination*
ZO-1	I	0-40	N	10YR6/1	Sandy Loam	South side of project survey area, pasture with short bermudagrass, few hardwoods, low-lying area, may explain shallow SL	Soil Change
	II	40-60+	N	10YR5/1	Sandy Clay	Very hydric, slightly saturated clay with redox features throughout (10YR5/6)	Compact Hydric Clay
ZO-2	I	0-50+	N	10YR5/1	Clay	Adjacent to existing PL, hydric clay at surface with redox features (10YR5/6), no sign of any buried horizons, short bermudagrass, surface is slightly inundated	Compact Hydric Clay
ZO-3	I	0-30	N	10YR6/1	Sandy Loam	Adjacent to small stand of scrub brush, pasture with short grass	Soil Change
	II	30-70+	N	10YR5/1	Clay	Very hydric and compact clay with extensive redox features throughout (10YR5/6), no indication of buried horizon	Compact Hydric Clay
MM-1	I	0-50	N	10YR6/2	Sandy Clay	Hardwood savanna with ankle-high grass and shrub, low GSV, prominent brownish yellow redoximorphic mottles through 0-50 cm, friable sandy clay	Soil Change
	II	50-104	N	10YR6/1	Clay	Firm clay	Depth
MM-2	I	0-64	N	10YR5/1	Silty Clay	Hardwood savanna with ankle-high grass and shrub, low GSV, friable with faint redox mottling	Soil Change
	II	64-105	N	10YR6/2	Sandy Clay	Firm sandy clay with large prominent reddish yellow redox mottling	Depth

Table 1. Break Point Project shovel testing results.

Shovel Test Pit	*Level*	*Depth (cmbs)*	*Results*	*Munsell Color (Moist)*	*Texture*	*Description*	*Reason for Termination*
MM-3	I	0-30	N	10YR4/4	Sandy Loam	Hardwood savanna with ankle-high grass and shrub, low GSV, loose sandy loam	Soil Change
	II	30-78	N	10YR4/6	Sandy Clay	Friable sandy clay with prominent large redox throughout and $CaCO_3$	Soil Change
	III	78-95	N	10YR6/6	Clay	Very firm clay with distinct redox features throughout	Compact Clay and Redox
DM-1	I	0-60	N	10YR4/4	Sand	Fine grain sand, ten percent GSV, short grass with sparse hardwood trees, pasture	Soil Change
	II	60-90	N	10YR4/6	Sand	Higher moisture content	Soil Change
	III	90-100	N	10YR6/3	Sandy Clay	Five percent redox	Depth
DM-2	I	0-30	N	7.5YR3/1	Clay	Zero percent GSV due to tall grass, forty percent redox	Soil Change
	II	30-40	N	10YR5/6	Clay	Water at 20 cmbs	Water Table
DM-3	I	0-30	N	10YR5/1	Sandy Loam	Zero percent GSV due to tall grass, forty percent redox	Soil Change
	II	30-65	N	10YR5/1	Clay	Moisture decreasing with depth, clay becoming more dense with depth, twenty five percent redox	Compact Clay and Redox
DM-4	I	0-30	N	10YR5/1	Sandy Loam	Zero percent GSV due to tall grass, forty percent redox	Soil Change
	II	30-55	N	10YR5/1	Clay	Moisture decreasing with depth, clay becoming more dense with depth, twenty five percent redox	Compact Clay and Redox

CONCLUSIONS AND RECOMMENDATIONS

Perennial, on behalf of Gulf South, a subsidiary of Boardwalk Pipeline Partners, LP, conducted an intensive cultural resources survey of the proposed Break Point Project located in Rosenberg, in Fort Bend County, Texas. The proposed Project construction activities consist of the excavation of the existing ROW in order to complete a hydrostatic test of the pipeline. These activities will necessitate the use of temporary workspaces for traffic and equipment storage within the boundary of the defined Project area. The survey was designed to inventory and assess cultural resources across the Project. These efforts involved both surface and subsurface archaeological survey and were conducted in accordance with Section 106 of the National Historic Preservation Act NHPA.

The APE measure approximately 3.4 acres with depths of impact extending to the depth of the existing pipeline (4.0 to 6.0 ft [1.2 to 1.8 m]) within the permanent easement, and 0.6 to 1.0 ft (0.1 to 0.3 m) within the temporary workspace areas. Perennial conducted the intensive Phase I archaeological investigation within the boundaries of the Project. Abby Peyton served as the PI for the Project and Zachary Overfield, Michael Maddox, and Miles Martin conducted the fieldwork on January 22, 2016.

The survey investigations resulted in entirely negative findings with no cultural resources observed along the ground surface or within any of the ten shovel tests excavated across the Project. The TSMASS required that field archaeologists complete a minimum of six shovel tests within the 3.4-acre (1.4-hectare) Project area. Perennial personnel excavated a total of 10 shovel tests, exceeding the minimum survey standards. Overall, the Project area was found to be covered by bermudagrass and small stands of hardwoods and scrub brush. The typical shovel test profiled consisted of a dark grayish brown sandy loam from (0-11.8 in [0-30 cmbs]) on top of a gray clay (11.8-39.4 [30-100 cmbs]). Based on the negative survey results recorded during the investigation, it is the professional opinion of the Principal Investigator that the Project will have no adverse effect on significant cultural resources listed on or considered eligible for listing on the NRHP. No further work is recommended for the Project.

Should historic properties and/or human remains be encountered during construction, work in the immediate area will cease and a qualified archaeologist will be called to evaluate the finding(s) and provide recommendations for how to manage the resource under the appropriate state's Historic Preservation Plan. All findings will be reported to, and activities coordinated with, the USACE as well as the THC. In the event that human remains are encountered, all activity that might disturb the remains shall cease, and may not resume until authorized by appropriate law enforcement, the FERC, the USACE and/or THC.

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