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## Cultural Resource Investigations for the Praxair Phillips 66 H2 Pipeline in Brazoria County, Texas

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## Cultural Resource Investigations for the Praxair Phillips 66 H2 Pipeline in Brazoria County, Texas

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# GRAY & PAPE

HERITAGE MANAGEMENT

*Cultural Resource Investigations  
for the Praxair  
Phillips 66 H2 Pipeline  
in Brazoria County, Texas*

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18-72603.001



# GRAY & PAPE

HERITAGE MANAGEMENT

Project No. 18-72603.001

## Cultural Resource Investigations for the Praxair Phillips 66 H2 Pipeline in Brazoria County, Texas

Lead Agency: The United States Army Corps of Engineers, Galveston District

Antiquities Code of Texas Permit #8666

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January 10, 2020



## **ABSTRACT**

Gray & Pape, Inc. was contracted to conduct a cultural resources survey for a proposed pipeline project. The project is a 14-inch pipeline from Praxair Freeport Plant to the Phillips 66 Clemens Storage Cavern located near Freeport, Texas. The project route measures approximately 28.0 kilometers (17.4 miles). The project's Area of Potential Effect is the entire alignment route within a survey corridor of 91.4 meters (300 feet). This amounts to approximately 252 hectares (622 acres). Subsequent workspace revisions resulted in an additional 25.7 hectares (63.4 acres) or 2.6 kilometers (1.6 miles) of workspace, documented in Appendix C of this final report. The pipeline will be collocated with several existing pipelines in a well-maintained corridor for the entire length. The Project is part of a Nationwide 12 permit for which the Lead Federal Agency is the United States Army Corps of Engineers, Galveston District. The procedures to be followed by the United States Army Corps of Engineers to fulfill the requirements set forth in the National Historic Preservation Act, other applicable historic preservation laws, and Presidential directives as they relate to the regulatory program of the United States Army Corps of Engineers (33 CFR Parts 320-334) are articulated in the Regulatory Program of the United States Army Corps of Engineers, Part 325 - Processing of Department of the Army Permits, Appendix C - Procedures for the Protection of Historic Properties. Approximately 3.6 kilometers (2.25 miles) of the project length is located within property owned by the Texas Department of Criminal Justice, Clemens Prison Unit, which necessitated the procurement of a permit subject to the Antiquities Code of Texas. Permit Number 8666 was assigned to the project on December 4, 2018. As required under the provisions of Texas Antiquities Code Permit, all project records are housed at the Center for Archaeological Studies at Texas State University, San Marcos, Texas.

The goals of this study were to assist the client, the Texas Historical Commission, and other relevant agencies in determining whether intact cultural resources were present within areas planned for construction, and if so to provide management recommendations for these resources. All work conducted by Gray & Pape, Inc. followed accepted guidelines and standards set forth by the Texas Historical Commission and the Council of Texas Archeologists. Prior to field investigation, site file research was used to develop a cultural context for the study. This research resulted in a listing of all archaeological sites and National Register properties within 1.6 kilometers (1 mile) of the project area, as well as a discussion of archaeological potential within the tract.

Previous surveys conducted by HRA Gray & Pape, LLC and other firms overlap approximately 6.1 kilometers (3.8 miles) / 55.4 hectares (137 acres) of the current project's corridor. These surveys were undertaken from between 2012 to 2013. These areas along with an additional 2.8 kilometers (2 miles) / 28.9 hectares (71.3 acres) of highly disturbed pipeline corridor were subjected to visual reconnaissance survey only. Another 3.0 kilometers (1.9 miles) / 27.5 hectares (68 acres) of the project is located within highly industrial areas of DOW property and was subjected to desktop assessment and determined to be of low potential for containing intact cultural materials. No further work is recommended for these areas. No new cultural resources were discovered during the survey. Gray & Pape, Inc. recommends no survey within these portions due to the highly disturbed conditions. Intensive pedestrian survey was completed on those portions of the current project that fall outside of the previous survey coverage or that have potential to impact previously unidentified sites. This amounts to 15.6 kilometers (9.7 miles) / 140 hectares (346 acres). As a result of survey efforts, one previously unrecorded archaeological site was identified during survey efforts. As currently mapped, the site is overlapped by an existing pipeline corridor and does not retain integrity within the project right-of-way. Gray & Pape, Inc. recommends that no further investigation be necessary within the surveyed portions of the project.

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# 1.0 INTRODUCTION

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Gray & Pape, Inc. (Gray & Pape) was contracted by Benchmark Ecological Services, Inc. (Benchmark) on behalf of their client Wood Group, PLC (Wood) to conduct a cultural resources survey for a proposed pipeline project in Brazoria County, Texas. For Nationwide 12 permitting requirements, the Lead Federal Agency for the project has been identified as the United States Army Corps of Engineers (USACE), Galveston District. Therefore, the USACE's issuance of a permit for the Project is considered an undertaking subject to the provisions and review process provided in Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended. Approximately 3.6 kilometers (2.25 miles) of the project length is located within property owned by the Texas Department of Criminal Justice (TDCJ), a political subdivision of the state of Texas. The property consists of the Clemens Prison Unit. This necessitated the procurement of a permit subject to the Antiquities Code of Texas. Thus, Permit Number 8666 was assigned to the project on December 4, 2018.

The goals of the cultural resources survey were to determine if land altering activities required to complete this project would affect any previously identified archaeological sites or historic properties as defined by Section 106 of the NHPA of 1966, as amended (36 CFR 800), and to established whether or not previously unidentified cultural resources were located within the Project's Area of Potential Effects (APE). All fieldwork and reporting activities were completed according to state (the Antiquities Code of Texas [1969, as amended 1997]) and federal (NHPA 1966; United States Department of the Interior [USDI], National Park Service [NPS] 1983) guidelines for conducting cultural resources surveys pursuant to Section 106 of the NHPA (Advisory Council on Historic Preservation [ACHP] 2004).

## 1.1 Project Overview

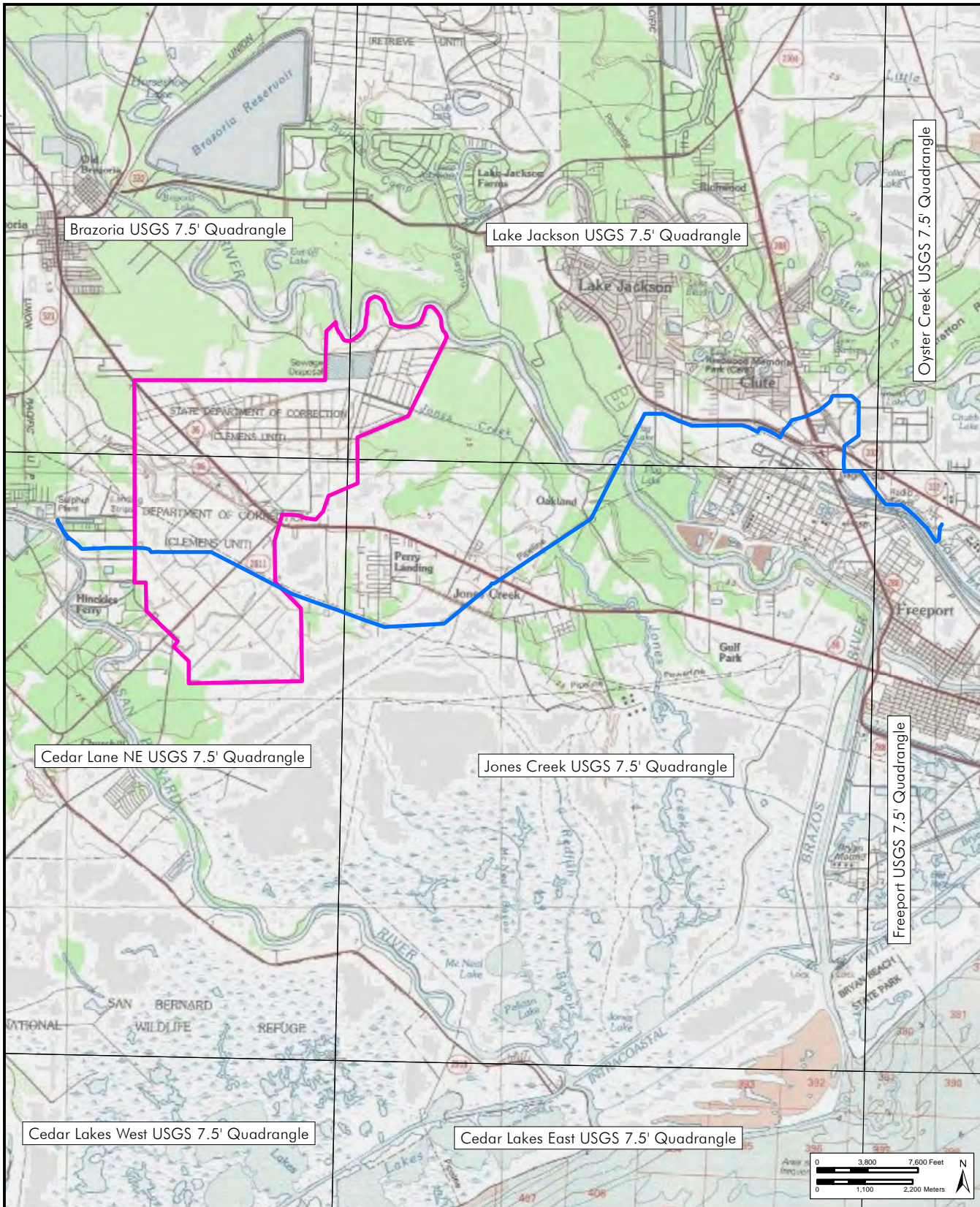
The project is located in Brazoria County, Texas, and can be found on the *Cedar Lane NE, Jones Creek, Lake Jackson and Freeport, Texas* United States Geological Survey (USGS) 7.5-minute topographic quadrangle maps (Figure 1-1). The project consists of a 35.6-centimeter (14-inch) pipeline that will extend between the Praxair Freeport Plant (PFP) in Freeport, Texas, to the Clemens Storage Cavern located adjacent to the San Bernard River. The project alignment measures approximately 28.0 kilometers (17.4 miles). The project is the entire alignment route within a survey corridor of 91.4 meters (300 feet). This amounts to approximately 252 hectares (622 acres). Subsequent workspace revisions resulted in 25.7 hectares (63.4 acres) or 2.6 kilometers (1.6 miles) of new workspace, documented in Appendix C of this final report. Over the course of the project length it crosses several waterways, canals, ditches, and drainages. Named water features include Flag Lake Drainage Canal, Flag Lake, the Brazos River, and Jones Creek.

## 1.2 Report Organization

This report is organized into seven numbered chapters. Chapter 1.0 provides an overview of the project. Chapter 2.0 presents an overview of the environmental setting and geomorphology. Chapter 3.0 presents a discussion of the cultural context associated with the APE. Chapter 4.0 presents the research design and methods developed for this investigation. The results of this investigation are presented in Chapter 5.0. Chapter 6.0 presents the investigation summary and provides recommendations based on the results of field survey. A list of literary references cited in the body of the report is provided in Chapter 7.0.



11/30/2018 Created in ArcGIS 10.4 for G&P Project 18-72603.001.



Brazoria USGS 7.5' Quadrangle

Lake Jackson USGS 7.5' Quadrangle

Oyster Creek USGS 7.5' Quadrangle

Cedar Lane NE USGS 7.5' Quadrangle

Jones Creek USGS 7.5' Quadrangle

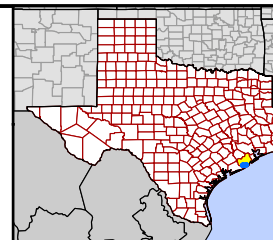
Freeport USGS 7.5' Quadrangle

Cedar Lakes West USGS 7.5' Quadrangle

Cedar Lakes East USGS 7.5' Quadrangle

Figure 1-1  
Project location in  
Brazoria County, Texas.

- Project Centerline
- TACP Properties: TDCJ Clemens Unit
- USGS Quadrangle Boundary



Maps showing project results are presented in Appendix A. A log of the shovel tests is provided in Appendix B. Appendix C contains a report Addendum submitted in November 2019 and concurred with in December 2019.

### **1.3 Acknowledgements**

Fieldwork was conducted between December 4, 2018, and January 10, 2019, and required 122 field hours to complete under the

supervision of Senior Principal Investigator Tony Scott. Field activities were conducted by Tony Scott, Archaeologist Jacob Hilton, and Field Technician Alexandra Smith. Standing structures were assessed by Architectural Historian Ryan VanDyke. The report was prepared by Tony Scott and Jacob Hilton. Graphics were produced by Tony Scott. Jessica Bludau edited and produced the report.

## 2.0 ENVIRONMENTAL CONTEXT

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### 2.1 Physiography and Geomorphology

The project lies within the Texas Coastal Prairie, a low, level to gently sloping flat prairie extending across the Texas Gulf Coast (University of Texas, Bureau of Economic Geology [UT-BEG] 1996). The basic geomorphological characteristics of the Texas coast and associated inland areas, which includes Brazoria County, resulted from depositional conditions influenced by the combined action of sea level changes from glacial advance in the northern portions of the continent and subsequent downcutting and variations in the sediment load capacity of the region's rivers. Locally, Brazoria County is represented by a geologic structure of nearly flat strata underlain by relatively recent deltaic sands and muds ranging in age from the Miocene to Holocene (Abbott 2001; UT-BEG 1996; Van Siclen 1991).

Although older geologic units have been identified in the region (Abbott 2001; Van Siclen 1991), units relevant to the study of long-term human occupation near the surveyed areas include the Beaumont Formation, generally believed to predate human occupation in the region. The Beaumont Formation in the area is characterized by yellowish- to brownish-gray clay, and includes reddish orange intermixed and interbedded fine to fine quartz sand, silt, and minor fine gravel. Evidence of the formation can be found on stream channel, point-bar, cravasse-splay, and natural levee ridge deposits, and clayey fill in abandoned channels. Channel fill is generally dark brown to brownish dark gray, laminated organic-rich clay and silt. Other characteristics of the

Beaumont formation include meander-belt ridges and pimple mounds 1 to 2 meters (3 to 6.5 feet) higher than the surrounding silt and clay (Moore and Wermund 1993a and b).

Overlaying Beaumont deposits may be relatively thick or thin Holocene-age alluvial deposits laid down in the area by alluvial or eolian factors or potentially marshy environments (UT-BEG 1992). The so-called "Deweyville" terraces may exist stratigraphically positioned between the Beaumont and Recent deposits. These terraces date to between 100,000 to 400,000 years ago and are characterized as consisting "of up to 3 inset fluvial terraces... (distinguished by the presence of) ...large looping meander scars..." indicative of watercourses capable of fluvial action and discharge markedly greater than that seen today (Abbott 2001:16).

### 2.2 Soils

Soil Series mapped within the project area include Asa silty clay loam, Pledger clay, Brazoria clay, Norwood loam, Lake Charles clay, Bernard-Edna complex, Surfside clay, Morey silt loam, and Ijam clay (National Resource Conservation Service [NRCS] 2019). The bulk of the APE is comprised by Pledger clay (Table 2-1). Nearly all of the soils mapped for the project are derived from loamy alluvium. This and the other soils mapped for the project are ecologically characterized as clayey and loamy bottomland. The drainage classes for these are split between well and poorly drained. Of these soils, Asa, Pledger, Norwood, and Brazoria are considered to have a moderate to high potential for containing intact cultural deposits (Abbott 2001) due in part to their alluvial deposition, drainage capability, and landscape setting.



Table 2-1. Soils Mapped within the Project APE.

Map Unit Symbol	Map Unit Name	Acres in APE	Percent of APE
2	Asa silt loam, 0 to 1 percent slopes, rarely flooded	9.4	1.5
3	Asa silt clay loam, 0 to 1 percent slopes, rarely flooded	85.0	13.7
8	Bernard-Edna complex, 0 to 1 percent slopes	15.1	2.4
10	Brazoria clay, 0 to 1 percent slopes, rarely flooded	29.9	4.8
21	Ijam clay, rarely flooded	24.2	3.9
24	Lake Charles clay, 0 to 1 percent slopes	21.1	3.4
29	Morey silt loam	29.8	4.8
33	Norwood loam, 0 to 1 percent slopes	4.9	0.8
36	Pledger clay, 0 to 1 percent slopes, rarely flooded	254.4	40.9
39	Surfside clay, 0 to 1 percent slopes, occasionally flooded	112.6	18.1
W	Water	35.5	5.7
<b>Totals for APE</b>		<b>621.8</b>	<b>100</b>

## 2.3 Natural Environment

### 2.3.1 Flora and Fauna

The surveyed area is located within a transitional area between the two ecological regions of the Gulf Coastal Marshes and Gulf Coastal Prairies (UT-BEG 2010; Blair 1950). Modern land alteration activities, especially those associated with rice farming, have resulted in the removal of native plant species from the area. Identified trees may include water oak, pecan, various elms, cedar, oaks, sweetgum, and mulberry, although the Chinese tallow has become the dominant species in any areas. Honeysuckle, dewberry, yaupon, and blackberry are common, as are indianguass and bluegrasses (Gould 1973;

UT-BEG 2000). Mammals in the area include deer, squirrels, raccoons, opossum, rabbits, skunks, and gophers. Riparian species include freshwater mussels and snails, alligators, and many different species of fish, turtles, and snakes (Jones 1982).

### 2.4 Land Use

The proposed right-of-way (ROW) passes through chemical plant facilities and rural areas. Land within and adjacent to the bulk of the project consists of agricultural fields and pasture with smaller areas consisting of wooded and industrial areas. The entirety of the proposed alignment is located within an existing pipeline easement occupied by several pipelines.

## 3.0 CULTURAL CONTEXT

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### 3.1 Prehistoric Context

Humans have occupied the Southeast Texas region for at least the last 12,000 years (Aten 1983, Story 1990). During this time, climate and environmental changes caused human cultures to adapt with new technologies, subsistence strategies, and life-ways. In general, prehistoric humans employed a hunter-gatherer strategy throughout their existence in the region, travelling from resource to resource with no central village. Instead, they used temporary campsites, staying until the resource had been used up before moving on. Often, the same campsites were used year after year in order to exploit the same resource. This model can be referred to as the seasonal round, and it allowed a small group or band to sustain themselves all year long without having to store food or set up a permanent residence (Patterson 1995; Story 1990). Modern examples of this practice can be seen in contemporary hunter-gatherer societies around the world. Most prehistoric archaeological sites in the Southeast Texas region are composed of the remains of these temporary camps.

Numerous chronologies have been put forth by archaeologists to organize the 12,000-year history of human settlement in Texas. Story (1990) provides a simple and straightforward chronology consisting of three different time periods; Early Cultures, Archaic Cultures, and Late Cultures. Perttula (2004) puts forth a similar chronology, except he further separates Story's Archaic Culture period into three, Early, Middle, and Late, and identifies an additional period between the Archaic and Late cultures which he calls the Woodland. The classification of these time periods is not based solely on age, but also on tool technology, subsistence strategies, and environmental changes (which in turn lead to changes in technology and subsistence strategies). An

extensive projectile point chronology has been established in Texas and is used to date the occupation period of sites as far back as the Paleoindian period (Patterson 1995; Turner and Hester 1993).

Per Story's (1990) chronology, the Early Cultures are the oldest, spanning from at least 12,000 years before present (BP) till about 8,000 BP. This period is commonly referred to as the Paleoindian period and took place during the end of the Wisconsin Glacial period. During this time, glaciers in the north of the continent began to melt, temperatures and sea-levels rose, and the Great Plains that made up most of what is now East Texas was overtaken by oak woodlands. The mega fauna that inhabited the area during the ice age, which were a staple food source for Paleoindians, began to die out. There are very few archaeological sites that still exist from Paleoindian times, and few contain large artifact assemblages. Based on the little information available, it is likely that they practiced a nomadic hunter-gatherer lifestyle, moving seasonally based on available resources. The paleo toolkit is most known for its unique fluted dart points; Clovis and Folsom. These points are exceptionally well made and are often of very high-quality material. Despite this, specialized tools such as blades are very uncommon and there is no evidence of earth ovens, which allowed for the exploitation of certain plant resources that require long cooking times under high heat. The paucity of early culture sites is likely due in large part to the environmental changes that took place at the end of the ice age. Massive flooding caused the surface of the earth to be completely changed and many of these early sites were simply washed away. With the loss of the mega fauna, Early Cultures were forced to adapt and create new strategies and new technologies to exploit available resources.

The Archaic Cultures took place from 7,000 BP until approximately 1,300 BP (Story 1990; Perttula 2004). Like the Early Cultures, Archaic societies were primarily composed of small, hunter-gatherer bands. During this time period, the climate began to resemble current conditions. Temperatures continued to rise and the glaciers continued to melt, increasing alluvial activity and altering the landscape of southeast Texas. Sea levels rose to their current levels, submerging shorelines and river deltas (Story 1990). The Archaic Culture period is distinguished from the Early Culture period primarily by the toolset. In general, tools were not as finely made but were often more task specific and expedient. In addition, the quality of raw material used for tool making declined, possibly due to an increase in population density causing a decrease in group mobility (Story 1990). To support this less mobile lifestyle, Archaic Cultures developed the earth oven which allowed them to exploit readily available plant resources that require long cook times in order to be made edible. Pottery also began to appear at the end of the Archaic period, though it was not as common as it would become. Archaeologists use a chronology based on dart point technology to date sites within the Archaic Culture period (Story 1990). Unfortunately, this chronology is somewhat unrefined and most of the datable tools come from the late Archaic period. This is due, once again, to the relative paucity of intact archaic sites in southeast Texas.

The final cultural period that Story (1990) identifies, the Late Cultures, occurred from 1,200 BP until about 200 BP, when European settlers all but wiped out the indigenous population. This time period corresponds to Perttula's (2004) Late Prehistoric period. The vast majority of prehistoric sites in southeast Texas come from this time period. Technology, once again, represents the biggest changes in culture. It was during this time that the bow and arrow came into use, approximately 1,300 to 1,500 years ago (Story 1990). Another major indicator of the Late Culture period is the widespread use of ceramics.

Though the earliest evidence for using ceramics can be traced to the end of the Archaic Culture period, by the Late Cultures period ceramic use was widespread throughout southeast Texas. Along with changes in technology, the Late Culture period also included changes in subsistence strategies.

The Late Cultures of Southeast Texas were very similar to the Woodland cultures of the Lower Mississippi Valley and further east (Aten 1983; Shafer 1968). Story (1990), however, recognizes a distinction between cultures in these two regions, naming the Southeast Texas cultural tradition Mossy Grove. She identifies the Mossy Grove cultural tradition not as a specific tribal group, but as a regional cultural tradition that took place during the Late Culture period. It extended roughly from the Brazos River to the Sabine River, including Galveston Bay and the Gulf Coast. The Mossy Grove culture partially parallels the Caddo culture to the north, though they are two distinct and different traditions. The ceramic technology associated with the Mossy Grove culture was of the plain, undecorated, sandy paste type. Small arrowheads all but replaced the larger dart points, with the Gary and Kent point types being the most common. Stone tool manufacturing practices shifted from large flake reduction to small flake reduction, possibly indicating a lack of quality raw material. Bison was likely a staple food source, along with deer and shellfish. It is likely that plant foods such as corns, beans, and squash were cultivated as a food source. The few burials that have been recorded from this time period indicate little difference in status, indicating an egalitarian society. Grave goods are rare, but are often composed of personal ornaments and not extravagant status symbols.

Due to the relative abundance of sites from Late Culture, a more complete picture of subsistence strategies and life ways can be inferred. The seasonal round model is the best explanation for Mossy Grove life ways. In this model, a small band of hunter-gatherers follow



a yearly subsistence pattern, moving to different locations in order to exploit specific resources only available at certain times. Temporary campsites were often utilized year after year, as the group would return to the same campsites in order to exploit the same resources. Once the resource had been used up, the group moved on to the next resource, following the same or similar routes each year (Story 1990). The Mossy Grove cultural tradition can be further divided by region into the inland and coastal groups. These designations are used loosely as it is likely that some, though not all, groups moved between these regions on a yearly basis. Coastal regions supplied both aquatic and terrestrial resources and were generally occupied from late spring through the summer. This happens to be the best time of year to collect clams and other shellfish as food resources. This practice left piles of clam shells on the surface, called shell middens, which make up a large number of archaeological sites in the coastal region.

By studying these middens, it is possible to discern the season the clams were harvested, how often the area was used, what season it was used in, and how large a group used the area (Story 1990). As mentioned above, it is likely that coastal groups exploited the littoral zone during the spring and summer then moved further inland during fall and winter. Inland groups also followed a seasonal mobility pattern. Archaeological evidence from this period shows that sites were generally utilized for short visits at regular times during the year and that similar activities were undertaken each year at individual sites (Story 1990). Most sites reflect this pattern of a short period of use over many years, but a few sites could represent a more permanent residence or “base camp.” Though it is not known why Inland groups did not exploit coastal resources, Story (1990) provides two possibilities. The first is that it was simply too far to travel from the northern reaches of the Inland range all the way to the coast and abundant inland resources made a journey of this length unnecessary. The second is that the

Coastal groups denied them access. This theory would suggest firm tribal groups with distinct regional boundaries; however, there is little archaeological evidence to support this.

## 3.2 Historical Context

Before European colonization of this region, it was occupied by the Karankawa Indians. Five different subgroups of Karankawa Indians, with the northern most tribe called the Cocos, lived in the area of modern-day Brazoria County (Ricklis 2004). In 1528, Alvar Nunez Cabeza de Vaca landed on San Luis Island and crossed the Brazos River in the area that would become Brazoria County. Many other Spanish explorers passed through the area, like Alonso De Leon in 1689 looking for the lost La Salle expedition and in 1727 Joaquin de Orobí y Basterra came through looking for French intruders in the Trinity River area.

Stephen F. Austin and 89 of Austin’s Old Three Hundred settled the area in 1824. Some of the earliest communities were Velasco, Brazoria, and Columbia. It was in Velasco, soon after the Battle of San Jacinto, that General Santa Anna signed the Treaties of Velasco with the Republic of Texas on May 14, 1836. Under this newly formed provisional government came the formation of the first counties in Texas, among them Brazoria County, taking its name from the Brazos River (Kleiner 2019a). Between 1849 and 1859, the county of Brazoria flourished. The county became the wealthiest in Texas due in part to its largely southern society based on plantation life and slavery. Agriculture was the foundation for the county’s economy based primarily on sugar and cotton (Kleiner 2019a).

Prior to the Civil War, the majority of white residents favored secession, which paved the way for new industries to be organized to help the Confederate Army, such as the Dance Brothers gun works manufacturing shop. Up until the time of the Great Depression, most Brazoria County residents made their living from agriculture with a maximum number of

farms in 1940 reaching 3,065. A major boom for the economy came from the greater production of rice. By 1940, the total acreage for rice had risen from 2,428 hectares (6,000 acres) to approximately 6,474 hectares (16,000 acres) and became the nation's number one rice producing area (Kleiner 2019a).

Brazoria County established its first school in 1827, followed by the Brazoria Academy in 1839. Academia became an integral part of the county around 1900 with the introduction of eight independent school districts employing 200 teachers to educate the county's 6,000 students. The results of the county's educational efforts can be seen in the statistics of 1950 where only 23 percent of the population had completed high school, but in 1982 more than 65 percent had graduated from high school (Kleiner 2019a).

Now Brazoria County offers an assortment of recreational activities, everything from fishing, hunting, boating, skiing, and an array of other water sports. In conjunction, they also offer access to historic sites such as the Varner-Hogg Plantation State Historical Park. The county also contains Brazoria National Wildlife Refuge.

### 3.3 The Cities of Freeport and Clute, Texas

The City of Freeport, Texas was officially founded by the Freeport Sulphur Company in November 1912. The city is the location of a deepwater port at the mouth of the Brazos River and the largest sulphur mines in the world. The community was also the headquarters of the Houston and Brazos Valley Railway. The city has profited enormously from the development of chemical and petrochemical storage facilities and from commercial fishing (Kleiner 2019b). The introduction of Dow Chemical Company in the early 1940s provided support to the City's involvement with the Brazosport Industrial Complex, which was created during World

War II. The industrial complex includes Freeport and the neighboring cities of Brazoria, Clute, Jones Creek, Lake Jackson, Oyster Creek, Quintana, Richwood, and Surfside Beach. The port is home to one of the largest shrimp boat fleets in the entire Gulf of Mexico. In 1957, the City of Freeport integrated the historic Texas town of Velasco (Kleiner 2019b).

The City of Clute is located on the site of Evergreen Plantation, one of the county's first plantations, dating to 1824. After 1839, the plantation later became the Herndon or Calvit-Herndon plantation when John H. Herndon married the daughter of original property owner, Alexander Calvit. After the Civil War, several relatives of the Clute family founded a community near the plantation and acquired additional land from Herndon and the property became known as Clute's Place from 1886 to 1889. The community remained small (only a population of 10 in 1933) until 1940 when it became part of the Brazosport industrial and port area. Fourteen years later the community had a population of 3,200 with several businesses. The townsite was incorporated in May 1952 under the name Clute City and in 1955 changed its name to Clute only to change its name to Clute City again in 1980. As recent as 2000, the City reached a population high of 10,424 and once again was known simply as Clute (Kleiner 2019c).

### 3.4 Historic Plantations near the Project Area

#### 3.4.1 Peach Point Plantation

A portion of the project passes through property once part of the Peach Point Plantation. The property became home to James Franklin Perry and his wife and Stephen F. Austin's sister, Emily Austin Bryan Perry. Austin's relationship with his sister's family and interest in the property led him to take a vested interest in the property's development. This included providing plans for the property's structures and arrangement of the grounds. As

a frequent guest, Austin included rooms for his own use within the main house. Austin was so involved in the property that he considered it his only residence in Texas. Austin was originally buried at the Peach Point Cemetery, now known as the Gulf Prairie Cemetery, before being moved to Austin, Texas, in 1910 (Jones 2019; Farone 2012).

After the Civil War, the value of the property fell and portions were sold, however, some of the property was reclaimed by family descendants after with advent of the oil industry. Little of the original plantation structures is thought to have survived a hurricane in 1909, with the exception of the two rooms of the main house used by Austin and two oak trees planted by Stephen Samuel Perry to commemorate the births of his children

(<https://tfsweb.tamu.edu/websites/FamousTreesOfTexas/TreeLayout.aspx?pageid=16115>).

The restored structure bears a medallion designating it a Recorded Texas Historic Landmark. The house remnant lies approximately 335 meters (1,100 feet) west of the project centerline and will not be impacted by the project (Jones 2019; Farone 2012).

### 3.4.2 The Ellersly Plantation

A portion of the project passes through property once part of the Ellersly (also spelled Ellerslie) Plantation. The history of the property began as part of Stephen F. Austin's Old Three Hundred Colony, whereupon several leagues were granted in what is now Brazoria County to John McNeel and four of his sons. The Ellersly Plantation was owned and built by John (J.) Greenville McNeel, who maintained control of the plantation until his death in 1876. The property changed hands in 1881 and 1974. Portions of the McNeel properties were eventually divided and sold to satisfy debts and several pieces were consolidated into the Clemens Prison Unit.

The main house of the plantation, said to be one of the finest in the area, was destroyed by

fire in the 1890s. Other structures from the plantation were either destroyed by fire or storm. Some structural remnants are still present approximately 350 meters (1,150 feet) to the north of the project alignment. These structural remnants are recorded as archaeological Site 41BO080 (Harris 2019; Brazosport Archaeological Society 2014). A historical marker commemorating the plantation is located on Weldon Road off the south side of Highway 36.

### 3.4.3 Durazno Plantation

The Durazno Plantation ("Durazno" means "peach" in Spanish) was founded by William Joel Bryan, nephew of Stephen F. Austin, and his wife Lavinia Perry after their marriage in April of 1840. The plantation was a wedding gift to the couple. The Bryans and their slaves raised a variety of crops, including cotton and cattle. Sugar was intermittently cultivated on the property during the 1850s. Bryan, who had fought as a volunteer during the Texas Revolution, supported the Confederacy during the Civil War. He looked after the Confederate garrison stationed at the mouth of the Brazos River by bringing the troops foodstuffs and not seeking reimbursement. Bryan supported the construction of the Houston and Texas Central Railroad after the war, and the railroad recognized his support by naming the town of Bryan in his honor in 1865. Bryan was also interested in other real estate promotions and railroad line construction.

The Durazno Plantation has undergone many changes since it was first founded in 1840, as buildings have been altered, torn down, or incorporated into new buildings. The site was once covered by a variety of buildings, including a detached kitchen, a plantation office building, a main house, brick cistern, a log carriage house, and at least a dozen slave cabins. The current main house on the property is of 1909 vintage but contains elements from older buildings. Currently, the only above-ground original structure is the

plantation's kitchen and a single brick gate post (Texas Archeological Sites Atlas 1980). Archaeological Site 41BO136 contains a portion of the Durazno Plantation covering an estimated 8 hectares (20 acres). While some of the site appears to have been affected by the previous pipeline construction within the plantation property, most of the site remains intact (Smith 1985).

### 3.5 The Texas Prison Farm System within the Project Area

Approximately 3.6 kilometers (2.25 miles) of the proposed pipeline project crosses state prison property owned by the TDCJ. Therefore, a brief history of the Texas Prison System and the Clemens Unit is provided herein. In an effort to help support the prison system, the State of Texas observed the practice of leasing convicted criminals to private individuals from 1867 to 1912. Once leased, the prisoners were used as laborers on railroads, farms, in mines and quarries (Lucko 2019). This system was abolished because of abuses to the prisoners. However, the Texas Prison System realized the potential to make the prison system self-sustaining by using prison labor for raising crops, and this prompted the formation of prison farms. The state purchased several of Brazoria County's old plantations after the Civil War, forming four prison farms (Clemens, Ramsey, Retrieve [now known as Wayne Scott], and Darrington Units) (Lucko 2019).

#### 3.5.1 The Clemens Prison Unit

Clemens is termed "the oldest continually operated [prison] facility in Texas" (Reagans and Livingston 2007). The Clemens Unit was first established by the State of Texas in 1899. The Clemens Unit is still primarily used for raising crops and livestock as well as training security dogs and horses (TDCJ 2016).

The Clemens Unit property is an amalgamation of various tracts of plantation land, including many properties originally owned by brothers David G. and Robert Mills.

The Mills brothers made their fortune through the banking, farming, and mercantile industries. They initially purchased 1,042 hectares (2,575 acres) on which to farm sugar (Platter 1961:133) and, after some time, expanded their interests to include cotton farming. They received land grants from then-governor Albert C. Hobby, in addition to other parcels purchased privately. The Mills family owned several plantations, including Bynum, Palo Alto, and Lowood, the latter being most affected by the construction of the Clemens Unit (Strobel 1926:24).

Despite the success of the Lowood Plantation, the Reconstruction of the South after the Civil War bankrupted the Mills family and, in 1899, the State of Texas began purchasing the land. Initially, Lowood Plantation land was leased for only \$2.00 per acre with the option to purchase at \$12.31 per acre, while the adjoining land had been purchased outright (Reagans and Livingston 2007). Within months, the State of Texas exercised their option and purchased all of Lowood Plantation.

From the turn of the century until the 1930s, the Clemens Unit was known as a "negro farm", meaning first-hand accounts and memoirs claim the land was worked by African Americans, though early census data also indicates the presence of a Hispanic/"Mexican" population (Reagans and Livingston 2007). Clemens participated in a "Convict Leasing Program" until 1912, when Governor Colquitt ended the program and cancelled any existing leases.

Shortly after the purchase of the property by the State, a large-capacity sugar mill and railroad were constructed, making "Clemens the primary location for the Ramsey State Farm and local farmers to get their sugar cane processed" (Reagans and Livingston 2007). Field workers and inmates initially lived in tents and then wooden structures, until these were replaced with brick buildings during the first major renovation in 1935 (Reagans and

Livingston 2007). A second renovation began in the 1970s, which constructed a new building that housed office areas, cell blocks, infirmaries, and other administrative and necessary offices (Reagans and Livingston 2007).

The Clemens Unit contains a variety of different landmarks. The eastern portion is made up of Lowood Plantation, and chicken sheds have been built on the site of David G. Mills' home (Platter 1961:137). The McNeel

family cemetery is located in this unit (*The Angleton Times* No date [nd]:10) and, according to contemporary first-person narratives, a steam engine was buried at the end of the railroad tracks on the Clemens Unit after production and processing of sugar cane ceased, although no archival records were located to confirm the accounts. The Clemens Unit is still primarily used for raising crops and livestock as well as training security dogs and horses (TDCJ 2016).

## 4.0 FIELD METHODOLOGY

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### 4.1 Site File and Literature Review

Gray & Pape conducted a site file and literature review using the Texas Archeological Sites Atlas Database maintained by the Texas Historical Commission (THC) as well as an online database of the National Register of Historic Places (NRHP) (2019). The primary purposes of this investigation are three-fold; 1) determine if any previously identified cultural resources or National Register properties were located within a 1.6-kilometer (1-mile) study radius of the surveyed area; 2) to determine if any previous cultural resource investigations had been conducted in or near the surveyed area, and; 3) use these results to develop an appropriate field survey strategy to identify and record any previously unidentified cultural resources within the surveyed area.

This background research included a list of all archaeological sites, historic properties, and archaeological projects recorded within the immediate APE and within a 1.6-kilometer (1-mile) study radius surrounding the same area. Site files were reviewed to provide context such as the number and type of sites located within the study radius. Previously published archaeological project reports were reviewed to provide additional context about the kind of work undertaken within the same area and the results of those investigations. Topographic maps and aerial imagery were also reviewed in order to understand recent and historic trends in land use and landscaping.

### 4.2 Field Methods

Due to the location of the proposed project within land subsumed by existing pipeline corridor and other industrial areas, Gray & Pape implemented a survey strategy consisting of desktop assessment supplemented by field efforts to confirm these data, which included intensive pedestrian survey and pedestrian reconnaissance and photo-documentation.

Previous surveys conducted between 2012 and 2013 overlap approximately 6.1 kilometers (3.8 miles) / 55.4 hectares (137 acres) of the current project's APE. These areas along with an additional 2.8 kilometers (2 miles) / 28.9 hectares (71.3 acres) of highly disturbed pipeline corridor were subjected to visual reconnaissance survey only. Another 3.0 kilometers (1.9 miles) / 27.5 hectares (68 acres) of project is located within highly industrial areas of DOW property, was subjected to desktop assessment, and determined to be of low potential for containing intact cultural materials. No further work is recommended for these areas.

The subsurface archaeological investigations associated with the current undertaking were designed to identify and record potential cultural resources within only those portions of the current project that fall outside of the previous survey coverage or have a potential to impact previously unidentified portions of previously identified sites. This amounted to approximately 15.6 kilometers (9.7 miles) / 140 hectares (346 acres) of project APE. Field methodology was designed based on the results of the desktop modeling and an intensive background research.

#### 4.2.1 Intensive Pedestrian Survey

The archaeological investigation consisted of a combination of pedestrian walkover and systematic shovel testing. For most of the project, two to three parallel linear transects spaced 30 meters (100 feet) apart were sufficient to cover the survey corridor/APE. Portions of the APE were subjected to both systematic and judgmental excavation of shovel tests. Per THC guidelines, minimum standards for surface reconnaissance and subsurface testing on linear projects call for 16 shovel tests per 1.6 kilometers (1 mile), within a 30-meter (100-foot) wide study corridor. Shovel test interval ranged between 30 and



100 meters (100 and 300 feet) and was determined based on observed environmental conditions. In addition to systematic shovel testing, sampling of the survey corridor was conducted via the excavation of judgmentally-placed shovel tests and surface inspection as determined appropriate by the lead Field Archaeologist and Principal Investigator.

Landforms, mounds, or other areas of topography were subsurface tested on a judgmental basis. Shovel tests were not excavated in areas with 100 percent surface visibility, areas containing existing road, roadside ditches, standing water, areas directly above where underground utilities had been installed, or where previous disturbance was evident. Due to the proximity to existing buried pipelines, at least one transect was not subjected to intensive subsurface testing. Instead, an observation point was taken and pedestrian walkover survey was performed to search for any cultural material that may have been scattered on the surface and shovel tests were undertaken judgmentally within these disturbed areas to verify disturbance.

Subsurface testing entailed the excavation of 30- by 30-centimeter (12- by 12-inch) shovel tests along pedestrian transects within the APE. Vertical control was maintained by excavating each shovel test in 10-centimeter (4-inch) levels. Shovel tests are excavated to a maximum depth of 1 meter (3.28 feet) or until a culturally sterile subsoil is encountered. One wall of each shovel test was profiled, and the walls and floor of each shovel test were inspected for color or texture change potentially associated with the presence of cultural features. When possible, soils were screened through 0.64-centimeter (0.25-inch) wire mesh; soils with high clay content were hand sorted in an effort to detect cultural materials in the soil matrix. Descriptions of soil texture and color followed standard terminology and the Munsell (2005) soil color charts. All field data were recorded on appropriate field forms. All shovel tests were backfilled after excavations and

documentations of them were completed. The excavated shovel tests were placed on field maps and points were taken with Global Positioning System (GPS) if the strength of the signal permitted.

#### 4.2.2 Site Definition

When new cultural resources were encountered, systematic steps were taken to define their extent, limits, and general character within the confines of the APE. Additional delineation shovel tests were excavated in four radiating directions at an interval of 10 meters (32.8 feet) within the confines of the APE. In general, two sterile shovel tests were used to define a site's size and extent. At a minimum, between six and eight delineation shovel tests were excavated unless surrounding landforms or topography suggested the presence of a natural site boundary.

For each cultural resource identified, including structures or other resources within or immediately adjacent to the APE, photographs were taken of the general vicinity and of any visible features. A sketch map was prepared showing site limits, feature locations, permanent landmarks, topographic and vegetation variation, sources of disturbances, and total number of tests performed within the site. All artifacts observed in shovel tests were analyzed in the field and not collected. Locations of all positive tests were recorded with the GPS.

If any architectural resources were identified, they were recorded on corresponding field forms. Details of form, construction, material, style, condition, and alteration were recorded both on the forms and photographically for each structure. All documentation was then reviewed by a qualified Architectural Historian who determined if additional information or a personal field inspection was necessary at the survey level.

### 4.3 NRHP Resource Types and Criteria

Cultural resources investigations generally are undertaken with the purpose of identifying resources that are listed in or eligible for listing in the NRHP. The NRHP, which is administered by the NPS, recognizes five types, or categories, of properties that may be listed in or eligible for the NRHP (NPS 1997). Each of these types is defined below.

- **Building.** A building is a structure created to shelter any form of human activity, such as a house, barn, church, hotel, or similar structure. The term “building” may refer to a historically and functionally related complex, such as a courthouse and jail or a house and barn.
- **Site.** A site is the location of a significant event, a prehistoric or historic occupation or activity, or a building or structure, whether standing, ruined, or vanished, where the location itself maintains historical or archaeological value regardless of the value of any existing structure.
- **Structure.** A structure is a work made up of interdependent and interrelated parts in a definite pattern of organization. Constructed by man, it is often an engineering Project large in scale. The term is used to distinguish resources created with some purpose other than the shelter of human activity from buildings. Examples of structures include fortifications, roads, and bridges.
- **Object.** An object is a material thing of functional, aesthetic, cultural, historical, or scientific value that may be, by nature or design, movable yet related to a specific setting or environment. Examples of objects

include railroad locomotive, ships, airplanes, and memorials.

- **District.** A district is a geographically definable area, urban or rural, possessing a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united by past events or aesthetically by plan or physical development.

The eligibility criteria and definitions laid out for the NRHP were used as guidance to the current Project. The quality of significance is present in resources that “possess integrity of location, design, setting, materials, workmanship, feeling, and association” and

A. that are associated with events that have made a significant contribution to the broad patterns of our history; or

B. that are associated with the lives of persons significant in our past; or

C. that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. that have yielded, or may be likely to yield, information important in prehistory or history (NPS 1997).

The seven aspects of integrity defined by the NPS for use in assessing National Register eligibility were applied to the evaluation of the integrity of historic-age resources. These seven aspects are integrity of location, design, setting, materials, workmanship, feeling, and association.

The level of integrity required for NRHP eligibility is different for each of the four NRHP Criteria of Significance. These criteria have been discussed at length in previous

documents. See How to Apply the National Register of Criteria for Evaluation (NPS 1997) for a full explanation of how the criteria are applied.

#### **4.4 Laboratory Analysis**

No cultural materials were collected during the course of this survey; therefore, a discussion of

laboratory methods is not included in this report.

#### **4.5 Curation**

All project records will be curated by the Center for Archaeological Studies at Texas State University in San Marcos, Texas.

## 5.0 RESULTS OF INVESTIGATIONS

### 5.1 Result of Site File and Literature Review

A search of the Texas Archeological Sites Atlas, maintained by the THC, revealed that no identified historic properties, previously recorded archaeological sites, or National Register properties are located within the project APE. One previously recorded cemetery is located within the APE. This cemetery and previously recorded cultural surveys and resources located within 1.6 kilometers (1 mile) of the project are discussed below.

#### 5.1.1 Previously Recorded Archaeological Surveys

Approximately 32 previous surveys have been recorded within 1.6 kilometers (1 mile) of the project area (Table 5-1, Appendix A). Portions of four of these overlap approximately 7.2 kilometers (4.5 miles) the current APE. These include fieldwork conducted in 2012 by Perennial Environmental Services, in 2013 by HRA Gray & Pape, LLC (Scott 2014), and in 2013 by SWCA. None of these surveys resulted in the identification of eligible cultural deposits within the current APE.

Table 5-1. Previously Recorded Area and Linear Surveys within 1.6 kilometers (1 mile) of the Proposed Project.

Survey Type	Fieldwork Date	TAC Permit	Report Author	Sponsor / Agency	Investigating Firm	Review Date	Atlas Number
Area Survey	1/1/1976		No Data	Texas Department of Transportation (TxDOT)	No Data	No Data	8500009740
*Area Survey	2/1/1976		No Data	USACE-Galveston District	No Data	No Data	8500001183
Area Survey	1/1/1979		No Data	USACE-Galveston District	No Data	No Data	8500000812
Area Survey	11/1/1985		No Data	USACE-Galveston District	No Data	No Data	8500009738
Area Survey	11/1/1985		No Data	USACE-Galveston District	No Data	No Data	8500002491
Area Survey	8/6/2010	5712	Schubert, Darren	Texas Department of Criminal Justice (TDCJ)	PBS&J	10/22/2014	8500064677
*Area Survey	5/1/2012		Maywald, Jason W.	USACE-Galveston District	Perennial Environmental Services	2/6/2013	8500025599
Area Survey	12/1/2012	6275	Soltysiak, Kristi, et al.	USACE-Galveston District, TDCJ	Area Survey	12/1/2012	6275
*Area Survey	3/1/2013	6308	Moreno, Meredith A.	USACE-Galveston District, TDCJ	SWCA	5/30/2013	8500036958
*Area Survey	11/19/2013		Scott, Tony	USACE-Galveston District	HRA Gray & Pape	5/8/2014	8500064269
Data Recovery	No Data		Gross, Sue, C. Kneupper, W.L. McClure	Brazoria County Historical Commission	Brazoport Archaeological Society	6/12/1905	8500013954

Survey Type	Fieldwork Date	TAC Permit	Report Author	Sponsor / Agency	Investigating Firm	Review Date	Atlas Number
Area Survey	No Data		No Data	No Data	No Data	No Data	8500002490
Area Survey	No Data		No Data	No Data	No Data	No Data	8500009736
Linear Survey	2/1/1976		No Data	USACE-Galveston District	No Data	No Data	8400002365
Linear Survey	2/1/1976		No Data	USACE-Galveston District	No Data	No Data	8400002366
Linear Survey	1/1/1979		No Data	USACE-Galveston District	No Data	No Data	8400002370
Linear Survey	1/1/1979		No Data	USACE-Galveston District	No Data	No Data	8400002371
Linear Survey	1/1/1979		No Data	USACE-Galveston District	No Data	No Data	8400002372
Linear Survey	1/1/1979		No Data	USACE-Galveston District	No Data	No Data	8400002407
Linear Survey	1/1/1979		No Data	USACE-Galveston District	No Data	No Data	8400008551
Linear Survey	3/1/1985		No Data	USACE-Galveston District	No Data	No Data	8400001592
Linear Survey	10/1/1985		No Data	USACE-Galveston District	No Data	No Data	8400002368
Linear Survey	10/1/1985		No Data	USACE-Galveston District	No Data	No Data	8400002369
Linear Survey	11/1/1985		No Data	USACE-Galveston District	No Data	No Data	8400002375
Linear Survey	2/1/1996		Turpin, Jeff	FERC	TAS, Inc.	2/1/1996	8400010495
Linear Survey	2/1/1996		Turpin, Jeff	FERC	TAS, Inc.	2/1/1996	8400010736
Linear Survey	1/1/2004	3625	Mooney, Susan Moorhead	FHA/TxDOT	Michael Baker Jr. Inc.	8/12/2004	8400010970
Linear Survey	No Data		No Data	No Data	No Data	No Data	8400001589
Linear Survey	No Data		No Data	No Data	No Data	No Data	8400001590
Linear Survey	No Data		No Data	No Data	No Data	No Data	8400001597
Linear Survey	No Data		No Data	No Data	No Data	No Data	8400001601
Linear Survey	No Data		No Data	No Data	No Data	No Data	8400001602

### 5.1.2 Previously Recorded Archaeological Sites

Archival research produced no record of National Register listed properties or State Antiquities Landmarks within 1.6 kilometers (1 mile) of the proposed project. A total of 19 previously recorded archaeological sites are mapped within 1.6 kilometers (1 mile) of the project (Table 5-2, Appendix A). The majority of sites are located in the vicinity of the Brazos River, nearby oxbow lakes, and the Sam Bernard River. One previously recorded site, 41BO32, is located within the project corridor. Site 41BO32 is recorded within or adjacent to DOW Corridor X, located along the south side of the Flag Lake Drainage Canal. Not much information was available for this site but the key card on file listed a “pumice head” and

camel teeth. The eligibility status of the site is unknown. Shovel tests excavated in the vicinity of Site 41BO32 by HRA Gray & Pape in 2013 showed signs of an obvious overburden composed of mottled clays and concretions. No signs of Paleofauna or cultural material was observed. Based on the site’s mapped location it is suspected that the site was a surface find stemming from the excavation of the Flag Lake Drainage Canal. Dredging activities either during the creation of the canal or later during its maintenance likely redeposited Paleo material along its bank or levee. The results of previous field efforts suggested that Site 41BO32 is under the artificial levee of the Flag Lake Drainage Canal, has eroded away, or was collected by previous surveys.

Table 5-2. Previously Recorded Archaeological Sites within 1.6 kilometers (1 mile) of the Proposed Project.

Trinomial	Site Type	Cultural Affiliation	Recorder	Observance / Record Date	NRHP Status
41BO32	Faunal	Unknown	Raymond Walley	1979?	Undetermined
41BO80	Plantation	Antebellum	J.W. McMichael	8/16/1973	Undetermined
41BO111	Shell Midden	Late Prehistoric	Mark A. Price and Harry W. Rhodes	5/26/1978	Undetermined
41BO112	Shell Midden	Late Prehistoric	Mark A. Price and Harry W. Rhodes	5/26/1978	Undetermined
41BO113	Shell Midden	Late Prehistoric	Mark A. Price and Harry W. Rhodes	5/26/1978	Undetermined
41BO129	Shell Midden	Late Prehistoric	Mark A. Price and Harry W. Rhodes	5/25/1978	Undetermined
41BO130	Shell Midden	Unknown Prehistoric	Mark A. Price and Harry W. Rhodes	5/25/1978	Undetermined
41BO131	Shell Midden	Unknown Prehistoric	Mark A. Price and Harry W. Rhodes	5/25/1978	Undetermined
41BO132	Shell Midden	Unknown Prehistoric	Mark A. Price and Harry W. Rhodes	5/25/1978	Undetermined
41BO140	Historic House/Prehistoric Shell Midden	Mid-Nineteenth through Early Twentieth Century and Late Prehistoric	Brazosport Museum of Natural Science	11/6/1982	Eligible
41BO141	Handmade Brick and Glass Bottle Scatter	Mid-Nineteenth Century	Brazosport Museum of Natural Science	11/6/1982	Undetermined
41BO142	Shell Midden	Late Prehistoric	Brazosport Museum of Natural Science	11/6/1982	Undetermined
41BO143	Cemetery	1830’s – 1860	Brazosport Archaeological Society	2/29/1984	Undetermined



Trinomial	Site Type	Cultural Affiliation	Recorder	Observance / Record Date	NRHP Status
41BO191	Shell Midden	Late Prehistoric	Turpin & Sons, Inc.	2/6/1996	Undetermined
41BO214	General Store	Early Twentieth Century	Moore Archeological Consulting	7/25/2001	Ineligible
41BO258	Lithic Scatter/Potential Shell Midden	Unknown Prehistoric	Perennial Environmental Services, Inc.	10/16/2013	Undetermined
41BO259	Ranch Complex	Mid-Twentieth Century	Perennial Environmental Services, Inc.	11/14/2013	Undetermined
41BO260	Shell Midden/Lithic Scatter	Unknown Prehistoric	Perennial Environmental Services, Inc.	10/3/2013	Undetermined
41BO267	Shell Midden	Unknown Prehistoric	WSA, Inc.	10/29/2015	Undetermined

### 5.1.3 Previously Recorded Markers and Cemeteries

A total of 11 historical markers and 13 cemeteries are located within 1.6 kilometers (1 mile) of the project (Table 5-3, Appendix A). Of these, one cemetery is recorded within the APE. The Futch (Tasch) Cemetery (BO-C068) is recorded within the existing pipeline corridor approximately 258 meters (846 feet) to the west of County Road (CR) 486, also known as Futch Road. The location is in close proximity to previously recorded Site 41BO259, a mid-

twentieth century ranch complex. A search of the THC archaeological atlas and websites such as Find A Grave (2019) produced no data regarding the record. A search of historic maps and aerials (Nationwide Environmental Title Research, LLC [NETR] 2019, Google, Inc. 2019) showed no obvious signs of a cemetery at the location. The pipeline corridor at the location is occupied by at least 11 pipelines according to data from the Railroad Commission (2019). Based on this research, if a cemetery did exist at the location it has either been removed or is destroyed.

Table 5-3. Previously Recorded Historical Markers and Cemeteries within 1.6 kilometers (1 mile) of the Proposed Project.

Marker or Cemetery Name	Marker Number
Archer, Dr. Branch Tanner	9521
Bryan, Major Guy M.	9537
Eagle Island Plantation	9557
Velasco Cemetery	9608
Velasco Lodge No. 757, A. F. & A. M.	9609
Wharton, William Harris	9614
Battle of Jones Creek	9569
Peach Point	9580
Peach Point	9581
Gulf Prairie Cemetery	16559
Brown, Major Reuben R.	9536
Restwood Memorial Park #1	BO-C022
Clemons Prison #1	BO-C043

Marker or Cemetery Name	Marker Number
Gulf Prairie	BO-C142
McNeel	BO-C129
Galilee Church	BO-C179
Bell	BO-C128
Bryant-Batteau Family	BO-C201
Wharton-Eagle Island	BO-C139
Gulf Coast	BO-C122
Futch (Tasch)	BO-C068
Hawkins	BO-C216
Overcoming Faith	BO-C040
Jones	BO-C219

## 5.2 Results of Field Investigations

Field survey was conducted from December 4 to 5, 2018, and again from January 9 to 10 of 2019. Survey conducted within the project resulted in the identification of one archaeological site, one isolate find, and one historic-age structure. The total area visually inspected amounts to approximately 24.9 kilometers (15.5 miles) / 224 hectares (554 acres) of APE (Appendix A). Of that amount, 15.6 kilometers (9.7 miles) / 140 hectares (346 acres) were subjected to intensive pedestrian survey with shovel testing. The survey corridor measured roughly 91 meters (300 feet) wide, a large swath of which was occupied by an existing pipeline corridor containing two to several pipelines. Due to safety concerns regarding the existing pipelines, at least one of three survey transects was typically not subjected to shovel testing but was instead walked over. Shovel tests were conducted at regular intervals between 30 and 100 meters (100 and 300 feet) depending on archaeological potential, proximity of previously recorded sites, or level of disturbance or inundation. A total of 181 shovel tests (Appendix B) were excavated across the project APE (see Appendix C for the results of supplemental work). All shovel tests were negative for buried archaeological materials. Another 123 planned test locations

were not excavated due to disturbance or inundation.

Due to the flat, featureless topography and thick clays occupying the APE, inundation was common in all project segments. In particular, areas near the Brazos River, Jones Creek, and Flag Lake were widely inundated. A representation of the project is shown in Figures 5-1 and 5-2.

The highest and driest areas of the APE include the south bank of the Brazos River and the east bank of the San Bernard River. However, these areas were also highly impacted by existing pipelines and pipeline ROW, as well as erosion. One employee of the Phillips 66 plant located east of the San Bernard River related stated that he believed approximately 3 meters (10 feet) of bank had eroded since Hurricane Harvey in 2017. Given the alluvial nature of the general project area, available soils mapping suggests that a good deal of the overall area contains a moderate to high potential for containing deeply buried archaeological sites (Abbott 2001); however, this potential diminishes with greater distance from the Brazos and San Bernard Rivers and oxbow lakes. The potential for intact sites is less likely given the heavy industrial use of the area, with as many of 11 pipelines occupying the corridor. The proposed projects are



Figure 5-1. Overview of general field conditions. View is to the north.



Figure 5-2. Overview of general field conditions. View is to the northeast.



located near and co-located with existing facilities and buried pipelines in areas showing signs of disturbance from industrial use and previous pipeline installation. Many of the shovel tests included spoil overburden from adjacent previous pipeline installation.

Where disturbance or inundation was not encountered, a typical shovel test profile consisted of a surface layer of black to very dark gray (10YR 2/1 to 3/1) silty clay over often saturated yellowish red to brown (5YR 4/6 to 7.5YR 4/4) silty to dense clay (Figure 5-3). The soils were saturated in most of the conducted tests and the water table was also encountered at a fairly shallow depth, typically between 45 and 60 centimeters (18 and 24 inches). This profile appears to be consistent with soils mapped for the project location, however, the shallow depth of the first stratum change suggests that the soils may be truncated to some extent. This would be consistent with the agricultural land use history of the general area.

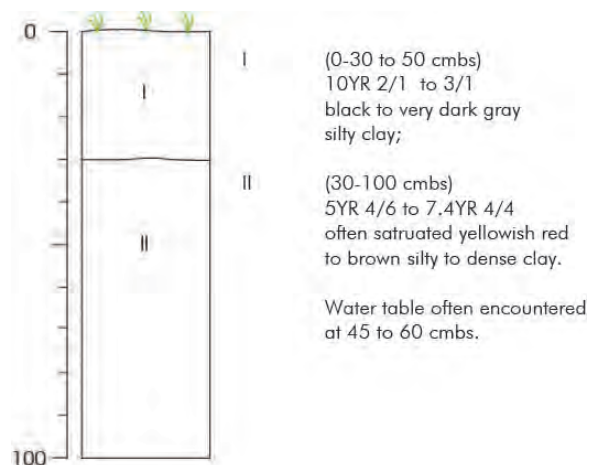


Figure 5-3. Representative shovel test from within the project APE.

Topographical maps and aerial photographs from the 1940s indicate that the APE between the Brazos and San Bernard Rivers travels through what was low and wet pasture or agricultural field, typically divided into multiple

fields outlined by drainage ditches, canals, or modified waterways. These areas are largely the same today. Areas north of the Brazos River have experienced the most change since the 1940s, having steadily been modified by DOW for industrial use up to the present. Despite the prevalence of inundation and disturbance, one archaeological site, one isolate find, and one historic-age structure were identified as a result of survey.

### 5.2.1 Site 41BO281

Site 41BO281 was identified within the existing pipeline corridor immediately east of CR 486 / Futch Road (Figure 5-4, Appendix A2). The site measures approximately 55 meters (180 feet) east-west by 58 meters (190 feet) north-south and consists of approximately five potentially hand-made brick fragments (Figure 5-5), some of which contained mortar, one fragment of ceramic sewer pipe, and one cut bone typical of a T-bone steak. All materials were identified on the surface. Shovel tests excavated within the wooded area south of the site but within the project APE were negative for cultural material. These tests displayed a surface layer of dark gray (7.5YR 4/1) wet silty clay to a depth of 10 centimeters (4 inches) followed by brown (7.5YR 5/2) silty clay to a depth of 35 centimeters (14 inches). Beyond that was a layer of mottled brown and light reddish brown (7.5YR 5/2 mottled with 5YR 6/4) silty clay to a depth of 50 centimeters (20 inches) at which point the water table was reached. It is possible that the materials are related to a structure that appears on the 1943 and 1956 topographic maps (NETR 2019) and a 1943 aerial (Google, Inc. 2019). The structure does not appear on the 1962 aerial or 1966 topo. The site location as currently mapped is the pipeline corridor and as such is underlain by at least 11 pipelines, and therefore not intact. It is possible that more materials are located to the north of the pipeline corridor, however, the current survey did not pursue the site beyond the current APE.

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Plan view of Site 41BO281



Figure 5-5. Possible hand-made brick fragment identified on the surface at Site 41BO281.

### 5.2.2 Isolate Find #1

Isolate Find #1 consists of a possible hand-made brick fragment found on the surface. The find was located on the historic Peach Point Plantation property within a treeline that separates two pastures (Figure 5-6, Appendix A2). The fragment measures approximately 12 centimeters (4.7 inches) wide and 20 centimeters (7.9 inches) long. One side is damaged; thus, the thickness can only be estimated at roughly 7 to 8 centimeters (3 inches) (Figure 5-7). The side that remains more intact bears the profile impression of a nail head and body (Figure 5-8). Degradation of the brick makes it impossible to determine if the nail is rounded or square. A shovel test placed at the find and nine additional radial shovel tests placed around the find produced no additional materials. The shovel tests contained soil profiles that matched closely to those mapped for the location. The profile consisted of a surface layer of black (10YR 2/1) clay to a depth of 35 to 50 centimeters

(14 to 20 inches) followed by a layer of brown (7.5YR 4/4) clay to a depth of 100 centimeters (39 inches).

The location was well trampled by cattle and standing water was pooled in places. A pipe fitting or coupling likely related to the nearby pipeline, was also identified approximately 20 meters (66 feet) north of the brick fragment. This suggests that surface use workspace for the pipeline may have included the location of Isolate Find #1.

### 5.2.3 Historic-Age Structure #1

Historic-Age Structure #1 consists of the remnants of a wood post and beam corral located to the northeast of the termination of CR 299 (Figure 5-9, Appendix A3). The structure is rectangular and measures roughly 42 meters (138 feet) southwest-northeast and at least 22 meters (72 feet) from southeast-northwest, although it may extend further to the west beyond the APE. The corral is constructed

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Plan view of Isolate Find #1





Figure 5-7. Isolate Find #1, possible hand-made brick fragment.



Figure 5-8. Isolate Find #1 reverse showing nail impression.

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Plan view of Historic-Age Structure #1

with wood planks and square wood posts of varying dimensions (Figure 5-9). The corral first appears on aerials from 1961 but is not present on the 1944 aerial (Google, Inc. 2019; NETR 2019). The corral was originally a rectangular structure with interior divisions but has since been abandoned and the majority of the corral has fallen down or been removed. The materials used to construct the corral appear to be standard twentieth century building materials such as weather-treated sawn boards, round cut posts, and corrugated sheet metal panels. The corral appears to have been abandoned prior to the 1995 aerial as the structure is obscured by dense vegetation (Google, Inc. 2019). Later aerials also show the remains of the corral structure obscured by vegetation.

Historic-Age Resource #1, a historic-age corral, is a simple wood post and beam construction using modern, twentieth century materials. The corral was constructed before 1962 and after 1944; however, the exact date of construction is unknown. This type of structure represents a highly prevalent approach to the design of ancillary agricultural structures in Texas, as well as the United States in general.

#### **5.2.4 Revisit of Futch (Tasch) Cemetery and Site 41BO259**

During the course of survey, portions of the APE containing the recorded locations of Futch (Tasch) Cemetery and Site 41BO259 were revisited (Figure 5-10). There is no information available for Futsch Cemetery, although it is assumed that the name is derived from the nearby road and previous land owner of the parcel. Site 41BO259 was recorded in 2013 as a ranch complex containing five structures dating to the mid-twentieth century. Structures

include a main residential structure, three outbuildings, and a horse barn. The remnants of a brick cistern are also recorded at the location. The site was not recommended as eligible for listing on the NRHP (Noble 2013). A revisit to the property showed conditions largely the same as described on the 2013 site form. The property appears to be overall well maintained, although the horse barn or corral appears dilapidated. The pipeline ROW at the location of the site and cemetery contains at least 11 pipelines. Much of the ROW contained standing water at the time of the visit. The ground surface was visible in a few small areas which lacked grass covering or contained vehicle ruts. No artifacts were visible on the surface in these areas. Shovel tests placed nearby within the pipeline ROW displayed mottled black (10YR 2/1 and dark gray (5YR 4/1) clay indicative of previous disturbance. The site location appears to be focused on the concentration of structures located north of the pipeline ROW, and therefore is outside of the APE. The location of the purported cemetery has certainly been disturbed by past pipelines and has likely been completely removed from the location.

#### **5.2.5 Revisit of Site 41BO32**

The mapped location of Site 41BO32 is composed of an artificial levee for the Flag Lake Drainage Canal (Figure 5-11). HRA Gray & Pape conducted two shovel tests at the location in 2013. The tests showed signs of an obvious overburden composed of mottled clays and concretions. The same site conditions were observed during the current effort. The location is a highly disturbed area consisting of a levee and well-established pipeline corridor. No shovel testing was conducted during the current survey.

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Mapped locations of previously recorded Futch Cemetery and Site 41BO259

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Mapped location of previously recorded Site 41BO32

## 6.0 CONCLUSIONS AND RECOMMENDATIONS

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This report summarizes the results of a cultural resources survey for a proposed pipeline consisting of a 14-inch pipeline that will travel from the DOW Freeport facility in Brazoria County, Texas, to the Phillips 66 Clemens Storage Cavern. All fieldwork and reporting activities were conducted with reference to state and federal guidelines. The Project consisted of approximately 28.0 kilometers (17.4 miles) of proposed centerline within a 91-meter (300-foot) wide APE. Approximately 3.6 kilometers (2.25 miles) of the project length is located within property owned by the Texas Department of Criminal Justice, Clemens Prison Unit, which necessitated the procurement of a permit subject to the Antiquities Code of Texas. Permit Number 8666 was assigned to the project on December 4, 2018.

The proposed centerline for the project was entirely collocated with existing pipeline ROW. Approximately 6.1 kilometers (3.8 miles) / 55.4 hectares (137 acres) the current APE overlap previous surveys conducted by Perennial Environmental Services (2012), HRA Gray & Pape, LLC (2013), and SWCA (2013), resulting in no newly recorded sites within those areas. Gray & Pape visually inspected those overlapping areas during the current effort but did not subject them to shovel testing. Another 3.0 kilometers (1.9 miles) / 27.5 hectares (68 acres) of project APE is located within highly industrial areas of DOW property, was subjected to desktop assessment, and determined to be of low potential for containing intact cultural materials. No further work is recommended for these areas. A mix of visual and intensive pedestrian survey was conducted on the remaining 24.9 kilometers (15.5 miles) / 224 hectares (554 acres) of project APE.

Prior to fieldwork, initial investigation consisted of a background literature and site files search to identify the presence of previously recorded

sites in close proximity to the project area. In addition, predictive modeling and a review of historical aerial imagery and topographic maps was performed along the entire length of the project alignment in an effort to assess the potential of unrecorded intact buried cultural deposits or historic-age standing structures. As a result of that research, one previously recorded cemetery (Futch) and one previously recorded archaeological site (41BO32) have been mapped within the project APE. A third previously recorded archaeological site (41BO259) is mapped adjacent to the APE.

Current survey efforts were completed over two mobilizations and were focused only on portions of proposed workspace which were not covered by previous surveys, or where the current project alignment could pose a risk to unidentified portions of previously recorded sites. This amounts to 15.4 kilometers (9.6 miles) or 139 hectares (343 acres). In general, the project APE was largely composed of existing pipeline ROW containing two to several pipelines. Areas within and outside the ROW were flat, featureless, and poorly drained. Standing water covered large swaths of the APE. Shovel testing conducted in potentially undisturbed portions of the APE displayed soils indicative of those mapped for the locations, although possibly truncated by past agricultural use.

As a result of survey efforts, one previously unrecorded archaeological site, one historic-age structure, and one isolate find were identified. Site 41BO281 consists of a light scatter of historic-age material. As currently mapped, it lies within an existing pipeline corridor and does not retain integrity within the project ROW. Further, the site does not contain the density or type of materials that could offer insight to historic occupation of the area. The site is not recommended for further work and not recommended as eligible for listing on the NRHP. Isolate Find #1 consists of



a single fragment of potentially hand-made brick. Additional subsurfacing testing surrounding the find produced no additional materials. No further work is recommended for either of these newly identified resources.

Historic-age Structure #1 consists of a livestock corral built between 1944 and 1962. Due to a lack of historic association with any significant period, event, or theme, Gray & Pape recommends that the structure is not significant under NRHP Criterion A. Furthermore, no direct association could be made with any specific person and the corral is not eligible under Criterion B. Also, the resource is not eligible under Criterion C due to its lack of architectural distinction and has experienced significant alteration due to its abandonment. The resource is not significant

under Criterion D due to its lack of potential to yield further information of historical importance.

Revisits to Sites 41BO32, 41BO259, and Futch Cemetery produced no evidence of them within the current APE and no changes to the landscapes based on previously recorded investigations. No further work regarding them is recommended.

Based on the results of the survey and research described in this document, Gray & Pape recommends that no further investigations be necessary regarding any of the project's 252 hectares (622 acres) of APE and that the project proceed as planned. See Appendix C for the results of supplemental work associated with the project.

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**APPENDIX A**

**FIELD SURVEY RESULTS WITHIN THE PRAXAIR PHILLIPS 66 H2  
PIPELINE PROJECT.**

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**APPENDIX B**

**SHOVEL TEST LOG**

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**APPENDIX C**

**ADDENDUM 1 TO TECHNICAL REPORT: CULTURAL RESOURCE  
INVESTIGATIONS FOR THE PRAXAIR PHILLIPS 66 H2 PIPELINE  
IN BRAZORIA COUNTY, TEXAS.**

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