CULTURAL ASSESSMENT
IN SUPPORT OF GREENHOUSE GAS PERMITTING FOR THE NATGASOLINE, LLC GAS TO GASOLINE PLANT BEAUMONT, TX

Prepared for
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LIST OF ACRONYMS

ACHP	Advisory Council on Historic Preservation
AmaTerra	AmaTerra Environmental, Inc
amsl	above mean sea level
APE	Area of Potential Effects
ASU	Air Separation Unit
Atlas	Texas Archeological Sites Atlas
B.P.	years Before the Present
bpd	barrel per day
CA	Cultural Resource Assessment
GHG	greenhouse gas
GtG	Gas to Gasoline
MSS	maintenance, startup, and shutdown
GtG	gas to gasoline
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
SH	State Highway
SHPO	State Historic Preservation Officer
tpd	ton per day
USEPA	U.S. Environmental Protection Agency
USGS	United States Geological Survey
WESTON	Weston Solutions, Inc.

EXECUTIVE SUMMARY

Natgasoline, LLC (Natgasoline) is submitting a greenhouse gas (GHG) permit application to the U.S. Environmental Protection Agency Region 6 (USEPA) to obtain a Prevention of Significant Deterioration (PSD) permit authorizing the construction of a gas to gasoline (GtG) plant at the Natgasoline facility in Beaumont, Texas.

USEPA's issuance of a GHG PSD permit to Natgasoline is an action subject to requirements pursuant to the National Historic Preservation Act. This Cultural Assessment (CA) reviews the potential for direct and indirect effects of project-related construction, operations, and air emissions increases on historic properties or other culturally significant features or landscapes within a designated Area of Potential Effects (APE).

The APE boundaries for construction and operation include the process areas, supporting structures, and on-site proposed pipelines. Natgasoline also took into consideration whether the APE should be expanded based on indirect impacts from air emissions. The geographic boundaries of the APE were established based on the impacts from construction and operation of the facility. Indirect and direct impacts from the project were assessed.

The APE is absent of any culturally significant features or landscapes. Consequently, USEPA's action in issuing a PSD permit to Natgasoline for the construction of a gas to gasoline (GtG) plant will have no effect on cultural resources for purposes of the National Historic Preservation Act because no cultural, historical, or archeological resources are present within the APE for the project.

1 INTRODUCTION

Natgasoline, LLC (Natgasoline) is submitting a greenhouse gas (GHG) permit application to the U.S. Environmental Protection Agency Region 6 (USEPA) to obtain a Prevention of Significant Deterioration (PSD) permit authorizing the construction of a gas to gasoline (GtG) plant at the Natgasoline facility in Beaumont, Texas. If the proposed project is carried out, it will aid in the reduction of domestic dependence on foreign sources of oil.

USEPA issuance of a GHG PSD permit to Natgasoline is an action subject to the provisions of Section 106 of the National Historic Preservation Act (NHPA) of 1966 (as amended), and defined in 36 CFR Part 800. The intent of Section 106 is for Federal agencies to take into account adverse effects on any historic properties situated within the direct or indirect Area of Potential Effects (APE) of the proposed undertaking, and to afford the Advisory Council on Historic Preservation (ACHP), State Historic Preservation Officers (SHPOs), tribal groups, and any other interested parties an opportunity to comment on the proposed action within a reasonable time period. AmaTerra Environmental, Inc (AmaTerra) conducted a desktop Cultural Resource Assessment (CA) for the proposed GtG plant in order to assess the potential of the proposed development to adversely affect historic properties as required under the Section 106 regulations.

Under 36 CFR Part 800, "Historic Property" is defined as:

> *[…] any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior.*
>
> *This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria.*

To be considered eligible for the National Register of Historic Places (NRHP), a property must meet one of the four following criteria (36 CFR 60.4): (a) they are associated with events that have made a significant contribution to the broad patterns of our history; (b) they are associated with the lives of persons significant in our past; (c) they 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) they have yielded, or may be likely to yield, information important in prehistory or history.

2 PROJECT DESCRIPTION

2.1 PROJECT PURPOSE AND LOCATION

The construction of the GtG plant in the Beaumont area would create over 130 permanent new jobs. It would also be the first GtG plant in the U.S. and aid in the reduction of domestic dependence on foreign sources of oil. The new plant is proposed with two primary process sections:

- A 5,500-metric tons per day (tpd) methanol production process that synthesizes refined methanol using methane and water; and
- A 22,000- barrels per day (bpd) gasoline production process that synthesizes gasoline and water using the refined methanol from the proposed new methanol production process.

The facility will consist of the structures and features presented in Table 2-1.

Table 2-1
Planned Structures at the Natgasoline GtG Plant
and Estimated Footprint Dimensions
(square feet)

Structure	Estimated Dimensions
ASU	44,800
Auxiliary Boiler	13,800
Control Room Building	30,000
Cooling Water Tower	65,100
D-04001 Scrubber	500
D-04002 Scrubber	500
Railcar Truck Loading	2,400
Methanol Process	265,300
MtG Process	231,100
Parking	21,600
Combined Process Areas	3,000
S-10001 Flare	600
Substation	35,300
TK-04001	2,000
TK-04002 A	2,000

Structure	Estimated Dimensions
TK-04002 B	2,000
TK-0S1	1,200
TK-11001 A	22,800
TK-11001 B	22,800
TK-FGGP1 A	6,700
TK-FGP1 B	5,600
TK-FGP1 C	5,600
TK-ST1 A	1,100
VCU-1 Combustion Unit	600
Water Treatment	97,000
Waste Water Treatment Area	138,900
Total	**835,100**

The proposed GtG plant would be constructed at the location shown in Figure 2-1. The layout of the GtG plant is shown in Figure 2-2. Locations of proposed new linear facility associated with the plant are shown on Figure 3-1.

2.2 CONSTRUCTION INFORMATION

2.2.1 CONSTRUCTION ACTIVITIES AND SCHEDULE

Construction of the GtG plant is scheduled to begin in 2014. A finalized schedule of construction will depend on the USEPA's schedule for issuing the GHG permit. Once started, construction is estimated to take approximately 24 months to complete.

A finalized list of equipment necessary for the construction of the GtG plant was not available at of the date of this report. However, it is expected that the construction equipment required will be equivalent to the industry standards for a project of this scope and may include heavy earth-moving equipment such as cranes, bulldozers, backhoes, and/or excavators.

2.2.2 EMISSION CONTROLS

Best Management Practices (BMP) will be incorporated during the construction of the GtG plant to minimize emissions from construction equipment.

2.3 OPERATION AND MAINTENANCE INFORMATION

2.3.1 OPERATIONS

The proposed new GtG facility would be composed of two main process operations: the methanol process and the MtG process. The methanol process would be designed to produce 5,500 tpd of methanol from methane and water. The MtG would be designed to produce 22,000 bpd of gasoline from methanol feedstock. The GtG plant would also be supported by utility operations and other ancillary equipment as described below.

2.3.1.1 Methanol Process Description

The proposed new methanol process would synthesize methanol using methane as feedstock. Methane (natural gas) would be delivered to the methanol process by pipeline. The majority of the methane received by the facility would be used as chemical feedstock for the methanol process, and a portion of the natural gas would be burned as fuel. The chemical feedstock portion of the methane would first be treated to remove sulfur compounds and then otherwise pretreated for use in the methanol process.

2.3.1.2 MTG Process Description

The proposed new MtG Unit would synthesize motor-grade gasoline using methanol as feedstock. The methanol feedstock would be from the new Methanol process or imported from off-site.

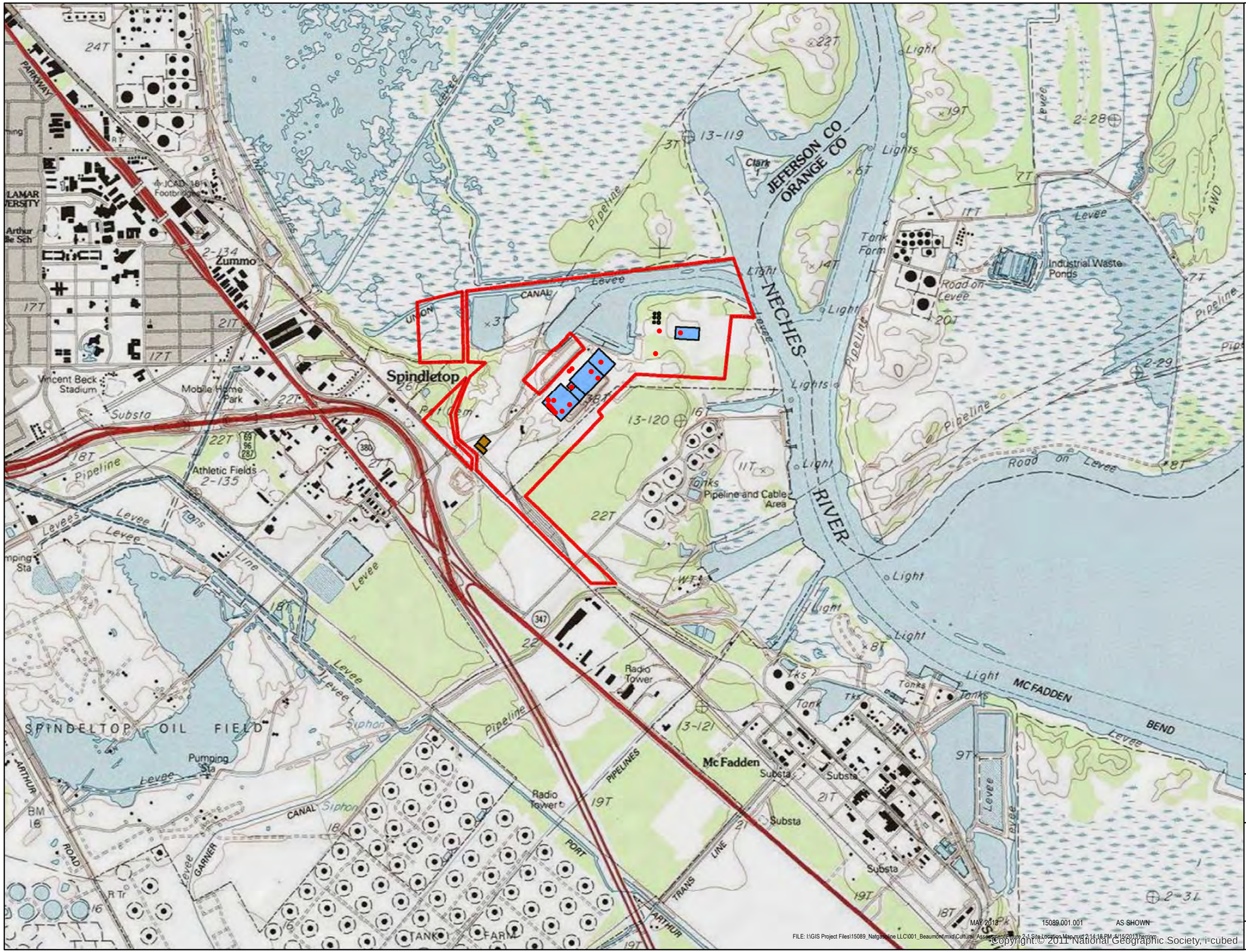
2.3.1.3 Supporting Operations

The proposed new GtG plant would be supported by various auxiliary operations. An auxiliary boiler would be used to provide steam to the plant. An Air Separation Unit (ASU) owned and operated by a separate company, would be located at the site in order to provide oxygen to the

secondary reformer (i.e., the ATR). Additionally, a cooling water tower would provide the necessary process cooling water, and a plant flare would control emissions in cases of upset or emergency and planned maintenance, startup, and shutdown (MSS), and a waste water treatment plant will also be constructed. The proposed locations of the supporting operations in relation to the main process areas are shown on Figure 2-2.

2.4 LINEAR FACILITIES

Operation of the GtG facility would require the construction of related linear facilities including pipelines for product transfer, raw water, wastewater and utilities. All new pipelines are proposed to be located within the site property boundaries or along existing pipeline routes. The proposed Natgasoline pipeline routes and existing pipelines mapped by the Texas Railroad Commission are shown on Figure 3-1. Natgasoline proposes to include new pipelines within or along existing pipelines where soil has previously been disturbed, and NHPA requirements for pipeline construction have been met. By following existing pipeline routes, the proposed linear facilities will not affect cultural resources.



LEGEND

- PROCESS AREAS
- STORAGE AND LOADING
- EMISSION POINTS
- OTHER STRUCTURES
- PROPERTY BOUNDARY

N

0 2,000 4,000

Feet

WESTON SOLUTIONS

FIGURE 2-1
SITE LOCATION MAP

NATGASOLINE, LLC GHG PERMIT
CULTURAL ASSESSMENT
NEDERLAND, TX

DATE	PROJECT NO	SCALE
MAY 2013	15089.001.001	AS SHOWN

FILE: I:\GIS Project Files\15089_Natgasoline LLC\001_Beaumont\mxd\Cultural_Assessment\Figure 2-1 Site Location Map.mxd 2-14-18 PM (4/15/2013 jharrison)

LEGEND

- PROCESS AREAS
- OTHER STRUCTURES
- PROPERTY BOUNDARY

N

0 400 800

Feet

WESTON SOLUTIONS

FIGURE 2-2
PLANT LAYOUT MAP

NATGASOLINE, LLC GHG PERMIT
CULTURAL ASSESSMENT
BEAUMONT, TX

DATE	PROJECT NO	SCALE
FEB 2013	15089.001.001	AS SHOWN

FILE: I:\GIS Project Files\15089_Natgasoline LLC\001_Beaumont\mxd\Cultural_Assessment\Figure 2-2 Plant Layout Map Ver 2.mxd 5:52:59 PM 7/28/2014 herrinm

3 PROJECT LOCATION AND APE

The proposed location for the Natgasoline GtG plant totals approximately 35 acres and is situated between State Highway (SH) 347, and the Neches River in Beaumont, Texas in Jefferson County. It is depicted on the Beaumont East (TX) United States Geological Survey (USGS) 1:24,000 topographic quadrangle in Figure 2-1 and the layout is depicted in Figure 2-2.

36 CFR 800 defines the APE as follows:

> *the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking.*

The APE boundaries for construction and operation encompass includes the process areas, supporting structures, and the on-site linear proposed pipeline routes (Figures 3-1). The APE includes a total of approximately 22-acres for the construction of the process areas (17.6 acres) and supporting structures (1.2 acres), with an additional 3.3 acres associated with the pipeline right of ways. It should be noted that APEs originally defined in the attached supporting reports (Appendix B) may include additional areas not depicted in Figure 3-1. As engineering progressed with project development, Natgasoline was able to refine the APE to the process areas, supporting structures, and pipelines depicted in Figure 3-1.

The evaluation takes into account both direct (e.g., destruction, alteration, damage) and indirect (e.g., visual, noise, vibration impacts) effects that a project could have on resources within and around the APE. The area surrounding the Natgasoline project is industrial, with facilities dedicated to petrochemical processing present on all sides. Therefore, construction of the new GtG facilities would not significantly alter the view shed or likely affect the integrity of historic properties near to the proposed construction. This cultural assessment provides an evaluation of the APE as depicted in Figure 3-1.

LEGEND

- AREA OF POTENTIAL EFFECTS
- PROPERTY BOUNDARY
- EXISTING PIPELINES

N

0 800 1,600

Feet

SOURCE: Railroad Commission of Texas, 2014, Pipelines.

WESTON SOLUTIONS

FIGURE 3-1
AREA OF POTENTIAL EFFECTS
INCLUDING LINEAR FACILITIES
NATGASOLINE, LLC GHG PERMIT
CULTURAL ASSESSMENT
BEAUMONT, TX

DATE	PROJECT NO	SCALE
FEB 2013	15089.001.001	AS SHOWN

FILE: I:\GIS Project Files\15089_Natgasoline LLC\001_Beaumont\mxd\Cultural_Assessment\Figure 3-1 Proposed Linear Facilities.mxd 3:15:39 PM 8/6/2014 herrinm

4 NATURAL SETTING

4.1 TOPOGRAPHY AND LANDSCAPE

The project is located in Southeastern Texas in the Northern Humid Gulf Coastal Prairies and Texas-Louisiana Coastal Marshes natural vegetation zones. Natural vegetation in this part of Texas is primarily grassland and marshland with a few oak mottes. However, much of the natural vegetation has largely been removed in favor of industrial growth (Griffith and Omernik, 2009).

The proposed project area is on an approximately 388 acres tract of land. A harbor is included in the northeast portion of the tract. The land includes paved and gravel roads, including Sulphur Plant Road and other roads that lead to docks at the water's edge. A rail spur and is also present. The majority of the parcel is a maintained field; however, the northwest portion of the parcel is a wetland and pond, and the far eastern portion south of the harbor inlet is wooded. The topography of the parcel is varying, ranging from 3 ft amsl in the marshy area in the northwest to over 30 ft amsl in the central portion of the parcel.

4.2 GEOLOGY AND SOILS

The underlying geology of the APE and surrounding area is characterized by Pleistocene age deposits of the Beaumont Formation (Bureau of Economic Geology, 1992). Soils in the project area include Anuahac, Caplan, Ijam, Labelle, and Neches series as well as Neel-Urban land complexes (USDA-NRCS, 2012). All of the soils within the parcels are deep, with profiles deeper than 80 inches. Figure 4-1 shows the soils plotted on an aerial photo of the project area and labeled with the USDA symbols from Table 4-1.

Table 4-1
Soil Series within the Project Area

Series Name	Symbol	Parent Material	Acreage
Anahuac-Aris complex	AsA	Loamy fluviomarine deposits	14
Caplen mucky peat	CeA	Fluid clayey backswamp deposits	3
Ijam clay	ImA	Sandy and/or loamy dredge spoils	82
Labelle silt loam	LaA	Clayey fluviomarine deposits	1
Neches coarse sand	NcC	Sandy and/or loamy dredge spoils	73
Neel-Urban land complex	NuC	Clayey sediments	87
Water	W	-	126
Totals	-	-	**388**

Soil Name

- Anahuac-Aris complex, 0 to 1 percent slopes
- Caplen mucky peat, 0 to 1 percent slopes, frequently flooded, tidal
- Ijam clay, 0 to 2 percent slopes, frequently flooded, tidal
- Labelle silt loam, 0 to 1 percent slopes
- Labelle-Urban land complex, 0 to 1 percent slopes
- Leton loam, ponded, 0 to 1 percent slopes
- Neches coarse sand, 2 to 5 percent slopes
- Neel-Urban land complex, 2 to 5 percent slopes, rarely flooded, tidal
- Water

LEGEND

- PROCESS AREAS
- STORAGE AND LOADING
- EMISSION POINTS
- OTHER STRUCTURES
- PROPERTY BOUNDARY

N

0 700 1,400

Feet

SOURCE: NRCS

WESTON SOLUTIONS

FIGURE 4-1
SOIL MAP
NATGASOLINE, LLC GHG PERMIT
CULTURAL ASSESSMENT
NEDERLAND, TX

DATE	PROJECT NO	SCALE
MAY 2013	15089.001.001	AS SHOWN

FILE: I:\GIS Project Files\15089_Natgasoline LLC\001_Beaumont\mxd\Cultural_Assessment\Figure 4-1 Soil Map Update.mxd 2:19:52 PM 5/15/2013 herrinm

5 CULTURAL SETTING

5.1 REGIONAL PREHISTORIC OVERVIEW

The APE is located in the Southeast Texas archeological region (Perttula, 2004). Early recorded interest in Southeast Texas archeology began in 1879, when Edward Palmer of Harvard University's Peabody Museum visited sites in the region and collected artifacts for the museum. In 1903, a shell midden was investigated by an amateur archeologist, the University of Texas at Austin conducted surveys in the region in 1919 and 1931.

Humans have lived in the Southeast Texas area for at least 11,000 years. The currently accepted framework of prehistoric culture for the Southeast region is outlined by Ricklis (2004). This region identifies populations ranging from the Paleoindian period (prior to 8000 years Before the Present [B.P.]), to Archaic foraging cultures (ca. 8000-2,000 B.P.), to the Ceramic period (2000-1300 B.P.), and to the Late Prehistoric period (1300-ca. 500 B.P.). These cultural time periods are based on changes archeologists perceive in the material record related to environment, technology, subsistence practices, and/or population size of prehistoric cultures.

5.2 PALEOINDIAN PERIOD (CA. 11,000-8000 B.P.)

Paleoindian sites are rare and often consist of isolated finds of diagnostic artifacts such as those that have washed up on McFaddin Beach (41JF50) over the years (Long, 1977). Lanceolate projectile points with ground, concave bases, and longitudinal fluting typical of Paleoindian tool technology recovered in this region suggest that early occupations were principally distributed along the valleys of major stream basins (Perttula, 1995) or along the Gulf Coast (Ricklis, 2004). However, beyond defining point types, archeologists know very little about Paleoindian lifeways in Southeast Texas because no sites with intact components have ever been systematically investigated (Ricklis, 2004). Applying more complete data from other parts of Texas, archeologists generally assume that Paleoindians in East Texas practiced a nomadic hunting and gathering lifestyle, and that this lifestyle continued well into the Archaic period, despite changes in climate and environment (Story, 1990).

5.3 ARCHAIC PERIOD (CA. 8000-2000 B.P.)

Changes in technology accompanied climate and environmental changes during the Archaic period (8000 - 2000 B.P.). Following the sequence for other parts of Texas, the Archaic Period is subdivided into Early, Middle, and Late divisions. Each of these subdivisions has characteristic types of artifacts, especially projectile points, which suggest differences in economy, technology, and possibly regional adaptations. A general outline of dart point chronology during this period in Southeast Texas is available (Ricklis, 2004), and many Archaic sites represented by flaked stone dart points and other lithic tools have been found in the inland region of southeast Texas, mostly near major streams. Neches River, Bell/Calf Creek, and Trinity points represent the Early Archaic; Bulverde, Yarborough, Travis, and Palmillas represent the Middle Archaic. However, the paucity of other evidence (i.e., faunal, botanical, etc. allows for little generalization regarding subsistence strategies other than the suggestion that these groups were likely engaged in some form of hunting and gathering. In general, sites with intact Early and Middle Archaic components are rare in Southeast Texas. On the coast, Archaic period sites of Southeast Texas consist mostly of shell middens located along the shores of secondary bays, or in and around river mouths and deltas (Ricklis, 2004). The most complete Archaic sequence of occupation in this region was recovered from the Eagle's Ridge site (41CH252) in Chambers County. In this densely stratified shell midden, a large sample of features and artifacts (comprising mostly of *Rangia cuneata*, but also oyster shells) from the earliest part of the period to the latest were recovered.

The number of known Late Archaic period sites is much higher than any previous period, and this has led researchers to suggest significant population growth occurred during this time. Data from Late Archaic sites in Southeast Texas also indicate that people were becoming more sedentary. These data include the use of poor quality local lithic materials, which suggests that there was reduced mobility and smaller, more localized territories. Cemeteries such as the Ernest Witte Cemetery, (41AU36) at the western edge of the Southeast Texas region, also become more common. These cemeteries could be quite large and often contained grave goods. For example, Group 2 of the Ernest Witte cemetery contained 145 individuals along with lithics, bone pins, shell beads, and shell pendants (Ricklis, 2004). Based on investigations at Late Archaic period sites, archeologists posit that indigenous people retained a hunting-gathering subsistence

economy, but also developed more regionally specialized approaches toward exploiting their environment (Story, 1990).

5.4 THE EARLY CERAMIC PERIOD (CA. 2000 – 1300 B.P.)

The Archaic period generally ends with the introduction of ceramics in prehistoric sites (2000-1300 B.P.). During the Early Ceramic period, there is not much evidence of major changes in lifeways. Early Ceramic period artifacts recovered overlying Archaic artifacts near river drainages suggest consistent patterns in subsistence and settlement over time. The earliest ceramics include thick-walled, blocky paste ceramics, with little to no temper other than natural sand inclusions. These chunky pottery types ultimately gave way to the thinner-walled sandy paste ceramics known as Goose Creek Plain (Aten, 1983) that dominate prehistoric assemblages of Southeast Texas until well into the Historic Period. Story (1990) coined the term Mossy Grove Tradition/Culture to describe groups that occupied areas in Southeast Texas during the Ceramic period. It is thought that most Mossy Grove groups were hunters and gatherers who practiced a seasonal-round subsistence pattern with no permanent settlement.

5.5 LATE PREHISTORIC PERIOD (CA. 1300 – 500 B.P.)

The Late Prehistoric period is usually defined by the introduction of the bow and arrow. Evidence from the Mitchell Ridge site (41GV66) suggests that the Late Prehistoric period in Southeast Texas can be divided into the Initial Late Prehistoric subperiod, represented by Scallorn arrowpoints, and the Final Late Prehistoric period. This latter period correlates with the well-documented Toyah phase common throughout Texas, represented by an abundance of bison bone and a lithic assemblage geared towards processing the meat and hides of large game (Ricklis, 2004). Unlike the more sedentary Caddo Indians to the north, the Native Americans of Southeast Texas practiced a pattern of seasonal migration, fishing along the coast during the Spring and Summer months and hunting deer, bison, and bear inland during the Winter (Newcomb, 2002).

5.6 HISTORIC OVERVIEW OF THE PROJECT AREA

The Atakapan tribes occupied Southeast Texas and Southwest Louisiana at the time the first Europeans made contact with the Americas. The name Atakapa means "eaters of men" in Choctow, but it is unknown if their cannibalism was for subsistence or for ritual (Crouser, 2012). The Atakapan groups who lived in the coastal region of Southeast Texas typically retained a hunting and gathering lifestyle well into the 18th century, moving seasonally from the coast (in Summer) where they fished and gathered shellfish and oysters, to inland areas (in Winter) where they hunted deer, bear, alligator, and occasionally bison. They traveled inland primarily by dugout canoe along the wide, slow-moving creeks and bayous. They traded dried, smoked fish to inland groups, and from the Caddos to the north received some ceramics in exchange (Newcomb, 2002). South of the APE, in Port Neches, archeologists reported six burial mounds measuring up to 450 feet long by 60 feet wide with heights up to 15 feet. These shell mounds were used as building material by the settlers in the area and have since disappeared. Found amongst the shell were burned human bones and entire skeletons.

The Historic period in Texas generally begins with the 1528 expedition of Alvar Nunez Cabeza de Vaca. Following this expedition, in which Cabeza de Vaca shipwrecked off the coast of Matagorda Bay and endured an 8-year journey through Texas before finally reaching the Spanish settlement in Mexico City, the Spanish claimed the right to much of what is now considered Texas. Meanwhile, the French believed that the La Salle expedition of 1685 gave them rights, since the Spanish had all but abandoned Texas after the Cabeza de Vaca expedition. This conflict spurred further *entradas* from both Spanish and French explorers.

In 1690, the Spanish began establishing a series of missions in East Texas, starting with San Francisco de los Tejas (Weddle, 2008) near Nacogdoches. In 1756, in response to intelligence that the French were building trading outposts in the region, the Presidio San Augustín de Ahumada was built near the mouth of the Trinity. Fifty families moved from Mexico to occupy it (Newcomb, 2002). The Mission Nuestra Señora de la Luz located at the former location of a French trading post, was established in 1765 near the Trinity River delta, approximately 45 miles southwest of the APE.

The Indians that were sheltered by this Presidio and Mission were mainly inland Atakapans, such as Bidais and Deadoses. They were initially friendly to the Spanish, but eventually aligned themselves with the French, trading with them for arms. Despite the fact that the French had fur traders in the area by the 1730s, the area of Jefferson County was relatively isolated from European contact because of the deep impassable rivers and many bayous (Kleiner, 2012). However, as these indigenous groups were increasingly exposed to Europeans, trade items such as glass beads, metal points, buttons, and gun parts made their way into the archeological record. Unfortunately, contact with the Europeans also brought new diseases, which severely reduced the populations of indigenous villages. By the early 19th century there were perhaps only 100 Bidais, while other Atakapan-speaking groups had effectively ceased to exist or had become so few that they joined Caddo groups to the north for survival (Newcomb, 2002).

Jefferson County was formed in 1836 and originally included all of current Orange County as well as portions Chambers and Hardin counties. The first county seat was New Jefferson which was located on Cow Bayou near present-day Orange, in Orange County. The county seat was moved quickly to Beaumont in 1838 (Kleiner, 2012).

The area was settled around the Tevis farm on the Neches River; this settlement along with another community named Santa Anna merged to form the townsite of Beaumont in 1835. Henry Millard, Joseph Pulsifer, and Thomas Huling planned the town, and Millard named it after the maiden name of his wife Mary Beaumont (Isaac, 2012; Linsley and Reinstra, 2012). The town was a hub for cattle raisers in its early days, but during Reconstruction Period, the lumber industry boomed due to railroad expansion and rebuilding. The striking of oil at Spindletop in 1901 doubled the population from nearly 10,000 people to over 20,000 and brought new industry to the area (Isaac, 2012).

In the late nineteenth century, Anthony Lucas, a leading expert on salt dome formations, theorized that the salt domes along the Gulf Coast contained oil. It took two years of trial and error for Lucas to prove his point at which time he had not much stake left in the claim after trading it off to many investors. On January 10, 1901, the pipes from Lucas's well shot out of the hole followed by mud, then gas, then a 100-foot fountain of oil. The well was capped 9 days later and flowed at a rate of 100,000 barrels of oil a day. The economy of Beaumont boomed

with over 17.5 million barrels of oil in 1902. The Texas Company (Texaco), Gulf Oil, Sun Oil, Magnolia Petroleum, and Humble (Exxon) all built operations in Beaumont near Spindletop. The boom did not last at that rate for long, with only 10,000 barrels of oil a day in 1904. Another boom occurred in 1925, and yet another in 1950, which allowed oil corporations to thoroughly entrench in the area (Wooster and Sanders, 2012).

6 NATIVE AMERICAN TRIBES WITH AN INTEREST IN THE PROJECT AREA

A records review of the Texas Historical Commission's online "Guidelines for Tribal Consultation" database was conducted to determine what Native American Tribes may have an interest in Jefferson County, Texas. Only the Tonkawa Tribe of Oklahoma is specifically identified on the Texas Historical Commission dataset as including Jefferson County in their area of interest. Nineteen additional tribes have a known interest in Texas, but their territorial extent is not listed. These tribes include the following:

- Alabama-Coushatta Tribe of Texas
- The Delaware Nation
- Quapaw Tribe of Oklahoma
- Alabama-Quassarte Tribe Town
- Kialegee Tribal Town
- Seminole Nation of Oklahoma
- Apache Tribe of Oklahoma
- Kickapoo Traditional Tribe of Texas
- Thlopthlocco Tribal Town
- Caddo Nation
- Kickapoo Tribe of Oklahoma
- Tunica-Biloxi Tribe
- Cherokee Nation of Oklahoma
- Kiowa Tribe of Oklahoma
- United Keetoowah Band of Cherokee Indians
- Coushatta Tribe of Louisiana
- Mescalero Apache Tribe
- Wichita and Affiliated Tribes
- Poarch Band of Creek Indians

7 ARCHEOLOGICAL BACKGROUND AND PREVIOUS ARCHEOLOGICAL STUDIES

Research for this CA consisted of a records search online through the Texas Archeological Sites Atlas (Atlas) and a review of historic period maps and aerial photographs. A follow-up visit to the Texas Archeological Research Laboratory was made to confirm online site descriptions and assessments.

Based on the review of the THC Archeological Sites Atlas, the Natgasoline property has experienced little archaeological investigations and no previously recorded archaeological sites fall within the Natgasoline proposed facility area. During a due diligence review of historical site information, two archeological surveys were identified. As presented in the unpublished *Preliminary Draft Environmental Impact Statement (EIS) for the Proposed Industrial Gasification Facility near Beaumont, Texas* (DOE/EIS-0412D) prepared for the U.S. Department of Energy, linear surveys intersecting the Natgasoline facility were conducted in 2009 by William Self and Associates, Inc. Surveyors traversed the eastern and southern boundaries of the facility area. Archaeologists did not record any cultural material(s) within either survey corridor. Tetra Tech conducted a Phase 1A archaeological reconnaissance survey (DOE/EIS-0412D) of the Natgasoline facility in 2009. Tetra Tech archaeologists did not identify any prehistoric archaeological sites or historic-period cultural resources. The results of these survey efforts have yet to be published on the THC Archeological Sites Atlas.

According to the desktop assessment, there are four historical markers, and one National Register District within 3 kilometers (km [1.84 miles]) of the APE. One of the historical markers relates to the Lucas Gusher, another relates to a Confederate camp on Spindletop Hill, and the other two relate to schools in the area. The Lucas Gusher, Spindletop Oil Field National Register District, was listed in the National Register in 1966 and is a 1.5 mile (2.4 km) diameter circle around the Spindletop Oil Field. The district is 0.62 miles (1 km) west of the APE. There are no human cemeteries within 3 km of the APE.

Thirty-three archeological projects and one marine survey of the Neches River have been conducted within 3 km of the APE. Of these 33 surveys, only six of the conducted surveys covered portions of the current APE.

No archeological sites have been recorded within the APE; however, there are 12 archeological sites within 3 km (1.84 miles) of the APE. Of these 12 sites, seven are historic sites located within the Lucas Gusher, Spindletop Oil Field National Register District, while the other five are prehistoric shell middens on the banks of the Neches River.

Sites 41JF84, 41JF90, 41JF91, 41JF93, 41JF94, 41JF95 and 41JF96 are historic sites that are located within the Spindletop National Register District and are related to the oil industry. These sites are all between 1.5 and 3 kilometers from the project area and would not be affected by the undertaking. The undertaking would have no direct affects, nor would it have any indirect effects (such as those on view shed, or those resulting from vibrations, noise, or soil contamination) because the sites are well-removed from the proposed undertaking.

- 41JF84 was originally recorded as a scatter of early to mid-20th century artifacts by Panamerican Consultants; however, 6 months later Panamerican decided to combine sites 41JF84–41JF89 into one large 90-acre site in the center of the Spindletop Oilfield. The site includes well heads, storage tanks, slabs, and domestic debris. The site was shovel tested in March 2007, when it was first recorded as several sites and artifacts were only found on the surface, though it was noted there is likely buried historic piping. In 2009, the composite site was tested further with backhoe trenches and 343 cubic meters of soil excavated from test units. The investigations documented numerous structural and feature remains related to the Spindletop oil discovery, including not just industrial features, but also residences. 41JF84 is listed on the NRHP as part of the Spindletop Oilfield National Register District (Karbula and Stinchcomb, 2010).

- 41JF90 was recorded in 2007 by Panamerican Consultants as a 2,200 x 40 m surface scatter of artifacts relating to oil production. The site was shovel tested, but no artifacts were found below the surface. Due to the limited nature of the subsurface artifacts, this site is not eligible for the National Register by itself; however, it is within of the Spindletop Oilfield National Register District.

- 41JF91 was recorded in 2007 by Panamerican Consultants as a 150 x 90 m surface scatter of artifacts relating to oil production. The site was shovel tested, but no artifacts were found below the surface. This site is not eligible for the national register by itself; however it is part of the Spindletop Oilfield National Register District.

- 41JF93 was recorded in 2010 by Moore Archeological Consulting as 65 x 40 ft area containing two wooden storage tanks an associated apparatus. The two tanks, one 6 x 10 ft and the other 12 x 20 ft, are 2 feet aboveground, but extend an unknown amount underground. Moore Consulting did not test at the site; and they only recorded the structures. Moore Consulting believes this site to have some research value as it pertains to early 20th century oil production.

- 41JF94 was recorded in 2010 by Moore Consulting as a 40- by 40-ft area containing two aboveground wooden storage tanks. The circular tanks measure 10 feet across and 12 feet high; between the two tanks is metal catwalk which gives access to the tanks. Below the tanks is a 15 ft square wooden water drainage pit. Moore Consulting did not test at the site; they only recorded the structures. Moore Consulting believes this site to have some research value as it pertains to early 20th century oil production.

- 41JF95 was recorded in 2010 by Moore Consulting as a 55 x 15 ft refuse pit containing domestic artifacts. The pit is rimmed with iron railroad sections pinned to the ground by 1-inch pipe. The rim of the pit is a foot higher than the surrounding ground surface. Moore consulting did not test the site, but recorded features visible on the surface. Moore Consulting believed this site to have some research value as it pertains to the domestic side of the workers lives.

- 41JF96 was recorded in 2010 by Moore Consulting as a 25 x 10 ft structure foundation or base. The foundation includes hand laid brick and some wood and iron, but here are no upright remains left of the structure. Moore Consulting did not test at the site; they only recorded the structures. Moore Consulting believed this site to have some research value as it pertains to early 20th century oil production.

Sites 41JF5, 41JF29, 41OR1, 41OR2, and 41OR3 are shell middens along the banks of the Neches River and like the sites at Spindletop. With the exception of 41JF29, they are all more than 1 kilometer from the APE.

- 41JF5 was recorded in 1940 by G.E. Arnold as a 150-foot long shell midden on the bank of the Neches River. The site contained over 100 ceramic shards above the water level and was noted to have extended below the water line at the time of survey. Since the survey, however, the McFadden Bend Cutoff was excavated, and the site was destroyed. 41JF5 is plotted 3 kilometers east of tracts VI and VII.

- 41JF29 is also a shell midden, which was likely recorded in 1974 during the Army Corps of Engineers conducted survey conducted 350 meters north of Tract V. The 225 by 450 foot site contained over 100 ceramic shards, unspecified bones, and lithic flakes. Its eligibility status is currently unknown.

- 41OR1 was recorded by Arnold in 1941 as a 100-foot-long shell midden located 3 kilometers north of Tract V on the north bank of the old channel of the Neches River. The site contained around 75 ceramic shards and some lithic flakes at the time of recording. It was revisited during a 1974 Army Corps of Engineers survey and was found to be very disturbed. Its eligibility status is currently unknown.

- 41OR2 was also recorded by Arnold in 1941 as a 30-foot-long shell midden on the north side of the Neches River, now approximately 1.6 kilometers southeast of Tract V. The site was noted to contain only four ceramic shards and some bone fragments. Arnold also noted that most of the site was underwater at the time of recording. Its eligibility status is currently unknown.

- 41OR3 was recorded in 1941 by Arnold as well. The site is a 50-foot-long shell midden on the east bank of the Neches River, approximately 1.7 kilometers northeast of Tract V. This site contained only two ceramic shards and some fragments of bone. Arnold noted that some of the site was below the water line. Its eligibility status is currently unknown.

There is no documentation as to the eligibility of the five prehistoric sites. It is likely that they would not be eligible today because these sites are in far worse condition now than when recorded due to the increased shipping traffic and wave action.

Figure 7-1 shows the project area, data from the THC, and a 3-kilometer buffer from the proposed project area plotted on the Beaumont 15-minute USGS Topographic Map. All sites and all surveys conducted within 3 kilometer of the APE are labeled in the figure.

Map Redacted

8 HISTORICAL LAND USE

Land use around the APE has been related to the oil industry since the Lucas Gusher of 1901. Figure 3 in Attachment B shows a comparison of three aerial photographs, a composite from 1938 available from Google Earth, a USGS aerial from 1959, and the current Bing Maps aerial. Each of the photos is in the same scale so a direct comparison can easily be made.

Most notably, the canal which is the northern boundary of the property and the waterway which would become the harbor are not present in 1938, but are apparent on the 1959 aerial. The waterway was enlarged again before the present aerial, and it appears as if the spoils were used to build up the land in the eastern end of the property. Also not appearing on the 1938 aerial is the sulfur depot itself, and originally it was much bigger than the current aerial photo depicts. The railway leading to the sulfur plant in 1959 had five spurs, while the current aerial shows only one track leading to the much smaller depot. The large refineries do not show up until the present aerial but they are visible on the 1970 Beaumont East USGS Topographic Quadrangle. The main channel of the Neches River was altered between 1959 and the present; the new route first appears on the 1970 USGS Topographic sheet as well.

9 SUMMARY AND RECOMMENDATIONS

There are no known archeological sites or any other known cultural resources within the APE. Based on soils and geology, there is some potential for prehistoric sites; these sites would most likely be found on the banks of the Neches River, although this area has been heavily modified over time, thereby reducing the potential for intact cultural resources. The best location for a prehistoric site has been removed or overfilled by the dredging of the harbor. Nonetheless, there could be some undisturbed areas that may contain cultural resources.

As described in an unpublished Preliminary EIS for the site (DOE/EIS-0412D), two previous field studies were performed in 2009, although they have not been published in the THC Archeological Sites Atlas. Archeological sites or resources were not identified during either study. The results of these studies were reviewed by AmaTerra and SHPO Archeologists. Based on the review, it was requested by SHPO that field surveys be performed in areas of the proposed project not surveyed during the 2009 field studies, and are in areas that are not currently or previously developed.

Archeological field surveys were performed in March 2013 and June 2014 that included visual inspection of the entire APE, and shovel testing at intervals following the guidelines for cultural resources surveys established by the Council of Texas Archeologists and adopted by SHPO. The results of the field survey are presented in two separate reports titled *Archaeological Field Investigations in Support of Natgasoline's Proposed New Gas to Gasoline Plant, Beaumont, Jefferson County, Texas* (AmaTerra, 2013), and *Addendum Report for Additional Archeological Field Investigations in Support of Natgasoline's Proposed New Gas to Gasoline Plant in Beaumont, Jefferson County, Texas* (Appendix B). Based on the information presented in these reports and on the results of the above field investigations, the proposed project will not affect any cultural resources and no further work is warranted.

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APPENDIX A

ARCHEOLOGIST RESUMES

Rachel Jane Feit

Principal Investigator, Archeology

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EDUCATION:

MA in Anthropology, University of Texas at Austin 1995-1998. Thesis entitled *Mealtime Stories: A Study of Cooking and Daily Life at Farmhouse 151 in the Chora of Chersonesos, Ukraine.*
BA in Anthropology, University of Chicago 1986-1990, awarded with honors.

PROFESSIONAL EXPERIENCE:

September 2007-present, Principal Investigator- AmaTerra Environmental/Ecological Communications Corporation, Austin, Texas. Duties involve archeology program management and staff supervision. Responsibilities also include project management for NEPA document preparation, historic and prehistoric archeology projects under federal and state compliance regulations, historical archival research, artifact and data analysis, report writing, proposal/budget writing, and client/agency coordination.

October 1998-September 2007. Principal Investigator- Hicks & Company, Austin, Texas. Duties involved archeology program management and staff supervision. Responsibilities also include project management for NEPA document preparation, historic and prehistoric archeology projects under federal and state compliance regulations, historical archival research, artifact and data analysis, report writing, proposal/budget writing, and client/agency coordination.

July 1998-September 1998. Field Technician- PBS&J, Austin, Texas. Participated on excavation of a historic African American cemetery in Houston, Texas. Duties included excavation, recording and mapping of burials.

June 1995- June 1998. **Teaching and Research Assistant- Department of Anthropology and Department of Classics, University of Texas at Austin.** Assisted with lectures and graded papers for archeology undergraduate classes. Participated in three field seasons at Chersonesos, Ukraine. Devised methodology for ceramics analysis for Site 151 in Chersonesos, directed on-site ceramics lab in Austin and in Ukraine, contributed to Institute publications, and assisted with project planning for 1997 field season in Crimea, Ukraine.

September 1995-June 1996. Archeology Intern- Office of the State Archeologist, Austin, Texas. Worked closely with staff archaeologists compiling data for Texas Military Sites publication, catalogued slides, artifacts, and performed general office tasks. Assisted with excavations of a prehistoric burial site in San Antonio.

RESEARCH, TESTING AND DATA RECOVERY PROJECTS:

2011-2012. Tarrant Regional Water District. Excavation of Burials at the Montgomery Hill Cemetery (41NV716): A Post-Bellum African American Cemetery in Navarro County. Principal Investigator overseeing excavation of 25 unmarked graves dating from ca. 1865-1880. Designed and implemented the project and oversaw excavations. Reporting and analysis are ongoing.

2009- 2012. Texas Department of Transportation. Archeological Testing of 41DW277, Dewitt County, Texas. Project manager and Principal Investigator for archeological testing of a stratified multi-component prehistoric site in Dewitt County. Designed and implemented the project, oversaw excavations, and directed report preparation.

2009- City of Austin. Data Recovery at the Vara Daniel Site, 41TV1364. Co-Principal Investigator for data recovery of the Paleoindian component of a stratified multi-component site. Involved in project design, planning, implementation, and reporting. Also responsible for public outreach.

2008-2009- Fort Worth Corps of Engineers. Data Recovery at Sites 41BX254, 41BX256 and 41BX1628 along the San Antonio River, Bexar County, Texas. Co-Principal Investigator for data recovery of three stratified multi-component prehistoric sites along the San Antonio River. Involved in project design, planning, implementation, and reporting.

2007- Texas Department of Transportation. Archeological Testing of the Engstrand Well, Williamson County. Project manager and Project archeologist for archeological testing of a historic well in Williamson County. Designed implemented, conducted research, directed investigations and co-authored report.

2005-2007- Houston Independent School District. Archeological Testing of the Gregory Lincoln/HSPVA 4th Ward Property. Principal Investigator for archeological testing at a 16-acre site in downtown Houston. The project involved extensive archival research in advance of testing of domestic and commercial remains in a historically African American neighborhood at the edge of Houston's Freedmen's Town. The project also involved extensive testing for potential burials.

2006- City of Austin. Archeological Survey of the Mexican American Cultural Center
Principal Investigator for archeological survey in Downtown Austin. The project required intensive archival research in advance of survey. The survey documented remains of early twentieth century residences and the City of Austin's early twentieth century street and bridge department industrial facilities.

2005-2006- TxDOT/Kennedy Consulting, Inc.. Project Archeologist for testing at Site 41CC312. Ms. Feit's involvement included research design development, pre-field planning, investigations, and report writing.

2003-2004- Texas Parks and Wildlife. San Jacinto Battleground Restoration Project- Phase I, Harris County, Texas. Directed research investigations into the location of two roads leading into the San Jacinto Battlefield. This interdisciplinary project involved archival research, GIS mapping using a variety of historical and modern maps, sketches and aerial photography, and physical survey

to plot roads and historical features on the modern landscape. Also served as assistant project manager and field director for metal detector survey of private properties adjacent to the park.

2001- Texas Parks and Wildlife. Battleground Trail Project- Archeological Testing of Site 41HR865. Harris County, Texas. Co-Project Director for test excavations of an historic debris scatter on the San Jacinto Battlefield/Monument State Historical Park.

2003-2004- Chambers County. Archeological Testing at Fort Anahuac-41CH226, Anahuac, Texas. Principal Investigator and Project Manager for two phases of testing investigations of an 1830s Mexican fort in Anahuac Park. This NRHP-registered property was the site of the first armed skirmish leading to the Texas Revolution. Ms. Feit also produced and implemented a Cultural Resources Management Plan for the park as part of this project.

1999-2002- City of Austin/Morton & Mackey. Survey and Testing Investigations of Historic Guy Town, Austin, Texas. Project Archeologist for excavation of five city lots pertaining to Austin's red light district. The multidisciplinary project involved archival research, HABS assessment, and archeological testing.

2000-2002- City of Austin/Landmark Organization. Hilton Hotel Project, Dickinson-Hannig House. Austin, Texas. Project Archeologist, directing excavations on two city lots pertaining to an 1850s occupation, and Alamo survivor, Susanna Dickinson. The multidisciplinary project involved archival research, HABS assessment, and archeological testing.

1999- City of Austin. Archeological Testing of Blocks 33 and 34 in the City of Austin. Crew Chief for survey and testing of two city blocks. The project documented numerous historical features pertaining to nineteenth century Austin.

1998-2000- Travis County Transportation and Natural Resources. Data Recovery at Toyah Bluff. Crew chief and post-field Project Archeologist for data recovery of a Late Prehistoric occupation site (41TV441). Work included field direction and management, report writing and ceramic analysis.

1998- U.S. Housing Authority. Cemetery Removal at Allen Parkway Village, Houston, Texas. Field Technician for burial removal at a nineteenth and early twentieth century African American Cemetery.

1995- City of Brackettville. Archeological Survey and Testing along a proposed wastewater line in Fort Clark, Kinney County, Texas. Project involved testing at three prehistoric sites and one historic Buffalo Soldier dwelling.

SURVEYS AND MONITORING:

2012- Michael Baker Jr.- Archeological Survey of Three Segments of the Grand Parkway Project in Harris and Montgomery Counties, Texas. Principal Investigator for 36 miles of survey for a new location roadway. The project also involved NRHP-testing at Site 41MQ197 in Montgomery County.

2012- CP&Y/ODOT- Archeological Survey for a Proposed Bridge Replacement along SH 79 Across the Red River in Clay County, Texas and Jefferson County, Oklahoma. Principal Investigator for two mile survey and proposed bridge replacement.

2011- HDR, Inc.- Archeological Survey of SH 360 in Tarrant, Ellis and Johnson Counties, Texas. Principal Investigator for nine mile survey of new location roadway. Survey documented two twentieth century archeological sites.

2011- TxDOT- Archeological Survey along FM 2214 in Eastland County, Texas. Principal Investigator for five mile survey of proposed road expansion.

2011- CP&Y, Inc.- Archeological Survey along SH 76 Garvin and McLain Counties Oklahoma. Principal Investigator for survey along eight mile segment of SH 76. Survey documented no new sites.

2011- CH2MHill- Cultural Resources Survey of Zink Lake in Tulsa, Oklahoma. Principal Investigator for cultural resources survey of proposed improvements to Zink Lake in the City of Tulsa. Resources evaluated included an early twentieth century railroad bridge.

2011- TxDOT- Archeological Survey of Detention Ponds and Mitigation Sites along FM 1464 in Sugar Land, Fort Bend County, Texas. Principal Investigator for survey of approximately 14 acres set aside for detention ponds and mitigation areas. Survey documented one new twentieth century archeological site.

2010- TxDOT- Archeological Survey of Two Yoakum District Bridges, Austin and Jackson Counties, Texas. Principal Investigator for survey in advance of two bridge replacements. Survey documented no new resources.

2010- HDR, Inc.- Archeological Survey of a Solar Array Site in Lampasas, Lampasas County, Texas. Principal Investigator for four acre site proposed for solar array in the City of Lampasas. Survey documented no new resources.

2010 Civil Associates, Inc.- Archeological Survey along FM 720, Denton County, Texas. Principal Investigator for survey along five mile segment in Denton County, Texas. Survey documented no new resources.

2010- CP&Y, Inc.- Archeological Survey along Loop 288 Denton County Texas. Principal Investigator for eight mile survey of new location roadway in Denton County, Texas. Survey documented no new resources.

2010- Baer Engineering, Inc.- Archeological Survey of the Green Water Treatment Plant Site in the City of Austin, Travis County, Texas. Principal Investigator for survey of two downtown blocks in the in the City of Austin. Project included detailed archival research and documentation of one new nineteenth century archeological site.

2010- TxDOT- Archeological Survey and Limited Testing along SH 195 in Williamson County. Principal Investigator for archeological survey along 20 miles of new location and expansion of SH

195. The project included archival research and limited testing of one nineteenth century archeological site and documentation of eight additional historic and prehistoric archeological sites.

2010- TXDOT- Marine Archeological Survey of the Red River at SH 37, McCurtain County, Oklahoma. Project Manager for marine survey of the Red River at SH 37. Survey documented no new resources.

2010- Jacobs Engineering- Archeological Survey along FM 1431- the Hines Tessera Development Travis County Texas. Principal Investigator for proposed expansion along one mile segment in Travis County. The survey documented two new sites, one historic and one prehistoric lithic scatter.

2009-2010- ODOT/CPY, Inc.- Archeological Survey of Carpenter's Bluff, Grayson County Texas and Bryan County Oklahoma. Principal Investigator for bridge replacement over the Red River. Survey documented no new resources.

2009- LTRA Engineers- Archeological Survey of Eight Denton County Bridges, Denton County, Texas. Principal Investigator for survey of seven bridge replacements in Denton County. Survey documented no new resources.

2009-2010-TxDOT- Archeological Survey Along SH 35 in Copano Bay, Aransas County Texas. Principal Investigator for a proposed causeway replacement over Copano Bay. Served as PI for terrestrial portion of the survey and project manager for two phases of marine survey in the bay.

2009- TxDOT/Michael Baker Corporation- Archeological Reevaluation along FM 865 from Beltway 8 to FM 518 in Brazoria County, Texas. Principal Investigator for survey of additional right of way along FM 865 in Pearland, Texas.

2009/2010- City Of Austin/Baer Engineering. S. IH 35 Water/Wastewater Program Project. Principal Investigator for 17 mile survey in southeast Travis County.

2009- San Antonio Water System (SAWS). Archeological Survey of SAWS' Medio Creek Recycled Water line, San Antonio, Texas. Principal Investigator for 4.8 mile water line.

2007-2009- Cox|McLain Environmental Consulting/Brazos Electrical Power Cooperative. Archeological Surveys in Various North Texas Counties. Principal Investigator for electrical transmission substation surveys in McLennan, Ellis, Navasota, Robertson, and Stephens Counties.

2008- San Antonio Water System (SAWS). Archeological Survey in San Antonio's HemisFair Park. Principal Investigator for proposed condensate line to be installed in historic downtown San Antonio.

2008- TxDOT/Michael Baker Corporation- Archeological Survey of SH 35 from IH 45 to Bellfort in Houston. Principal Investigator for proposed tollway construction in Houston, Texas.

2008- TxDOT/Turner, Collie, and Braden, Inc.- Archeological Survey along SH 99 from Katy to Sugar Land in Harris and Fort Bend County. Principal Investigator for road expansion survey**.**

2008- Oklahoma DOT/Chiang Patel & Yerby- Archeological Survey for NW122nd Street in Oklahoma City. Principal Investigator for road expansion survey in Oklahoma City**.**

2008- Oklahoma DOT/Chiang Patel & Yerby- Archeological Survey for SH 36 in Cotton County, Oklahoma. Principal Investigator for road expansion survey in Southern Oklahoma. Survey recorded two historic-age sites**.**

2008- Texas Parks and Wildlife Department- Archeological Survey of Village Creek State Park, Hardin County, Texas. Principal Investigator for 1090-acre survey of Village Creek State Park near Beaumont, Texas.

2008- City of Austin. Archeological Survey of the Waterloo Park and Waller Beach, Travis County, Texas. Principal Investigator for archeological survey in Downtown Austin. The project required intensive archival research in advance of survey. The survey documented remains of early twentieth century residences in Waterloo Park.

2008- Cox|McLain Environmental Consulting. City of Kermit Wastewater Treatment Plant. Principal Investigator for 250 acre survey in Winkler, County, Texas. The project documented one new prehistoric site.

2008 – Teague, Nall & Perkins. Windhaven Boulevard Survey. Principal Investigator for archeological survey in areas of proposed right of way expansion and new location roadway in Dallas County, Texas.

2008- HDR, Inc. Archeological Survey along US 385 in Crane and Upton Counties. Principal Investigator for archeological survey in areas of proposed right of way expansion along a 21-mile section of road.

2007-2008 Boeing Corporation. Archeological Survey of Secure Border Initiative Locations in the Nogales and Ajo Sector, Arizona. Field archeologist for inspections and assessments of 1-acre communications tower locations in southern Arizona.

2007- Professional Engineering Design/TxDOT San Antonio District. Archeological Survey of East Metate Creek. Principal Investigator for archeological survey for a proposed bridge expansion across Metate Creek in Atascosa County.

2007- City of Pleasanton. Archeological Survey of the Pleasanton Wastewater Pipeline. Principal Investigator for a three-mile wastewater line in Atascosa County. Involved in all project phases including design coordination, fieldwork and reporting.

2007- Texas Department of Transportation. Archeological Survey Along FM1044 from IH35 to Weil Rd. Principal Investigator for archeological survey in areas of proposed right of way expansion and new location roadway.

2007- Texas Department of Transportation. Archeological Survey for a Proposed Office Site in Medina County. _ Principal Investigator for a 12-acre office site. Involved in all project phases including design coordination, fieldwork and reporting.

2007- Texas Department of Transportation, Laredo District. Archeological Survey of Cuatro Vientos Road, Webb County, Texas. Principal Investigator for survey of four miles of proposed new location roadway.

2007- Texas Department of Transportation, Odessa District. Archeological Survey of SH 349 in Midland and Martin Counties, Texas. Project Archeologist for survey of forty miles of proposed road expansion.

2006- Brazos Electric Power Cooperative. Archeological Monitoring at Site 41BL95, Cedar Valley. Project director for archeological monitoring at site 41BL95. Investigations involved extensive agency coordination and excavation of one 1x1 meter test unit for purposes of assessing archeological deposits at a prehistoric campsite.

2006- Targa Resources, Inc. Archeological Survey of the Proposed Targa North Shore Gas Pipeline Project in Young County, Texas. Principal Investigator for seven–mile natural gas pipeline. Involved in all project phases including design coordination, fieldwork and reporting.

2006- Texas Department of Transportation, Pharr District. Archeological Survey of the US 83 Reliever Route from Roma to Rio Grande City in Starr County, Texas. Principal Investigator for survey of 11 miles of new location roadway.

2006- City of Laredo. Archeological Survey of Chacon Creek Wastewater Line Extension. Principal Investigator for five mile waterline survey. The survey documented two prehistoric sites.

2006- Travis County Transportation and Natural Resources. Archeological survey of the Travis County Eastside Service Center. Principal Investigator for survey of a 120-acre tract in eastern Travis County. The project documented one new prehistoric archeological site.

2006- Texas Department of Transportation., Austin District. Archeological Survey of US 290 from Paige to Giddings in Bastrop and Lee Counties. Principal Investigator for archeological survey in areas of proposed right of way expansion for US 290. The survey recorded two new prehistoric sites, 41BP813 and 41BP814.

2006- City of Austin. Archeological Survey of the Gilleland Basin-North Austin Wastewater Interceptor in Manor, Texas. Principal Investigator for a one-mile water interceptor. Involved in all project phases including design coordination, fieldwork and reporting.

2006- Chambers County Economic Development Office. Chambers County Park Survey. Principal Investigator and Project Manager for a project that involved archeological survey of three parks in Chambers County—Double Bayou Park, Job Beason Park, and Hugo Point Park.

2005- Bell County WCID and Lockwood, Andrews and Newnam, Inc. Archeological Survey of the Bell County Effluent Pipeline from South Bell County WWTP to Nolan Creek. Principal

Investigator for 4.5–mile water transmission pipeline. Involved in all project phases, including design coordination, fieldwork and reporting.

2005- Texas Department of Transportation, Paris District. Archeological Survey of US 69 from Greenville to Lone Oak. Principal Investigator for 11 miles of road expansion.

2005- City of Brownsville. Archeological Survey of the Texas Historic Battlefield Trails Southern Pacific Linear Park, Brownsville, Texas. Principal Investigator for survey of proposed 4-mile park trail.

2005- Brazos Electric Power Cooperative, Archeological survey for a new transmission line in Parker and Palo Pinto Counties. Principal Investigator for survey of new location electrical transmission line extending approximately 40 miles.

2005- Texas Department of Transportation, Fort Worth District. Archeological Survey for Lake Ridge Parkway. Principal Investigator for survey of two miles of new location roadway.

2004-7- TxDOT/Lone Star Infrastructure. SH130 Environmental Management. Oversaw survey, analysis and archival research of selected historic archeological sites in eastern Travis, Caldwell, and Guadalupe Counties. Developed a detailed predictive model for archeological site types and patterning for Travis, Caldwell and Guadalupe Counties that submitted to TxDOT and the THC for coordination.

2004- TxDOT. SH130-IH10 Interchange Alternatives, Guadalupe County Texas. Created probability study to determine the potential occurrence of archeological sites, then served as Principal Investigator for an intensive survey of high probability areas for two roadway alternatives. Assisted planning team in alternatives assessment.

2004- Kinder Morgan. Archeological Survey of the Sand Hill Pipeline, Travis County, Texas. Principal Investigator for survey of six mile gas pipeline.

2004- Doucett & Associates. Archeological Survey for a Proposed Retail Center in Williamson County, Texas. Principal Investigator for 20-acre survey for a proposed Walmart. The project documented one historic period farmstead site.

2004- American Electric Power- Roma to Frontera Archeological Survey, Starr and Hidalgo Counties, Texas. Principal Investigator for a 40-mile long transmission line survey along the US-Mexico border. Seven prehistoric sites were documented and recorded. Ms. Feit worked closely with AEP to develop avoidance strategies for NRHP-eligible sites.

2003- City of Lubbock. McAlister Park Geoarcheological Survey, Lubbock, Texas. Principal Investigator and Project Manager for a geoarcheological survey of a playa lake in a proposed city park in Lubbock Texas.

2003- San Antonio Water System, Archeological Survey of the Dos Rios Water Recycling Center in Bexar County, Texas. Principal Investigator for an archeological survey in advance of bank stabilization at a water recycling center along the Medina River.

2003 TxDOT. SH45 Southeast Archeological Survey, Travis County Texas.
Created probability study to determine the potential occurrence of archeological sites, then served as Principal Investigator for an intensive survey of high probability areas for three roadway alternatives.

2003-2007- Austin Clean Water Program, various engineers, Travis County Texas. Ms. Feit served as lead archeological liaison and Principal Investigator for City of Austin environmental assessments performed prior to sewer line upgrades. Conducted archeological surveys in support of numerous projects.

2002- Texas Parks and Wildlife-Hog Bayou Moist Soils Unit Survey. Calhoun County, Texas. Principal Investigator for archeological survey for proposed wetlands mitigation areas within the Guadalupe Delta Wildlife Area. The project relocated and reassessed Site 41CL94 a late prehistoric shell midden.

2002-2003- TxDOT. Archeological Survey of SH155 Frankston-Pert, Anderson County, Texas. Principal Investigator for archeological survey of proposed 11-mile roadway expansion area in northeast Texas.

2002- Archeological Survey of Proposed Channelization of Dry Branch Creek, Williamson County, Texas. Principal Investigator for a proposed creek channelization along Dry Branch Creek.

2001-2002 TxDOT. George Bush Turnpike Reconnaissance Survey. Dallas County, Texas. Principal Investigator for a reconnaissance survey of three reported sites located in the proposed George Bush Turnpike right-of-way.

2001 TxDOT. Loop 1 Survey Investigations. Travis and Williamson County Texas. Principal Investigator for 280-acre roadway survey. The survey documented four historic period farmstead sites and two prehistoric lithic scatters.

2001- City of Round Rock. Archeological Survey of Arterial B Roadway. Principal Investigator for survey of new location roadway.

2001- Texas Parks and Wildlife. Survey of Lake Houston State Park. Project director for the survey of proposed water lines in Lake Houston State Park in Montgomery County, Texas.

2000-2001- Williamson County. Southwest Regional Williamson County Park Survey. Williamson, County Texas. Principal Investigator for survey of an 800-acre park site in Williamson County, Texas. The survey documented three prehistoric sites, and recommended avoidance for two of those sites.

2000- San Antonio Water System. Reconnaissance Survey, Bexar County, Texas. Principal Investigator for a reconnaissance survey of a sixteen-mile water pipeline in southern Bexar County.

2000- City of Round Rock. Archeological Survey Along Chandler Creek, Williamson County, Texas. Project Archeologist for survey of a proposed wastewater line**.**

2000- City of Georgetown. Pecan Branch Wastewater Treatment Plant Survey. Georgetown, Texas. Principal Investigator on a survey of 46 acres along Pecan Branch and Berry Creek in Williamson County, Texas.

2000- Parkhill, Smith & Cooper. Archeological Survey at Yellowhouse Draw, Lubbock, Texas. Project Archeologist for survey of proposed storm sewer**.**

1999- Marchbanks Engineering- Rio Hondo Water Treatment Plant, Cameron County, Texas. Project archeologist for intensive survey of a 25-acre water treatment plant site in Rio Hondo.

1999- Archeological Survey of Lohman's Crossing Road, Travis County, Texas. Crew Chief for survey of new location roadway.

1999- Survey Investigations Along FM 1431 and Cottonwood Creek - Cedar Park, Texas. Project archeologist for survey of water/wastewater pipeline.

1999- TxDOT/Carter-Burgess, Archeological Survey of SH 121 Toll Road in Fort Worth, Texas. Crew Chief for survey of new location roadway.

1998- Maverick County Landfill Survey, Maverick County, Texas. Project archeologist for 250-acre landfill site along the Texas-Mexico border south of Eagle Pass, Texas. The survey consisted of extensive shovel testing and backhoe trenching, documenting three prehistoric sites.

1997- City of Lampasas, Archeological Survey at Hanna Springs Park, Lampasas County, Texas. Crew chief for archeological survey and limited testing of a historic-period hot springs spa.

POPULAR AND SCHOLARLY JOURNAL PUBLICATIONS:

1999-present. Regular contributor to the *Austin Chronicle* Cuisines and Arts section

2008 Contextualizing Material Culture: Some Thoughts on an African American Community in Houston's 4th Ward in the Early 20th Century, co-authored with Bradford M. Jones. In *Bulletin of Texas Archeology,* October 2008.

2007 A Story of Freedom, *American Archaeology Magazine*, Autumn 2007

2005 Book review of *Under Four Flags: History and Archeology of North Loop One, Travis County, Texas,* by John W. Clark. In *Bulletin of the Texas Archeological Society*, Vol. 76

2003 Peas on Earth. In *Saveur Magazine,* Vol. 71, December 2003, pp.17-18

2003 Defining the Caddoan Culture. In *American Archaeology Magazine*, Vol. 7 No. 1, Spring 2003

2002 Urban Secrets Revealed. In *Texas Heritage Magazine,* Fall 2002

2000 Archeological Investigations in a Nineteenth Century Neighborhood. In *Current Archeology in Texas*, Vol. 2 No. 2

1999 Restaurant reviews published at San Antonio citysearch.com

CRM PUBLICATIONS- RESEARCH, TESTING, AND DATA RECOVERY REPORTS:

Bonine, Mindy, Rachel Feit and Antonio Padilla
2012 *Changing Lifeways Along the Guadalupe Basin in South Texas. The Results of National Register Testing of a Stratified Multicomponent Site (41DW277) in DeWitt County, Texas*. AmaTerra Environmental, Inc., Austin.

Padilla, Antonio E. and David L. Nickels (Rachel Feit, contributor)
2010 *Archaeological Data Recovery on Three Sites along the San Antonio River, Bexar County, Texas.* Ecological Communications Corporation, Austin.

Nickels, David L., Mason D. Miller and W. Nicholas Trierweiler (Rachel Feit, contributor)
2010 *Archeological Excavation of a Deeply Buried Paleoindian Component at the Vara Daniel Site (41TV1364), Travis County, Texas*. Ecological Communications Corporation, Austin.

Feit, Rachel, Bradford M. Jones and Mason D. Miller
2007 *A Lotta People Have Histories Here: History and Archeology of Houston's Vanishing Freedmen's Town.* Archeology Series No. 184. Hicks & Company, Austin.

Feit, Rachel and Bradford M. Jones
2007 *Archeological Testing of the Engstrand Well, Williamson County, Texas*. Archeology Series No. 190. Hicks & Company, Austin.

Feit, Rachel, and Bradford M. Jones
2006 *An Archeological Inquiry into Austin's Daily Life and City Services at the Turn of the Twentieth Century: Archeological Survey of the Mexican American Cultural Center in Downtown Austin, Travis County, Texas.* Archeology Series No. 165. Hicks & Company, Austin.

Feit, Rachel, Brian King, Bradford Jones and Robert Lassen
2006 Archeological Testing of Prehistoric Sites 41CC311 and 41CC312, Concho County, Texas. Archeology Series No. 160. Hicks & Company, Austin.

Feit, Rachel and John W. Clark
2004 *Archeology and History at Fort Anahuac: Results of the 2003 Season Excavation in Chambers County, Texas.* Archeology Series No. 132. Hicks & Company, Austin.

Karbula, J.W., J.H. Jarvis and R. Feit
2004 *Metal Detecting Along the Path of the Mexican Retreat at San Jacinto.* Archeology Series No. 124. Hicks & Company, Austin.

Rachel Feit, John Clark, James Karbula, Jonathan Jarvis
2004 *Archeological and Historical Research at the San Jacinto Battleground Volume I, The Roads to San Jacinto; Research Investigations for the Harrisburg-Lynchburg and New Washington Roads*. Hicks & Company, Austin.

Feit, Rachel and John W. Clark
2003 *Fort Anahuac: Archeological Testing at a Mexican Era Fort in Chambers County, Texas.* Archeology Series No. 115. Hicks & Company, Austin.

Feit, R, J.W. Karbula, J. Clark and S. C. Caran
2003 *Boarding Houses, Bar Room and Brothels- Life in Vice-District: Archeological Investigations of A Changing Urban Neighborhood in Austin, Texas.* Two Volumes. Archeology Series No. 104. Hicks & Company, Austin.

Feit, Rachel and John W. Clark
2003 *Managing Cultural Resources at Fort Anahuac Park: A Management Plan.* Hicks & Company, Austin.

Feit, Rachel and John Clark
2002 *Archeological and Historical Research Investigations on the Historic Hannig-Dickinson House and the Hedgecoxe House in Austin, Texas.* Archeology Series No. 109. Hicks & Company, Austin.

Feit, Rachel, John Andrew Moreman and John W. Clark
2002 *Archeological Test Excavations at Site 41HR865: An Historic Debris Scatter at the San Jacinto Battlefield/Monument State Historic Park.* Archeology Series No. 105. Hicks & Company, Austin.

Karbula, James W., Rachel Feit and T. G. Griffith
2001 *Changing Perspectives on the Toyah: Data Recovery Investigations of 41TV441, The Toyah Bluff Site, Travis County, Texas*. Archeology Series No. 94. Hicks & Company, Austin.

Seibel, Scott, Rachel Feit and Susan Dial
2000 *Robert E. Johnson State Office Building Project: A Compilation Volume for Areas A, B and C.* Hicks & Company, Austin.

Dial, S.W. and J.W. Karbula, eds.
2000 *Archeological Investigations of Blocks 33 and 34: The Austin Convention Center Expansion Project.* Archeology Series No. 73 Hicks & Company, Austin.

CRM PUBLICATIONS- SURVEY REPORTS:

Padilla, Antonio, Rachel Feit, and Matthew Carter
Archeological Survey of SH 360 from Green Oaks Boulevard to US 2878 in Tarrant, Ellis and Johnson Counties, Texas. Ecological Communications Corporation, Austin.

Miller, Mason and Rachel Feit
Interim Report for Archeological Survey along FM 2214 from in Eastland County, Texas. Ecological Communications Corporation, Austin.

Feit, Rachel and Kurt Korfmacher
Phase 1 Cultural Resources Report for the Arkansas River Zink Lake Improvements Project in Tulsa, Tulsa County, Oklahoma. Ecological Communications Corporation, Austin.

Feit, Rachel and Alex Voellinger
Archeological Survey of Two Detention Ponds and a Wetland Mitigation Site along FM 1464 in Sugar Land, Fort Bend County, Texas. Ecological Communications Corporation, Austin.

Darnell, Bruce and Rachel Feit
Archeological Survey of Two Yoakum District Bridges, Austin and Jackson Counties, Texas. Ecological Communications Corporation, Austin.

Dowling, Jon J. Rachel Feit and Daniel J. Rose
Archeological Survey of Proposed Loop 288 from IH 35E North to IH 35E at Vintage Boulevard, Denton County Texas. Ecological Communications Corporation, Austin.

Feit, Rachel and Emory Worrell
Archeological Survey of the Green Water Treatment Plant Site in the City of Austin, Travis County, Texas. Ecological Communications Corporation, Austin.

Anthony, Dana and Rachel Feit
Archeological Survey along SH 195 from IH 35 North to .8 miles South of the Bell County Line in Williamson County, Texas **.** Ecological Communications Corporation, Austin.

Dowling Jon J. and Rachel Feit
Archeological Survey along a Segment of FM 1431 in Lago Vista, Travis County, Texas. Ecological Communications Corporation, Austin.

Dowling, Jon J. and Rachel Feit
Archeological Survey of Carpenter's Bluff, Grayson County Texas and Bryan County Oklahoma. Ecological Communications Corporation, Austin.

Dowling, Jon J. and Rachel Feit
An Archeological Survey of Eight Off-System Bridges, Denton County, Texas. Ecological Communications Corporation, Austin.

Enright, Jeffrey, Rachel Feit and Jon J. Dowling
A Marine and Terrestrial Survey of the Copano Bay Causeway Replacement in Aransas County, Texas. Ecological Communications Corporation, Austin.

Jones, Richard S., Antonio E. Padilla, W. Nicholas Trierweiler, and Rachel J. Feit
2008 *Cultural Resource Inventory of 878 Acres at Lake B.A. Steinhagen and Lake Sam Rayburn, Jasper, Nacogdoches, and San Augustine Counties, Texas.* Ecological Communications Corporation, Austin

Feit, Rachel
2008 *An Archeological Survey of the Proposed Bridge Replacement Along CR 427 at East Metate Creek.* Ecological Communications Corporation, Austin

Feit, Rachel, David L. Nickels and Richard Jones
2008 *Archeological Survey of Village Creek State Park, Hardin County, Texas*. Ecological Communications Corporation, Austin.

Nickels, David L., Richard S. Jones, W. Nicholas Trierweiler, Rachel J. Feit and Antonio E. Padilla
2008 *Archeological Investigations at Lake Whitney, Bosque, Hill and Johnson Counties, Texas.* Ecological Communications Corporation, Austin.

Nickels, David, and Rachel Feit
2008 *Archeological Survey of the City of Kermit's Proposed Wastewater Treatment Facility in Winkler County, Texas.* Ecological Communications Corporation, Austin.

Padilla, Antonio E. and Rachel Feit
2008 *An Archeological Survey along US 385 from Crane to McCamey*. Ecological Communications Corporation, Austin.

Rachel Feit
2008 *An Archeological Survey Along Windhaven Parkway, Collin County Texas*. Ecological Communications Corporation, Austin.

Stotts, Matthew, Rachel Feit, Robert Lassen
2007 *An Archeological Survey Along US 290 from Paige to Giddings*. Hicks & Company, Austin.

Feit, Rachel
2007 *Archeological Survey for a Proposed TxDOT Hondo Area Office Site, Medina County, Texas.* Hicks & Company, Austin.

Feit, Rachel and Matthew C. Stotts
2007 *Archeological Survey of FM 1044 Improvements from IH 35 to Weil Road in Comal and Guadalupe Counties, Texas, CSJ 2021-01-009.* Hicks & Company, Austin.

Feit, Rachel, John Campbell, Matthew Stotts, Robert Lassen
2007 *Results of Archeological Investigations of US 183 Improvements from US 183/US 183- A Interchange to SH 29 Williamson County, Texas.* Hicks & Company, Austin.

John Campbell, Rachel Feit, Matthew C. Stotts and Bradford Jones
2007 *Archeological Survey of the Proposed CuatroVientos Roadway From Mangana-Hein Road to US83/Espejo-Molina Road Webb County, Texas.* Hicks & Company, Austin.

Jones, Bradford, Rachel Feit, and Matt Stotts
2007 Intensive Archeological Survey of the Proposed Expansion of State Highway 349 from Two Miles North of the Martin and Midland County Line to 1.26 Miles South of FM 2052 South of Lamesa, Texas, CSJ# 0380-08-012, 0380-07-018. Hicks & Company, Austin.

Matthew C. Stotts, Rachel Feit and Mason Miller
2007 *Results of Archeological Investigations of a Proposed Wastewater Line Along Spanish Oak Creek in Williamson County, Texas.* Hicks & Company, Austin.

Brian King & Rachel Feit
2006 *Archeological Survey of the Proposed Targa North Shore Pipeline Project in Young County, Texas.* Hicks & Company, Austin.

Feit, Rachel
2006 *Archeological Survey for the City of Laredo's Chacon Creek Wastewater line Extension, Webb County, Texas.* Hicks & Company, Austin.

Feit, Rachel and Brian Farabough
2006 *Archeological Survey Investigations at Three Chambers County Parks, Chambers County, Texas.* Hicks & Company, Austin.

Feit, Rachel
2006 *Archeological Survey of the Gilleland Basin-North Austin Wastewater Interceptor in Manor, Texas.* Hicks & Company, Austin.

Feit, Rachel and Matt Stotts
2006 *Archeological Survey of the Proposed Eastward Extension of the George Bush Turnpike, Dallas County, Texas.* Hicks & Company, Austin.

King, Brian and Rachel Feit
2006 *Archeological Survey of the Proposed US 83 Reliever Route from Roma to Rio Grande City in Starr County, Texas.* Hicks & Company, Austin.

Miller, Mason and Rachel Feit
2005 *Archeological Survey for US Highway 69 from FM 1570 in Greenville to FM 513 in Lone Oak, Hunt County, Texas.* Hicks & Company, Austin.

Brian King, Rachel Feit
2005 *Archeological Survey of the Proposed Texas Historic Battlefield Trails Southern Pacific Linear Park, Brownsville, Texas.* Hicks & Company, Austin.

Feit, Rachel
2005 *An Archeological Survey of the Proposed Effluent Pipeline from South Bell County WWTP to Nolan Creek.* Hicks & Company, Austin.

Feit, Rachel
2005 *SH-45 Southeast Summary of Survey Investigations.* Hicks & Company, Austin.

Feit, Rachel and John Campbell
2005 *Archeological Survey along Fish Creek, within the Proposed Extension to Lake Ridge Parkway; Dallas and Tarrant Counties, Texas.* Hicks & Company, Austin.

Feit, Rachel and Jonathan H. Jarvis
2004 *Archeological Survey of the Roma to Frontera Electrical Transmission Line, Starr and Hidalgo Counties, Texas*. Hicks & Company, Austin.

Karbula, James W., J. Jarvis, R. Feit, and J. Moreman
2003 *Intensive Archeological Investigations of the Wonderworld Drive Extension: FM3004 in Hays County, Texas.* Hicks & Company, Austin.

Feit, Rachel, John Campbell, Brian King
2004 *Archeological Survey of the Proposed Sand Hill Pipeline for Kinder Morgan in Travis County, Texas*. Hicks & Company, Austin.

Jarvis, Jonathan H. and Rachel Feit
2004 *Archeological Survey of the Proposed Wild Horse Ranch Northwest Wastewater Interceptor Line and Treatment Plant, Travis County, Texas.* Hicks & Company, Austin.

King, Brian and Rachel Feit
2004 *Results of Archeological Field Investigations of Two Newly Proposed Alternatives for the SH130-IH10 Interchange in Guadalupe County, Texas.* Hicks & Company, Austin.

Miller, Mason and Rachel Feit
2004 *Archeological Survey for a proposed Retail Center in Southern Williamson County*. Hicks & Company, Austin.

Miller, Mason and Rachel Feit
2004 *An Archeological Survey in Bartholomew Park; Investigations for the City of Austin's Planned Wastewater Line Improvements and Channel Restabilization along Tannehill Creek from Broadmoore to Cameron Roads.* Hicks & Company, Austin.

Miller, Mason D. and R. Feit
2003 *Results of the Archeological Survey for the Eubank Acres Water and Wastewater Improvement Project in Austin, Texas.* Hicks & Company, Austin.

Aiuvalasit, Michael and Rachel Feit

2003 Upper *Tannehill/Lower Fort Branch Sewer Line Upgrade Archeological Survey.* Hicks & Company, Austin.

Aiuvalasit, Michael, S. C. Caran w/contribution by R. Feit
2003 *Results of Geoarcheological Investigations at a Playa Lake in McAlister Park, Lubbock, Texas.* Hicks & Company, Austin.

Campbell, John A., Rachel Feit, Reign Clark, Nesta Anderson, and Julie Adams McClellan
2003 *Archeological Survey of State Highway 155 from Frankston to Pert Anderson County, Texas.* Hicks & Company, Austin.

Feit, Rachel ; Campbell, John A.
2003 *Results of the Loop 1/SH45 Additional Right of Way Archeological Survey in Williamson and Travis Counties, Texas.* Hicks & Company, Austin.

Feit, Rachel, Jonathan Jarvis
2002 *Archeological Survey of the Proposed Channelization of Dry Branch Creek Williamson County, Texas.* Hicks & Company, Austin.

Moreman, J. Andrew, Jonathan H. Jarvis, and Rachel Feit
2002 *Cultural Resource Survey of Proposed Additions to Southwest Regional Williamson County Park.* Hicks & Company, Austin.

Moreman, John A. and Rachel Feit
2002 *Reconnaissance Survey Investigations of the SAWS-ASR Water Transmission Line, Bexar County, Texas.* Hicks & Company, Austin.

Moreman, John A., J. Jarvis, Rachel Feit
2002 *Intensive Archeological Investigations of the Moist Soil Units Project in the Guadalupe Delta Wildlife Management Area in Calhoun County, Texas.* Hicks & Company, Austin.

Karbula, James W., Tim B. Griffith, Jonathan J. Jarvis, Rachel Feit
2001 *A Cultural Resources Assessment of the Proposed State Highway 45.* Hicks & Company, Austin.

Feit, Rachel and Timothy B. Griffith
2001 *Results of Archeological Survey Investigations for the Loop 1 Project Area.* Hicks & Company, Austin.

Kapanday, Diamond, Rachel Feit, James Karbula
2001 *Archeological Survey of Arterial B Proposed Roadway.* Hicks & Company, Austin.

Feit, Rachel and J Andrew Moreman
2000 *An Intensive Survey of the Proposed Site of the Southwest Regional Williamson County Park.* Hicks & Company, Austin.

Feit, Rachel and Timothy Griffith
2000 *A Cultural Resource Survey on the San Gabriel Terrace: Investigations at the Proposed Pecan Branch Wastewater Treatment Plant Property.* Hicks & Company, Austin.

Feit, Rachel and Timothy Griffith
2000 *Results of Survey Investigations for the Proposed Lubbock Storm Sewer in Yellowhouse Draw, Lubbock, Texas.* Hicks & Company, Austin.

Griffith, Timothy B. and Rachel Feit
2000 *A Cultural Resources Assessment of the Proposed Alignment for a New Wastewater Pipeline Along Chandler Creek.* Hicks & Company, Austin.

Seibel Scott, James Karbula, Rachel Feit, Susan Dial, and Chris Caran
2000 *Archeological Investigations along the Clear Fork of the Trinity River: Intensive Survey of the SH 121 Project; Tarrant County, Texas.* Hicks & Company, Austin.

Karbula, James, Scott Seibel, Rachel Feit
1999 *Survey Investigations of the Proposed Maverick County Landfill Site, Eagle Pass Texas* . Hicks & Company, Austin.

Feit, Rachel
1999 *Archeological Survey Investigation at the Rio Hondo Water Treatment Plant, Cameron, Texas*. Hicks & Company, Austin.

Feit, Rachel
1999 *Survey Investigations of the Proposed Extension to Lohman's Crossing Road.* Hicks & Company, Austin.

Feit, Rachel and James W. Karbula
1999 *Survey Investigations along FM 1431 and Cottonwood Creek - Cedar Park, Texas.* Hicks & Company, Austin.

CONFERENCE PRESENTATIONS:

January 2011- "Lost in the Flood: The Effects of Town Planning and Expansion in Austin's Mid-Twentieth Century Urban Neighborhoods." Paper presented at Society for Historical Archaeology Meeting in Austin, Texas.

January 2010- "Under the Kitchen Floor." Paper presented at Society for Historical Archaeology Meeting in Jacksonville, Florida.

January 2008- "A Lotta People Have Histories Here." Paper presented at Society for Historical Archaeology Meeting in Albuquerque, New Mexico.

October 2007- Organized session on African American Archeology in Texas for Texas Archeological Society Meeting in San Antonio, Texas.

April 2007- Organized session entitled *Archaeologies of Urbanism* at the 2007 Society for American Archaeology meeting in Austin, Texas; specific paper delivered entitled "Building the Urban Landscape: the Development of Austin's Infrastructure."

March 2006- "Austin Underground: Archeology of the Capital City's Infrastructure," paper presented at the Spring meeting of the Council of Texas Archeologists in Austin, Texas.

March, 2005- Organized session entitled, the *Archeology of Terán's Forts*; specific paper delivered entitled "Archeology and Architecture at Fort Anahuac" at Texas State Historical Association Meeting.

March 2004- "Building a Fort at Anahuac," paper presented at the Spring meeting of the Council of Texas Archeologists in Austin, Texas.

July 2003- "Preliminary Results of the 2003 Field Season at Anahuac," presentation given upon invitation at the annual Texas Steward's Meeting in Austin, Texas.

June 2003- "Stewardship of What, and By Whom?" Co-authored paper presented at the World Archaeological Congress in Washington, D.C.

October 2000- *Archeology in Guy Town, Austin's Red Light District*- paper presented at the annual Texas Archeological Association Meeting, LaPorte, Texas

PROFESSIONAL MEMBERSHIPS:

Texas Archeological Society (TAS)
Council of Texas Archeologists (CTA), President
Society for Historical Archaeology (SHA)

CERTIFICATIONS / TRAINING:

Registered Professional Archeologist (RPA)
OSHA Trench Safety Training, 2006
Practical Project Development and Environmental Documentation for NEPA compliance, seminar taught by Robert (Jake) Jacobson, March 2000
National Preservation Institute Section 106 seminar, January 2000

APPENDIX B

ARCHEOLOGY FIELD REPORTS

ARCHAEOLOGICAL FIELD INVESTIGATIONS IN SUPPORT OF NATGASOLINE'S PROPOSED NEW GAS TO GASOLINE PLANT BEAUMONT, JEFFERSON COUNTY, TEXAS

(Draft)

By:

Julian A Sitters, M.A.

Prepared for:

Natgasoline, LLC TX

April 2013

ARCHAEOLOGICAL FIELD INVESTIGATIONS IN SUPPORT OF NATGASOLINE'S PROPOSED NEW GAS TO GASOLINE PLANT BEAUMONT, JEFFERSON COUNTY, TEXAS

By

Julian A Sitters, M.A., Project Archaeologist

Prepared for

Natgasoline, LLC TX

Technical Report No. 49

Prepared by

AmaTerra Environmental, Inc.
Austin, Texas

April 2013

4009 Banister Lane, Suite 300
Austin, Texas 78704

AmaTerra Project No. 083-027

AmaTerra Technical Report No. 49

ABSTRACT

In March, 2013, AmaTerra Environmental, Inc. (AmaTerra) was subcontracted by Weston Solutions Inc. to perform a Phase-I archaeological survey at the Natgasoline, LLC TX (Natgasoline) facility, Jefferson County, Texas. The work was conducted in support of Natgasoline's proposed gas to gasoline (GtG) plant situated along the western banks of the Neches River. Because Natgasoline will require a Federal permit, compliance with Section 106 of the National Historic Preservation Act of 1966 (Section 106) is required prior to construction.

On March 14, 2013, field archaeologists surveyed a total of 135,077-square feet (2.86 acres). Field methods included a 100 percent pedestrian survey accompanied by manual excavation of eight shovel tests. No cultural materials or features were observed on the surface or within the eight shovel tests. Field work was supplemented by extensive archival research. The survey resulted in the discovery of no archaeological sites, but cultural materials potentially associated with early-Twentieth Century industrial activities were observed outside of the proposed project areas. These materials are not in situ and likely arrived at their current location through dredging activities.

No archaeological resources are located within the proposed project area(s). The proposed industrial undertaking will not affect any cultural resources and no further work is warranted.

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CHAPTER 1
INTRODUCTION

Introduction

On March 14, 2013, AmaTerra Environmental, Inc. (AmaTerra) conducted a Phase I archaeological survey at the Natgasoline facility, Jefferson County, Texas. The work was conducted in support of Natgasoline's proposed gas to gasoline (GtG) plant situated along the western banks of the Neches River. Before construction of the new facilities can begin, a permit from the United States Environmental Protection Agency (USEPA) must be obtained. This permit is known as the Prevention of Significant Deterioration (PSD) permit. Since Natgasoline will receive this permit from a federal agency (USEPA), the proposed development is considered to be a Federal undertaking. Therefore, compliance with Section 106 of the National Historic Preservation Act of 1966 (Section 106) is required by law.

Prior to the fieldwork outlined within this report, AmaTerra performed a desktop Cultural Resources Assessment (CA) designed to evaluate the potential effects of construction. Archaeologists identified two areas within the Area of Potential Effects (APE), the proposed location of the F-WWTOP (PA1), as well as the Control Room and associated parking lot (PA2), as having archaeological potential. The two proposed project locations (PA1 and PA2) encompass a total area of approximately 135,077-square feet (2.86 acres). The proposed F-WWTOP footprint is approximately 72,640-square feet (1.66-acres) in size, while the proposed Control Room and associated parking lot totals 52,437-square feet (1.2 acres). Archaeologists surveyed these two areas by means of visual inspection and shovel testing according to the minimum standards outlined by the Council of Texas Archeologists (CTA).

Location

The Natgasoline facility is located southeast of Beaumont, Jefferson County, Texas (**Figure 1**). More specifically, the facility is situated between Spindletop Park (west) and the Neches River (east). The two proposed project areas are depicted on the Beaumont East, Texas USGS 7.5' topographic quadrangle in **Figure 2**. The Natgasoline facility occupies an area approximately 537 acres in size and currently consists of a harbor and maintained fields with transportation (e.g., rail spur, gravel, and paved roads) and utilities (e.g., natural gas pipeline) transecting the property boundary. Parcels surrounding the Natgasoline facility include industrial complexes and vacant fields.

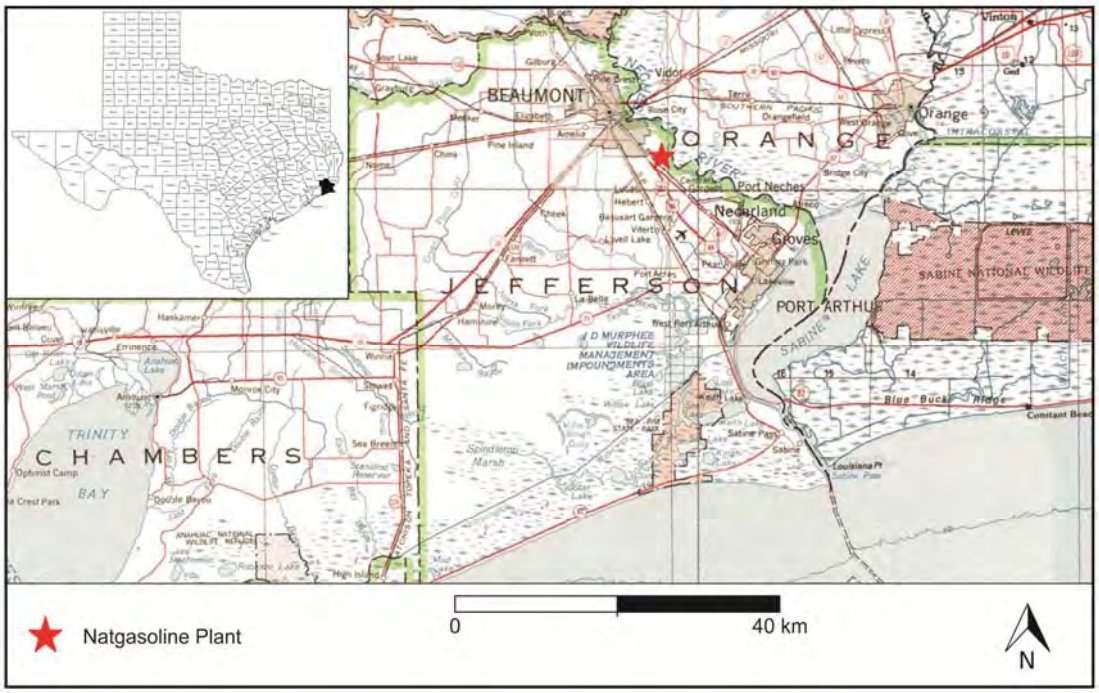

Figure 1. Natgasoline facility location depicted on a 7.5' topographic map (1994). Adapted and modified from National Geographic (2008).

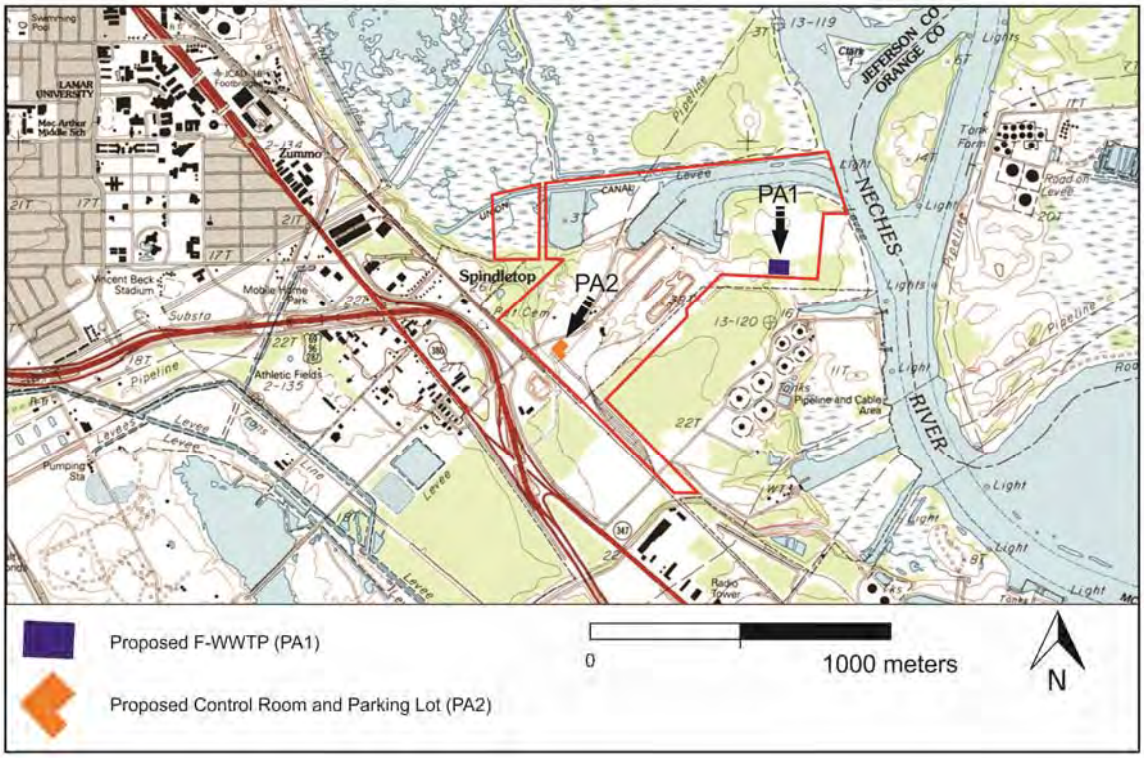

Figure 2. Proposed project area locations on Beaumont East, TX 7.5' topographic quadrangle (1994). Natgasoline facility is outlined in red. Note Spindletop Park to the west and the Neches River to the east of the facility. Adapted and modified from National Geographic (2008).

CHAPTER 2
ENVIRONMENTAL

Jefferson County (1,111 square miles) is located in southeastern Texas within the Gulf Prairies and Marshes vegetational zone (Simpson 1999). The local region is characterized by acidic sands, sandy loams, and clay that support salt tolerant plants. Vegetation prevalent within the region include Big Bluestem (*Andropogon gerardii*), Little Bluestem (*Schizachyrium scoparium* var. *frequens*), Indian Grass (*Sorghastrum nutans*), Live Oak (*Quercus virginiana*), Southern Red Cedar (*Juniperus silicicola*), and Durand White Oak (*Quercus sinuate* var. *sinuate*) (Simpson 1999). However, most of the natural vegetation within the vicinity of the proposed Natgasoline facility has been largely removed and replaced by industrial uses (Griffith and Omernik 2009). Annual precipitation ranges from 50 to 60 inches with a mean annual temperature of 70° to 72° F (NRCS Web Soil Survey 2013).

The proposed project areas are characterized by Pleistocene age deposits of the Beaumont Formation (Bureau of Economic Geology 1992). Soils within the proposed project area(s) include Ijam clay (ImA), Neches coarse sand (NcC), and the Neel-Urban land complex (NuC). Both ImA and NcC are derived from sandy and/or loamy dredge spoils, while the NuC's parent material are the clayey sediments from the Beaumont formation.

CHAPTER 3
PREVIOUS ARCHAEOLOGICAL RESEARCH

Background research for this project consisted of archival research through the Texas Archeological Sites Atlas (Atlas) and at the Texas Archeological Research Laboratory (TARL). Research also included a review of historic period maps and aerial photographs. Within 1 km (.6 mile) of the Natgasoline facility, there are no known recorded archaeological sites or other archaeologically significant localities. For a thorough review of archaeological sites within three kilometers of the Natgasoline facility see *Cultural Assessment in Support of Greenhouse Gas Permitting for the Natgasoline, LLC Gas to Gasoline Plant, Beaumont, Texas* (2013) prepared by Weston Solutions, Inc and AmaTerra Environmental, Inc.

According to the THC Archeological Sites Atlas, the Natgasoline property has experienced little archaeological investigations and no previously recorded archaeological sites fall within the Natgasoline facility area. Linear surveys intersecting the Natgasoline facility were conducted in 2009 by William Self and Associates, Inc. Surveyors traversed the eastern and southern boundaries of the facility area. Archaeologists did not record any cultural material(s) within either survey corridor. In addition, Tetra Tech conducted a Phase 1A archaeological reconnaissance survey (DOE/EIS-0412D) of the Natgasoline facility in 2009. Tetra Tech archaeologists did not identify any prehistoric archaeological sites or historic-period cultural resources. The results of this survey effort have yet to be published on the THC Archeological Sites Atlas.

In an attempt to identify historic land use within the proposed Natgasoline facility area, historic aerial photographs (**Figure 3**) and a 1921 Corps of Engineers tactical map were consulted (**Figure 4**). After reviewing these available resources it is evident that the proposed project areas were mostly undeveloped prior to industrial use. The Texas Beaumont Quadrangle, Corps of Engineers, U.S. Army Tactical Map (1921) does depict what appear to be agricultural fields within the vicinity of the Natgasoline facility (see Figure 4), but no structures appear within or adjacent to the Natgasoline property boundaries.

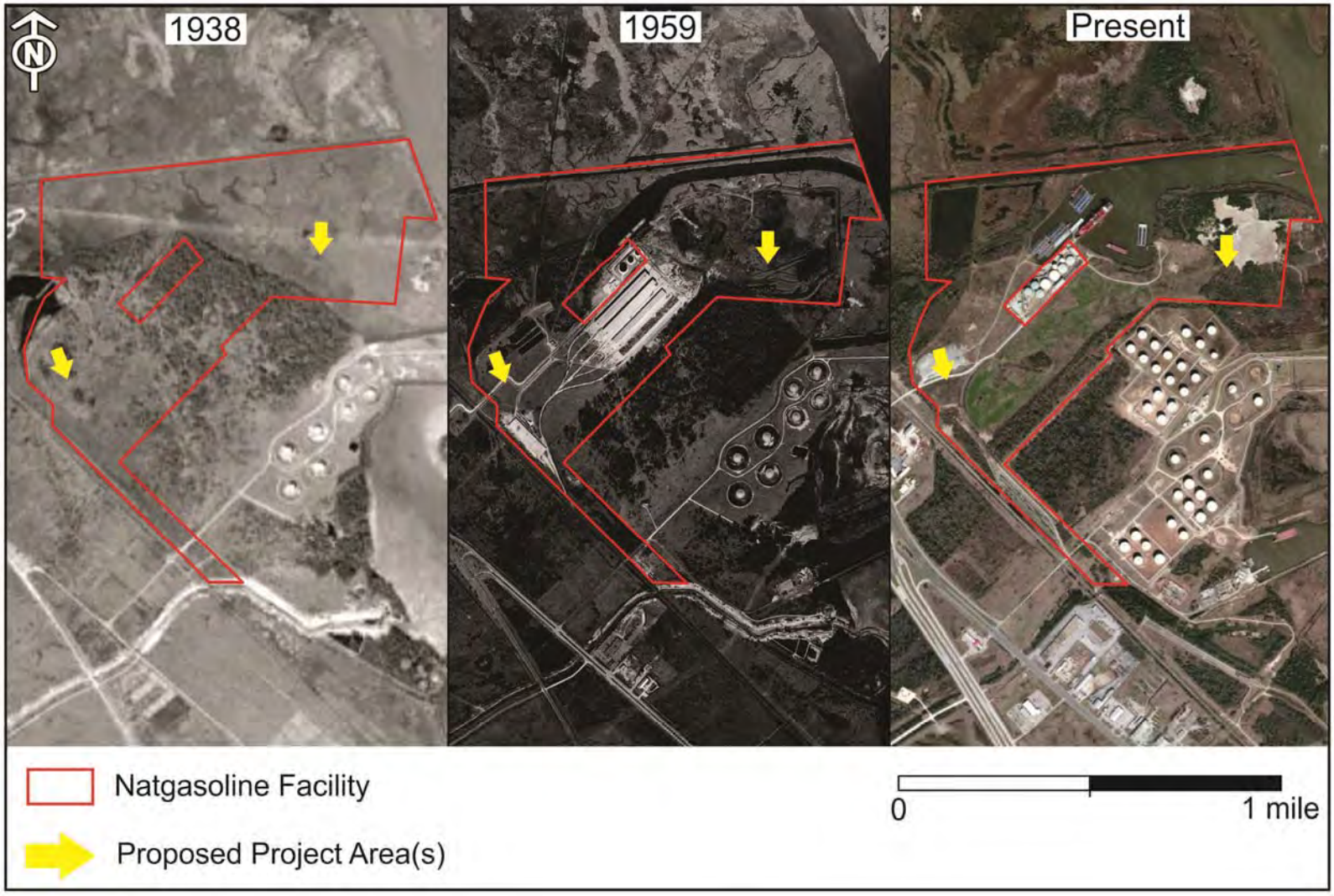

Figure 3. Historic aerial imagery of the area now occupied by the Natgasoline facility dating to 1938, 1959, and present day. Apparent in the photographs are the drastic industrial changes the landscape has endured over the past 75 years.

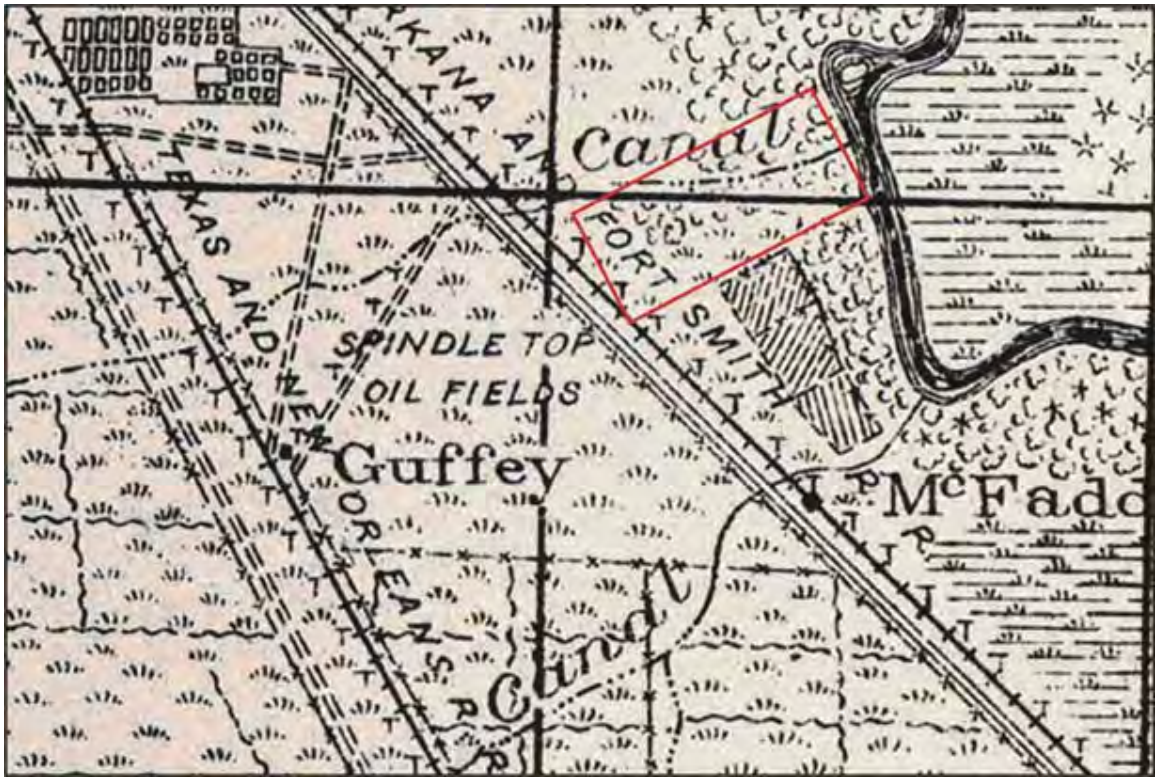

Figure 4. 1921 Corps of Engineers, U.S. Army Tactical Map depicting the approximate location of the Natgasoline facility adjacent to the Neches River. Adapted and modified from Texas Beaumont Quadrangle, Corps of Engineers, U.S. Army (1921). Note what appear to be agricultural fields to the southeast of the Natgasoline facility.

CHAPTER 4
METHODS AND RESULTS

Methods

Archaeological investigations were conducted on March 21, 2013 by Project Archaeologist Julian (Drew) Sitters, assisted by Dan Rose (Field Archaeologist), and Clifford R. Wenzel (Project Manager). Principal Investigator for this project was Rachel Feit. Fieldwork began at 7:00 AM and was carried out within an area approximately 135,077 square feet (2.86 acres) in size (see Figure 2). Eight shovel tests (**Figure 5**) were excavated in arbitrary 20 cm levels, terminating at 40 to 90 centimeters below surface (cmbs). All excavated soil was screened through ¼-inch hardware cloth. No artifacts were collected. The Universal Transverse Mercator (UTM) coordinates of all tests were recorded using a hand held GPS receiver (DeLorme Earthmate PN-40). At the completion of each shovel test, soil profiles were recorded and photographed using a Sony Cyber Shot 7.2 megapixels camera. The shovel tests were then backfilled. Fieldwork concluded at approximately 12:30 PM, and the proposed project areas were deemed devoid of cultural material.

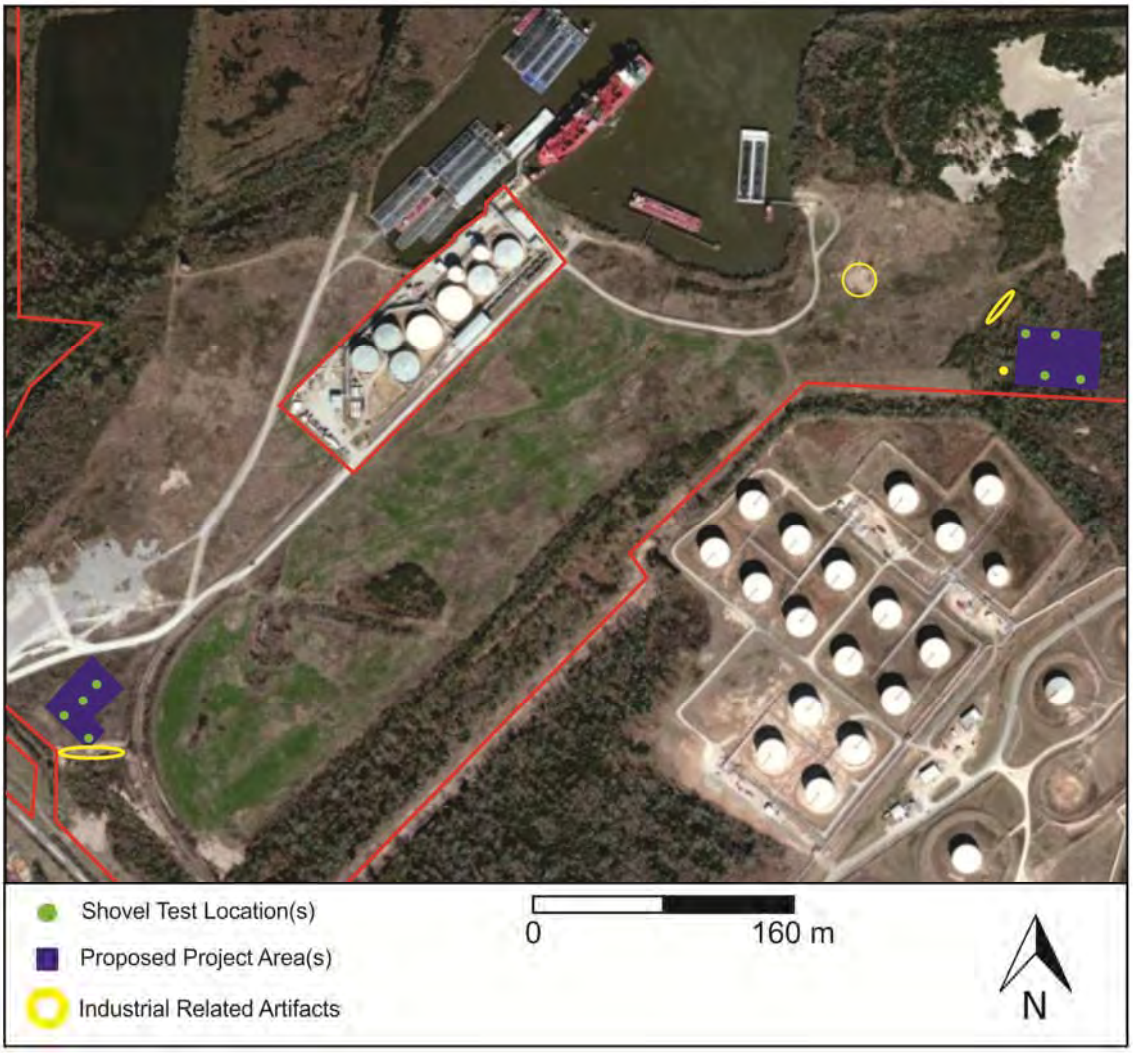

Figure 5. Shovel test locations within the Natgasoline facility. Natgasoline facility is outlined in red boundary.

Results

Natgasoline Facility: Proposed Project Area 1 (PA1)

Proposed Project Area 1 consists of a thick understory with an undulating surface bisected by drainages (**Figure 6A**). Natural ground surface visibility was reduced to 10 percent as a result of the thick vegetation. A natural gas pipeline bisects the proposed project area, but its extent and trending direction is unknown as it is not visible on aerial maps. The area is approximately 6 to 10 feet above sea level. A total of four shovel tests (PA1-1, PA1-2, PA1-3, and PA1-4; **Table 1**) were excavated within PA1. No archaeological material or features were observed on the surface or within the subsurface during the investigation.

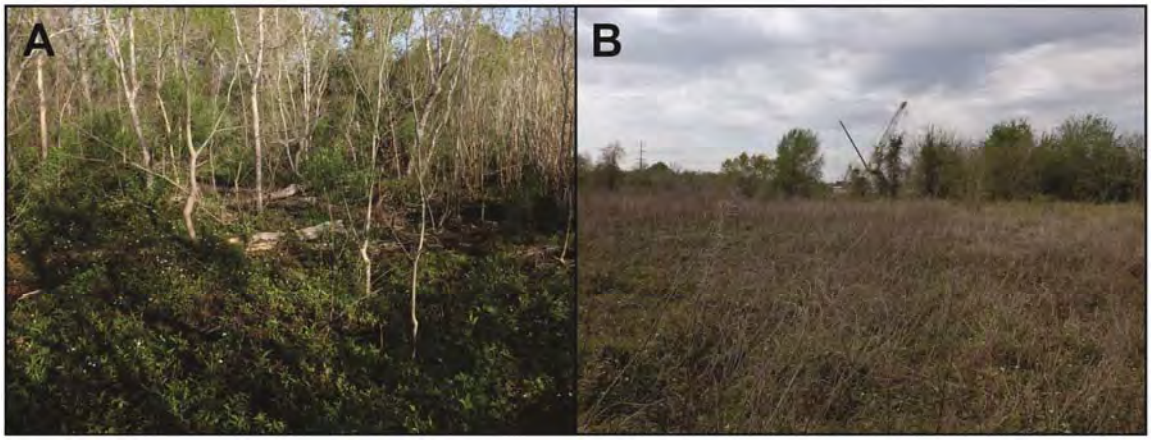

Figure 6. Photograph of proposed project area(s): (A) F-WWTP (PA1), photographed facing 340°; and (B) Control Room and Parking Lot (PA2), photographed facing 230°.

Table 1. Results of Subsurface Testing at the Natgasoline Facility, Victoria County, Texas.

Shovel Test No.	UTM Coordinates (15R)	Depth (cm)	Cultural Material
PA1-1	N3323154/E399712	0-90	N
PA1-2	N3323148/E399755	0-70	N
PA1-3	N3323201/E399726	0-46	N
PA1-4	N3323208/E399685	0-55	N
-	-	-	-
PA2-1	N3322771/E398535	0-50	N
PA2-2	N3322750/E398518	0-40	N
PA2-3	N3322730/E398496	0-40	N
PA2-4	N3322702/E398526	0-40	N

The soil composition within proposed PA1 exhibits the dredge spoil type NcC mentioned above (**Figure 7**). Soils varied from sandy loams to clay with water present at the base of one shovel test (PA1-3). The lack of stratigraphic units and mottling of soils recorded in all but one (PA1-2) of the four shovel tests implies that this area is disturbed. No cultural resources were observed in any of the shovel tests. However, a light scatter of early-Twentieth Century industrial debris was observed to the west/northwest, outside of the proposed project area (see Figure 5). These artifacts include a ceramic sewer pipe fragment (1), asphalt (1), an unidentifiable metal object (1), the segment of a metal pipe (1) (**Figure 8**), a milk glass container (1) (**Figure 9**), and bricks (2) (see **Figure 11**). The milk glass container and an unidentifiable brick fragment are located to the west of the proposed project area within a low lying area interspersed with drainages. The metal pipe segment, unidentifiable metal object, and asphalt are located to the northwest of the proposed project area eroding down a shallow hillslope. Two complete bricks are located further to the northwest of the proposed project area on a deflated surface interspersed with sulphur and contemporary trash. This mostly industrial debris is likely either the result of previously industrial land use, or could be dredge spoil from activities that created the current port along the northern edge of the Natgasoline facility

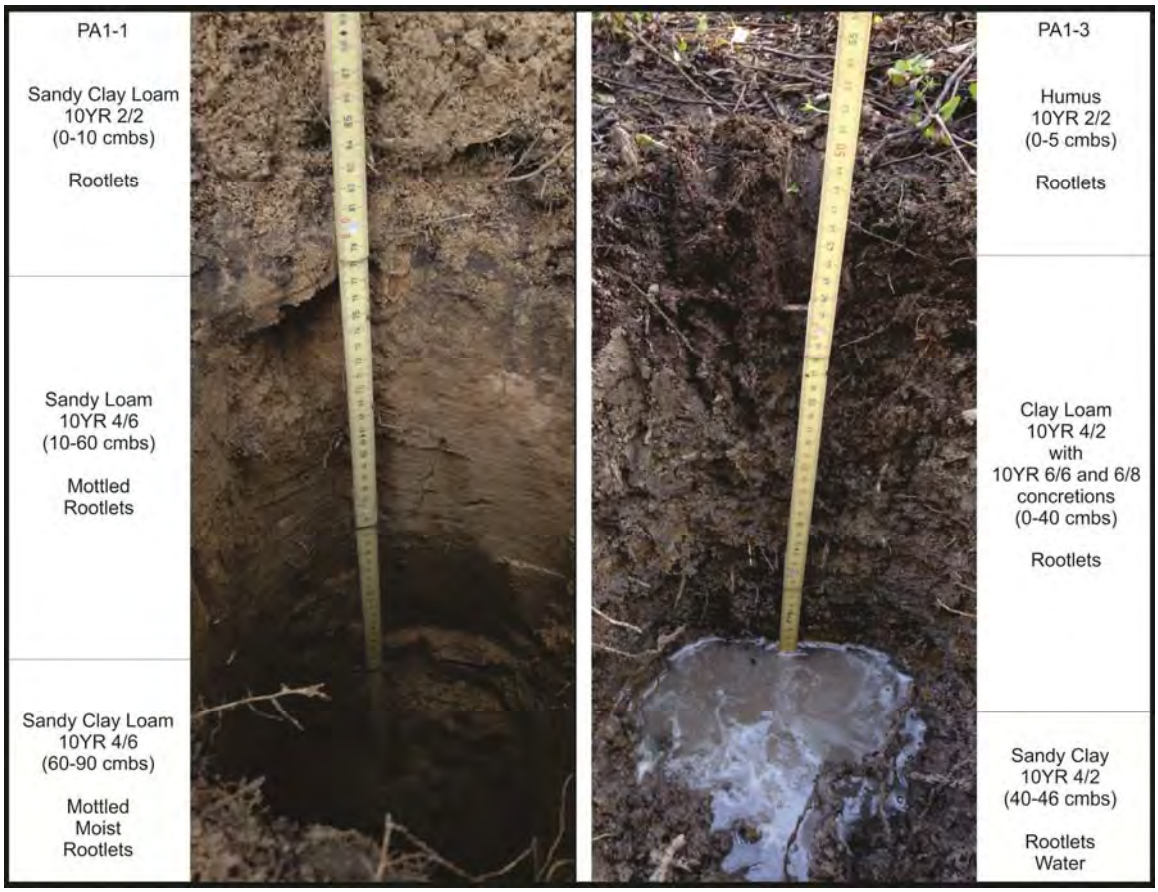

Figure 7. Typical soil profiles observed in proposed PA1 (soil profiles not drawn to scale).

Figure 8. Potential contemporary debris located on shallow hillslope northwest of proposed PA1: (A) segment of a metal pipe; (B) unidentified metal object and ceramic sewer pipe fragment; and (C) asphalt. Trowel in photograph(s) is used for scale and is approximately 26 centimeters long.

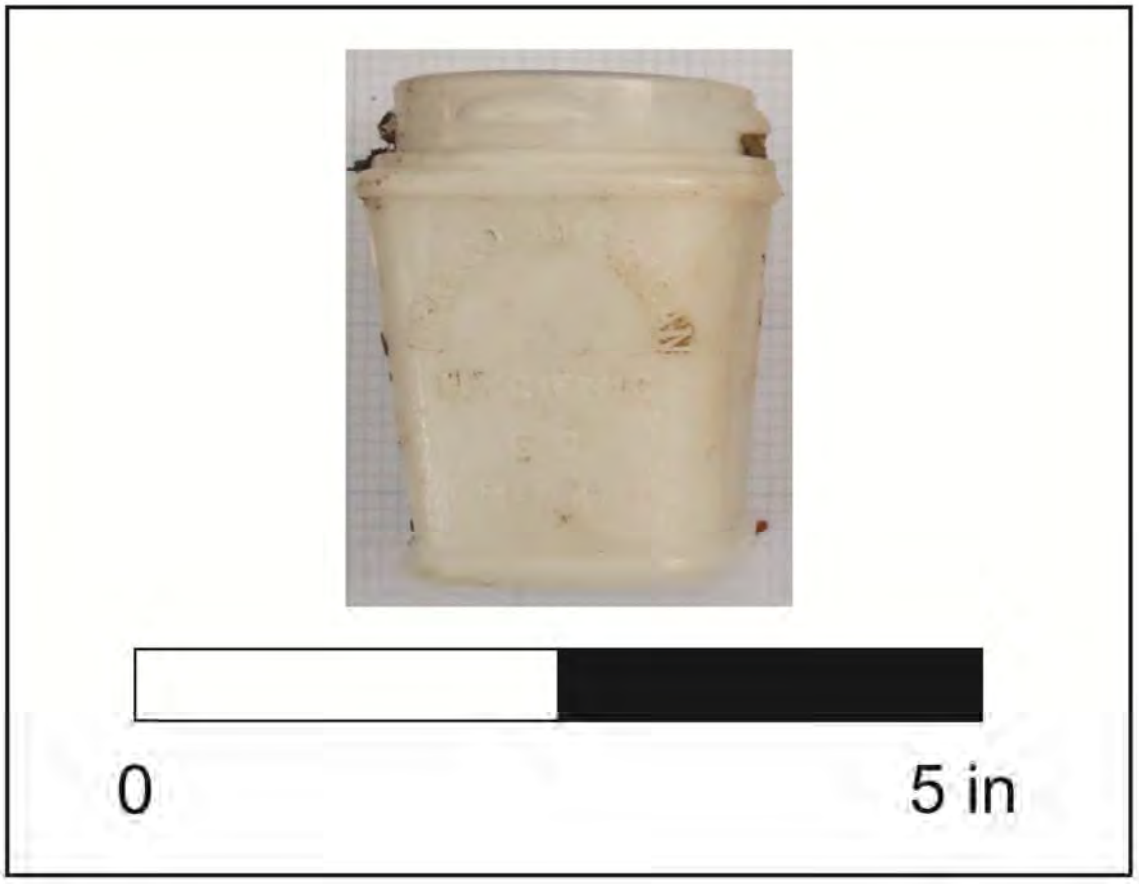

Figure 9. Milk glass container with "FRANCO AMERICAN HYGIENIC CO CHICAGO" embossed on the front and "CHICAGO" embossed on the base. The Franco American Hygienic Company originated out of Chicago in 1889 and made cosmetic products such as depilatories, powders, and deodorants (Currey 1918).

Natgasoline Facility: Proposed Project Area 2 (PA2)

Proposed Project Area 2 is relatively flat and situated at an elevation of 24 feet above sea level, roughly 14+ feet higher than proposed PA1. The area is blanketed by tall grasses reducing ground visibility from zero to 10 percent (northwest to southeast). A total of four shovel tests (PA2-1, PA2-2, PA2-3, and PA2-4; see Table 1) were excavated within this proposed project area. No archaeological material or features were observed on the surface or within the subsurface during this investigation.

Similar to PA1, PA2 contained soils representative of the dredge spoil (type ImA). Based on shovel test observations a typical soil column (**Figure 10**) consisted of 50 centimeters of mottled clay loam and clay (10YR 4/4 and 5/8) containing oyster shell, water worn chert nodules expressing signs of mechanical breakage, asphalt fragments, and sulphur. The lack of stratigraphic units and the mottling of soils recorded in all four shovel tests imply that this area has been previously disturbed. Shovel tests were terminated at 40 to 50 cmbs due to compactness and the disturbed soils. No cultural materials were observed in any of the shovel tests. However, a variety of paving bricks (4) (**Figure 11**) were observed in a ditch outside and to the southeast of proposed PA2. Based on the location of the material, within a ditch, it is believed that the artifacts are out of context and are potentially linked to early-Twentieth Century industrial activities.

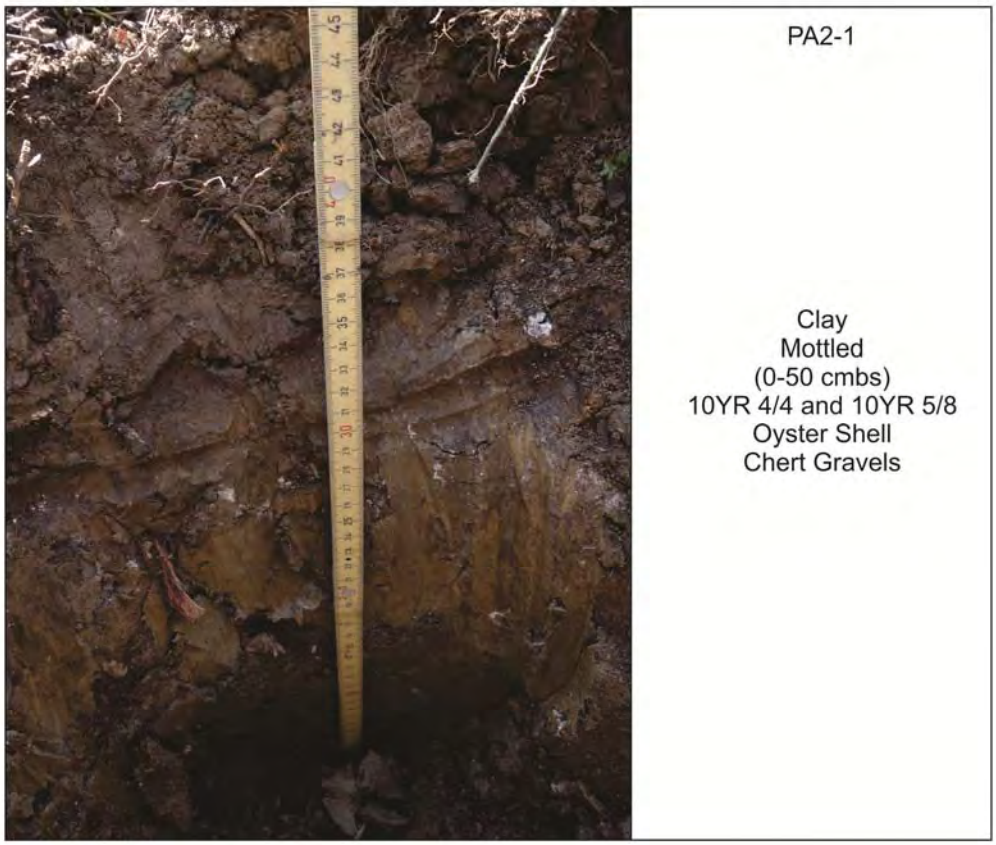

Figure 10. Typical soil column observed in proposed PA2 (soil profile not drawn to scale).

Figure 11. Bricks recovered from outside of proposed PA1 and PA2. Bricks B, C, and D were recorded southeast of proposed PA2, while Brick A was recorded west of proposed PA1 in an open grassy field: (A) PITTSBURG V.P. & B BRICK CO; (B) Beaumon[t]; (C) NESCH PITTSBURG BLOCK; and (D) CORSI[CANA] BRICK [C]O.

The potential dates of manufacture for the bricks illustrated in **Figure 11**. The 'PITTSBURG V. P. & B BRICK CO' was produced by the Pittsburg Vitrified Paving Brick Company established in 1890 (Roberts and Mauk 2009). The 'NESCH PITTSBURG BLOCK' brick came from the same plant described above and retained the name of the company owners, Nesch. A search for the 'Corsicana Brick Co' did not produce any results regarding the company's history. However, a publication dating to 1914 mentions the Corsicana Brick Company implying the company had been well established prior to 1914 (Brick and Clay Record 1914). A search for the Beaumont Brick Company also failed to produce a reliable date regarding the company's establishment. However, a publication dating to 1908 mentions the Beaumont Brick Company implying that the company had been well established prior to 1908 (Ries 1908).

Bricks are often recycled making them unreliable temporal markers. Also, dredging activities, as illustrated by the soils in both project areas, may have relocated the artifacts from other areas to their current resting place within the Natgasoline facility area. Since the observed artifacts are located outside of the proposed project areas, on a shallow hillslope, within a low lying area laced with drainages, or in a ditch, and associated with dredge spoils no further explorative work is unwarranted at this time.

Summary

No archaeological materials or features were observed on the ground surface within the Natgasoline proposed project areas (PA1 and PA2). Eight shovel tests were hand excavated within proposed PA1 and PA2 totaling 135,077-square feet (2.86 acres). None of the eight shovel tests contained archaeological materials and all exhibited disturbed sediments to a depth of at least 50 cmbs. No archaeological sites or isolated artifacts were found within the proposed project areas. However, a light scatter of early-Twentieth Century industrial debris was observed outside the areas surveyed. These artifacts are most likely related to the dredging spoils and have been moved to their current location through erosion or mechanic processes. The artifacts are located outside of the proposed project areas and will not be impacted by the proposed construction.

CHAPTER 5
CONCLUSIONS AND RECOMMENDATIONS

No archaeological resources are located within the proposed project areas (PA1 and PA2). The proposed industrial undertaking will not affect any cultural resources and no further work is warranted.

Unexpected discoveries are not anticipated during construction, but are always a possibility. Should human remains or any significant archaeological find be discovered, all work in the immediate vicinity should cease and the State Historic Preservation Office should be immediately consulted.

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Addendum Report for Additional Archeological Field Investigations in Support of Natgasoline's Proposed New Gas to Gasoline Plant in Beaumont, Jefferson County, Texas

JULY 2014

Prepared by Bruce Darnell and Rachel Feit
AMATERRA ENVIRONMENTAL

PREPARED FOR WESTON SOLUTIONS, INC.

INTRODUCTION

This short report serves as an addendum to the report entitled *Archeological Field Investigations in Support of Natgasoline's Proposed New Gas to Gasoline Plant in Beaumont, Jefferson County, Texas*, previously submitted in May 2013. The plant site and the proposed new facilities are regulated by the Environmental Protection Agency (EPA) and therefore, compliance with Section 106 of the National Historic Preservation Act (Section 106) is required. In June 2014, project proponents added two pipeline corridors (A and B) and a wastewater pipeline (C), necessitating additional archeological investigations in areas with potential for archeological resources. This letter report describes the additional work completed.

AmaTerra previously surveyed 2.83 acres of the plant site, where new facilities were proposed in areas thought to be undisurbed. As a result of the survey conducted in April 2013, no significant historic or prehistoric cultural materials or features were observed on the surface or within the eight shovel tests. Fieldwork was supplemented by extensive archival research. No sites were recorded as a result of the field work or archival effort, but cultural materials potentially associated with early-twentieth century industrial activities were observed outside the construction areas (see Sitters 2013). These materials were not in situ and likely are the result of dredge fill placement.

The proposed added improvements include two pipeline corridors and one wastewater pipeline located within the Natgasoline Plant (Figure 1). These pipeline corridors are located in sections not previously investigated for archeological material and were thought to have some potential for containing previously unknown archeological deposits. Although the pipelines installed in pipeline corridors A and B will connect to other facilities outside the plant property, they will connect with existing pipeline easements and new pipelines will closely parallel existing ones. Therefore, shovel testing along portions of the pipelines in those already existing easements outside the Natgasoline property was not considered warranted.

The current revisit consisted of a pedestrian survey of the two new proposed pipeline corridors and one proposed wastewater pipeline (Pipeline A running approximately 0.39 miles, Pipeline B running about 0.47 miles, and Wastewater Pipeline line C running roughly 0.74 miles in length) supplemented with shovel testing at regular intervals in order to evaluate the area's potential for subsurface cultural materials. A total of 19 shovel tests were excavated (Figure 1 – Shovel test map and current aerial image). No cultural resources or features were observed during the pedestrian survey or in any of the shovel tests. Large amounts of disturbance was observed resulting from railroad construction, previous sulfur storage, road scraping, ploughing activities, existing petrochemical facilities, and river channel dredging. Below is a detailed discussion of the work conducted in between June 25th and July 1, 2014.

SHOVEL TEST AND SURFACE INSPECTION RESULTS

Surface Inspection

Surface inspection consisted of a thorough walk over of the entire project area. Numerous areas of disturbances were noted including a plowed field, existing access roads, railroad and terminal construction, push piles, previous gasoline plant facilities, and river channel dredging activities.

Specifically Pipeline Corridor A has been impacted by an existing access road and a former rail terminal facility for nearly its entire length. The southern portion of this line has also been affected by the intersection of a railroad. Pipeline Corridor B has been impacted from the construction of a rail line in the southern portion and by plowing activities for the rest of its length, while Wastewater Pipeline C has been impacted by the previous construction associated with the former rail terminal and gasoline plant facilities, existing access road, a former sulfur storage pile, and previous activities related to the channeling of the Neches River.

Shovel Tests

Nineteen shovel tests were excavated in order to investigate the three proposed corridors not inspected during the original survey completed in March 2013 (see Sitters 2013). Shovel tests were excavated to the basal clay layer, or when soils were too compacted to dig further. Most shovel tests reached a depth of between 40 – 60 centimeters below surface (cmbs) (Table 1). Shovel tests revealed a heavily modified environment. To facilitate discussion, the two pipeline corridors and one wastewater pipeline labeled Pipeline Corridor A, Pipeline Corridor B, and Wastewater Pipeline C and will be discussed below.

Pipeline Corridor A

Disturbance from the construction of a road, and a mid-twentieth century rail yard impacted the landscape around shovel tests placed along the proposed pipeline paralleling the road (Figures 2 and 3). Specifically the southern portion of the line was located near an existing railroad which has caused significant surface soil disturbance in the area. A view of the 1938 aerial indicated that the project area was more or less undisturbed at that time, consisting of a lightly wooded to heavily wooded landscape with no structures present. By 1959 construction of a gas storage facility and rail yard had occurred, although today those facilities are no longer present (Figure 4).

This pipeline corridor was investigated with a total of six shovel tests (Figure 1). These tests revealed a heavily modified environment and contained no cultural material. Shovel tests placed along Pipeline Corridor A typically reached a depth of 30-60 cmbs before encountering basal clay.

Pipeline Corridor B

Pipeline Corridor B followed the modern tree line in the eastern portion of the Natgasoline property before veering off to the northwest. Disturbance related to the placement of a rail line intersecting the pipeline and plowed field disturbance was evident in the shovel tests placed along this pipeline corridor (Figure 5 and 6). The 1938 aerial shows the area was undisturbed, although a plant had been erected by 1959.

A total of five shovel tests were excavated along this corridor revealing a disturbed project area Figure 1). Shovel tests in this area heavily mottled soils over a layer of gravel fill. In several tests, investigators encountered the water table at 40 cmbs, but this saturation may be due to recent heavy rains and not an indication of the typical water table. The average depth of the other

tests reached 50-65 cmbs before encountering basil clay. None of the shovel tests placed along Pipeline B were positive for cultural resources.

Wastewater Pipeline C

Shovel tests along the Wastewater Pipeline C revealed disturbance in the form of plowed field, road construction, dirt push piles and previous plant construction (Figure 7). All shovel tests were negative for cultural material. Significant disturbance was observed in the mid-section of the line caused by heavy machinery and the presence of a former sulfur storage area clearly visible on the aerial (Figure 8). A review of the 1938 and 1959 aerial photographs indicate that the area was lightly to heavily wooded prior to the construction of a gasoline storage and or processing facility (Figure 4). This corridor was investigated with a total of eight shovel tests, none of which contained cultural material.

Table 1. Shovel Rest Results

Shovel Test	Easting	Northing	Depth	Color	Texture	Setting	Pos/Neg
NS-1	398498	3322642	0-40	10YR6/4	Clay with gravels	Disturbed soils next to road	Neg
NS-2	398566	3322714	0-40	10YR6/4	Clay with gravels	Build up from railroad	Neg
NS-3	398638	3322785	0-30	10YR6/4	Clay with gravels	Disturbed from plowing, high water table	Neg
NS-4	398730	3322880	0-30	10YR6/4	Clay with gravels	Disturbed, next to ACI building and gravel pad. High water table	Neg
NS-5	398802	3322955	0-60	10YR6/4	Clay with gravels	Plowed field, disturbed soil	Neg
NS-6	398862	3323011	0-60	10YR6/4	Clay with gravels	Plowed field, disturbed soil	Neg
B1	398635	3322515	0-40	10YR5/2; 10YR6/8; 10YR7/8	Mottled clay with some gravels	Disturbed soils, near new railroad tracks	Neg
B2	398741	3322618	0-45	10YR5/2; 10YR6/8; 10YR7/8	Mottled clay	Disturbed soils, previously plowed field	Neg
B3	398929	3322770	0-65	10YR5/2; 10YR6/8; 10YR7/8	Mottled clay	Disturbed soils, previously plowed field	Neg
B4	399078	3322932	0-40	10YR5/2; 10YR6/8; 10YR7/8	Mottled clay	Disturbed soils, previously plowed field	Neg
B5	399111	3323008	0-40	10YR5/2; 10YR6/8; 10YR7/8	Mottled clay	Disturbed soils, previously plowed field	Neg
NS1A	398996	3323164	0-5	10YR4/4	Sandy loam	Top soil disturbed by plowing and new road construction	Neg
			5-40	10YR5/3	Clay loam		Neg

Shovel Test	Easting	Northing	Depth	Color	Texture	Setting	Pos/Neg
			40+	10YR5/3 with orange mottling	Clay loam with gravels		Neg
NS2A	399134	3323243	0-50	10YR3/3 with orange mottling	Clay loam	Near river bank and road. Disturbed soils	Neg
NS3A	399382	3323183	0-8	10YR4/4	Clay loam	Top soil disturbed heavily, push piles surrounding test along road	Neg
			8-60	10YR4/4 with orange mottling	Clay loam with gravels		Neg
NS4A	399541	3323290	0-40	10YR4/4 with orange mottling	Clay loam	Very overgrown, heavy weeds	Neg
NSA5	399723	3323363	0-40	10YR6/4	Sand	In woods near open sandy area	Neg
			40-80	7.5YR6/3	Damp sand		Neg
NS6A	399825	3323421	0-15	10YR6/4	Sand	In an open area	Neg
			15-40	10YR4/4; 10YR4/2	Sandy clay loam		Neg
NS7A	399921	3323476	0-20	10YR6/4	Sand	In an open area	Neg
			20-40	10YR4/4; 10YR6/4	Mud		Neg
NS8A	400015	3323526	0-40	10YR4/4	Loose sandy loam	In heavily wooded area near river bank. Unable to test in the canal	Neg
			40+	10YR4/4	Sandy clay loam		Neg

SUMMARY AND RECOMMENDATIONS

Once again, this letter report serves as a new addendum to the cultural resources assessment of the Natgasoline property prepared in May 2013 and updated in March 2014. AmaTerra recommends that no further archeological work is warranted along the proposed pipeline corridors and wastewater lines within the Natgasoline property. The project area is heavily disturbed and an intensive pedestrian survey supplemented with shovel tested did not reveal any cultural material. AmaTerra recommends that construction within the pipeline corridors can proceed.

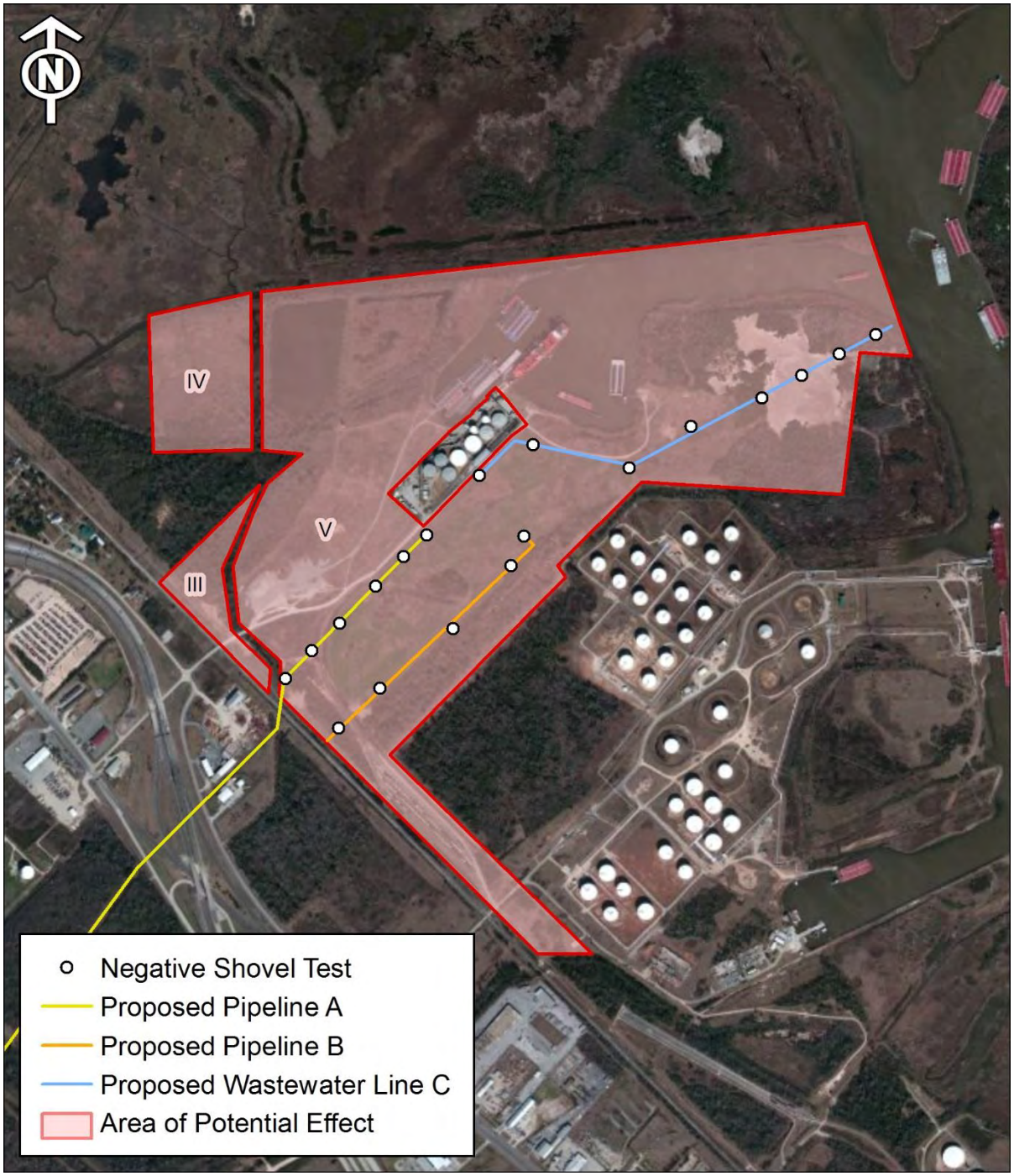

Figure 1. Project area and shovel test locations over a modern aerial photograph.

Figure 2. Railroad line in the southern sections of Pipeline A and B.

Figure 3. Natgasoline property in the northern portion of Pipeline Corridor A and the western portion of Pipeline C with existing terminal in background.

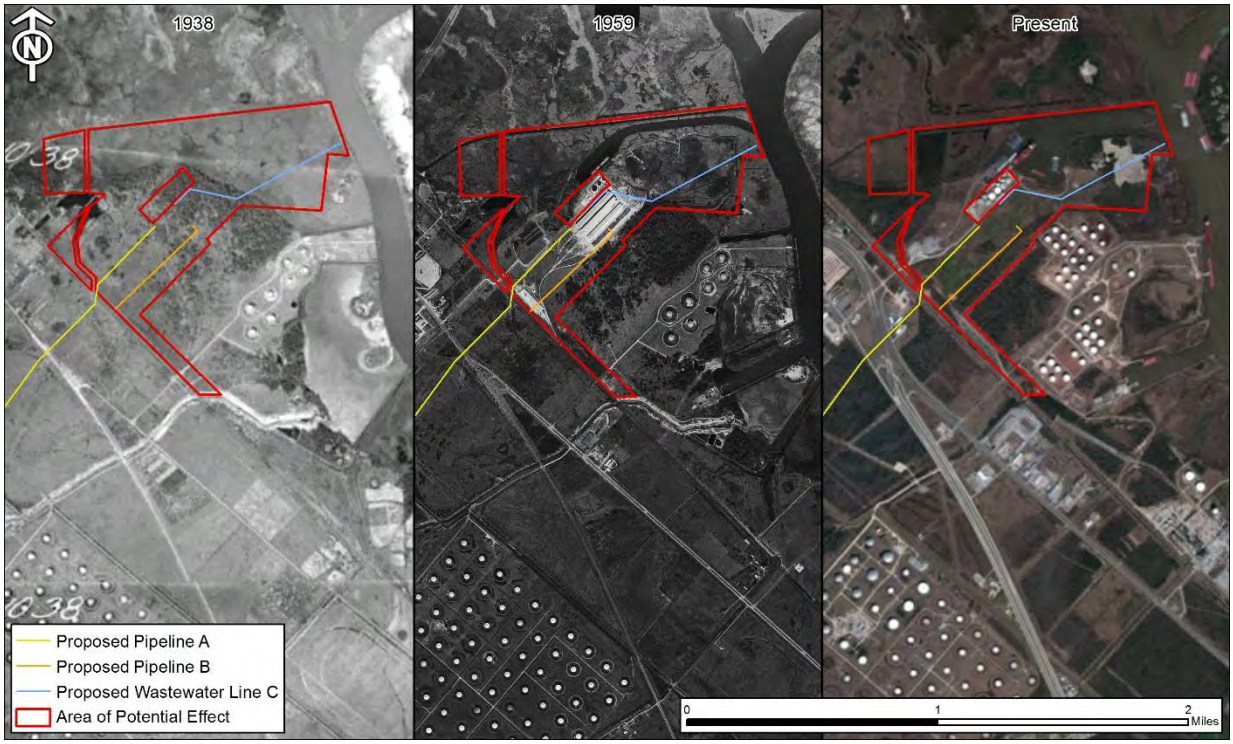

Figure 4. Project area over a 1938, 1959 and present day aerial photograph.

Figure 5. Obvious ground disturbance along Pipeline B.

Figure 6. Plowed field along Pipeline B.

Figure 7. Natgasoline property near the western section of Pipeline C with existing terminal in background.

Figure 8. Former sulfur storage area along Pipeline C.