# A Cultural Resources Survey of the Targa Resources, Inc. Train 5 Fractionator facility Chambers County, Texas

Prepared for:
Raven Environmental, Inc.
P.O. Box 6482
Huntsville, TX 77342-6482

Prepared by:
Deep East Texas Archaeological Consultants
4215 Red Oak
Nacogdoches, Texas 75965

Principal Investigator and Report Author
Victor Galan, Ph.D.

Project Number 467

July 2012

## ABSTRACT

On the 15th of March 2012 Deep East Texas Archaeological Consultants (DETAC) conducted a cultural resource management survey of the proposed 12.5 hectare (30.8 acre) Targa Resources, Inc. Train 5 Fractionator Facility in Mont Belvieu, Texas. The pedestrian survey was conducted with a combination of visual examination and shovel testing. A visual examination revealed that the area was heavily disturbed by modern oil and gas activity to include the construction of several well pads, settling ponds, and pipelines. More recent modifications include shallow stripping of several areas, piling rubble, and dumping material randomly throughout the area. The excavation of 36 shovel tests found shallow clayey soil that was heavily disturbed by the industrial activity. No further investigations are recommended; however, if any cultural material is recovered during construction, then excavation should stop and a qualified archaeologist contacted to evaluate the impact. DETAC is requesting concurrence with the determination of "no effect" on NRHP eligible properties for the proposed project area.

TABLE OF CONTENTS



LIST OF FIGURES



LIST OF TABLES

## INTRODUCTION

In March 2012, Deep East Texas Archaeological Consultants (DETAC) conducted a cultural resources survey of the proposed Targa Resources, Inc. Train 5 Fractionator Facility in Mont Belvieu, Texas (Figure 1). Proposed construction includes clearing and leveling the 12.5 hectares (ha) (30.8 acres (ac)) area for an expansion of the Mont Belvieu Fractionator facility. The archaeological survey was conducted at the request of the Environmental Protection Agency under Section 106 of the National Historic Preservation Act.

The purpose of this survey was to locate, describe and record any cultural resources within the project area boundaries. The report was prepared following the short report format outlined by the Council of Texas Archaeologist (CTA) (1995a) with modifications requested by the THC (Martin 1999). No cultural resources were found during the surface inspection shovel testing of the project area. The pedestrian survey did find the area was heavily impacted by the remains of modern well locations, pipelines, and extra material that was dumped on the property. DETAC requests concurrence with a determination of "no effect" to properties listed or eligible for the NRHP.

## DEFINITION OF STUDY AREA

The project included expansion of the existing Mont Belvieu Fractionator facility to the north onto three tracts of land totaling 12.5 ha. (30.8 ac). The survey area was based on maps provided by Targa and a Targa representative escorted the archaeologists around the property limits at the beginning of the survey; project area boundaries were fence lines. Vegetation in the project area includes young soft and hard wood trees with a dense understory of various bushes and shrubs. Ground cover includes leaf litter in areas with trees and grasses along pipelines and fence lines. Modern disturbances to the area include several pipelines, settling ponds, oil well foundations, well heads, piles of rubble, and shallow areas that were stripped of vegetation. Recent rain filled the low-lying areas with water. Larger ponds were mapped while several small lower areas were not mapped. Shovel testing avoided wet and saturated areas where possible.

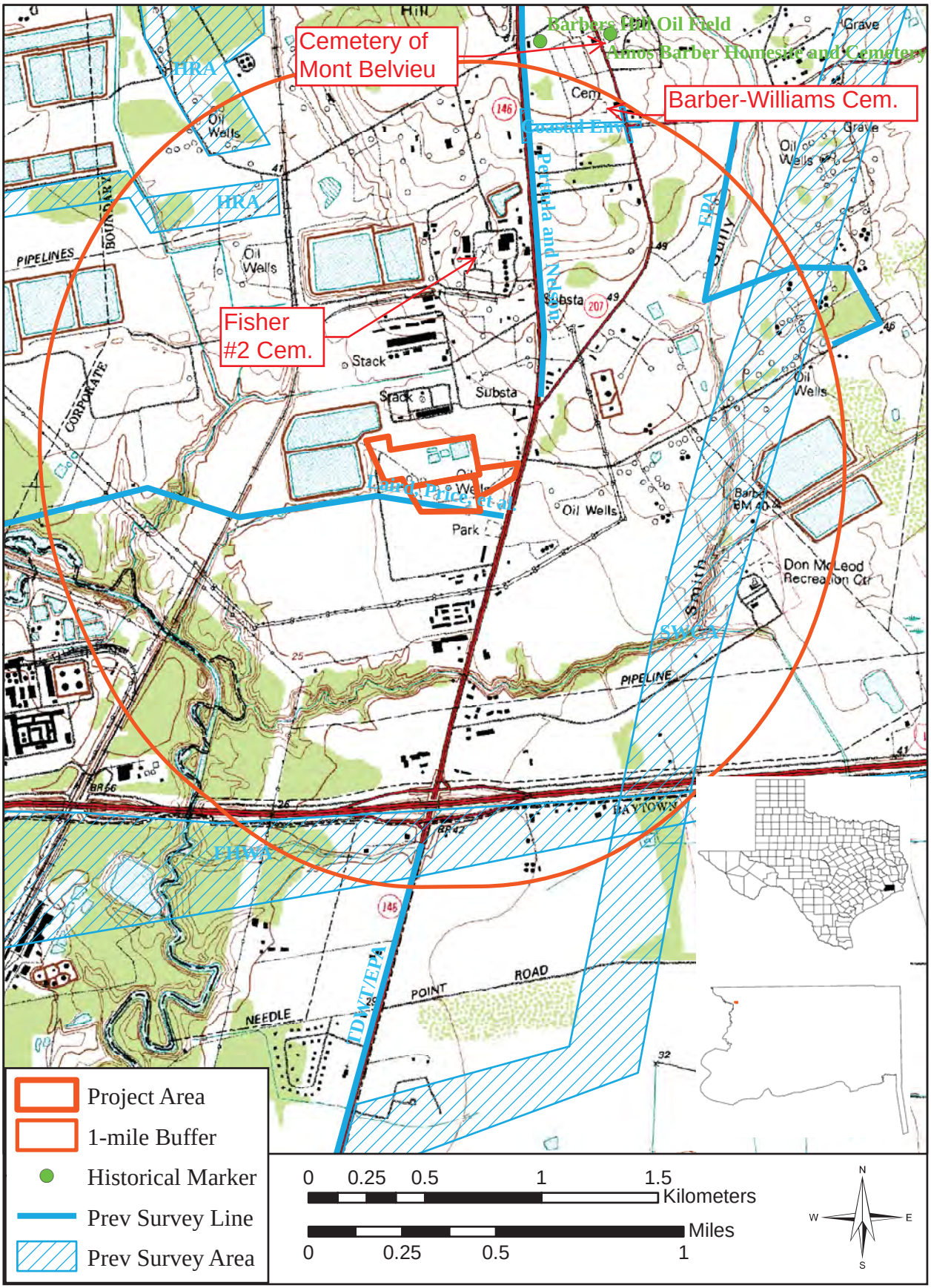


Figure 1. Project area on Mont Belvieu 7.5' Quad

## PREVIOUS RESEARCH AND CULTURAL HISTORY

Chambers County has been studied in numerous linear and area surveys. Most of the investigations were for pipelines and other industrial developments around Trinity Bay. The archaeological survey that documented the first sites in Chambers County was in 1970 during a survey of the Wallisville Reservoir. Ambler (1970) identified three sites (41CH1, 41CH3, and 41CH6) as Archaic to Late Prehistoric occupations. Other investigations in Chambers County include archival and historical research (e.g., Foster and Schmidt 1999), marine remote-sensing surveys (e.g. Gearhart *et al*. 2011), and testing excavations at Fort Anahuac (41CH226) (Feit and Clark 2003). Subsequent testing at Fort Anahuac found the remains of structures, the fort walls, features and artifacts associated with the Mexican fort (Feit *et al*. 2004). These surveys generally show that sites were found adjacent to stream channels in the floodplains on first terraces or along the toe slopes of higher ridges.

In addition to the fieldwork referenced above, several documents have added significantly to available information on the archaeological record in this region. The documents of primary importance are D.A. Story's (1990) and J.A. Guy's (1990) discussions of the Gulf Coastal Plain. Additionally, Aten (1983) described coastal adaptation while Shafer and others (1975) described inland adaptation along the lower Trinity and Neches rivers to the north. Finally, Ricklis (2004:181-204) has the most up to date description of the southeast Texas region which extends from the Gulf Coast to Angelina County.

The occupation of the area includes the Paleo-Indian (ca. pre-7000 B.C.), Archaic foraging cultures (ca. 7000-200 B.C.), Early Ceramic Period (ca. 100 B.C. - A.D. 600), Late Prehistoric Period (A.D. 800 - 1680), and the Historic Period (Perttula and Kenmotsu 44:1993). The Paleo-Indian period is characterized by small, mobile bands of hunters and gatherers that consumed a variety of native plants and animals principally distributed in the valleys of major stream basins (Ricklis 2004:184). The Archaic refers to hunter-gatherers who implemented more regionally specialized approaches toward exploiting their environment (Story 1990). When compared to Paleo-Indian artifacts, Archaic lithic assemblages are more functionally varied; however, tool types are generally less well made and of increasingly more local materials than the Paleo-Indian

period and earlier Archaic (Ricklis 2004:184). Cemeteries date to the Archaic period as well (Story 1990) and become an integral part of the late Archaic (Ricklis 2004:186). The Early Ceramic period represents the diffusion of Tchefuncte ceramics and later Goose Creek ceramic technology into the area from the Texas-Louisiana coastal area (Aten 1983:297; Ricklis 2004:189). The late prehistory of southeast Texas began with the arrival of the bow and arrow and the wide spread of the grog tempered pottery, e.g., San Jacinto Plain and Baytown Plain ceramics although earlier varieties continued (Ricklis 2004:200). Larger aggregates of people became increasingly sedentary with the introduction of the bow and arrow and populations specializing in environmental zones (Aten 1983:91). The Historic Period describes both the history behind the current cultural setting of the area and marks a transition from the native populations' domination of the area to the American immigrants' establishment of farms, towns, and counties. The first non-native inhabitants were Spanish and American settlers competing for Land Grants in the 1820's. After Texas Independence more Americans arrived in the area and Chambers County was formed in 1858 from Liberty and Jefferson counties (Kleiner 2012). Wallisville was the county seat. Initially, cotton and other valuable crops were grown on plantations. Ranching and shipping were also important parts of the local economy and helped the county survive Reconstruction (Kleiner 2012). Mont Belvieu was established in 1890 around the Barber home site and Big Hill but was not laid out until 1922 (Wooster 2011).

The Barbers Home site and Cemetery (Marker 9080) describes the location on Big Hill where Amos Barber settled in 1849. He built a log cabin which stood until 1923. Today, the site is the location of the Church of Christ and the adjacent cemetery contains the Barber family graves. The Barbers Hill Oil field (Marker 9081) describes the oil field as an expansion from the first well drilled on the north side of Barbers Hill in 1902. It was not until 1918 that the United Petroleum Co. No. 1 Fisher well location produced enough oil for sale. Widespread drilling around Barbers Hill did not begin until 1926 and lasted until the late 1930s.

## RESEARCH DESIGN AND METHODOLOGY

The investigations were performed in compliance with the National Historic Preservation Act of 1966 (PL89-665), as amended in 1974, 1976, 1980, and 1992; the National Environmental Policy Act of 1969 (PL91-190, 83 Stat. 915, 42 USC 4231, 1970); the Archaeological Protection Act of 1979 (PL96-95; 16 U.S.C. 470aa-mm), the guidelines set forth by the CTA (2005b); and the ethics standards of the Texas Archaeological Society and the Register of Professional Archaeologists.

The program of site definition was conducted in accordance with the National Park Service criteria (36 CFR, part 60.4) for determining eligibility of a cultural resource to the NRHP. The objectives of the survey were to locate prehistoric and historic cultural resources sites within the survey areas. If sites were found, then the investigations were to delineate the vertical and horizontal extent of each site, determine each site's integrity, and provide a preliminary evaluation of each site's potential for NRHP eligibility.

Before initiating fieldwork, DETAC conducted a records and literature review using the Texas Archaeological Site Atlas (THC 2012). The atlas contains a current database with published and unpublished data regarding cultural resource surveys, location maps, and cultural resources records. In addition, these records show State Archaeological Landmarks (SAL) and NRHP eligibility of previously recorded sites.

DETAC conducted a 100 percent pedestrian survey of the area. The pedestrian survey relied on shovel testing and visual examination of the project area to locate sites. Shovel testing included excavating an area approximately 30 centimeters (cm) in diameter in 10 cm (4 inch (in)) levels down to the clay substrate or 90 cm (35 in). The weather and soil conditions limited examination of the excavated soil to trowling in accordance with THC guidelines. According to the THC guidelines, project areas between 11 and 100 acres require a minimum of one shovel test every two acres. Following these guidelines, the pedestrian survey included a surface inspection focused on areas with exposed soil (e.g., erosional features and ant mounds) along with a minimum of 16 shovel test. Shovel test locations were recorded with Ashtech GPS units with sub-meter post-processing accuracy and notes were made about soil color, texture, and shovel test depth.

## RESULTS

The literature search and records review of the Texas Archaeological Site Atlas (2012) found five archaeological investigations within 1.6 km (1 mi) of the project area (Figure 1). None of the six NRHP properties in Chamber County are within 1.6 km (1 mi) of the project area. The Barber Hill Historical Marker is shown on the Site Atlas as approximately 150 m (492 ft) northeast of the project area; however, the marker is actually in the Auther B. Davis Park further to the north. There are two cemeteries within 1.6 km (1 mi) of the project area: The Fisher #2 and the Barber-Williams. The Fisher #2 cemetery contains roughly 12 internments in a gated area 700 m (2,296 ft) to the north. The Barber-Williams cemetery contains 95 marked graves in an open area surrounded by trees 1500 m (4,921 ft) to the north-northeast. A third cemetery, Mont Belvieu, is roughly 1.9 km (1.2 mi) north of the project area. The Mont Belvieu cemetery has a historical marker (9122) for the church and cemetery. No previous investigations were found to determine NRHP eligibility for any of the cemeteries. All of these locations are surrounded by trees and there are several buildings between the cemeteries and the project area. There is no visual impact to or from the project area to listed or potential NRHP eligible properties or the cemeteries.

The archaeological investigations near the project area include surveys in 2008 by AEC, SWCA, and TRC; surveys in 2010 by HRA Gray and Pape; and backhoe trenching in 2011 by Coastal Environments. The AEC survey was for a pipeline adjacent to Hwy 146 roughly 250 m (820 ft) northeast of current project area (Perttula and Nelson 2008). The SWCA survey was for a pipeline roughly 1.0 km (1.0 km) east of the project area (Crow and Mass 2008), and the TRC survey was for a pipeline along the southern limit of the project area (Laird *et al*. 2008). HRA Gray and Pape, LLC conducted archaeological surveys on four areas upon request by the Galveston Corps of Engineers roughly 1.6 km (1 mi) northwest of area; no archaeological sites were documented during the survey (Blundeau 2010). Most recently, Costal Environments (Kelly *et al*. 2011) excavated backhoe trenches along an extension of FM 565 roughly 1.3 km (0.8 mi) north of the project area. No archaeological sites were documented during the surveys or backhoe trenching.

Soils in the project area were described as Lake Charles clay on the western half of the project area and Morey silt loam, leveled, on the eastern half of the project area (NRCS 2012). Lake Charles clay is very dark gray clay 50 cm (20 in) deep over gray and yellowish red clay in excess of 203 cm (80 in) deep. Slick-n-slides are visible in the B horizon below 50 cm (20 in). Morey silt loam is described as dark gray loam 20 cm (8 in) deep over clay loam in excess of 203 cm (80 in) deep. Gley colors are visible in the Bt horizon roughly 91 cm (36 in) below the surface. The visual examination of the property confirmed the "leveled" description in that the entire area was heavily modified by modern activity. Parent material for both soil series is clayey fluviomarine deposits from the late Pleistocene. The late Pleistocene spans the time from 126,000 to 10,000 years ago. Given the relative location of the project area the sediments are most likely from earlier than later in the epoch. This limits the potential for archaeological sites from any cultural period to the surface or near surface because the edge of the terrace and closest surface stream (Cedar Bayou) is roughly 1.3 km (0.8 mi) to the west.

Surface Inspection

The visual inspection of the project area found that the property was flat. The only drainage was a cut channel roughly one meter (3.3 ft) deep near the western boundary of the project area. Four rectangular settling ponds were observed in the northeast corner of the project area and four irregular areas were excavated with heavy machinery in the southern half of the project area; in addition, there were several low areas that were not mapped. Rain in the weeks before the survey left most of the depressions filled with water (Figure 2). Two areas of piled rubble were mapped in the southern portion of the project area and several piles of random material and debris were not mapped. Observed material in the rubble piles and randomly scattered through the project area were all modern and related to the oil and gas industry. In addition to the mapped and unmapped ponds and debris the topographic map shows four oil wells in the project area. Remains of these wells and three more recent well heads and pads were observed in the project area along with five pipeline right-of-ways (Figure 3). No cultural material was observed during the surface inspection that could not be related to modern use of the area in the past 50 years.

Mapped water

Unmapped water

Mapped rubble pile

Random material

Shovel test

Saturated Sooil

Figure 2. Project area photographs and soil profile

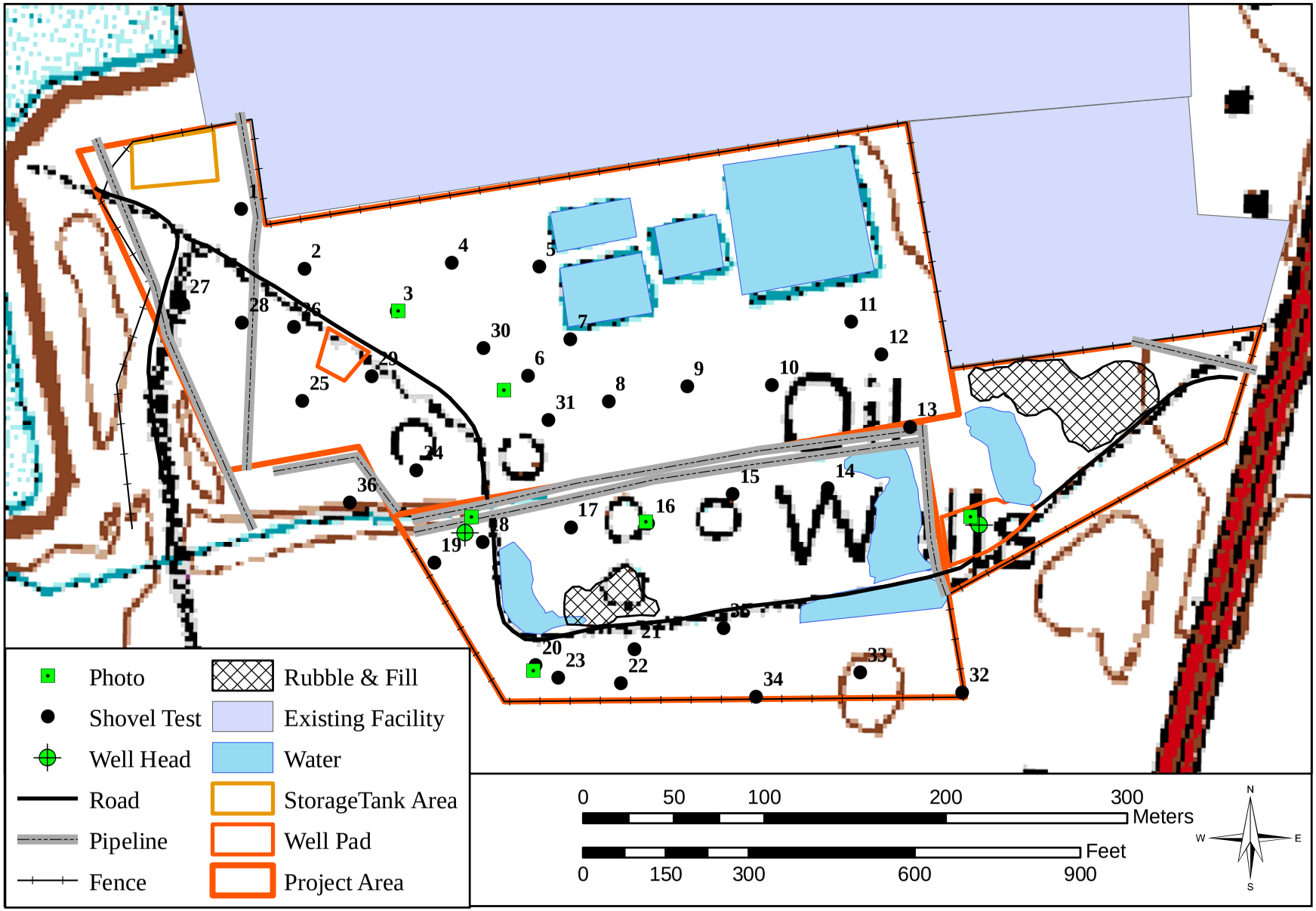


Figure 3. Project area shovel test and surface features on Mont Belvieu 7.5' Quad

Shovel Testing

The shovel testing effort focused on those areas between modern features and surface water. A total of 36 shovel tests were excavated where possible (Table 1). Shovel testing found dark grayish brown clay roughly 40 cm (16 in) deep where ground water did not fill the test before it was complete. Complete shovel tests often contained a disturbed soil profile with mottled brown and gray silt or clay soil. No artifacts were found in the shovel testing effort.

Table 1. Shovel Test Data

| STNo | Depth (cm) | Soil | STNo | Depth (cm) | Soil |
|---|---|---|---|---|---|
| 1 | 10 | Dark brown clay | 19 | 30 | Saturated |
| 2 | 10 | Dark brown clay | 20 | 30 | Dark brown clay |
| 3 | 20 | Saturated | 21 | 20 | Saturated |
| 4 | 10 | Dark brown clay | 22 | 10 | Dark grayish brown silty clay |
| 5 | 10 | Dark brown clay | 23 | 20 | Saturated |
| 6 | 10 | Dark brown clay | 24 | 30 | Saturated |
| 7 | 10 | Dark brown clay | 25 | 10 | Dark brown clay |
| 8 | 10 | Dark brown clay | 26 | 30 | Saturated |
| 9 | 10 | Dark brown clay | 27 | 40 | Dark grayish brown silty clay |
| 10 | 10 | Dark brown clay | 28 | 40 | Dark grayish brown silty clay |
| 11 | 10 | Dark brown clay | 29 | 40 | Dark grayish brown silty clay |
| 12 | 10 | Dark grayish brown silty clay | 30 | 40 | Dark grayish brown silty clay |
| 13 | 10 | Dark grayish brown silty clay | 31 | 40 | Dark grayish brown silty clay |
| 14 | 10 | Dark grayish brown silty clay | 32 | 40 | Dark grayish brown silty clay |
| 15 | 10 | Dark grayish brown silty clay | 33 | 50 | Dark grayish brown silty clay |
| 16 | 20 | Saturated | 34 | 40 | Dark grayish brown silty clay |
| 17 | 10 | Dark grayish brown silty clay | 35 | 30 | Dark grayish brown silty clay |
| 18 | 10 | Dark grayish brown silty clay | 36 | 30 | Dark grayish brown silty clay |

## SUMMARY AND RECOMMENDATIONS

The proposed Targa Resources, Inc. Train 5 Fractionator Facility in Mont Belvieu, Texas will develop three tracts of land totaling 12.5 ha (30.8 ac). A surface inspection found the area was heavily disturbed by modern oil and gas activity to include the construction of several well pads, settling ponds, and pipelines. More recent modifications include shallow stripping of several areas, piling rubble, and dumping material randomly throughout the area. The excavation of 36 shovel tests found shallow clayey soil that was heavily disturbed by the industrial activity.

No cultural resources were found during the surface inspection shovel testing of the project area. Based on the shovel test results and the visual examination, there is little chance of encountering undiscovered cultural resources in the project area; however, in the event that human remains and/or archaeological materials are discovered during construction, then the project activity will immediately cease and the THC shall be notified of the discovery. DETAC requests concurrence with a determination of "no effect" to properties listed or eligible for the NRHP as defined by the National Historic Preservation Act.

REFRENCES CITED

Ambler, J.
1970 *Additional Archeological Survey of the Wallisville Reservoir Area, Southeast Texas*. Tx. Archeological Salvage Project Survey Reports, No.6. Austin.

Aten, L.
1983 *Indians of the Upper Texas Coast*. Academic Press. New York.

Blundeau, J.
2010 *Intensive Pedestrian Cultural Resources Survey of 74 Acres on Behalf of LDH Energy Mont Belview L.P. Chambers County, Texas*. HRA Gray and Pape. Houston.

Crow, Michael S. and Lauren F. Mass
2008 *An Archaeological Survey of Portions of the Air Products LLC Cedar Bayou to Neches Station H2 Pipeline Project in Chambers, Liberty and Jefferson Counties, Texas*. SWCA Cultural Resources Report No. 2007-489. SWCA Environmental Consultants. Houston.

Council of Texas Archaeologists
1995a Guidelines for Cultural Resources Management Reports in *Council of Texas Archaeologists Guidelines*.

1995b Guidelines for Professional Performance Standards in *Council of Texas Archaeologists Guidelines.*

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

Feit, R., J. Clark, J. Jarvis, and M. Miller
2004 *Archeology and History at Fort Anahuac; Results of the 2003 Season Excavations in Chambers County, Texas*. Archeology Series No. 132. Hicks & Company. Austin.

Foster, E. and J. Schmidt
1999 *Archival Research and Historic Sites Testing-Houston-Galveston Navigation Channels, Texas Project Galveston, Harris, Liberty, and Chambers Counties, Texas*. Antiquities Permit 1825. PBS&J. Austin.

Gearhart, R., R. Tubby, and S. Laurence
2011 *Marine Archeological Remote-Sensing Survey in Lake Anahuac for the Middleton Ranch 3D Seismic Project, Chambers County, Texas*. Antiquities Permit #5730. PBS&J Document No. 100195. PBS&J. Austin.

Guy, J.A.
1990 Previous Archaeological Investigations. In *The Archaeology and Bioarchaeology of the Gulf Costal Plain,* D.A. Story, Ed. Research Series No. 38. Arkansas Archaeological Survey, Fayetteville.

Kelly J., T. Hahn, III, and N. Manjarris
2011 *A Cultural Resources Survey of the Proposed Extension of Farm to Market (FM) 565, Mont Belvieu, Chambers County, Texas*. Antiquities Permit #5915. Coastal Environments, Inc. Corpus Christi.

Kleiner, D.
2012 Chambers County, *Handbook of Texas Online* Accessed 24 February 2012 (http://www.tshaonline.org/handbook/online/articles/hcc09). Published by the Texas State Historical Association.

Laird, P., L. Thomas, J. Owens, and P. Matchen
2008 *Phase I Cultural Resource Investigations for the Deer Park LPG Terminal Project in Chambers and Harris Counties, Texas*. TRC. Atlanta.

Martin, W.A.
1999 Letter to author 15 September

Natural Resource Conservation Service (NRCS), U.S. Department of Agriculture
2012 Web Soil survey. *Unites States Department of Agriculture*. Accessed 24 February 2012. http://websoilsurvey.nrcs.usda.gov/app/WebSoil survey.aspx

Perttula, T.A. and N.A. Kenmotsu
1993 *Archaeology in the Eastern Planning Region, Texas: A Planning Document*. Edited by Nancy Adele Kenmotsu and Timothy K. Perttula. Department of Antiquities Protection, Cultural Resources Management. Report 3. p 44.

Perttula, T. and B. Nelson
2008 *Archaeological Investigations of Oneok, Inc's Proposed Arbuckle NGL 16-Inch Pipeline, Spread 3, Navarro, Freestone, Leon, Madison, Walker, San Jacinto, Liberty, and Chambers Counties, Texas*. Report of Investigations No. 93. Archaeological & Environmental Consultants, LLC. Austin.

Ricklis, R.A.
2004 The Archeology of the Native American Occupation of Southeast Texas. In *The Prehistory of Texas*. Timothy K. Perttula editor. Texas A&M University Press. College Station.

Shafer, H.J., E. Baxter, T. Sterns, and J. Dering
1975 *An Archaeological Assessment of the Big Thicket National Preserve*. Texas A & M University, Archaeological Laboratory, Report 19. College Station.

Story, D.A. J.A. Guy, B.A. Burnett, M.D. Freeman, J.C. Rose, D.G. Steele, B.W. Olive and K.J. Reinhard

1990 *The Archaeology and Bioarchaeology of the Gulf Coastal Plain*, vols. 1 and 2. Arkansas Archaeological Survey Research Series No. 38. Fayetteville, Arkansas.

Texas Historical Commission

2012 *Texas Archaeological Site Atlas*. Accessed 24 February 2012. http://nueces.thc.state.tx.us/

Wooster, R.

2012 *Barbers Hill Oilfield*. *Handbook of Texas Online*. Accessed 24 February 2012 (http://www.tshaonline.org/handbook/online/articles/dob01). Published by the Texas State Historical Association.