Investigations Conducted on the Crawford Property in Lamar County, Texas for the Keystone XL Pipleine

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As part of the cultural resources survey of the Keystone XL Pipeline, SWCA Environmental Consultants conducted two field efforts on the Crawford property, an initial investigation on October 21, 2008 and a subsequent effort on October 28, 2010. The initial effort included the excavation of 34 shovel tests that revealed a southern extension of the Sanders site (41LR2), the primary portion of which is located north of the surveyed area (Figure 1). At the time, there was an internal fence within the Crawford property, designated WRP lands that could not be accessed.

To assess the possibilities of an alternate route, SWCA subsequently surveyed a second route, south of the first, on the Crawford property in 2010. A total of 22 shovel tests were excavated during this field assessment. With the exception of one positive shovel test, the shovel test results showed the site deposits were primarily west of the Crawford property on this specific portion of the alignment.

From the two field efforts, a total of 56 shovel tests were excavated on the Crawford property. The vast majority of the cultural materials identified in the tests were left on the site. However, a total of six small ceramic fragments from five shovel tests were collected for analysis to define temporal and cultural affiliation. These were returned to the land agent for submittal to the landowners on May 11, 2011. The following site write-up provides pertinent information and recommendations on the site as a whole, including those portions on the Crawford property and adjacent land.

41LR2

Site Type: Previously recorded Prehistoric Caddo village/Historic artifact scatter

Maximum Site Size: 200 m NE-SW by 185m NW-SE

Mile Post: 162.19

NRHP Eligibility: Eligible

Project Effect/Recommendation: Avoided by directional drilling

41LR2

Site CARC7BFN11.001, part of the larger previously recorded site 41LR2, is a multicomponent site consisting of a prehistoric occupational site and historic farmstead located in far northwest Lamar County on tract LA-0.005 at MP 162.19. The site is situated on a terrace above Bois D'Arc Creek, located approximately 100 m to the northwest of the site. The area is currently pasture, with mixed grasses throughout and mixed hardwoods along the northern and northwestern fence lines. Surface visibility ranges from 10 to 35 percent. Soils throughout the site consist primarily of brown loamy sand generally underlain by light brown loamy sand, and, at greater depths, brown to gray clay. Previous impacts to the area are moderate, primarily from years of plowing prior to the conversion to pasture lands. Additional impacts include fence line construction along the north and northwest site boundaries, erosion, cattle grazing and trampling, and gopher bioturbation.

The present resource was recorded as a separate site during the survey investigations, but was later determined to be an extension of previously recorded site 41LR2. This highly significant site, also known as the Sanders site, covers an area of 8 to 9 acres along the eastern side of Bois D'Arc Creek, beginning just to the northwest of the present site boundary. The Sanders site was first recorded in 1928 by Harris and Hanna, and was investigated more thoroughly in 1931 by the University of Texas. The site is a large Caddo village with occupations associated with the Sanders Phase, dating to A.D. 1300 to 1400, and the Norteño Focus, believed to date to the late 1600s to early 1700s. Two mounds are present in the northern part of the site, the smaller of which was excavated by A.T. Jackson in 1931. A larger village midden covers the remainder

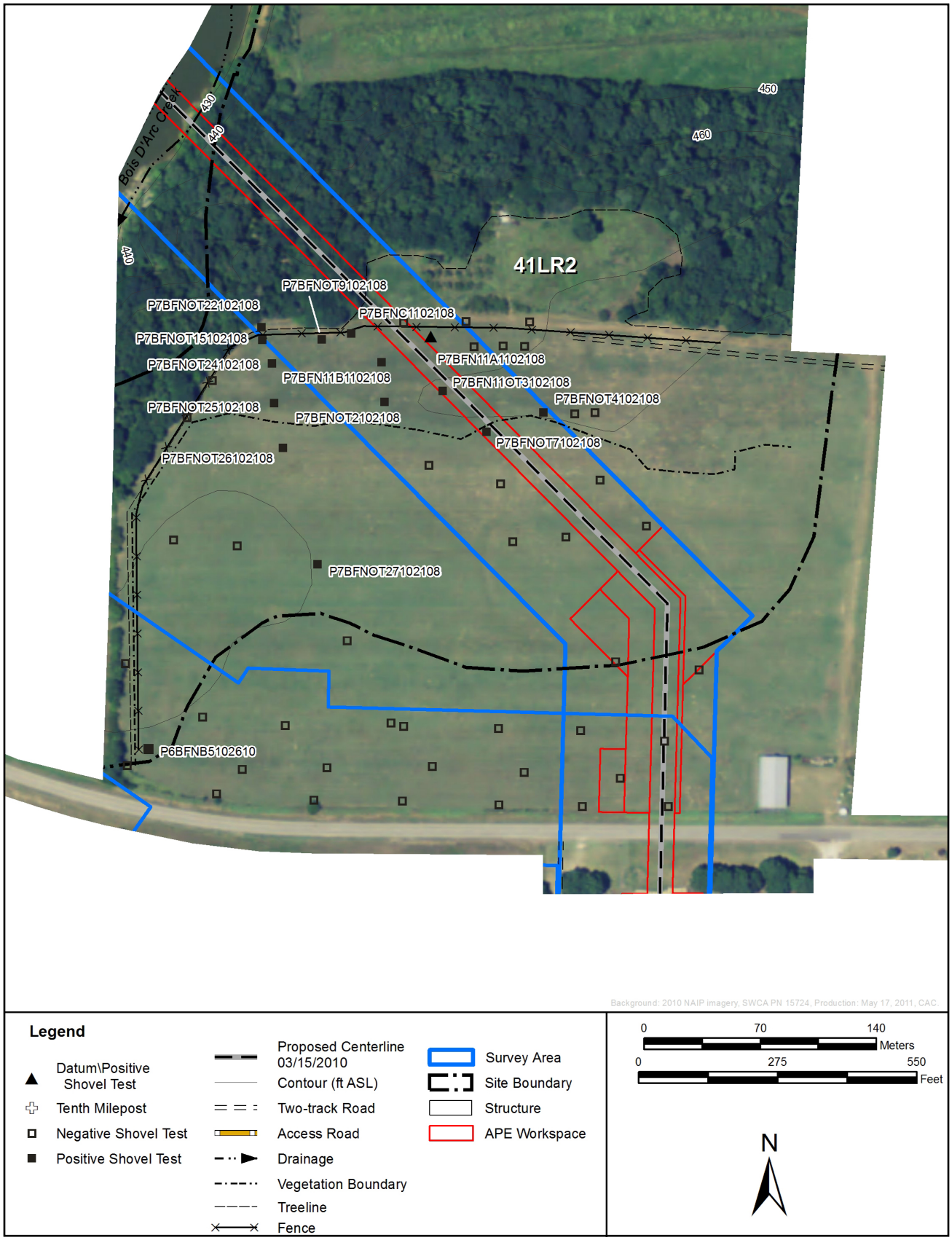

Figure 1. Shovel test location map.

of the site area, and cemeteries associated with both foci are present. Recovered artifacts from previous investigations include a large sample of ceramics; stone tools including projectile points, scrapers, and drills; bone tools; and glass trade beads. A revisit to the site in 1970 noted that the entire site was then plowed, and that this has reduced the size of the smaller mound. Nonetheless, the site condition was noted as excellent (41LR2 State of Texas site form). The Sanders site is the typesite for the Sanders Focus, defined on the basis of unique pottery and grave goods recovered by Jackson's investigations.

The present site extension was discovered when four flakes were identified in a shovel test during centerline survey in 2008. Thirty-four shovel tests were placed throughout the site to delineate the boundaries and assess the vertical dimension. Fourteen tests yielded both prehistoric and historic subsurface cultural material (Table 1). The site surface was also thoroughly inspected and additional historic and prehistoric cultural materials were identified. Based on the results of the 2008 survey, site CARC7BFN11.001 boundaries covered an approximate area of 200 m northeast-southwest by 185 m northwest-southeast on the Crawford property.

The prehistoric subsurface artifact assemblage found during the 2008 survey included 19 chert flakes, two incised stones, five ceramic sherds, a burnishing stone measuring 8 by 4 cm, six small burned clay fragments, and 12 pieces of burned rock. A white chert biface fragment measuring 2.5 by 1.5 cm was also identified. This may be a proximal projectile point fragment. However, the specimen is too small to positively identify as such, and would not be typable. Multiple flakes and charcoal were also found on the site surface. It is not clear which component the charcoal is associated with, or whether it is a modern intrusion.

Two ceramic sherds were recovered from 15 to 25 cmbs in shovel test OT-24. One is a rim sherd with a single horizontal engraved line. The other sherd is a small buff body sherd, with a sandy paste and no apparent temper. Both the interior and exterior have been smoothed, and the sherd is 6.0 mm thick. These may be from the same vessel.

A plain body sherd with a prominent bone-grog temper was found in shovel test OT-15 at 0 to 20 cmbs. Bits of grog are visible on the exterior surface, and the core has evidence of poor firing. This sherd measures 7.7 mm in thickness. A small, heavily eroded sherd with similar temper was recovered from shovel test OT-25 at a depth of 0 to 30 cmbs.

Two ceramic sherds were also recovered from shovel test OT-26. The first, from 10 cmbs, is a plain body sherd with some curvature and burnishing on both interior and exterior surfaces. It has a sandy paste and a fine grog temper, is well-fired, and measures 4.6 mm in thickness. A highly fragmented sherd recovered from 30 to 40 cmbs has similar characteristics, and is likely from the same vessel. This indicates that some vertical translocation has occurred at the site, most likely from plowing.

Dr. Tim Perttula conducted a detailed analysis by of three of these sherds. Small sherds such as these are extremely difficult to assign to a time period. Grog temper is characteristic of Caddo ceramics (Perttula et al. 1995). Plain bone-grog tempered ceramics are also commonly found in Caddo assemblages. None of the decorative techniques in this assemblage are diagnostic. Perttula's analysis dates the assemblage to the Middle Caddo period.

In general, the prehistoric components range from the site surface to 60 cmbs and appear largely undisturbed at greater depths. The pottery and the burnishing stone are concentrated in the northwest portion of the site nearest the creek. Also present in the northwest portion of the site are two circular areas of thick green vegetation that may represent prehistoric habitation structures; however, further testing is required to determine if these vegetation anomalies are natural or cultural in nature. The fact that this site is part of a large Caddo village certainly increases the potential that these anomalies indicate structural or midden remains.

The historic subsurface artifact assemblage consists of one brown glass snuff lid fragment, two brown glass fragments, four clear glass fragments, one glass flake, one ceramic sherd with black glaze on both sides, one curved metal bucket handle, one metal barb, one square-head nail, one wire nail, one pearlware fragment with blue floral design, one white ware fragment, several pieces of crude unglazed redware, and two cross-mendable pieces of a porcelain ring insulator commonly used for electrified fences. In addition, a stoneware bottle mount was observed on the site surface.

The historic component of the site is largely restricted to the surface and shallow subsurface deposits. Research of the county deed records did not locate a record of the

Table 1. Shovel Test Data for 41LR2 and the Crawford Property

ST ID	Depth (cmbs)	Munsell	Soil Texture Description	Inclusions	Comments
P7BFN11A1102108	0–20	10YR 6/3	sandy loam	n/a	no cultural material
	20–60	10YR 5/4	sandy loam	n/a	3 flakes 20–40 cmbs, flake and charcoal 40–50 cmbs. Not collected.
	60+	7.5YR 5/8	clay	n/a	no cultural material; terminated at basal clay
P7BFN11B1102108	0–25	10YR 7/4	sandy loam	n/a	historic bottletop 25 cmbs not collected.
	25–55	7.5YR 5/6	sandy loam	n/a	no cultural material
	55+	10YR 7/8	clay	n/a	no cultural material; terminated at basal clay
P7BFN11C1102108	0–40	10YR 6/4	sandy loam	n/a	flake 0–20 cmbs, flake 20–40 cmbs; Not collected
	40–50	7.5YR 5/4	sandy clay loam	n/a	no cultural material; terminated at basal clay
N7BFN11OT1102108	0–25	10YR 6/3	sandy loam	n/a	no cultural material
	25–65	10YR 5/4	sandy loam	gravels	no cultural material; terminated at basal clay
P7BFN11OT2102108	0–100	10YR 6/4	sandy loam	n/a	flake 60 cmbs; terminated at basal clay, not collected
P7BFN11OT3102108	0–40	10YR 6/4	sandy loam	n/a	no cultural material
	40–100	7.5YR 7/6	sandy loam	10YR 7/8 mottles, 10% gravels and clay beginning 80 cmbs	chert flake 10–40 cmbs, metal barb or fence staple 40–50 cmbs; terminated due to depth. Not collected
P7BFN11OT4102108	0–15	10YR 6/3	sandy loam	n/a	no cultural material
	15–70	7.5YR 6/1	silt loam	n/a	decorated pearlware 60 cmbs not collected
	70–75	7.5YR 5/1	clay	n/a	no cultural material; terminated at basal clay
N7BFN11OT5102108	0–60	10YR 5/4	sandy loam	n/a	no cultural material
	0–61	10YR 6/4	sandy loam	stream gravels	no cultural material; terminated due to depth
N7BFN11OT6102108	0–60	10YR 4/4	sandy loam	n/a	no cultural material
	60–80	7.5YR 5/4	sandy clay loam	n/a	no cultural material; terminated at basal clay
P7BFN11OT7102108	0–30	10YR 7/4	sandy loam	n/a	incised rock or burned rock 15–25 cmbs not collected
	30–80	7.5YR 6/1	silty clay loam	n/a	no cultural material
	80+	7.5YR 5/1	clay	n/a	no cultural material; terminated at basal clay
N7BFN11OT8102108	0–30	10YR 6/4	sandy loam	n/a	no cultural material
	30–65	10YR 6/6	silt loam	n/a	no cultural material; terminated at basal clay
P7BFN11OT9102108	0–20	10YR 6/3	sandy loam	n/a	chert flake, brown glass not collected
	20–40	10YR 6/3	sandy clay loam	n/a	no cultural material; terminated at basal clay
N7BFN11OT10102108	0–20	10YR 6/3	sandy loam	gravels	no cultural material
	20–100	10YR 5/4	sandy loam	gravels	no cultural material; terminated due to depth
N7BFN11OT11102108	0–5	10YR 5/4	sandy loam	n/a	no cultural material; terminated at basal clay
N7BFN11OT12102108	0–40	10YR 6/4	sandy loam	n/a	no cultural material
	40–100	10YR 6/3	sandy loam	20% gravels 60–100 cmbs	no cultural material; terminated due to depth
N7BFN11OT13102108	0–30	10YR 7/4	sandy loam	gravels	no cultural material
	30–100	10YR 6/4	sandy loam	10% smooth gravels 70–100 cmbs	no cultural material; terminated due to depth
N7BFN11OT14102108	0–10	10YR 6/3	sandy loam	gravels	no cultural material
	10–60	10YR 5/4	sandy loam	gravels	no cultural material; terminated at basal clay
P7BFN11OT15102108	0–20	10YR 5/4	sandy loam	n/a	placed in unusually green circular patch of grass, possible dwelling feature; pottery sherd, flake. Sherd collected
	20–40	10YR 5/4	sandy loam	n/a	flake, heat spall, 4 burned clay nodules not collected
	40–50	7.5YR 4/4	sandy clay loam	n/a	no cultural material; terminated at basal clay
N7BFN11OT16102108	0–5	10YR 6/3	sandy loam	n/a	no cultural material
	5–80	10YR 6/4	sandy loam	n/a	no cultural material; terminated at basal clay
N7BFN11OT17102108	0–40	10YR 5/4	sandy loam	n/a	no cultural material
	40–50	10YR 5/4	sandy clay loam	5YR 5/4 mottles	no cultural material; terminated at basal clay

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ST ID	Depth (cmbs)	Munsell	Soil Texture Description	Inclusions	Comments
N7BFN11OT18102108	0–25	10YR 6/4	sandy loam	n/a	no cultural material
	25–35	10YR 6/6	sand	gravels	no cultural material; terminated due to compact soil
N7BFN11OT19102108	0–40	10YR 6/1	sandy loam	n/a	very compact; no cultural material
	40–45	10YR 4/2	sandy clay loam	n/a	no cultural material; terminated at basal clay
N7BFN11OT20102108	0–5	10YR 6/3	sandy loam	n/a	very compact; no cultural material
	5–65	10YR 4/3	silt loam	n/a	no cultural material; terminated at basal clay
N7BFN11OT21102108	0–15	10YR 5/2	sandy loam	n/a	no cultural material
	15–100	10YR 6/3	sandy clay loam	10YR 6/6 mottles 40–100 cmbs	no cultural material; terminated due to depth
P7BFN11OT22102108	0–20	10YR 5/4	sandy loam	n/a	square nail, wire bundle, 3 clear glass shards, 1 amber glass; 2 chert flakes, 1 chert heat spall, 1 sandstone burnishing stone, 6 burned clay nodules; Not collected
	20–40	10YR 5/4	sandy loam	n/a	brown glass snuff bottle, square nail; chert flake, dart point base, 2 small FCR, 2 burned clay nodules; Not collected
	40–60	10YR 5/4	sandy loam	n/a	2 burned clay nodules; terminated at basal clay; Not collected
N7BFN11OT23102108	0–15	10YR 6/3	sandy loam	gravels	no cultural material
	15–100	10YR 5/4	sandy loam	gravels	no cultural material; terminated due to depth
P7BFN11OT24102108	0–15	10YR 5/2	sandy loam	n/a	glass shard; black chert biface fragment; potsherd; Not collected
	15–60	10YR 6/3	sandy loam	n/a	2 chert flakes 15–25 cmbs; chert flake, burned potsherd 30–40 cmbs; burned clay nodule, 5 FCR 50–60 cmbs; terminated at basal clay; Sherd collected
P7BFN11OT25102108	0–5	10YR 6/3	sandy loam	n/a	no cultural material
	5–80	10YR 4/3	sandy clay loam	n/a	pottery sherd 30 cmbs; terminated at basal clay. Sherd collected.
P7BFN11OT26102108	0–10	10YR 6/3	sandy loam	n/a	potsherd 10 cmbs; Sherd collected.
	10–100	10YR 5/4	sandy loam	n/a	pottery sherd, flake 30–40 cmbs; terminated due to depth; Sherd collected
P7BFN11OT27102108	0–5	10YR 6/3	sandy loam	rootlets	no cultural material
	5–70	10YR 5/4	sandy loam	rootlets	flake 10 cmbs; terminated at basal clay; Not collected
N7BFN11OT28102108	0–50	10YR 5/4	sandy loam	n/a	no cultural material
	50–55	7.5YR 4/4	sandy clay loam	n/a	no cultural material; terminated at basal clay
N7BFN11OT29102108	0–70	10YR 4/4	sandy clay loam	n/a	no cultural material; terminated at basal clay
N7BFN11OT30102108	0–5	10YR 6/3	sandy loam	n/a	no cultural material
	5–80	10YR 5/4	sandy loam	n/a	no cultural material; terminated at basal clay
N7BFN11OT31102108	0–10	10YR 6/3	sandy loam	rootlets, gravels	no cultural material
	10–60	10YR 5/4	sandy loam	rootlets, gravels	no cultural material; terminated at basal clay
N6BFN101A4102610	0–100	7.5YR5/6	sand loam	various concretions	Cleared field with grasses; termination due to depth.
N6BFN101A5102610	0–70	7.5YR5/6	clayey sand loam	rootlets	Within mowed field 50 m WNW of fenceline; clay and moisture increase with depth; termination due to compact soils.
N6BFN101A6102610	0–100	7.5YR5/6	sand loam	various concretions	Cleared field with grasses; termination due to depth.
N6BFN101A7102610	0–100	7.5YR5/6	sand loam	various concretions	Cleared field with grasses; termination due to depth.
N6BFN101A8102610	0–100	7.5YR5/6	sand loam	various concretions	Cleared field with grasses; termination due to depth.
N6BFN101A9102610	0–100	7.5YR5/6	sand loam	various concretions	Cleared field with grasses; termination due to depth.

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ST ID	Depth (cmbs)	Munsell	Soil Texture Description	Inclusions	Comments
N6BFN101A10102610	0–60	7.5YR5/6	clayey sand loam	rootlets	Within open, mowed field.
	60+	7.5YR5/8	sandy clay loam	rootlets	Clay content increases with depth; termination due to basal clay.
N6BFN101A11102610	0–70	7.5YR5/6	clayey sand loam	rootlets	Open, mowed field 30 m W of original A transect.
	70+	7.5YR5/8	sandy clay loam	rootlets	Termination due to compact basal clay.
N6BFN101A12102610	0–70	2.5YR5/4	sandy loam	2.5YR4/6 (Red) mottles	At end of MOC just N. of FM79; some clay content; termination due to basal clay.
P6BFN101B5102610	0–50	10YR5/6	sand loam	rootlets	Field of short, maintained grasses; two plain ceramic body sherds at 0–20 cmbs. Not collected.
	50–55	7.5YR4/6	sandy clay loam	rootlets	Termination due to basal clay.
N6BFN101B6102610	0–55	7.5YR5/6	clayey sand loam	rootlets	Within mowed field; moisture and clay content increase with depth.
	55+	7.5YR5/8	sandy clay loam	rootlets	No cultural materials encountered; termination due to basal clay.
N6BFN101B7102610	0–60	7.5YR5/6	clayey sand loam	rootlets	Within open, mowed field.
	60+	7.5YR5/8	sandy clay loam	rootlets	Distinct and abrupt transition; termination due to compact basal clay.
N6BFN101B8102610	0–70	2.5YR5/4	sandy loam	2.5YR4/6 (Red) mottles	E. of fenceline and N. of FM 79 within a harvested hay field; termination due basal clay.
N6BFN101B9102610	0–70	10YR4/3	sand loam	degraded sandstone	Mowed field with damp, compact soils; termination due to compact basal clay.
N6BFN101B10102610	0–65	10YR4/3	sand loam	degraded sandstone	Mowed field with damp, compact soils; termination due to compact basal clay.
N6BFN101C5102610	0–65	10YR4/3	sand loam	rootlets	E. of fenceline and N. of FM 79.
	65+	7.5YR6/8	clay loam	rootlets	Very moist clay with minor sand content; termination due to basal clay.
N6BFN101C6102610	0–60	10YR4/3	sand loam	rootlets	Mowed field with damp, compact soils.
	60+	7.5YR6/8	clay loam	rootlets	Termination due to damp basal clay.
N6BFN101C7102610	0–60	10YR4/3	sand loam	rare gravels	Mowed field with damp, compact soils.
	60+	7.5YR6/8	clay loam	rootlets	Some sand content that decreases with depth; termination due to basal clay.
N6BFN101C8102610	0–60	10YR4/3	sand loam		Mowed field with damp, compact soils; termination due to compact basal clay.
N6BFN101C9102610	0–55	10YR4/3	sand loam	degraded sandstone	Mowed field with damp, compact soils; termination due to compact basal clay.
N6BFN101C10102610	0–65	10YR5/6	sand loam	rootlets	Maintained grassy field with 5% GSV.
	65–68	7.5YR4/6	sandy clay loam	rootlets	Termination due to basal clay.
N6BFN101C11102610	0–65	10YR5/6	sand loam	rootlets	Approximately 60 m W of barn.
	65–67	7.5YR4/6	sandy clay loam	rootlets	Termination due to basal clay.

original land acquisition for the property in which this extension of site 41LR2 is located. The earliest ownership record is in 1898 when M.H. Thomas purchased the land from Ebenezer L. Dohoney. Dohoney was an attorney, living in Paris, Texas, who was a staunch prohibitionist and was responsible for the "Local Option Clause" in the Texas Constitution (Haley 2006). Marwell H. Thomas, his wife Mary, and their two sons and two daughters had lived in Lamar County since at least 1880. Marwell and his eldest son ran a farm, while his eldest daughter taught school in the area. In 1907, Thomas and his wife sold the property to James Goolsby. Goolsby had lived in Lamar County as early as 1900 but was a boarder prior to his acquisition of the Dohoney land (U.S. Census 1900a). In 1910, census records show Goolsby, his wife, and a young son lived and worked on a farm in the area (U.S. Census 1910a). The Goolsby family retained the property until 1917, where grantee grantor records indicate they sold the property to James S. Sharp, a farmer, who lived on the property with his wife and young daughter. However, the 1920 census lists Sharp as renting his farmland, so

it is not clear if he only purchased some of the land he farmed. Sharp and his wife sold the property back to the Goolsbys five years later and the Goolsby's retained the property until 1948, when they sold it to Paul and Grady Crawford.

Although no temporally diagnostic artifacts were identified at this extension of site 41LR2, the historic cultural material at the site appears to span a very long production range. The wide range of possible production dates for this material makes it difficult to establish a date range for this material. The stratigraphic integrity of the material located in the upper sediments has also been disturbed by plowing. The material likely represents a mixture of multiple occupations over a lengthy period of time.

As previously noted, in 2010 SWCA conducted additional fieldwork on the Crawford property to assess a possible reroute south of the previous survey area. Of the total of 22 shovel tests excavated during this field assessment, only one encountered cultural material. This is located on the southwestern property boundary. The results of the 2010 survey indicate the primary southern extension of the site is more narrowly focused along Bois D'Arc Creek in this area. No artifacts were recovered from this field session.

Summary

This extension of the large, significant site 41LR2, also known as the Sanders site, is a multicomponent site consisting of a prehistoric occupation and historic scatter. The prehistoric component of the site extension contains diagnostic artifacts likely associated with the two identified occupation phases at the Sanders site. Furthermore, the presence of anomalous circular vegetation patches suggests the presence of prehistoric structures, congruent with the Caddo village identified at the larger site. The upper deposits of the site have likely been impacted by plowing, but the lower deposits (40–60 cmbs) appear largely undisturbed, suggesting that intact prehistoric deposits may be present. Conversely, the historic component of the site is largely confined to the surface and very shallow subsurface sediments. The history of farming at the site, as well as the wide temporal range of artifacts identified at the site, suggests that the upper deposits represent multiple occupations over a lengthy period of time that have undergone mixing. Because of the lack of integrity, SWCA considers the historic farmstead component of the site not eligible for NRHP nomination, and recommends no further work. The prehistoric components of this site extension are clearly associated with the Caddo components of the larger Sanders site, and are considered contributing elements to the probable NRHP eligibility of the Sanders site. This site has already contributed significant information for understanding the prehistory of the region, and has great potential to yield additional significant information. For these reasons, SWCA considers site 41LR2, including the newly recorded southwest extension, eligible for NRHP nomination.