

ABSTRACT/MANAGEMENT SUMMARY

An archeological survey of the Mike Monroney Aeronautical Center was performed between December 21, 1997, and January 16, 1998, by Briscoe Consulting Services. These investigations consisted of a Phase I cultural resources inventory of the 1,000-acre facility. This included background research, a 100% pedestrian survey of the grounds, structural canvass, recording of resources, and the preparation of recommendations for the located resources. Approximately 300 acres on the property was determined to be landfill and could not be adequately inspected for cultural resources.

Evidence of aboriginal, early homesteading and World War II resources were located during the survey. Aboriginal evidence consists of two isolated finds (boiling stones) that suggest the area was used for temporary specialized purposes at some point. Background research indicated that eight homesteads were claimed in or shortly after the "Run of 89" and physical evidence of two of those homesteads remain on the tract. 34Ok158 is a relatively complete farmstead, with house, barns and other outbuildings and features. 34Ok159 is a cistern from a second house site. All traces of the other six homesteads have been destroyed by more modern developments.

Four buildings and a railroad spur loading dock from World War II were also located on the facility. Buildings 50 and 122 have been modified by new roofs and siding. Buildings 53 and 51 appear to be more or less in the same appearance as originally erected. The loading dock appears to be unmodified, although the railroad spur no longer connects to the main line.

Although National Register of Historic Places (NRHP) evaluations were not included as part of the investigations, it is being recommended that further research be considered for 34Ok158, and Building 53, as potentially eligible for inclusion in the NRHP, prior to modifications or other development actions. It is also being recommended that any ground disturbing activity in land fill areas be preceded by deep trenching to search for potential buried archeological resources. No further cultural resources concerns are being recommended for the two isolated finds, for Buildings 50 and 122, or for the loading dock.

ACKNOWLEDGMENTS

A number of individuals contributed to this project and deserve mention. First, the personnel at the Mike Monroney Aeronautical Center provided environmental and archival materials, and assisted the field team wherever possible. Frank Winchell at the United States Army Corps of Engineers edited the draft report and provided guidance throughout the project. Joe Watkins also provided guidance and editorial assistance.

The field crew included K.C. Kraft, Paula Allen, Danielle Crider, John and Daniel Gay. All performed as the professionals they are. Art Stockman performed the laboratory processing and Tanya Fliegler typed the report.

A note of thanks to all.

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INTRODUCTION

A cultural resources inventory of the Mike Monroney Aeronautical Center was performed between December 21, 1997, and January 16, 1998, by Briscoe Consulting Services. The inventory was completed on behalf of the Federal Aeronautical Administration, under contract with the US Army Corps of Engineers (Tulsa District), as part of the preparation of a new Master Plan for the Oklahoma City facility.

Construction of the expanded Aeronautical Center in Oklahoma City was begun in 1957 (FAA 1992: 24) with replacement of most of the temporary buildings which had been erected as part of the Air Corps Intermediate Station in 1940. By the end of World War II, the Intermediate Station included over 200 buildings, its own hangars, railroad, and landing strips. In 1958, the facility officially became the Mike Monroney Aeronautical Center with the passage of the Federal Aviation Act. The facility today includes a wide range of training, support, research, and supply services.

Current facilities include about 200 buildings, runways, and other structures adjacent to the Oklahoma City Will Rogers World Airport. The facilities are leased to the FAA by the City of Oklahoma City. The Mike Monroney Aeronautical Center currently includes training, supply, and research functions. As the mission of the Center continues to expand, so does the need for expanded facilities within the 1,000-acre lease. The formulation of a Master Plan allows the Center to take its cultural resource management responsibilities into consideration while at the same time planning its expansion.

**Figure 1. FAA Mike Monroney Aeronautical Center
Oklahoma City**

ENVIRONMENTAL SETTING

The Mike Monroney Aeronautical Center is located in southwest Oklahoma City, west of Will Rogers World Airport. Curtis and Ham (1979: 3) place this area within the Central Red Beds Plains geomorphic province, defined as red Permian shales and sandstones forming gently rolling hills and broad, flat plains. A wedge of Western Sand Dune Belts (hummocky fields of grass covered sand dunes derived from Quaternary alluvium) exists along the North Canadian River just north of the area.

Buehler (in Hofman and Drass 1990: 3) describes the climate in the Oklahoma City area as one of relatively mild winters, with the record cold temperature of -17o Fahrenheit set in February of 1899. The summers in the area are hot and dry, and it is common to have temperatures over 100o Fahrenheit. Rainfall averages 31.93 inches annually, mostly falling in the months of May and June.

According to the Soil Survey for Oklahoma County (USDA Soil Conservation Service 1969: sheet 54), soils in the study area include Bethany silt loam on the western half of the facility, and Renfro clay loam on the eastern half of the facility. Both soils are level to gently sloping well drained loams with deep (over 1 meter) profiles over sandstone. Much of the A horizon has been removed from the western part of the facility, and covered by landfill in the central portion (north-south) (see Figure 2). The eastern third of the facility is actually urban land development with mixed fill amid construction.

The area is within the Mixed-Grass Plains biotic district, transitional between open prairie plains to the west and the cross-timbers of the east. A riparian forest on the tract is composed primarily of oaks and elm, along with cottonwood, sycamore, hackberry, ash, and walnut. Grasses predominate the plant community, with prairie beardgrass, silver beardgrass, bluejoint, bluestem, buffalo grass, and several species of grama grasses the primary types.

Development of the Mike Monroney Aeronautical Center has impacted the natural environment, with roughly 30% of the area developed. Another 30% of the central portion of the Center has been subjected to land filling activities which might have covered any existing cultural resources with fill soil. The remaining 40% of the tract retains an essentially rural character. A large portion of this area has been modified by surface stripping, landscaping, and plowing. An approximate 20-acre region of native prairie with buffalo wallows exists on the southern portion of the property.

Figure 2. Surface Conditions

CULTURAL SETTING

Prehistoric Background

This section discusses the prehistoric and protohistoric cultural setting in the general area of the project. The generally accepted scheme for the prehistoric sequence on the Southern Plains includes the Paleo-Indian, Plains Archaic, Plains Woodland, and Plains Village periods. Oklahoma County is situated on the eastern edge of the Red Bed Plains geomorphic province of the Southern Plains, generally peripheral to identified and well studied archeological complexes. The outline of prehistoric cultures offered herein is presented as a general guide to the types of prehistoric cultural resources that exist in the general region.

Paleo-Indian (ca. 10,000 - 7,000 B.C.)

Paleo-Indian sites are not common in central Oklahoma. Paleo-Indian occupation of the region is, however, represented by a variety of lanceolate projectile point types (including Clovis, Folsom, Plainview, Dalton, and Agate Basin). Aside from isolated artifacts found in the region, evidence of the culture is best known from the Domebo Site (Leonhardy 1966) in Caddo County. Domebo is a kill site with Clovis points in direct association with the remains of a woolly mammoth. The Clovis tool kit included longer gracile lanceolate points with basal fluting, a series of blade tools, and scrapers.

Around 9,000 years ago, Clovis is replaced by the Folsom culture, which represents a shift to bison hunting along with (possibly) the introduction of the atlatl. The Folsom point, chief diagnostic tool of the culture, is shorter and more finely made than the Clovis point, with basal fluting extending the length of the blade. Large scrapers with side burrs, knives, backed blade tools and knives are also common (Gettys 1984: 104-107).

The Cooper Site, in Harper County, is perhaps the best-studied Paleo-Indian component in the region. The site is a kill site located about 75 miles northwest of the project and includes bone beds with distinctive fluted Folsom points (Bement 1994). Most impressive of the finds from the site is a bison skull with a red ochre design, which may be the oldest piece of artwork in the Americas. A full report on the site is forthcoming in *Plains Anthropologist* Memoir 29 (Bement, in press).

At the end of the period small groups from the open plains to the west experienced contact and influence with groups to the east. Plainview and San Patrice style projectile points are found in occasional association with Dalton-Meserve style points at a number of sites along the Cross Timbers (Johnson 1989), a transitional zone between the open plains to the west and the woodlands of the east. A Dalton point made of obsidian was found at a site in Midwest City (James Cox, personal conversation).

Archaic (ca. 7000 B.C. - 0 A.D.)

During the lengthy Archaic period, mobile hunting-gathering groups ranged widely across Oklahoma, camping along stream valleys with dependable water supplies and a diversity of animal and plant food resources. Archaic groups used mostly local cherts to manufacture spear points and other stone tools. Much of the archeological record for the early Archaic probably remains deeply buried in alluvial deposits of considerable thickness (Hofman and Drass 1990; Mandel 1995), particularly those Archaic sites dating between ca. 8000-4000 years BP. Consequently, what is generally known about the Archaic period over much of the region comes from multi-component sites on alluvial surfaces where vertically and/or horizontally intact components and features are rarely preserved (Hofman, et al. 1989:57; Wyckoff 1984).

Calf Creek occupations and camps dating from ca. 5000-6000 years BP appear to be common along eastern Oklahoma tributaries (Wyckoff 1995:197). Calf Creek sites appear to have mainly been small hunting and multi-purpose processing camps (Wyckoff 1995:198). The primary diagnostic of the culture is a large elegant biface (knife/projectile point) with deep basal notches.

During the early 1960s, James Shaeffer (1966) began to recognize a pattern to Archaic sites in western and central Oklahoma, which he used to identify the poorly defined Lawton Aspect. The Lawton Aspect in central Oklahoma was further named the Little River focus, with similarities to the Edwards Plateau and La Harpe aspects of Texas. The Lawton Aspect is based almost entirely on surface collections from disturbed and generally multi-component sites but remains to be replaced by data from better studied and understood sites. Shaeffer (1966) further divided the Lawton Aspect into two foci for western and central Oklahoma. The Little River focus centers around the Little River in Cleveland County (Hughes 1984: 112) and includes heavy scrapers and knives, scraper plows, manos and miscellaneous quartzite points. The Clear Fork gouge is common, suggesting ties with the Summers Complex of north and west Texas.

Early Ceramic or Woodland (0 -A.D. 1000)

The Woodland period is generally defined as the point after which ceramics and arrowpoints are introduced. The earliest portion of the period is little changed from the preceding Archaic, with small mobile bands exploiting local resources (Briscoe 1989). A major Woodland component was located at the Quillan site (34Ok11), discovered during sewer line construction through the site in Midwest City (Hughes and Briscoe 1987). Rectangular and basin shaped roasting/midden pits, salt collection pits, a rudimentary structure, and possible grave were excavated at a depth of 1 to 2 meters. Radiocarbon dates from one of the midden pits at the site yielded a date of about A.D. 240 (Hughes and Briscoe 1987:24).

The Woodland period in central Oklahoma is still poorly defined (Drass 1997:7-8) but appears to include small hunting or base camps situated along stream terraces and points. Indigenous semi-sedentary groups are generally believed to be the ancestors of the Washita River culture of the following Plains Village period.

Middle Ceramic or Plains Village (A.D. 800-1450)

Intermediate between the Woodland and Plains Village periods is the Pruitt Complex (Barr 1966), based initially on excavations at the Brewer (34MI3) and Pruitt (34Mr12) sites. Both are small villages with large, well-made storage/refuse pits, middens and post molds of probable houses. Dates from the sites range from A.D. 740 to 840 and later comparisons by Drass (1988) suggest that the "complex" is representative of the early stages of the Plains Village period.

Oklahoma County is situated on the northeast edge of the Redbed Plains variant of the Plains Village period on the Southern Plains (Drass 1997). The variant includes the Paoli and Washita phases which sees a development of permanent villages along the larger order streams, with a bison hunting and horticultural economy. The Washita phase vanishes about A.D.1450.

The Quillan site (Hughes 1986) contained a major Paoli phase component which included occasional post holes and moderate artifact scatters suggesting some degree of intensive occupation of the site (Hughes 1986). A lack of features or midden deposits, however, suggested a specialized foraging function for the site rather than permanent occupancy.

The Pomona variant (Brown 1995: XIII-26) is a Middle Ceramic plains-like expression generally associated with eastern Kansas and western Missouri. Ceramics recovered from the Manwell Site in Oklahoma County (Brooks 1988:177) however, tentatively have been identified as Pomona ware, and the variant may have had a wider range than previously thought. As with the Paoli component of the Quillan Site, the Manwell Site appears to have been a specialized and temporary hunting camp, assigned to the Pomona strictly on the basis of distinctive ceramics. Pomona wares have a distinctive "x-wrapped" cordmarking surface treatment and a clay, grog or junk temper.

One additional late prehistoric site in the area is worthy of mention. The Nagle Site (34Ok4) was discovered during pipeline construction near the community of Spencer (Shaeffer 1957). The find consisted of 16 graves, several of which showed signs of violent death. Artifacts from the site included ear spools and Caddoan style pottery, suggesting that some specialized expeditionary group from far eastern Oklahoma may have come into conflict with another group of the area. The occupants of the Nagle Site, like Manwell and Quillan, were probably a hunting party only temporarily in the area.

No permanent late prehistoric villages have been found within the general area of the project.

Late Ceramic or Protohistoric/Historic Indian (ca.. A.D. 1541-1800)

Late Ceramic or Protohistoric/Historic Native American settlements in northern Oklahoma, particularly in the Arkansas River lowlands, are believed to be ancestral to the Wichita Indians (see discussion in Vehik 1986, 1992; Wedel 1981). Waldo Wedel (1959) defined the Great Bend Aspect, which extends from about the mid-15th century until the early 18th century (Hawley 1995: Figure 5), on the basis of archeological investigations at a number of sites in McPherson, Rice, and Cowley Counties, Kansas. The Great Bend Aspect includes two foci or phases, the Little River focus or phase near the Great Bend of the Arkansas River and the Lower Walnut focus or phase in the Arkansas City, Kansas, vicinity (Brown and Simmons 1987: XVI-7 and Figure 16.2). Significant early to mid-18th century Wichita sites, Deer Creek (34Ka-3) and Bryson-Paddock (34Ka5), have also been studied in the Kaw Lake area of northeastern Oklahoma (Sudbury 1976; Hartley and Miller 1977; Wedel 1981), as well as in other parts of Oklahoma and northern Texas (Bell et al. 1967; Odell 1990).

The ancestral Wichita people of the Great Bend Aspect were successful horticulturists (growing maize and beans) and bison hunters who lived in large permanent villages (some with several hundred structures, according to the accounts of Spanish explorers in 1601) along the Arkansas River lowlands and the lower Walnut River. Archeological investigations have disclosed circular or oval houses (probably grass-covered) with associated trash mounds, and large bell-shaped storage pits (Rohn and Emerson 1984).

Ethnohistorical research summarized by Vehik (1986, 1992, 1994: Figure 11.5) suggests that Onate's 1601 entrada contacted the Etzanoa and Tancoa, who were aboriginal groups ancestral to the Wichita, living along the Arkansas River and tributaries in the Great Bend area of Kansas. At that time, these horticultural groups had populations numbering in the tens of thousands living in large permanent villages. By the early 18th century, ancestral Wichita populations were substantially smaller (Vehik 1994: Table 11.4), due to the introduction of European epidemic diseases. A number of Wichita-speaking groups lived in the area of the lower Walnut River, including the Paniassa (or Panioussa), Ouatchitas (or Ousita or Wichita), and Iscani (Wedel 1981), but, by the mid-eighteenth century, these groups had moved south to the Red River region of north Texas/southern Oklahoma.

The Wheeler Complex (ca. A.D. 1650-1750) was described by Bell and Bastian (1967: 123-126) primarily on the basis of three sites in central western Oklahoma. The major identifying characteristics of the complex are a distinctive black sandy paste pottery, occasional southwestern sherds, and large, well prepared end-scrapers. European and European-influenced materials include gun flints (of native manufacture), lead shot, and glass trade beads. Hofman (1989: 96) places the complex between the mid-seventeenth and mid-eighteenth centuries.

Drass and Baugh (1997) include the Edwards Complex (defined by Baugh 1982) with the Wheeler as the Wheeler Phase and attribute it to the Wichita (Drass and Baugh 1997: 200-201). Problems with this include defensive features at Edwards Complex sites (Baugh 1982), black sandy paste pottery indistinguishable from Dismal River pottery (Gunnerson 1968) and a lack of similarity to Bluff Creek (O'Brien 1984) and Little River focus materials located in the Arkansas Valley to the north (Rohn and Emmerson 1984).

Central Oklahoma appears to have been a common hunting ground, occupied sporadically by numerous groups, among them the Wichita, Apache, Kiowa, Comanche, Osage, Pawnee, Cheyenne, and Arapaho.

The Historical Period

The Historical Period begins in the project area with the records of Coronado in 1541 and Onate in 1601. While various authors have discussed Onate's route through the area (Vehik 1986), it is probable that the complex of Wichita sites located around present day Arkansas City, in Butler County, Kansas, were the sites he visited. This region was next visited by Du Tisne in 1719 (M. Wedel 1981). The Wichita by this time had moved southward into northern Oklahoma around the upper reaches of present day Kaw Lake in Kay County. Du Tisne described two large villages which may correspond to the Deer Creek (34KA3) and Bryson sites (34KA5). It was at about the same time that Osage groups were moving westward onto the Flint Hills and Osage Prairie from the east and other groups were moving into the Central Plains from the west and northwest. A stockaded defensive feature around the Deer Creek Site (Wedel 1981: Figures 2 & 3) suggests that the move southward was in response to the newcomers and a major factor in the further move of the Wichita towards the Red River by about 1750 (Hofman 1989:95).

The Osage considered the region of south-central Kansas and north-central Oklahoma as a part of their homeland until territorial sovereignty was ceded to the United States in 1825. The Osage spread southward into eastern Oklahoma by the early 1800s (Mathews 1961) with the enticement of Chouteau, who set up a trading center at the Three Forks locale in present day Rogers County, Oklahoma. Central Oklahoma remained essentially unoccupied, however, except for hunting parties and seasonal camps of Wichita, Osage, and other Plains groups from the west.

Throughout the early 1800s, most occupation of the study area was Native American, with European occupation limited primarily to traders and military men. After the French sale of their holdings west of the Mississippi River through the Louisiana Purchase (1803), the area was crossed by several American explorers. Washington Irving and party were probably the first European Americans to visit the open prairies in the study area. In 1832, Irving's party camped around the present-day medical center complex south of the Oklahoma State Capitol Building (Irving 1834). The Dragoon Expedition passed through the area in 1834 (Agnew 1976) and Josiah Gregg followed the highlands between the two Canadian Rivers in 1840 (Gregg 1990: 326). Small patrols and hunting parties from Camp Mason twenty miles down river also probably visited the area in 1835, but, like the other groups, only passed through the area and made little mention of it.

Between 1820 and 1860, the majority of the settlement in the area was limited to Native Americans as a result of United States President Andrew Jackson's forced removal policy of the Indians of the east and southeastern United States. Between 1820 and 1840 most southeastern tribes and many Midwestern tribes were resettled in Oklahoma and Kansas. Treaties with the Creeks and Seminoles in 1832 and 1833 established a common reserve for the two tribes in Oklahoma, with the center of the reserve territory in the study area (Morris and McReynolds 1976:24). Treaties in 1855 and 1856 further divided the reserve, with the Seminole receiving the portion of the reserve between the two Canadian Rivers (Morris and McReynolds 1976:26). The Seminole settlements aggregated on the eastern edge of the new reserve and little activity beyond buffalo hunts occurred in the study area.

After the 1840s, the area retained its mostly Native American character, with few Europeans listed among the occupants. Not until after the War between the States did European desires to settle northern Oklahoma reach fruition. The Civil War had both direct and indirect impacts on the Native American land holdings in Indian Territory. After the defeat of the Confederacy in 1865, the Five Civilized Tribes gave up more than half their lands (Hofman, et al. 1989: 107). By the Treaty of Washington in 1866, the Seminole reserve was reduced to a portion of present-day Cleveland and Seminole counties, with the excess lands to the west becoming part of the Unassigned Lands.

Following the Civil War, most of the southern plains experienced a large increase in Euroamerican settlement resulting from the release of military personnel from active duty. Because Indian Territory had been proposed as a haven for American Indians and free from white settlement, development occurred in the states surrounding the area. Texas, Arkansas, Missouri, and Kansas experienced tremendous growth as the postwar economies regained strength.

Cattle ranching increased as railroads opened up the eastern markets for the beef. The Chisholm Cattle Trail was opened through the area in 1869 to bring Texas cattle to railheads in Kansas (Ford 1988), and the use of cattle drives across the western portions of Oklahoma ensured cheap prices for the beef. As a result, numerous cattle leases were negotiated in the Cherokee outlet which allowed the ranchers to graze cattle on the rich grasses (Skaggs 1978:32-33).

The Unassigned Lands of central Oklahoma were not opened to grazing leases. This area, located midway along the Chisholm cattle trail, was the first open prairie north of the Red River, and offered a much needed resting area for the cattle herds. Pressure was placed on the government to open it for leases and for settlement. These Unassigned Lands were finally opened for settlement via the "Run of '89" on April 22, 1889.

Numerous tales of the Land Run are available (Gibson 1981; Hoig 1984), and the history of the area can be told in the history of its towns. Two plats for Townsites of Oklahoma Station were filed in June of 1889 (Morris 1979:127-131). Oklahoma Station became Oklahoma City by the time Oklahoma Territory was formed in 1890. The community of Wheatland, located two miles west of the Mike Monroney Aeronautical Center, was founded in 1889.

Rich farmland and open prairie in the study area was quickly settled, and much of the area has retained its agrarian character to this day. Eight homesteads were claimed in the area of the present Federal Aeronautical Administration lease. Patents, established 5 to 7 years after claims were staked, included:

Section 27, T11N, R4W: the NW quarter to Edward King on August 12, 1897 (Book 13: pg. 174); the SW quarter to Banner Jones October 17, 1896 (Book 13: pg. 8).

Section 28, T11N, R4W: the NW quarter to J. W. Chisholm on February 13, 1895 (Book 12: pg. 100); the SW quarter to Rinaldo Carlton on July 6, 1897 (Book 13: pg 149); the SE quarter to Samuel C. Prather on December 27, 1898 (Book 13: pg 480); and the NE quarter to John W. Pogue (Book 14: pg 265).

Section 33, T11N, R4W: the NE quarter to Thomas Dunn on January 24, 1898 (Book 13: pg. 298).

The petroleum industry also left its mark on the region with early oil booms just before and after the first World War (Franks 1980:127-138), but perhaps the greatest impact on the study area remains to be aviation. In 1910, the Wright Brothers sent Charles Willard to make a demonstration flight where Capitol Hill High School now stands. The flight reached a height of 50 feet and lasted about 200 yards before ending in a crash (Morris 1979: 136). After World War I, pilots from the Fort Sill Army Signal Corps unit came to Oklahoma City and, in 1924, Westwood Aerodrome was established in the vicinity of Stockyards City. Southwest Aviation Park was also established at SW 29th Street and May Avenue.

In 1930, the Oklahoma City Chamber of Commerce optioned all of Section 27, T11N, R4W, for the creation of a new airfield. The City of Oklahoma City purchased the section in June, and opened the new Municipal Airport in 1932. The Army Air Corps moved the Air Reserve Training Station to the Municipal Airport in 1936, and leased the west side of the property (between the runway and MacArthur Boulevard) to establish the Air Corps Intermediate Station in 1940.

During World War II, the Air Corps Intermediate Station was expanded to include a large area on either side of MacArthur Boulevard for training pilots and transfer of McDonald DC-3s being built nearby. By War's end, the Intermediate Station included over 200 buildings, its own hangars, railroad, and landing strips.

At the end of World War II, the Air Corps consolidated the various airfields around Oklahoma City to Tinker Field in Midwest City. Will Rogers Field was placed on inactive status (Anonymous 1991: A-3), and facilities were made available to other Federal agencies. The Veterans' Administration and Civil Aeronautics Administration occupied portions of the former military base along MacArthur Boulevard. In 1946, the Civil Aeronautics Administration announced its intention to locate a major aeronautical center at Will Rogers Field (dedicated April 24-25, 1948). The Air Corps relinquished its lease with Oklahoma City in 1947.

Construction of the expanded Aeronautical Center in Oklahoma City was begun in 1957 (FAA 1992: 24) with replacement of most of the temporary buildings which had been erected by the Air Corps. In 1958, with the passage of the Federal Aviation Act, the facility officially became the Mike Monroney Aeronautical Center. The facility today includes a wide range of training, support, research, and supply services.

Figure 3. The Intermediate Station, 1944

RESEARCH DESIGN

The investigations are intended to suffice as a data base of inventoried cultural resources at the facility. Evaluation of significance of identified resources (Phase II) was not originally included as part of this research. Recommendations for such, however, were to be included in the final report for these investigations.

The proposed research design for investigations at the facility was submitted to the Tulsa District on September 8, 1997. The purpose of the research plan was to outline the design for archaeological research to be conducted at the FAA-Mike Monroney Aeronautical Center in Oklahoma City. The project was a Phase I Archeological Investigation, including background research, 100% archeological survey, and preparation of a comprehensive narrative report on the investigations.

Upon notice to proceed a meeting was scheduled with the Contracting Officer, FAA representatives and James Briscoe, the Principle Investigator (Project Manager). Details about scheduling, procedures, and contacts were outlined and tailored to the satisfaction of FAA representatives, and the point of contact for the archeological team was named. Weekly verbal reports on project progress were scheduled to be given to the appropriate representatives, as were monthly written progress reports.

The draft statement of work for the FAA Mike Monroney Aeronautical Center specified that specific methodology would be developed from information collected during the records search. It was generally identified that prehistoric components most likely to be encountered would be lithic procurement sites; temporary and seasonal campsites; villages and intensive activity areas; and kill sites.

The general types of historic components expected in the study area include: domestic complexes; trash deposits; equipment parks (farm equipment and vehicles are parked or abandoned, usually near agricultural fields); shelter belts (rows of native and non-native trees planted in the 1930's and 1940's to stop wind erosion, generally along section lines and agricultural field edges); and family grave plots or cemeteries. Other complexes were expected to be associated with the Center (agricultural industrial complexes, early aviation facilities, brickworks, and so forth), but the lack of information available concerning the early military installation functions of the Center dictated that structures be identified as best as possible for evaluation.

It was established that the optimum strategy for the archeological survey would include pedestrian transects walked in an ambling zigzag fashion across the facility in 10 to 30 meter intervals (as conditions dictated at the time of survey). Shovel testing, consisting of 20 to 30 cm holes dug through surface deposits, was scheduled to be performed in areas of high ground cover with the fill from shovel tests to be either hand sorted or sieved through 1/4 inch wire hardware cloth before backfilling the tests. Standard field notes and photographs were to be taken of cultural materials located during the survey. Artifacts were not collected.

Areas of high development (parking lots, buildings and landscaped lawns, etc.) were not included in the survey, rather they were subjected to a structural canvass. Any older buildings that have been incorporated into the facility were located, noted and recorded as localities for further consideration (as detailed in the final report recommendations). Unique and other structures of rare or historical (National) importance were documented as allowed by FAA confidentiality requirements. Consultation with the Contract Officer, FAA Security, and others was undertaken before proceeding.

Figure 4. The Survey Area

METHODOLOGY AND INVESTIGATIONS

Physical visits were made to the Oklahoma Archeological Survey Office to search for previously recorded archeological sites in the project area. Details were collected on all known sites. The Oklahoma Historic Preservation Office was visited to search for properties previously nominated to or included in the National Register of Historic Places and to discuss thematic issues that may have been developed by the SHPO for similar facilities (transportation or research facilities). The original homesteaders were identified from records at the Oklahoma County Courthouse. General historical and archeological sources were examined and reviewed to prepare the background culture history for the area.

Archeological investigations were conducted between December 1997 and January 22, 1998 by personnel of Briscoe Consulting Services. The field crew included James Briscoe (Principal Investigator), K. C. Kraft, Danielle Crider, John Paul Gay, Paula J. Allen, and Daniel Gay. The investigations included 100% coverage of the 1,000-acre facility grounds with a pedestrian survey of undeveloped areas, structural canvass of developed areas, and comparative analysis of aerial photographs to identify resources and changes to the property.

Roughly 30% of the tract has been modified by development (roads, runways, buildings, oil wells and underground utility lines). These areas were not included in the survey but were subjected to a structural canvass. The structural canvass of the area consisted of a windshield and pedestrian inspection of standing structures. Older structures were photographed and detailed according to exterior appearance, remaining historical architectural fabric, and condition. Comparisons were then made between aerial photographs taken in 1944, 1959, and recently to determine which structures remain and what changes have been made to them over the years. An existing Master Plan for the facility was also consulted for supporting details about certain structures.

Another 30% of the tract has extensive land fill cover. The portion of the tract covered by landfill was mapped and only minimally tested. Shovel tests in the fill proved unproductive due to dense concentrations of concrete in the fill as well as the depth of fill deposits. The developed areas were mapped and included in the structural canvass.

Roughly 40% (400 acres) remains essentially rural in character, and was included in the systematic pedestrian survey. These areas were covered by a series of roughly parallel transects spaced 10 to 25 meters apart, depending on conditions noted at the time of the survey. Approximately 95% of the pedestrian survey area was found to have been landscaped, surface stripped, or plowed and terraced.

Shovel tests were dug at intervals of 10 to 25 meters in less disturbed areas, and at arbitrary intervals in more heavily disturbed areas to assess the nature of soils, to check for disturbances, and to search for evidence of cultural materials. Fill from each shovel test was sifted through ¼-inch hardware cloth before being replaced in the holes. Care was taken, when possible, to remove the surface sod layer intact so that it could be replaced atop the test holes. Shovel tests in heavily disturbed areas was hand sorted rather than screened to facilitate coverage of the area.

All archeological sites were recorded on standard Oklahoma Archeological Survey site forms and plotted on a master topographical map of the tract. These forms will be forwarded to the Contract Officer for review prior to submittal to the Oklahoma Archeological Survey Office. A master map of the project tract was prepared on USGS topographic quadrangles for plotting all site locations. Older, unique, or historically important structures were located, and guidance was sought from the SHPO, Contract Officer and FAA representatives prior to photographing and recording in accordance with project needs and facility security.

Figure 5. Cultural Resources

CULTURAL RESOURCES

Cultural resources at the Mike Monroney Aeronautical Center include indications of earlier aboriginal activities, early homesteading, and the military occupation of the facility.

Evidence of aboriginal, early homesteading and World War II resources were located during the survey. Aboriginal evidence consists of two isolated finds (boiling stones) that suggest the area was used for temporary specialized purposes at some point. Background research indicated that eight homesteads were claimed in or shortly after the "Run of 89" and physical evidence of two of those homesteads remain on the tract. 34Ok158 is a relatively complete farmstead, with house, barns and other outbuildings and features. 34Ok159 is a cistern from a second house site. All traces of the other six homesteads have been destroyed by more modern developments.

Four buildings and a railroad spur loading dock from World War II were also located on the facility. Buildings 50 and 122 have been modified by new roofs and siding. Buildings 53 and 51 appear to be more or less in the same appearance as originally erected. The loading dock appears to be unmodified, although the railroad spur no longer connects to the main line.

Aboriginal Resources

Isolated Find 1. SW/SE/SW of Section 28, T11N, R4W, I.M.

This is a fire cracked boiling stone on the edge of a 100% disturbed area just north of Building 201. The find is a cobble (12cm across) of metaquartzite, with deep red heat rind and thermal fracturing on one end. The find spot was originally at the head of a minor tributary stream, in an area that has recently been scraped and leveled for the construction of Building 201.

No intact soils on other artifacts were located in the area, and little can be said about the nature of the original site. It is presumed, however, that the site was probably a temporary camp area.

Isolated Find 2. NE/NE/SE of Section 33, T11N, R4W, I.M.

This is a fire cracked probable boiling stone found on the edge of a land fill area south of Building 185. It is unclear if the find originated in the area or was deposited there as part of the land filling activities. The find is a cobble of metaquartzite (12 cm across) with mottled red heat rind and crizzling typical of boiling stones. The find spot is along a low terrace on the north side of a small seasonal branch of Cow Creek.

The landfill covers much of the terrace, and no additional artifacts were located in the area. Like I.F. 1, it is presumed that a temporary camp may have existed in the area.

Homestead Resources

34Ok-158. SW/NW/SW of Section 28, T11N, R4W, I.M.

This is the Rinaldo Carlton homestead (claimed during the "Run of '89") and patented in 1897. The site includes a 2 story double parlor or "Southern I" style house, frame barn and numerous outbuildings, cellars, and hand dug well. There is a slight depression on the south side of the house where a 12- x 40- foot house trailer has recently been removed. All structures are currently intact but are beginning to show deterioration from being abandoned.

The site is probably eligible for nomination to the National Register of Historic Places as a surviving remnant of the earlier homesteading period of the greater Oklahoma City area. The house itself is a good example of the homes built by the more successful farmers after the "Run of '89".

Figure 6. 34Ok158.

Figure 7. 34Ok158 Site Plan.

34Ok159. SE/SE/NE of Section 33, T11N, R4W, I.M.

This is a cistern (filled to ground level) from a homestead site that has been leveled and further disturbed by 2 petroleum pipelines running on either side of the feature. The cistern is a brick and mortar/plaster lined bell, measuring 6 feet across at the surface. Approximately 3 courses of bricks were removed by bulldozers after the City of Oklahoma City acquired the property in the 1930s. Shovel tests around the feature indicate the entire area has been cleared, and no other indications of the homestead remain. One salt-glazed stoneware sherd from a ginger bottle was located in a disturbed area about 100 feet south of the cistern, but the sherd may or may not be associated with the cistern homestead.

The cistern itself remains primarily intact and could contain a significant amount of turn-of-the-century artifactual material.

Figure 8. 34Ok159.

Figure 9. 34Ok159 Site Plan.

Military Resources

Building 50. SW/SE/NE of Section 28, T11N, R4W, I.M.

This structure was originally a loading dock and warehouse for the 1940s air base containing 19447 square feet (50 x 400 feet). The structure is a single story frame on a raised concrete platform. Asbestos shingles have been added to the original wood lap siding and security wire mesh has been added to the windows. The roof is modern composite shingles.

Although the building retains its historical architectural fabric, modern siding and shingles preclude it from eligibility for nomination to the National Register of Historic Places.

Figure 10. Building 50.

Figure 11. Facility Sreet Plan

Building 51. NE/NW/SE of Section 28, T11N, R4W, I.M.

This building is depicted on the 1944 aerial photograph of the air base in roughly the same condition as it appears today. Current use is for grounds maintenance of the facility. The structure is a corrugated tin machine shop with a sawtooth or four simple gabled roof that overhangs on the east side.

The structure retains its original structural fabric and appearance but is not eligible for nomination to the NRHP, according to the review by the Historic Preservation office, as an aviation related resource.

Figure 12. Building 51.

Building 53. NE/NW/SW of Section 27, T11N, R4W, I.M.

This is Hangar 10 on the south end of the flight line. The structure is a common style open bay hangar with arched roof and sliding bay doors on its north and south ends. The west side has a brick 2 story facade with offices while the east side is corrugated tin. The 45,000 square foot structure appears the same today as on the 1944 and 1959 aerial photographs and retains its original historical architectural fabric.

According to the 1992 Master Plan for the facility, the hangar was built in 1947 (FAA 1992:26), but this does not agree with the aerial photographs. Most likely the office space on the west side was renovated in 1947. In its present condition, Building 53 probably qualifies for nomination to the National Register of Historic Places as a structure and intact remnant of the military period for the facility.

Figure 13. Building 53

Figure 14. Hangar 10 (Building 53) in 1944

Building 122. NW/NE/SE of Section 28, T11N, R4W, I.M.

This structure is currently in use as one of the Plant Engineering facility buildings. The 1800 square foot structure is a single story frame building with 3 original slat roof vents. Asbestos siding and a modern composite shingle roof have been added over the original wood lap siding. Security wire mesh grills have been added to original window frames.

Although the structure appears to retain its historical architectural fabric, the modern siding and roofing preclude it from eligibility for nomination to the National Register of Historic Places.

Figure 15. Building 122

Loading Dock. SE/SE/SE of Section 28, T11N, R4W, I.M.

This is a massive concrete slab 5 feet high, 80 feet long, and 24 feet wide. A siding of the railroad spur runs along the south side of the dock and massive ramps 15 feet long run up either end. The loading dock has been fenced apart from the paved parking lot (former marshaling yard) on the north side of the dock. Four-inch angle iron was added as an edging around the upper edge of the dock and ramp at some point after the concrete dock was poured.

This type of feature is common along the railroad and the addition of angle iron edging probably excludes the feature from eligibility for nomination to the National Register.

Figure 16. The Loading Dock

DISCUSSION AND INTERPRETATIONS

The minor occurrences of prehistoric cultural resources at the Mike Monroney Aeronautical Center provides little in the way of interpretative value. It was, however, noted that the better known and studied sites (Manwell, Nagle, and Quinlan) appear to be specialized activity sites. The Manwell site (Brooks 1988: 181-183) typifies these sites as a base camp for hunting parties from other areas. Smaller temporary camps, Ok143 and 144, were identified on land adjacent to the FAA tract, further suggesting that the area was frequented by small hunting parties from elsewhere. Oral traditions of the Cheyenne (Terry Wilson, personal communications) indicate that the area was visited by hunting parties throughout the nineteenth century, a pattern that probably extends far back into the prehistoric past. Geographically, the area is situated along the extreme eastern edge of the prairie plains and western edge of the eastern woodlands. It would appear that the transitional zone was exploited by groups living elsewhere, primarily as hunting grounds.

The deep surface soils, prairie environment, and abundant water made this area highly desirable to the early settlers. The community of Wheatland, 2 miles to the west, was one of the first to spring up after the land run of 1889 and boasts the earliest settler cemetery in the Unassigned Lands (according to the historical sign at the entrance to the cemetery). It is not surprising that the entire facility tract was claimed by the land runners. It is, however, surprising to find one of the eight original farmsteads relatively intact, given the degree of later development. The same can be said for remnants of the World War II military facility.

Oklahoma City was well suited for the location of a rest and refueling station, roughly half way (circa 1500 miles) between the east and west coasts. Heavy bombers (Jablonski 1965) and other large aircraft of 1940 had a range of slightly more than 1500 to 1800 miles and a centralized refueling and rest station for pilots was essential. As DC-3s began rolling off the assembly line in Oklahoma City, the Intermediate Air Station became even more important as a distribution point for aircraft. Support facilities for the station grew to include over 200 buildings, and facilities (runways, railroad, etc.) provided an excellent foundation for the later aeronautical center that replaced it.

The mission of the modern aeronautical center for research, training, support and other services dictates a degree of modernization and improvements that few other facilities around the country can match. Continuing modernization and development often requires replacement of dated or antiquated facilities and it is understandable that so few remnants of the earlier installation remain. The facility has had and will continue to have a major impact on aviation and many of the structures there will meet the age requirement (50 years) for nomination to the National Register by the year 2010. The Mike Monroney Aeronautical Center, as an entity in itself, can be considered culturally significant. The facility also represents a unique type of site to the sub-field of aviation archeology (for aviation support, research and development).

MANAGEMENT CONSIDERATIONS

The cultural resources discovered as a result of the cultural resources inventory of the Mike Monroney Aeronautical Center include two isolated finds of aboriginal artifacts, a homestead complex and an historic cistern from early homesteads, and four buildings and a loading dock associated with the military period of the Center.

The two isolated finds are fire cracked boiling stones that were found in disturbed contexts. There are no further management concerns for the two artifacts because of the minimal information contained in them.

The Carlton Farmstead complex, 34Ok158, may be eligible for nomination to the National Register as an example of one of the more successful period farms in the area. Similar resources are becoming increasingly rare in the Oklahoma City Metroplex and the site is worthy of preservation. The site should be fenced off and returned to the control of Oklahoma City for protection. The City might also consider restoring or rehabilitating the complex as an example of "Run of '89" homestead complexes in the central Oklahoma area, much like has been done with the Harn Homestead (State Historic Preservation Office, National Register Handbook, 1988). If the site can not be reverted to City control, the FAA will remain responsible for protection of the site as a probable significant cultural resource. At either rate, the site would require significance evaluation prior to disturbance or modifications.

34Ok159 could contain important archeological information about the homestead of which it was once a part. The site should be protected and preserved as it is, or excavated to determine the extent of information contained in any artifactual material within the cistern. As with 34Ok158, the cistern would require significance evaluation prior to further disturbance.

Buildings 51 and 53 are potentially eligible for inclusion on the National Register of Historic Places and should be maintained in their current condition. Building 50, Building 122, and the loading dock are not eligible for inclusion on the Register, but should be photographed and documented prior to any renovation or demolition.

The massive landfill through the center of the property could not be adequately tested for potential buried deposits. Certain World War II artifacts in the fill may be of interest to aviation archeologists and the fill areas should not be disturbed without prior archeological inspection. At a minimum, a series of backhoe trenches should be dug, under archeological supervision, at intervals across areas of the fill slated for future development or disturbance.

REFERENCES CITED

Agnew, B.

- 1976 Brigadier General Henry Leavenworth and Colonel Henry Dodge, 1834-1835. in: Frontier Adventures, American Exploration in Oklahoma. The Oklahoma Historical Society, The Oklahoma Series, vol. IV. pp. 91-100.

Anonymous

- 1991 Airport History. Will Rogers World Airport, Metropolitan Area Comprehensive Airport Plan, Master Plan. City of Oklahoma City Airport Authority. Oklahoma City. pp. A1-6.

Barr, T.

- 1966 The Pruitt Site: A Late Plains Woodland Manifestation in Murray County, Oklahoma. Oklahoma River Basin Survey, Archaeological Site Report, No. 5. Norman.

Baugh, T.

- 1982 Edwards I (34BK2): Southern Plains Adaptations in the Protohistoric Period. Oklahoma Archeological Survey, Studies in Oklahoma's Past, No. 8. Norman.

Bell, R. E., E. B. Jelks, and W. W. Newcomb, Jr. (assemblers)

- 1967 A Pilot Study of Wichita Indian Archeology and Ethnohistory. Final report to the National Science Foundation.

Bement, L.

- 1993 The Cooper Site: A Folsom-Age Bison Kill in Northwestern Oklahoma. Oklahoma Archeological Survey, Newsletter, vol. 23. no. 1.

- 1994 Results of the 1994 Field Season at the Cooper Site. Oklahoma Archeological Survey, Newsletter, vol. 14, no. 2.

Briscoe, J.

- 1989 Chronology and Distribution of Lake Creek Focus/Complex: Information from the Swift Horse Site. in: In Light of Past Experience, Papers in Honor of Jack T. Hughes. Panhandle Archeological Society, Publications, No. 5. Clarendon. pp. 105-116.

Brooks, R.

1988 Excavations at the Manwell Site: A Plains Village Camp, in North-Central Oklahoma. Oklahoma Anthropological Society, Bulletin, vol. 37. pp. 151-190.

Brown, K. L. and A. H. Simmons (editors)

1987 Kansas Prehistoric Archaeological Preservation Plan. Office of Archaeological Research, Museum of Anthropology, and Center for Public Affairs, University of Kansas, Lawrence.

Buehler, K., R. Brakenridge, and B. Carter

1990 A Survey of Archeological Resources and an Evaluation of Buried Site Potential in Northwestern Oklahoma County, Oklahoma. Oklahoma Archeological Survey, Archeological Survey Report, No. 36. Norman.

Carney, G. O.

1981 Cushing Oil Field: Historic Preservation Survey. Report submitted to the Oklahoma Historic Preservation Office. Oklahoma City.

Curtis, N. and W. Ham

1979 Geomorphic Provinces in Oklahoma. in: Geology and Earth Resources of Oklahoma. Oklahoma Geological Survey, Educational Publication, 1. Norman.

Drass, R. R.

1988 A Reanalysis of the Brewer Site: An Early Plains Village Settlement in Central Oklahoma. Oklahoma Anthropological Society, Bulletin, vol.37. pp. 1-110.

1997 Culture Change on the Eastern Margins of the Southern Plains. Oklahoma Archeological Survey, Studies in Oklahoma's Past, No. 19. Norman.

Drass, R. R. and T. Baugh

1997 The Wheeler Phase and Cultural Continuity in the Southern Plains. Plains Anthropologist vol. 42 (160). pp. 183-204.

Federal Aviation Administration

1992 Installation Master Plan, Mike Monroney Aeronautical Center. Document on file at FAA MMAC, Oklahoma City.

- Franks, K.
1980 The Oklahoma Petroleum Industry. The Oklahoma Heritage Association, Inc. Oklahoma City.
- Galm, J.
1979 The Uncas Site: A Late Prehistoric Manifestation in the Southern Plains. Research Series No. 5. Archaeological Research and Management Center, University of Oklahoma. Norman.
- Gettys, M.
1984 Chapter 4. Early Specialized Hunters. in: Prehistory of Oklahoma, edited by Robert E Bell. Academic Press. New York. pp. 97-108.
- Gibson, A. M.
1981 Oklahoma: A History of Five Centuries. Second Edition. University of Oklahoma Press. Norman.
- Gregg, J.
1990 Commerce of the Prairies. University of Oklahoma Press. Norman.
- Gunnerson, J.
1968 Plains Apache Archeology: A Review. Plains Anthropologist, vol. 13, pp. 167-189.
- Hartley, J. D.
1974 The Von Elm Site. Archaeological Site Report No. 28. Oklahoma River Basin Survey, University of Oklahoma Office of Research Administration. Norman.
- Hartley, J. D. and A. F. Miller
1977 Archaeological Investigations at the Bryson-Paddock Site: An Early Contact Period Site on the Southern Plains. Archaeological Site Report No. 32. Oklahoma River Basin Survey, University of Oklahoma Office of Research Administration. Norman.
- Hofman, J., R. Brooks, J. S. Hays, D. Owsley, R. L. Jantz, M. K. Marks, and M. H. Manheim
1989 From Clovis to Comanchero: Archeological Overview of the Southern Great Plains. Arkansas Archeological Survey, Research Series No. 35. Fayetteville.

Hofman, J. and R. R. Drass, eds.

1990 A Survey of Archaeological Resources and an Evaluation of Buried Site Potential in Northwestern Oklahoma County, Oklahoma. Oklahoma Archeological Survey, Archeological Resource Survey Report No. 36. Norman.

Hoig, S.

1984 The Oklahoma Land Rush of 1889. Oklahoma Historical Society. Oklahoma City.

Hughes, D. T.

1984 The Foragers, western Oklahoma. in: Prehistory of Oklahoma, edited by Robert E Bell. Academic Press. New York. pp. 109-118.

1986 Excavations at the Quillan site (34Ok11), Oklahoma County, Oklahoma. Contract report prepared for the City of Midwest City. Norman.

Hughes, D. T. and J. M. Briscoe

1987 Final Investigations of the Quillan Site (34OK11): Monitoring of Construction, 1987. Contract report prepared for the City of Midwest City. Norman.

Irving, W.

1834 A Tour of the Prairies. Thomas Y. Crowell & Co. New York.

Jablonski, E.

1965 Flying Fortress, The Illustrated Biography of the B-17s and the Men Who Flew Them. Doubleday & Company, Inc. New York.

Johnson, L., Jr.

1989 Great Plains Interlopers in the Eastern Woodlands during Late Paleo-Indian Times. Office of the State Archeologist, Texas Historical Commission, Report 36. Austin.

Leonhardy, F.

1966 Archaeology of the Domebo Site. Contribution of the Museum of the Great Plains, Number 1. Lawton.

Mandel, R. D.

- 1995 Geomorphic Controls of the Archaic Record in the Central Plains of the United States. In *Archaeological Geology of the Archaic Period in North America*, edited by E. A. Bettis, III, pp. 37-66. Special Paper 297. Geological Society of America. Boulder.

Mathews, J.

- 1961 *The Osages, Children of the Middle Waters*. The University of Oklahoma Press. Norman.

Morris, J. W., C. R. Goins, and E. C. McReynolds

- 1986 *Historical Atlas of Oklahoma*. 3rd Edition. University of Oklahoma Press. Norman.

Morris, J. W.

- 1978 *Ghost Towns of Oklahoma*. University of Oklahoma Press. Norman.

- 1979 *The Oklahoma City Metropolitan Area*. in: *Cities of Oklahoma*, Oklahoma Historical Society. Oklahoma City. pp.124-147.

O'Brien, P. J.

- 1984 *Archeology in Kansas*. Public Education Series 9. University of Kansas Museum of Natural History, Lawrence.

- 1994 *The Central Lowland Plains: An Overview A.D. 500-1500*. In: *Plains Indians, A.D. 500-1500: The Archaeological Past of Historic Groups*. edited by K. H. Schlesier. pp. 199-223. University of Oklahoma Press. Norman.

Odell, G. H.

- 1990 *Final Report on Archaeological Excavations conducted between May and July, 1988, at the Lasley Vore Site (34TU-65), Jenks, Oklahoma*. Submitted to the Kimberly-Clark Corporation, the Oklahoma State Archaeologist, and the Oklahoma State Historical Preservation Office.

Rohn, A. H. and A. M. Emerson

- 1984 *Great Bend Sites at Marion, Kansas*. Wichita State University, Publications in Anthropology No. 1. Wichita.

Shaeffer, James

1957 The Nagle Site, Ok-4. Oklahoma Anthropological Society, Bulletin, vol. 5. pp. 93-96

1966 Salvage Archaeology in Oklahoma, Volume II, Papers of the Oklahoma Archaeological Salvage Project, Numbers 18 to 21. Oklahoma Anthropological Society, Bulletin, vol. 14. pp. 62-83.

Skaggs, J. M.

1978 Ranch and Range in Oklahoma. The Oklahoma Series, vol. 7. Oklahoma Historical Society. Oklahoma City.

Sudbury, B.

1976 Ka-3, The Deer Creek Site: An Eighteenth Century French Contact Site in Kay County, Oklahoma. Bulletin of the Oklahoma Anthropological Society 24:1-136.

USDA

1969 Soil Survey of Oklahoma County. USDA Soil conservation Service. Stillwater.

Vehik, S. C.

1986 Onate's Expedition to the Southern Plains: Routes, Destinations, and Implications for Late Prehistoric Cultural Adaptations. Plains Anthropologist, vol. 31(111). pp. 13-33.

1992 Wichita Culture History. Plains Anthropologist, vol. 37(141). pp. 311-332.

1994 Cultural Continuity and Discontinuity in the Southern Prairies and Cross Timbers. In: Plains Indians, A.D. 500-1500: The Archaeological Past of Historic Groups, edited by K. H. Schlesier, pp. 239-263. University of Oklahoma Press. Norman.

Wedel, M. M.

1981 The Deer Creek Site, Oklahoma: A Wichita Village Sometimes Called Ferdinandia, an Ethnohistorian's View. Series in Anthropology 5. Oklahoma Historical Society. Oklahoma City.

Wedel, W. R.

1959 An Introduction to Kansas Archeology. Bulletin 174. Bureau of American Ethnology, Smithsonian Institution, Washington, DC.

Wyckoff, D. G.

1984 The Foragers: Eastern Oklahoma. In: Prehistory of Oklahoma, edited by R. E. Bell, pp. 119-160. Academic Press, New York.

1995 A Summary of the Calf Creek Horizon in Oklahoma. Oklahoma Anthropological Society, Bulletin, vol. 42. pp. 179-210.

APPENDICES

Archeological Survey Site Forms

Historic Preservation Resource Identification Forms