

**PHASE I RECONNAISSANCE SURVEY
CIMARRON WIND ENERGY PROJECT – PHASE 1
GRAY COUNTY, KANSAS**

PRIVILEGED INFORMATION--DO NOT RELEASE

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EXECUTIVE SUMMARY

CPV Cimarron Renewable Energy Company, LLC has proposed construction of the Cimarron Wind Energy Project – Phase 1 (the Project) in Gray County, Kansas. The Project is within an area of approximately 20.4 square miles (13,084 acres) of leased private land (the Project Area) located 1.5 miles north of the Arkansas River. The proposed Project will include up to 72 wind turbine generators and associated facilities. The area of potential effect (APE) has been defined as the construction footprint plus a conservative buffer and equals approximately 367 acres. The Tennessee Valley Authority (TVA) will purchase power generated by the Project and will serve as the Lead Agency during environmental review under Section 106 of the National Historic Preservation Act and under the National Environmental Policy Act. TVA will also consult with the Kansas State Historic Preservation Office (SHPO) and interested Native American tribes. In addition, this Project will be subject to the *Kansas Unmarked Burial Sites Preservation Act* which protects human remains and associated objects from disturbances.

This Phase I Reconnaissance Survey included three principal tasks: background research; a Project Area visit; and report preparation. Previously recorded cultural resources were reviewed and cultural contexts were identified that might help in locating unrecorded archeological sites. No archeological sites had been previously reported and no archeological surveys had been previously conducted in the Project Area. Similarly, no properties in the Project Area have been listed in either the National Register of Historic Places (NRHP) or the Register of Kansas Historic Places (RKHP).

Occupations by Native Americans possibly occurred between 12,000 and 150 years ago during periods when water, game, and plant resources were most abundant. Prehistoric-period archeological sites in the Project Area are most likely located around former large playa lakes and along the valley of Buckner Creek. Upland flats far from water sources, including most of the Project Area, probably have low sensitivity for prehistoric archeological sites. During the historic period, uplands around the Santa Fe Trail, including the Project Area, could have been scouted and hunted regularly by wagon trains and by Native Americans. Populations in Gray County, and probably also the Project Area, increased dramatically during the 1880s. Many early homesteads were abandoned by 1900. By 1969, the Project Area contained 16 dwellings. Presently there are 13 dwellings in the Project Area, but only 6 dwellings are more than 50 years old. A separate Historic Architecture Reconnaissance Survey is being conducted to identify and document all above ground cultural resources within the architectural APE style dated as 50-years-old or older so that TVA and SHPO may assess their potential eligibility for the NRHP.

Roadside reconnaissance of the Project Area was conducted to observe environments, landscape features, and disturbances that are potentially associated with prehistoric and historic-period archeological sites. As recommended by SHPO, the margins of playa lakes, streams, and wetlands are presently considered sensitive for prehistoric archeological sites. Seven historic-period abandoned farms were identified that are potentially sensitive for associated archeological remains. Other abandoned homesteads and farms are likely in the Project Area, especially near section lines and county roads. Early homesteads might be associated with unmarked family graves that are protected by the *Kansas Unmarked Burial Sites Preservation Act*.

In compliance with the National Environmental Policy Act (NEPA), TVA is considering the environmental impacts of construction and operation of the Project, including effects on cultural



resources. In order to issue a Finding of No Significant Impact, TVA and SHPO might request additional information concerning Project effects on cultural resources. A Phase II Intensive Survey may be recommended by TVA in areas of proposed ground disturbances possibly resulting from Project construction, operation, and decommissioning to identify unrecorded archeological sites (if any) in the APE that potentially meet criteria for listing in the NRHP or RKHP. Specific locations of archeological testing will be determined in consultation with TVA and SHPO. Archeological investigation will conform to professional standards and guidelines as specified by SHPO.

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1.0 INTRODUCTION

CPV Cimarron Renewable Energy Company, LLC (CPV) has proposed construction of the Cimarron Wind Energy Project – Phase 1 (the Project) in Gray County, Kansas. The Project is proposed within an area of approximately 20.4 square miles (13,084 acres) on leased private land (Project Area), located approximately two miles northeast of the City of Cimarron (Figure 1). The Project Area extends into portions of Foote and Cimarron Townships within Township (T) 25S Range (R) 27W, including all or parts of Sections (S) 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 26, 27, 28 and 29.

The Project will be designed to generate up to 165.6 megawatts (MW) of electrical power from approximately 72 Siemens 2.3-MW (or equivalent) wind turbine generators. The Project will also require crane paths, new access roads, improved existing county roads, buried electrical collection lines, permanent meteorological (met) towers, a substation, equipment laydown area, temporary batch plant, and an operation and maintenance (O&M) building (Figure 2). The area of potential effect (APE) has been defined as the construction footprint plus a conservative buffer. The currently proposed APE includes the following Project components along with the assumed construction layout and buffer area:

- 72 turbines (200 foot radius) = 204 acres;
- Access roads, 93,286 feet in length (50-foot width) = 107 acres;
- County road improvements, 36,930 feet in length (30-foot width) = 25 acres;
- Met tower spur roads, 1,562 feet in length (30-foot width) = 1 acre;
- Collection lines, 44,283 feet in length (30-foot) = 30 acres;
- 2 permanent met towers = 2 acres;
- Temporary batch plant, laydown, and O&M building = 10 acres;
- Substation = 5 acres; and
- Crane paths, 16,395 feet in length (40-foot width) = 15 acres.

The total APE, excluding areas of overlap, equals approximately 367 acres.

Tetra Tech EC, Inc. (Tetra Tech) is assisting CPV in permitting the proposed Project. The Tennessee Valley Authority (TVA or the Lead Agency) will purchase power generated by the Project. Therefore, this Project will require environmental review under Section 106 of the National Historic Preservation Act (NHPA) and under the National Environmental Policy Act (NEPA). TVA will consult with the Kansas State Historical Society (KSHS), which serves as the State Historic Preservation Office (SHPO), and interested Native American tribes. In addition, this Project will be subject to the *Kansas Unmarked Burial Sites Preservation Act* (Kansas Statutes Annotated [K.S.A.] 75-2741-75-2754), which protects disturbance of human remains and associated objects.

This Phase I Reconnaissance Survey (the Survey) was conducted to identify possible Project effects on below ground archeological sites that are listed in or potentially eligible for the National Register of Historic Places (NRHP) and/or Register of Historic Kansas Places (RHKP). The APE for archeological resources includes locations of possible ground disturbances resulting



from construction, operation, and decommissioning of Project facilities. Objectives of this Survey included review of previously recorded cultural resources and identification of cultural contexts that might help in locating as-yet unrecorded archeological sites. Locally and regionally important cultural contexts are useful for evaluating cultural resource significance following NRHP eligibility criteria (Townsend et al. 1993). Tetra Tech has prepared a separate study of aboveground architectural resources (Tetra Tech 2010a).

This Survey included three principal tasks: background research; a Project Area visit; and report preparation. Tetra Tech conducted background research between November 3 and 6, 2010 at the Gray County Register of Deeds, Cimarron Public Library, and at the Natural Resource Conservation Service, all in Cimarron; the Santa Fe Trail Museum of Gray County in Ingalls; and at the Dodge City Public Library, the Kansas Heritage Center, and the Kansas Genealogical Society in Dodge City. Additional online research was conducted, including SHPO archeological site files and publications (KSHS 2010b-2010c, 2010e); the KSHS (2010d) and Kansas State Library (2006) for maps and historic photographs; the National Park Service (1994, 2002, 2006) for the National Archeological Database; census records at the University of Virginia Library (2007), Ancestry.com (2010) and other sources; the Gray County Appraiser (2010); Google Books; Historic American Newspapers; and other sources. Field investigations included roadside observations of natural and historic landscape features, conducted on November 4, 12, and 14.

Following this Introduction, Section 2.0 describes the results of background research including environmental and cultural contexts, and cultural resources known within the Project Area. Section 3.0 describes observations from the Project Area site visit. Section 4.0 presents a Project summary and recommendations resulting from investigations. Section 5.0 lists references cited in the report. Figures, Tables, and Photographs follow the report. Appendix A provides the professional qualifications of Dr. Stuart A. Reeve of Tetra Tech who conducted the Survey and authored this report.

2.0 ENVIRONMENTAL AND CULTURAL CONTEXTS

2.1 Environmental Setting

The Project Area is within the Central Great Plains physiographic region, formed under shallow seas during the Mesozoic Era. The Project Area is approximately 1.5 miles north of the City of Cimarron (the seat of Gray County), 11 miles northwest of Dodge City, and 20 miles east of Garden City. The topography is very flat uplands ranging in elevation between approximately 2,700 to 2,800 feet above mean sea level. Most of the Project Area drains gently north and east to Buckner Creek, an intermittent tributary of the Pawnee River. Southern portions of the Project Area drain to the Arkansas River approximately 1.5 miles to the south.

Most soils are variations of silty loam and silty clay loam or clay loam formed from loess, with undifferentiated alluvium along stream drainages and scattered upland intermittent playa deposits (Tetra Tech 2008). Cobbles and pebbles are extremely rare and when found potentially result from human transport. Hydric soils have been described across approximately 93 percent of the Project Area (Figure 3). However, despite the presence of hydric soils, recent National Wetland Inventory (NWI) data indicate that only a small percentage of the Project Area is covered by wetlands (Figure 4). NWI wetland maps show dozens of scattered small (less than 1,000 square meters [m²]) to medium-sized (~80,000 m²) wetlands in the Project Area, the majority of which

are emergent palustrine; many have been terraced, ditched, or diked (United States Department of Interior 1990; Tetra Tech 2008). Playa lakes are also present in the Project Area; playas form during wet seasons and are valuable to wildlife.

During most of the Holocene Epoch, including the last 12,000 years of possible human occupations, the Project Area has maintained grasslands associated with the High Plains (Chapman et al. 2001). Prairie grasslands are mosaics of communities on wet to dry landforms, associated with saline to fresh water wetlands, or from fire history, community succession and agricultural impacts. Grasslands are sensitive to climatic trends, especially periodic droughts. Modern grasslands in the Project Area are predominantly big bluestem (*Andropogon gerardii*), switchgrass (*Panicum virgatum*), little bluestem (*Schizachyrium scoparium*), and sideoats grama (*Bouteloua curtipendula*) (Tetra Tech 2010b). Remnant areas of native grasslands remain in areas with rolling terrain, especially marginal to stream channels (Figure 5). General Land Office surveys in 1872 (Everts 1887) mapped large playas and expansive “wet prairies” in upland headwater sections of the Project Area (Figure 6). Surveys in 1890 by the United States Geological Survey (USGS) (USGS 1892) mapped large playas in the Project Area (Figure 7).

Throughout the prehistoric era, since 12,000 years ago, Native Americans occupying the High Plains of western Kansas hunted and gathered naturally occurring animal and plant resources. Climatic changes led to shifts in subsistence and land use among prehistoric peoples. Late Pleistocene environments were rich in diverse herbivores, including mammoths, large bison, camels, horses, and other animals. Many taxa became extinct between 10,000 and 8000 B.C., coinciding with warming climates and the appearance of Paleoindian hunters, the earliest documented human populations in the Project Area (e.g., Morlan 2001; Hoard and Banks 2006). Bison were the predominant herbivores on the prairies and were a major food resource for prehistoric Native Americans through most of the Holocene. However, bison populations also were tied to climatic variations and grassland productivity. Wet climatic phases led to lush grasses that supported increases in bison populations. Subsequent droughts withered grasses and led to declines of bison herds. The Altithermal climatic optimum, from approximately 6000 to 3000 B.C., was a period of prolonged warmth and drought across the Great Plains. Bison populations declined and the sizes of animals decreased (Wilson 1978). Cooler and wetter climates on the Plains coincided with periods of neo-glaciation in the Rocky Mountains, including The Triple Lakes (3000 to 1000 B.C.), Audubon (A.D. 300 to 800) and Arapaho Peak glaciations (A.D. 1600 to 1850) in the Colorado Front Range (Benedict 1973). Wetter climatic phases again supported more bison and attracted Native American hunters onto the Plains from the surrounding major river basins and mountain areas (Kay 1998a).

The Arkansas River and tributaries provided a natural thoroughfare for movements of animals and people. Water was a critical resource on the arid Plains and was most predicable along the Arkansas River or at springs along creeks. Native plant resources also were most diverse and abundant along the valley of the Arkansas River and other major creeks. Woody plants were more common along rivers, where protected from wildfires and strong winds. Shrubs and trees were important to Native Americans for fuel, materials and foods, such as the fruits of serviceberry (*Amelanchier alnifolia*), choke cherry (*Prunus virginiana*), or wood from Osage orange (*Maclura pomifera*) for bows and other implements (e.g., Moerman 1998:722-724).

2.2 Native American Cultural Contexts

Archeologists divide Native American cultures of Kansas into four major periods: Paleoindian (ca. 10,000-6000 B.C.); Archaic (ca. 6000 B.C.-A.D. 1); Early-Middle Ceramic Period (ca. A.D.

1-1541); and Late Ceramic or Protohistoric Period (A.D. 1541-1820) (Reynolds et al. 2004; Hoard and Banks 2006). Research shows that Gray County and the Project Area might have been exploited by Native American hunters and gatherers during most periods of prehistory. However, few archeological surveys have been conducted in Gray County. SHPO files include reports for only seven prehistoric Native American sites and two paleontological sites (Table 1). Most sites were described near streams or playa lakes. None of the known sites occur in the Project Area.

Although Native Americans first occupied western Kansas more than 11,000 years ago, no Paleoindian Period sites or artifacts are recorded in Gray County in SHPO site files or the National Archeological Database (National Park Service, 1994). However, site 14GY501 contained mammoth and bison bones, suggesting the possible presence of Paleoindian hunters (KSHS 2010a).

The warm, dry conditions of the Altithermal climatic episode (ca. 6000 to 3000 B.C.) reduced game populations across the High Plains and probably resulted in low human population densities (Reynolds et al. 2004; Kay 1998a). Archaic Period sites are rare in western Kansas, and no Archaic Period sites have been reported in Gray County. The Walnut Creek and Wister Complexes along the middle and lower Arkansas River, respectively, date after 2500 B.C., corresponding to wetter climatic conditions (Kay 1998b).

After A.D. 1, agricultural production supported large village sites containing ceramics along the Arkansas River downstream (east) of Gray County. Villages of the Pratt Complex and Great Bend Aspect extended as far west as the Pawnee River, perhaps associated with ancestors of the Washita people (Drass 1998; Newcomb 2001). Two Middle and Late Ceramic Period sites have been identified in Gray County suggesting periodic movements up the Arkansas River and major streams for hunting on the High Plains (KSHS 2010a).

Increasing bison herds, trade with Europeans and the diffusion of horses brought successive waves of tribes from the Northern and Central Plains into western Kansas, including diverse Apache groups during the 1600s (Foster and McCollough 2001), Kiowa, and Comanche during the 1700s (Levi, 2001; Kavanagh 2001), and the Southern Cheyenne and Arapaho during the early 1800s (Fowler 2001; Moore et al. 2001). The Fort Laramie Treaty of 1851 assigned the area north of the Arkansas River, including the Project Area, to the Arapahoe and Cheyenne. The Medicine Lodge Creek Treaty of 1867 assigned a new reservation to these groups south of the Arkansas River and far to the east of the Project Area (Fowler 2001). Among the final episodes of Native American conflict occurred between September 22 and 27, 1878, when the Northern Cheyenne crossed the vicinity of the Project Area in their flight north from Oklahoma (National Park Service 2002:57). Four cowboys from the Barton Ranch in Ingalls were surrounded and chased by the Cheyenne, but escaped (Lemart 1907). Soon afterward, the Cheyenne fought the battle of Punished Woman's Fork against the United States (U.S.) Cavalry in Scott County, north of the Project Area, the last Indian battle in Kansas.

According to the SHPO, the following Native American tribes may have an interest in cultural resources in Gray County (KSHS 2010c):

- Apache Tribe of Oklahoma;
- Arapaho Tribe of the Wind River Reservation, Wyoming;
- Cheyenne-Arapaho Tribes of Oklahoma;

- Northern Cheyenne Tribe of the Northern Cheyenne Indian Reservation, Montana;
- Comanche Nation of Oklahoma;
- Kaw Nation of Oklahoma;
- Kiowa Indian Tribe of Oklahoma;
- Osage Nation of Oklahoma; and
- Wichita and Affiliated Tribes.

TVA, as the lead federal agency, will conduct consultations with interested Native American tribes. It is unknown whether the Project Area contains traditional cultural properties (TCPs) associated with Native American groups that historically occupied the area.

2.3 Euro-American Cultural Contexts

In A.D. 1541, Spaniard Francisco Vasquez de Coronado traveled from New Mexico to Quivira along the Arkansas River in Kansas, east of the Project Area (Thomas 1928; Newcomb 2001). In 1601, Juan de Onate led another Spanish expedition along the Arkansas River near the Project Area, and he described numerous encounters with Apache bands hunting bison (Thomas 1928). Spanish expeditions into western Kansas were rare during the seventeenth century. The Pueblo Revolt in 1680 led to the introduction of horses among Plains tribes. The Apache and Comanche owned large numbers of horses in the eighteenth and nineteenth centuries, and formed a substantial barrier to European incursions.

In 1806, a U.S. Army expedition led by Zebulon Pike traveled up the Arkansas River to the Rocky Mountains. The Santa Fe Trail was established in 1821, again following the Arkansas River westward. Two major branches of the trail crossed what would later become Gray County. The original route, known as the Mountain or Wet Route, followed the north bank of the Arkansas River west to Bent's Fort in Colorado, where it turned south. A second route, the shorter but more dangerous Cimarron Cutoff or Dry Route, turned southwest from the Arkansas River at several locations, including at large camps near Cimarron (Barry 1973). Uplands around the Santa Fe Trail, including perhaps the Project Area, could have been scouted and hunted regularly by the wagon trains, and by Native Americans who often attacked the emigrants.

In 1866, Frank and William Hartwell from New Hampshire started a ranch at the Cimarron Crossing to supply the stagecoach line and emigrant wagon trains (Barry 1973). The ranch was subject to numerous Indian raids. William Hartwell described the landscape in the vicinity of the Project Area (Barry 1973:350):

We were in the midst of a vast open plain, covered only with cactus on the higher ground and with grass in the river bottoms as high as a man on horseback. Prairie-dog towns were everywhere. Buffalo could be seen in any direction, and for an hour at a time the river might be heard roaring in the night from the crossing of great herds.

Since nearly the beginning of Euroamerican occupation of the region, settlements have tended to concentrate along transportation corridors, including the Arkansas River valley, railroad lines, and along county roads along section lines. Travelers and traders used the Santa Fe Trail through Gray County until the 1870s, when the Atchison, Topeka and Santa Fe Railroad (AT&SFRR) reached western Kansas. Dodge City was founded in 1872 along the AT&SFRR and quickly became the destination for Texas cattle drives up the Great Western Cattle trail. Buffalo hunters

also shipped millions of bison skins, meat, and bones from Dodge City. The AT&SFRR was completed to Santa Fe, New Mexico in 1880, and most of the Santa Fe Trail was abandoned (Connelley 1918; Barry 1973; Gallagher et al. 1993).

In 1872, the General Land Office (GLO) surveyed Township, Range and Section lines in the Project Area as a prelude to settlement. Figure 6 includes information from GLO surveys of Gray County. The city of Cimarron was founded along the railroad line in 1878. In 1879 Foote County was established by the Kansas legislature encompassing today's Gray County. Agriculture has been a key element of the county's economy since its inception, with its principal products today being beef cattle, corn, wheat, sorghum, and sunflower seed (KSHS 2010d). The 1880 U.S. census reported only 411 people living in Foote County. There were 27 farms and 1,318 acres had been improved for agriculture (Table 2).

Eastern capitalists imagined profits along the Kansas frontier. During the 1880s, the Eureka Irrigation Canal was built east from Ingalls across the Arkansas River bluffs to advance agricultural interests along the Arkansas River valley. However, this venture failed. On May 25, 1883, the State of Kansas granted all odd-numbered sections in Foote County to the AT&SFRR to subsidize railroad construction, and the company began selling land to homesteaders (Gray County Register of Deeds No Date 6:171).

Many settlers and squatters flooded into Gray County during the 1880s. As described by Lester Luther, son of an early Cimarron real-estate broker, most early homesteads were dugouts or constructed of sod (Luther 1955:2-3):

A dug-out was an excavation usually about 12 x 18 feet in its outer dimensions and about 4 or 5 feet deep. The walls were extended upward with sod and the roof was covered with sod. Two windows and one door was standard equipment and all the living was done in one room.

None of these pioneer dwellings have survived to the present. However, archeological remains might be located in the Project Area. The numbers and locations of early pioneer archeological sites are hinted in the historical record.

In 1887, Foote County changed its name to Gray County, and a local government was established. This was one of the last areas in Kansas where a local government was created. That year, a county census listed 4,896 people and 912 households (Blackmor 1912 1:782). The northeastern corner of the county was Foote Township, an area of approximately 120 square miles that included most of the Project Area. A "Stage Line" ran north from Cimarron to the post office at Radcliffe, located in T24S R28W S14 (Figure 5). The 1887 Gray County map did not identify homesteads in Foote Township or the Project Area (Everts 1887). However, Foote Township was extensively settled by 1887.

Immediately following establishment of Gray County controversy erupted over the location of the county seat between supporters for the villages of Cimarron and Ingalls. A group of 72 Foote Township residents secretly organized the Equalization Society, also known as the Black Lantern Society, to sell their votes for \$10,000 to Cimarron merchants. A vote for the county seat was held on October 31, 1878, Cimarron prevailing with 753 votes versus 713 votes for Ingalls. Foote Township voted 117 for Cimarron and only 25 votes for Ingalls, carrying the election. The bribery was exposed when the Cimarron merchants refused to pay the Black Lantern Society.

The sheriff at Ingalls confiscated the county records, Cimarron reclaimed the records, Ingalls men retaliated, one man was shot in 1887, and eight more were shot in 1889. The U.S. Army eventually imposed marshal law, and the Kansas Supreme Court finally ruled in favor of Cimarron (*Atchison Daily Globe* 1889; *The Pacific Reporter* 1890:363).

The great blizzard of 1886, droughts in 1887 and 1888, dust storms, plagues of grasshoppers and cinch bugs drove many early settlers away from Gray County (Luther 1955:2-3; *Atchison Daily Champion* 1887; Malin 1946). Many residents mortgaged their farms and land and departed, leaving banks and private land agents with disastrous financial losses. By 1890, Gray County had declined to 2,415 people and in 1900 to 1,264 people, a loss of more than two-thirds of the population and households since the founding of Gray County 13 years earlier. Only 123 people and 31 farms remained in Foote Township by 1900 (Table 2). Table 3 lists early land patents and lands purchased from the AT&SFRR in the Project Area that might have been associated with archeological sites related to pioneer settlement (Gray County Register of Deeds no date; Gray County Appraiser 1890). A detailed plat showing locations of early homesteads was not compiled for Gray County. Early USGS quadrangles did not identify locations of dwellings in the Project Area (USGS 1892, 1955).

From 1900 to 1930, populations increased in Gray County and Foote Township, driven by expanding farms and croplands (Table 2). New settlers continued to file claims on quarter-section (160 acres) homesteads and tree claims. Continuing the Jayhawk tradition from before the Civil War, most new settlers in Foote Township were from northern states, especially Ohio, Indiana, Illinois, and Iowa. First generation European immigrants were uncommon in Foote Township (Table 4). Foote Township reached its peak in 1930 with 410 people and 78 households/farms (Table 2). The Sunnyslope School was located in the Project Area, probably in T25S R27W S11 (Kansas Genealogical Society 1987).

Among the families formerly living in the Project Area, E.G. Sparks began buying land in 1888 from the AT&SPRR in T25S R27W Section 23, and passed the land on to his daughter Jennie. She married David A. Lupton, who moved to Gray County in 1891 and patented a homestead in 1898 in the southwestern quarter of T25S R27W Section 14. Figure 8 is a faded newspaper photograph of the David Lupton homestead, now demolished (Kansas Genealogical Society 1987). The frame house began with two rooms, the second floor and front room were added in 1912. David eventually owned 12 quarters of land. His son, James Lupton, took over the homestead. James' sister Francis married neighbor George Johnson. In 1930, another neighbor was Alex Salem, who emigrated from Assyria in 1900 (Ancestry.com 2010). Salem's descendants continue to live in the Project Area.

The Great Depression of the 1920s and 1930s and droughts of the Dust Bowl were hard times in Gray County (University of Kansas 2009). Landscape changes probably occurred in the Project Area from dust storms, wind erosion, dune deposits, and field reclamation efforts during the 1930s. However, the area of agricultural land increased during the 1940s in Gray County (Table 2), aided by programs by the United States Department of Agriculture (USDA) Soil Conservation Service.

A Gray County plat map from 1969 (Gray County Register of Deeds 1969) and the 1969 Gray County, Kansas Farm & Ranch Directory (Anonymous 1969) provide detailed information about former Project Area settlements, including locations of 16 dwellings (Table 5). In 2000, there were 126 people and 57 households/farms in Foote Township (Table 2). Records of the Gray

County Appraiser provide possible dates of construction for 13 existing dwellings in the Project Area (Gray County Appraiser 2010). Only 6 dwellings are more than 50 years old, the oldest surviving dwelling dates to 1920 (Table 5).

2.4 Cultural Resources Reported in the Project Area

Cultural resources include archeological sites, standing structures, objects, districts, traditional cultural properties, and other properties that illustrate important aspects of prehistory or history or have important and long-standing cultural associations with established communities or social groups. Research results are briefly summarized below:

- **NRHP Properties.** A review of properties listed in the NRHP and RHKP revealed no listed or potentially eligible archeological sites, historic trails, or historic architectural resources within the proposed Project Area (KSHS 2010b) National Register of Historic Places 2010). The nearest NRHP listed properties are the Cimarron Hotel and Gray County Courthouse (Old) located approximately 2 miles southwest of the Project Area in the city of Cimarron. The Santa Fe Trail National Historic Landmark is approximately 5 miles southeast of the Project Area along U.S. Route 50, near the Gray and Ford County line. In addition, the Barton House is situated approximately 9 miles to the west of the Project Area in the town of Ingalls. Unrecorded archeological sites, architectural resources, and TCPs might be located in the Project Area that might meet the criteria for listing on the NRHP and RHKP.
- **Archeological Sites.** SHPO site files contain no references to prehistoric or historic archeological sites in the Project Area (Table 1). Similarly, no archeological surveys have been conducted in the Project Area (KSHS, 2010a; National Park Service, 1994, 2006). The small sample of archeological sites recorded in SHPO site files from Gray County indicate Native American settlements were located near rivers, streams and playas SHPO also reviewed maps that included the Project Area and most of Foote Township, observing (Weston 2009):

Our concern is with those areas where lines of turbines and access roads are situated near playa lakes and the upper reaches of the Buckner Creek drainage. Such features provide a major water source in a relatively arid portion of the state, and known archeological sites are situated around similar features in nearby areas.

In addition, archeological remains of former homesteads might be located within the Project Area. Former dwellings, outbuildings and associated features and artifact assemblages were most likely near public rights-of-way along section lines and county roads.

- **Architectural Resources.** No historic architectural structures have been previously surveyed in the Project Area. The Gray County Appraiser’s Office identified construction dates of 6 dwellings in the Project Area that date to 1960 or older (which represents dwellings 50 years old or older). SHPO observed (Weston 2009):

We also request that structures/farmsteads older than 50 years within the Project Area, of which there are likely to be very few, be photographed so that their historic significance (if any) may be addressed.

A Historic Architecture Reconnaissance Survey is the subject of another Project report (Tetra Tech 2010a).

- Traditional Cultural Properties. No TCPs have been identified in the Project Area. TVA, the Lead Agency, will consult with interested Native American tribes to identify their concerns (if any) about the Project.

3.0 FIELD OBSERVATIONS

Based on results of background research, roadside reconnaissance of the Project Area was conducted on November 4, 12, and 14, 2010. Objectives of the field investigations included:

- Observe environments that are potentially sensitive for prehistoric archeological sites;
- Identify landscape features possibly associated with former farmsteads; and
- Observe possible ground disturbances that might influence the integrity of cultural resources (if present).

During the survey, heavy rains had left many county roads muddy and impassable, especially cross branches of Buckner Creek. All passable dirt roads were traveled to observe adjacent properties in the Project Area. Notes were collected about agricultural practices, landscape features, and ground cover, information that will be useful in developing field survey strategies if it is determined that a Phase II Intensive Survey will be performed. Areas of proposed wind turbine construction were not visited. No private properties were entered and no archeological materials were collected. Locating and testing archeological sites are tasks for Phase II Intensive Surveys.

Table 6 summarizes observations compiled during the Phase I survey, including recent (November 2010) ground cover, grassland types (Tetra Tech 2010b), water resources (United States Department of the Interior 1990), farms noted in the 1969 *Gray County, Kansas Farm & Ranch Directory* (Anonymous 1969), and archeological sensitivity.

Background research and SHPO comments (Weston 2009) suggest that water resources are important criteria for determining prehistoric archeological sensitivity in the Project Area. At this time, all playa lakes and streams and wetlands are considered sensitive for prehistoric archeological sites including locations within most sections of the Project Area. However, formerly, large playa lakes, noted on 1887 and 1892 maps (Figures 6 and 7) in Sections 9, 18, 19, 20 and 24, appear to have been drained and no obvious depressions or paleo-shorelines were observed during the field reconnaissance. Figure 9 provides a detail aerial photograph of Sections 17, 18, 19 and 20, showing mapped wetland features and areas of proposed Project APE. No obvious landscape features are evident that indicate historic playa lakes or archeologically sensitive lake margins. Other recently mapped playas and wetlands appear to contain water

seasonally, and might not have been landscape features that attracted prehistoric Native Americans.

As recommended by SHPO, the stream valley of Buckner Creek in Sections 11, 12, 13, 14, 23 and 24 was likely to be especially sensitive for prehistoric archeological sites. Valleys might have provided predictable water sources from springs and shelter from strong winds (Photograph 1). Many mapped upland stream channels were extremely shallow and floodplains and terraces appear to have been smoothed by plowing. No deeply eroded ravines were observed during the field reconnaissance.

During the November 2010 field reconnaissance, seven abandoned farms were identified by the presence of remnant outbuildings, fences and old farm equipment and/or trees planted for wind breaks, including:

- Location 1, in the southeast quarter of Section 10 (Photograph 3);
- Location 2, in the northwest quarter of Section 11 (Photograph 4);
- Location 3, in the southwest quarter of Section 11 (Photograph 5);
- Location 4, in the northwest quarter of Section 14 (Photograph 6);
- Location 5, the former David Lupton farm in the southwest quarter of Section 14 (Photograph 7);
- Location 6, in the southeast quarter of Section 14 (Photograph 8); and
- Location 7, in the southwest quarter of Section 24 (Photograph 9).

Observed abandoned farms are sensitive for archeological remains and are identified (*) in Table 6. Other homesteads and farms are likely in the Project Area, especially near section lines and county roads. Evidence for early homesteads is among the more compelling research topics that might be addressed through archeological investigations. Standing structures within the architectural APE style dated as 50-years-old or older are the subject of the Historic Architecture Reconnaissance Survey – a separate Project report. As noted in Section 2.3, homesteaders flocked into Foote Township before 1887 and probably established land claims by occupying sod dwellings or dugouts. Many of these early claims were abandoned, or early homes were replaced by more substantial wooden dwellings, outbuildings and other improvements. Homesteads might contain unmarked family graves that are protected by the *Kansas Unmarked Burial Sites Preservation Act* (K.S.A. 75-2741-75-2754).

Figure 11 summarizes areas sensitive for prehistoric sites, including 330-foot buffers (100 meters) around mapped playas, streams, and wetlands. This area of archeological sensitivity is offered for planning purposes and is not intended as a development setback, and precise locations for possible archeological testing will be determined in consultation with TVA and SHPO. Level plowed fields away (more than 330 feet) from water sources have low archeological sensitivity, which includes most of the Project Area. It is important to note that the water features used in this preliminary archeological sensitivity map are likely overly conservative and all water features in the Project APE will be field verified during wetland delineations to be conducted in 2011. Abandoned farmsteads (Locations 1 to 7) are also identified on Figure 11. Proposed areas of wind development, including most turbines, access roads, collection lines and other facilities, tend to avoid playas, wetlands and streams, reducing potential impacts on prehistoric archeological sites.

Setbacks from roads and existing dwellings also limit impacts on historic-period archeological sites.

Native grasslands have probably been less affected by agricultural plowing and therefore are habitats where archeological sites (if present) are likely to be better preserved than in plowed fields. Many formerly plowed areas have been converted to grasslands as part of the 1985 USDA Conservation Reserve Program (CRP). Most grassland areas appear to have low ground visibility (less than 40 percent), potentially limiting the effectiveness of pedestrian archeological surveys (Photograph 2). No-till practices, especially planting milo in untilled harvested wheat fields, also reduces visibility due to chaff littering ground surfaces.

Soil conservation practices might have affected archeological preservation in various sections of the Project Area. For example, beginning during the 1940s and 1950s, field terracing was implemented along many streams in Gray County to reduce stream erosion (Eberle 2010). Ravines have been filled, stream gradients have been altered by damming and road construction, and playas have been drained in some areas. Figure 10 presents a detailed aerial photograph of the valley of Buckner Creek in Sections 11, 12, 13 and 14. Numerous parallel terrace berms follow contours along Buckner Creek. Portions of the APE crossing Section 12 are likely to be disturbed by terrace grading, however the APE crossing native grasslands in Section 13 is unlikely to have been disturbed by grading (Figure 10). All slopes and drainages observed during the field investigation were rounded and smoothed, suggesting modification of eroded landforms.

4.0 SUMMARY AND RECOMMENDATIONS

During most of the period of possible human occupations, the Project Area has maintained grasslands associated with the High Plains. The Project Area has been subjected to periodic droughts and grassland fires. The nearby Arkansas River probably provided a corridor for travel by animals and people throughout the Holocene. Occupations by Native Americans possibly occurred during periods of wetter climates when water and game and plant resources were most abundant. Prehistoric period archeological sites in the Project Area are expected to be located around former playa lakes and along the valley of Buckner Creek. Upland flats far from water sources, including most of the Project Area, probably have low sensitivity for prehistoric archeological sites.

During the historic period, Euroamerican occupations have been focused toward the valley of the Arkansas River. The Santa Fe Trail was established in 1821 and emigrants used the trail until the coming of the railroad during the 1870s. Uplands around the Santa Fe Trail, including perhaps the Project Area, could have been scouted and hunted regularly by the wagon trains and by Native Americans. In 1872, the General Land Office surveyed Township, Range, and Section lines in the Project Area as a prelude to settlement. Populations increased dramatically during the 1880s, probably including early homesteads in the Project Area. Blizzards, droughts, dust storms, and insect pests caused abandonment of many early homesteads by 1900. New settlers arrived through the early twentieth century. During the Dust Bowl years of the 1930s, landscape changes probably occurred in the Project Area from wind erosion, dune deposits and field reclamation efforts. By 1969, the Project Area contained 16 dwellings. Presently, there are 13 dwellings in the Project Area, but only 6 dwellings are more than 50 years old. The oldest surviving dwelling dates to 1920.

Based on results of background research, roadside reconnaissance of the Project Area was conducted to observe environments, landscape features and disturbances that are potentially associated with prehistoric and historic period archeological sites. As recommended by SHPO, the margins of playa lakes, streams, and wetlands are presently considered sensitive for archeological sites, including locations in most sections of the Project Area (Table 7). Little evidence was observed for large playa lakes shown on nineteenth-century maps (Figures 6 and 7). Valleys along Buckner Creek in northeastern sections of the Project Area might have provided predictable water sources from springs and shelter from strong winds, and are especially sensitive for prehistoric archeological sites. However, extensive ground disturbances have resulted from contour terracing. Additional background research is recommended to determine the history of landscape modifications in the APE. Additional research might include analyses of historic aerial photographs, records of the USDA soil conservation programs, and landowner interviews.

Seven historic-period abandoned farms were identified that are potentially sensitive for associated archeological remains. Other abandoned homesteads and farms are likely in the Project Area, especially near section lines and county roads. A separate Historic Architecture Reconnaissance Survey is being conducted for this Project to identify and document all above ground cultural resources within the architectural APE style dated as 50-years-old or older so that TVA and SHPO may assess their potential eligibility for the NRHP. Early homesteads might be associated with unmarked family graves that are protected by state statute.

Proposed areas of Project development, including most turbines, access roads, collection lines and other facilities, tend to avoid playas, wetlands and streams, reducing potential impacts on prehistoric archeological sites (if present). The location of water bodies will be field verified during wetland delineations planned for 2011. The setbacks from roads and existing dwellings which CPV has applied to the Project also coincidentally may limit impacts on historic-period archeological sites. In addition, many areas of the Project Area have been affected by ground disturbances associated with agricultural practices.

TVA as federal Lead Agency should consult with SHPO regarding steps required to comply with Section 106 of the NHPA and other federal permitting requirements on behalf of CPV and the Project. A Phase II Intensive Survey will likely be required by TVA and SHPO in areas of proposed Project disturbance to identify if unrecorded archeological sites are located in the APE that potentially meet criteria for listing in the NRHP and RKHP. Specific locations and methods of archeological testing would be developed in consultation with TVA and SHPO. Archeological investigations will conform to professional standards and guidelines as specified by SHPO (KSHS 2010e).

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TABLES

Table 1. Recorded Archeological Sites in Gray County, Kansas

Site	Culture	Period	Site Type	Setting	T	R	S
14GY301	Prehistoric	Unknown	Camp	Ridge crest near playa	27	30	19
14GY302	Prehistoric	Middle Ceramic	Camp	Ridge crest south of Crooked Creek	29	29	22
14GY303	Prehistoric	Unknown	Lithic scatter	Stream bank	29	28	32
14GY304	Prehistoric	Middle-Late Ceramic	Camp	Steep bluff south of Crooked Creek	29	29	36
14GY401	Paleontological	Unknown	Animal bones	Bluff slope north of Arkansas River	26	38	12
14GY402	Prehistoric	Unknown	Isolated find	Unknown	29	29	22
14GY403	Prehistoric	Unknown	Isolated find	Unknown	29	28	6
14GY404	Prehistoric	Unknown	Isolated find	Unknown	29	29	23
14GY501	Paleontological	Pleistocene	Mammoth, bison	Stream bank	25	28	32

Legend: T = Township, R = Range, S = Section

Source: KSHS 2010a

Table 2. Population and Agricultural Trends in Gray County and Foote Township, Kansas

Year	Gray County				Foote Township	
	Population	Dwellings	Farms	Improved Acres	Population	Dwellings (Farms)
1880*	411	No data	27	1,318	No data	No data
1887	4,896	912	No data	No data	No data	No data
1890	2,415	No data	No data	No data	No data	No data
1900	1,264	312	237	31,590	123	31
1910	3,121	830	574	108,698	202	58
1920	4,711	1,067	733	228,277	301	66
1930	6,211	No data	828	481,082	410	78
1940	4,773	1,378	866	546,719	No data	No data
1950	4,894	1,399	619	491,083	No data	No data
1960	4,380	1,337	No data	No data	No data	No data
1970	4,516	1,626	No data	No data	No data	No data
1980	5,138	2,010	No data	No data	No data	No data
1990	5,396	2,114	No data	No data	No data	No data
2000	5,904	2,181	No data	No data	126	57

* Foote County

Sources: University of Virginia Library 2007; Blackmor 1912; Ancestry.com 2010; Institute for Policy and Social Research 2010; City-Data.com 2010

Table 3. Early Land Claims in the Project Area

T	R	S	Q	Date	Grantor	Grantee	Reference
25	27	7	NE	1898/05/17	AT&SFRR	Wilder, Edward	6:171
25	27	7	NW	1898/05/17	AT&SFRR	Wilder, Edward	6:171
25	27	7	SW	1898/05/17	AT&SFRR	Wilder, Edward	6:171
25	27	7	SE	1898/05/17	AT&SFRR	Wilder, Edward	6:171
25	27	8	NE	1893/02/22	US	Custer, Luther	21:066
25	27	8	NW	1888/08/21	US	Shipley, William	2:019
25	27	8	SW	1902/01/11	US	Hugg, John	21:237
25	27	8	SE	1902/01/16	US	Hale, Sarah A., heirs	21:237
25	27	9	NE	1890	AT&SFRR	Moore, John	Tax List
25	27	9	NW	1890	AT&SFRR	Fitch, William	Tax List
25	27	9	SW	1890	AT&SFRR	Moore, Elder	Tax List
25	27	9	SE	1890	AT&SFRR	More, Elder	Tax List
25	27	10	NE	1893/05/08	US	Slaughter, Jacob M.	21:077
25	27	10	NW	1902/01/22	US	English, Robert W.	21:231
25	27	10	SW	1902/06/30	US	Adams, Levi	21:252
25	27	10	SE	1893/05/08	US	Gray, Virginia F.	21:078
25	27	11	NE	1890	AT&SFRR	Fitch, William	Tax List
25	27	11	NW	1890	AT&SFRR	Fitch, William	Tax List
25	27	11	SW	1900/09/04	AT&SFRR	Slaughter, Jacob M.	1:318
25	27	11	SE	1901/02/09	AT&SFRR	Slaughter, Jacob M.	1:318
25	27	12	NE	1913/05/14	US	Riley, William B.	21:548
25	27	12	NW	1891/03/21	US	Osten, Oley	2:090
25	27	12	SW	1899/09/11	US	Custer, Luther	21:199
25	27	12	SE	1898/05/02	US	Marshall, Fred	21:177
25	27	13	NE	1890	AT&SFRR	Thompson, E.W.	Tax List
25	27	13	NW	1890	AT&SFRR	Lakin, S.W.	Tax List
25	27	13	SW	1889/08/04	Otto, Simon S.	Longley, James	16:051
25	27	13	SE	1890	AT&SFRR	Thompson, E.W.	Tax List
25	27	14	NE	1898/06/16	US	Snyder, Margret A.	21:180
25	27	14	NW	1902/11/26	US	Ferrel, William B.	21:261
25	27	14	SW	1898/08/02	US	Lupton, David A.	21:182
25	27	14	SE	No record	US	No record	No record
25	27	15	NE	1890	AT&SFRR	St. John, E.	Tax List
25	27	15	NW	1890	AT&SFRR	St. John, E.	Tax List
25	27	15	SW	1890	AT&SFRR	St. John, E.	Tax List
25	27	15	SE	1890	AT&SFRR	Birch, J.E.	Tax List
25	27	16	NE	1931/10/09	State of Kansas	Keesling, C.G.	A:139
25	27	16	NW	1922/09/23	State of Kansas	Keesling, C.G.	A:120
25	27	16	SW	1912/09/21	State of Kansas	Luther, F.M.; Keesling; C.G.	44:143, 143
25	27	16	SE	1922/09/23	State of Kansas	Keesling, C.G.	A:120
25	27	17	NE	1899/06/29	AT&SFRR	Warner, Vespasian	14:428
25	27	17	NW	1899/06/29	AT&SFRR	Warner, Vespasian	14:428
25	27	17	SW	1899/06/29	AT&SFRR	Warner, Vespasian	14:428
25	27	17	SE	1899/06/29	AT&SFRR	Warner, Vespasian	14:428
25	27	18	NE	1886/12/06	US	Niles, Lewis E.	22:039
25	27	18	NW	1892/01/16	US	Black, George H.	21:025
25	27	18	SW	1898/11/25	US	Parris, John M.	2:154

Legend: T = Township, R = Range, S = Section, Q = Quarter section.

Source: Gray County Register of Deeds No Date; Gray County Appraiser 1890

Table 3. Early Land Claims in the Project Area

T	R	S	Q	Date	Grantor	Grantee	Reference
25	27	18	SE	1891/03/16	US	Lindenberger, John	27:011
25	27	19	NE	1899/01/07	AT&SFRR	Adams, W.H.	6:282
25	27	19	NW	1899/01/07	AT&SFRR	Adams, W.H.	6:282
25	27	19	SW	1899/01/07	AT&SFRR	Adams, W.H.	6:282
25	27	19	SE	1899/01/07	AT&SFRR	Adams, W.H.	6:282
25	27	20	NE	1893/08/03	US	Hole, Joseph D.	2:118
25	27	20	NW	1901/09/02	US	Parris, Charles E.	21:228
25	27	20	SW	1897/09/14	US	Parris, Joseph H.	21:165
25	27	20	SE	1905/01/06	US	Parris, Lewis W.	21:308
25	27	21	NE	1902/01/18	Luther, F.M.	Sauser, W.S.	20:164
25	27	21	NW	1902/11/22	Seuser, W.G.	Stulhein, George S.	20:385
25	27	21	SW	1902/11/22	Seuser, W.G.	Stulhein, George S.	20:385
25	27	21	SE	1902/01/18	Luther, F.M.	Sauser, W.S.	20:164
25	27	22	NE	1905/05/17	US	Thompson, Ida L.	21:323
25	27	22	NW	1904/04/18	US	Stang, Nellie S.	21:287
25	27	22	SW	1892/02/10	US	Marble, Lewis L.	2:099
25	27	22	SE	1888/05/19	US	Nelson, Prior L.	1:149
25	27	23	NE	1891/12/05	Sparks, E.G.	Luptan, Jennie	18:449
25	27	23	NW	1891/12/05	Sparks, E.G.	Luptan, Jennie	18:449
25	27	23	SW	1898/08/02	Sparks, E.G.	Luptan, Jennie	6:224
25	27	23	SE	1898/08/02	Sparks, E.G.	Luptan, Jennie	6:224
25	27	24	NE	1913/03/27	US	Arnold, Wellington B. heirs	21:544
25	27	24	NW	1928/10/25	US	McDaniel, Wilbert L.	10:377
25	27	24	SW	1910/08/15	US	Wilson, William M.	21:452
25	27	24	SE	1894/06/20	US	Bayless, William F.	2:130
25	27	26	NE	1901/09/30	US	Morgan, Solon C.	21:229
25	27	26	NW	1888/05/11	US	Parris, Joseph H.	1:145
25	27	26	SW	1894/02/05	US	Elem, Samuel H.	21:105
25	27	26	SE	1892/12/01	US	Mitchell, Fuller A.	21:052
25	27	27	NE	1895/07/23	Snyder, John C.	Loose, Joseph M.	16:500
25	27	27	NW	1895/07/23	Snyder, John C.	Loose, Joseph M.	16:500
25	27	27	SW	1885/12/23	AT&SFRR	Hudson, E.G.	5:192
25	27	27	SE	1895/07/23	Snyder, John C.	Loose, Joseph M.	16:500
25	27	28	NE	1888/05/19	US	Camden, John A.	1:150
25	27	28	NW	1910/11/05	US	Clothier, Wilford E.	21:457
25	27	28	SW	1893/09/07	US	Parris, John M.	21:094
25	27	28	SE	1909/01/04	US	Naylor, Charles A	26:445
25	27	29	NE	1903/11/19	Luther, F.M.	Clothier, Wilford E.	39:010
25	27	29	NW	1903/12/18	Clugston, David B.	Miller, Catherine R.	39:041
25	27	29	SW	1896/11/23	AT&SFRR	Young, G.A.; J.A.	6:041
25	27	29	SE	1905/05/12	Logan, William	Naylor, Matilda E.	39:465

Legend: T = Township, R = Range, S = Section, Q = Quarter section.

Source: Gray County Register of Deeds No Date; Gray County Appraiser 1890

Table 4. Origins of Heads of Households in Foote Township

Origin	Census Dates			
	1900	1910	1920	1930
Foreign Born				
Alsace	0	0	1	0
Assyria	0	0	0	2
Canada	1	0	0	0
England	0	0	0	1
Germany	2	5	0	0
Norway	1	0	0	0
Poland	0	0	2	0
Russia	0	0	1	5
Turkey	0	0	1	1
United States Born				
Colorado	0	0	1	0
Iowa	2	7	3	3
Indiana	8	5	5	6
Kansas	2	6	25	38
Kentucky	0	2	2	1
Minnesota	1	0	0	0
Missouri	0	6	9	4
Nebraska	0	0	2	2
New York	2	1	0	0
Ohio	5	4	4	5
Oklahoma	0	0	0	3
Pennsylvania	1	1	1	0
Tennessee	0	2	0	0
West Virginia	2	2	2	0

Source: Ancestry.com 2010

Table 5. Recent Landowners and Structures in the Project Area

T	R	S	Q	1969 Land Owners	1969 Farm Directory: Dwellings	2010 Dwellings: Date and Style
25	27	7	NE	Moore, C.H. estate		
25	27	7	NW	Moore, C.H. estate		
25	27	7	SW	Moore, C.H. estate		
25	27	7	SE	Moore, C.H. estate		
25	27	8	NE	Moore, C.H. estate		
25	27	8	NW	Moore, C.H. estate		
25	27	8	SW	Miller, Myrtle I.		
25	27	8	SE	Turner, G.L. & C.K.		
25	27	9	NE	Adams, John P.		
25	27	9	NW	McDonald, Hazel		
25	27	9	SW	Day, Floyd W.	Day, Floyd W.	
25	27	9	SE	Day, Floyd W.		
25	27	10	NE	Horton, Alb.		
25	27	10	NW	Koehler, Edw.		
25	27	10	SW	Koehler, Edw.		
25	27	10	SE	Horton, Alb.	Horton, Ted	
25	27	11	NE	Herron, Sam		
25	27	11	NW	Armstrong, Evelyn et al.		
25	27	11	SW	Armstrong, Evelyn et al.	No resident	
25	27	11	SE	Herron, Sam		
25	27	12	NE	Kittle, F.W.		
25	27	12	NW	Kittle, F.W.	Kittle, F.W.	1955 Ranch
25	27	12	SW	Kittle, F.W.		
25	27	12	SE	Kittle, F.W.		
25	27	13	NE	Herron, Sam		
25	27	13	NW	Herron, Sam		
25	27	13	SW	Lupton, Joseph		
25	27	13	SE	Miller, Doris L.		
25	27	14	NE	Herron, Sam		
25	27	14	NW	Harris, Bland		
25	27	14	SW	Johnson, Francis J.	Salem, Hesson	
25	27	14	SE	Herron, Sam	Herron, Roy L.	Farm buildings
25	27	15	NE	Lupton, Joseph		
25	27	15	NW	Johnson, Francis J.		
25	27	15	SW	Lupton, Joseph	Sanford, Ives	1921 Bungalow
25	27	15	SE	Lupton, Joseph		
25	27	16	NE	Fry, Ralph A.		
25	27	16	NW	Niemeir, V.G.		
25	27	16	SW	Niemeir, V.G.	Niemeir, Guy	1920 Bungalow
25	27	16	SE	Niemeir, V.G.		
25	27	17	NE	Lohse, A. & F.		
25	27	17	NW	Holloway, M.L.		
25	27	17	SW	Groth, E.A.		
25	27	17	SE	Voran, N.P. & R.W.		
25	27	18	NE	Warner, Sid T.		
25	27	18	SE	Walker, Nellie	Salem, Dale	

Legend: T = Township; R = Range; S = Section; Q = Quarter section.

Sources: Gray County Register of Deeds 1969; Anonymous 1969; Gray County Appraiser 2010

Table 5. Recent Landowners and Structures in the Project Area

T	R	S	Q	1969 Land Owners	1969 Farm Directory: Dwellings	2010 Dwellings: Date and Style
25	27	19	NE	Herron, Sam		
25	27	19	NW	Warner, S.T. & Diane		
25	27	19	SW	Warner, Diane		
25	27	19	SE	Herron, Sam		
25	27	20	NE	Salem, Alex M.		
25	27	20	NW	Jantz, R.T.	Jantz, Millard	1998 Manufactured
25	27	20	SW	Moore, C.H. estate		
25	27	20	SE	Voran, Lester W.		
25	27	21	NE	Voran, Lester W.		
25	27	21	NW	Voran, Lester W.		
25	27	21	SW	Voran, Lester W.	Voran, Lester W.	1963 Ranch
25	27	21	SE	Buck, E.R.		
25	27	22	NE	Salem, Alex M.		1980 Ranch
25	27	22	NW	Salem, Alex M.	Salem, Alex M.	1930 Bungalow
25	27	22	SW	Salem, Alex M.		
25	27	22	SE	Redger, Dan	Redger, Dana	1925 Bungalow
25	27	23	NE	Lupton, J.L.; Johnson, F.L.		
25	27	23	NW	Lupton, J.L.; Johnson, F.L.		
25	27	23	SW	Johnson, Francis J.	No resident	1993 Other
25	27	23	SE	Johnson, Francis J.		
25	27	24	NE	Schwartz, Bernard R. et al.		
25	27	24	NW	No data		
25	27	24	SW	Bean, Walt C.		
25	27	24	SE	Lugfer, R.I. & S.E.		
25	27	26	NE	Kultgen, D.L.		
25	27	26	NW	Redger, Dan		
25	27	26	SE	Kultgen, D.L.		
25	27	27	NE	Hager, Leon W.		2007 Ranch
25	27	27	NW	Steinberg, E. & Truhlier, E.		
25	27	27	SW	Hagen, J. Wesley	Hagen, J. Wesley	1957 Ranch
25	27	28	NE	Salem, Alex M.		
25	27	28	NW	Salem, Alex M.		
25	27	28	SW	Hagen, Leon M.	Koen, Wilbur	2000 Ranch; 2002
25	27	28	SE	Eitzen, Peter C.		
25	27	29	NE	Voran, Lester W.		
25	27	29	SE	Voran, Lester W.		

Legend: T = Township; R = Range; S = Section; Q = Quarter section.

Sources: Gray County Register of Deeds 1969; Anonymous 1969; Gray County Appraiser 2010

Table 6. Environments, Land Use, and Archeological Sensitivity in the Project Area

T	R	S	Q	Ground Cover Observed 2010	Grassland Types	NWI Water Resources	1969 Gray County Plat - Farm Present?	Archeological Sensitivity
25	27	7	NE	Milo-harvested	0	Stream; Wetland	0	High/Low
25	27	7	NW	Milo-harvested	0	Wetland	0	High/Low
25	27	7	SW	Wheat-harvested	0	0	0	Low
25	27	7	SE	Wheat-harvested	0	Stream	0	High/Low
25	27	8	NE	Wheat-planted; grassland	CRP	Stream	0	High/Low
25	27	8	NW	Wheat-planted; grassland	CRP	Stream	0	High/Low
25	27	8	SW	Milo-harvested; wheat-planted; grassland	CRP	Playa	0	High/Low
25	27	8	SE	Milo-harvested; wheat-harvested; wheat-planted; grassland	CRP	Playa	0	High/Low
25	27	9	NE	Wheat-harvested	0	Playa	0	High/Low
25	27	9	NW	Milo-harvested; wheat-harvested; wheat-planted	0	0	0	Low
25	27	9	SW	Milo-harvested	0	Stream	1	High/Low
25	27	9	SE	No view	0	Stream	0	High/Low
25	27	10	NE	Wheat-planted	0	Stream	0	High/Low
25	27	10	NW	Milo-harvested	0	0	0	Low
25	27	10	SW	Grassland	0	Stream	0	High/Low
25	27	10	SE	Milo-harvested; wheat-harvested	0	Stream	1	High*/Low
25	27	11	NE	Wheat-planted; grassland	Planted; CRP	Stream	0	High/Low
25	27	11	NW	Wheat-planted; trees	0	Stream	0	High*/Low
25	27	11	SW	Wheat-harvested; grassland	Native	Stream	1	High*/Low
25	27	11	SE	No view	0	Stream	0	High/Low
25	27	12	NE	No view	Native; CRP; planted	Stream	0	High/Low
25	27	12	NW	Grassland	Native; CRP	Stream	1	High/Low
25	27	12	SW	No view	Native; CRP	Stream	0	High/Low
25	27	12	SE	No view	CRP	Stream	0	High/Low
25	27	13	NE	No view	Native	Stream	0	High/Low
25	27	13	NW	No view	Native	Stream	0	High/Low
25	27	13	SW	Wheat-planted	0	Stream	0	High/Low
25	27	13	SE	No view	0	Playa; Stream	0	High/Low
25	27	14	NE	No view	0	Stream	0	High/Low
25	27	14	NW	Wheat-planted; Milo-harvested; grassland	Native	0	0	High*/Low
25	27	14	SW	Wheat-planted; wheat-harvested; Milo-harvested; treeline	0	Stream	1	High*/Low
25	27	14	SE	Grassland	Planted	Stream	1	High*/Low
25	27	15	NE	Milo-harvested; wheat-harvested	CRP	0	0	Low
25	27	15	NW	No view	0	Stream	0	High/Low
25	27	15	SW	Grassland	Native	Stream	1	High/Low
25	27	15	SE	Milo-harvested	0	Stream	0	High/Low
25	27	16	NE	No view	CRP	Stream	0	High/Low
25	27	16	NW	Milo-harvested; wheat-harvested	0	0	0	Low
25	27	16	SW	Milo-harvested; grassland	Native	0	1	Low
25	27	16	SE	Wheat-harvested; grassland	Native	Stream	0	High/Low
25	27	17	NE	Wheat-planted	0	Stream	0	High/Low
25	27	17	NW	Wheat-planted; grassland	CRP	Playa; Wetland	0	High/Low
25	27	17	SW	Wheat-planted	0	Stream; Wetland	0	High/Low
25	27	17	SE	Wheat-planted	0	Stream	0	High/Low

Legend: T = Township; R = Range; S = Section; Q = Quarter section; 0 = absent, 1 = 1 Farm Present in 1969; Archeological Sensitivity * = possible abandoned farmstead observed; NWI = National Wetlands Inventory

Table 6. Environments, Land Use, and Archeological Sensitivity in the Project Area

T	R	S	Q	Ground Cover Observed 2010	Grassland Types	NWI Water Resources	1969 Gray County Plat - Farm Present?	Archeological Sensitivity
25	27	18	NE	Grassland; Milo-harvested	0	Stream	0	High/Low
25	27	18	SE	Wheat-harvested; Milo-harvested	0	Stream; Wetland	1	High/Low
25	27	19	NE	Wheat-harvested	0	0	0	Low
25	27	19	NW	Milo-harvested; wheat-harvested; grassland	CRP	Stream	0	High/Low
25	27	19	SW	Wheat-harvested	0	Stream	0	High/Low
25	27	19	SE	Milo-harvested; wheat-harvested	0	0	0	Low
25	27	20	NE	Grassland; wheat-planted	No data	Wetland	0	High/Low
25	27	20	NW	Milo-harvested; wheat-planted	0	0	1	Low
25	27	20	SW	Grassland	Planted	Playa	0	High/Low
25	27	20	SE	Hayfield; wheat planted	0	Wetland	0	High/Low
25	27	21	NE	No view	0	Stream	0	High/Low
25	27	21	NW	Wheat-planted	0	Stream	0	High/Low
25	27	21	SW	Wheat-planted; grassland	Native; planted	Stream	1	High/Low
25	27	21	SE	No view	0	Stream	0	High/Low
25	27	22	NE	Wheat-planted; wheat-harvested	0	Stream	0	High/Low
25	27	22	NW	Wheat-harvested; grassland	Native	Stream	1	High/Low
25	27	22	SW	No view	No data	Stream	0	High/Low
25	27	22	SE	Milo-harvested; grassland	Native; CRP	Stream	1	High/Low
25	27	23	NE	Wheat-harvested; grassland	Native	Stream	0	High/Low
25	27	23	NW	Wheat-planted	0	Stream	0	High/Low
25	27	23	SW	Wheat-planted; grassland; treeline	Native; CRP	Stream	1	High/Low
25	27	23	SE	Milo-harvested; grassland	Native; CRP	Stream	0	High/Low
25	27	24	NE	No view	0	0	0	Low
25	27	24	NW	Hayfield-planted; wheat-planted	0	Stream	0	High/Low
25	27	24	SW	Wheat-planted; grassland	CRP	Stream	0	High*/Low
25	27	24	SE	Wheat-planted	0	Stream	0	High/Low
25	27	26	NE	Hayfield-planted	0	0	0	Low
25	27	26	NW	Wheat-planted	Native	Stream	0	High/Low
25	27	26	SE	Grassland; hayfield-planted	0	Playa; Wetland	0	High/Low
25	27	27	NE	Wheat-planted; Milo-harvested	0	Stream	0	High/Low
25	27	27	NW	No view	Native	Wetland	0	High/Low
25	27	27	SW	Wheat-harvested	0	Stream; Wetland	1	High/Low
25	27	28	NE	No view	No data	Playa; Wetland	0	High/Low
25	27	28	NW	Wheat-planted	No data	Stream; Wetland	0	High/Low
25	27	28	SW	Wheat-planted	No data	Playa; Wetland	1	High/Low
25	27	28	SE	Wheat-harvested	No data	Wetland	0	High/Low
25	27	29	NE	Wheat-harvested; Milo-harvested	0	Wetland	0	High/Low
25	27	29	SE	Wheat-planted; wheat-harvested; grassland	CRP	Wetland	0	High/Low

Legend: T = Township; R = Range; S = Section; Q = Quarter section; 0 = absent, 1 = 1 Farm Present in 1969; Archeological Sensitivity * = possible abandoned farmstead observed; NWI = National Wetlands Inventory

FIGURES

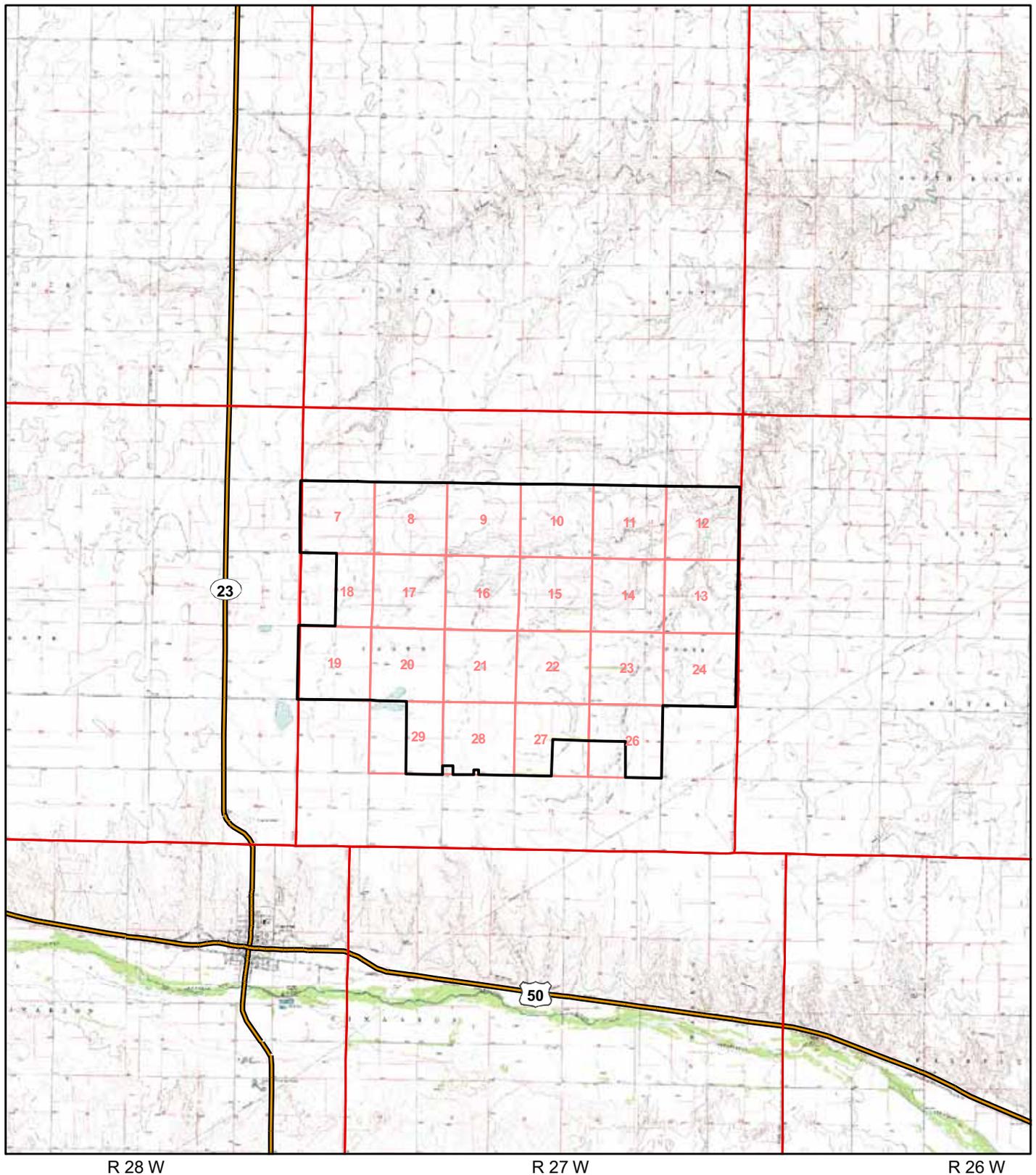
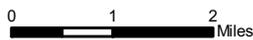


Figure 1
Project Area Location

Cimarron Wind Energy Project-
Phase 1
Gray County, Kansas

-  Project Area
-  Township/Range
-  Sections
-  Major Road



Source: USGS 100k Quad, 1985.



Figure 2
Proposed Project Layout
Cimarron Wind Energy Project-
Phase 1
Gray County, Kansas



- Legend
- Project Area
 - Sections
 - Turbine
 - Permanent Met Tower
 - 5-foot Contours
 - Collection Lines
 - Access Road
 - Crane Path
 - Substation
 - Batch Plant and Laydown

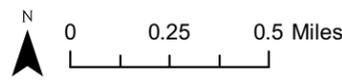
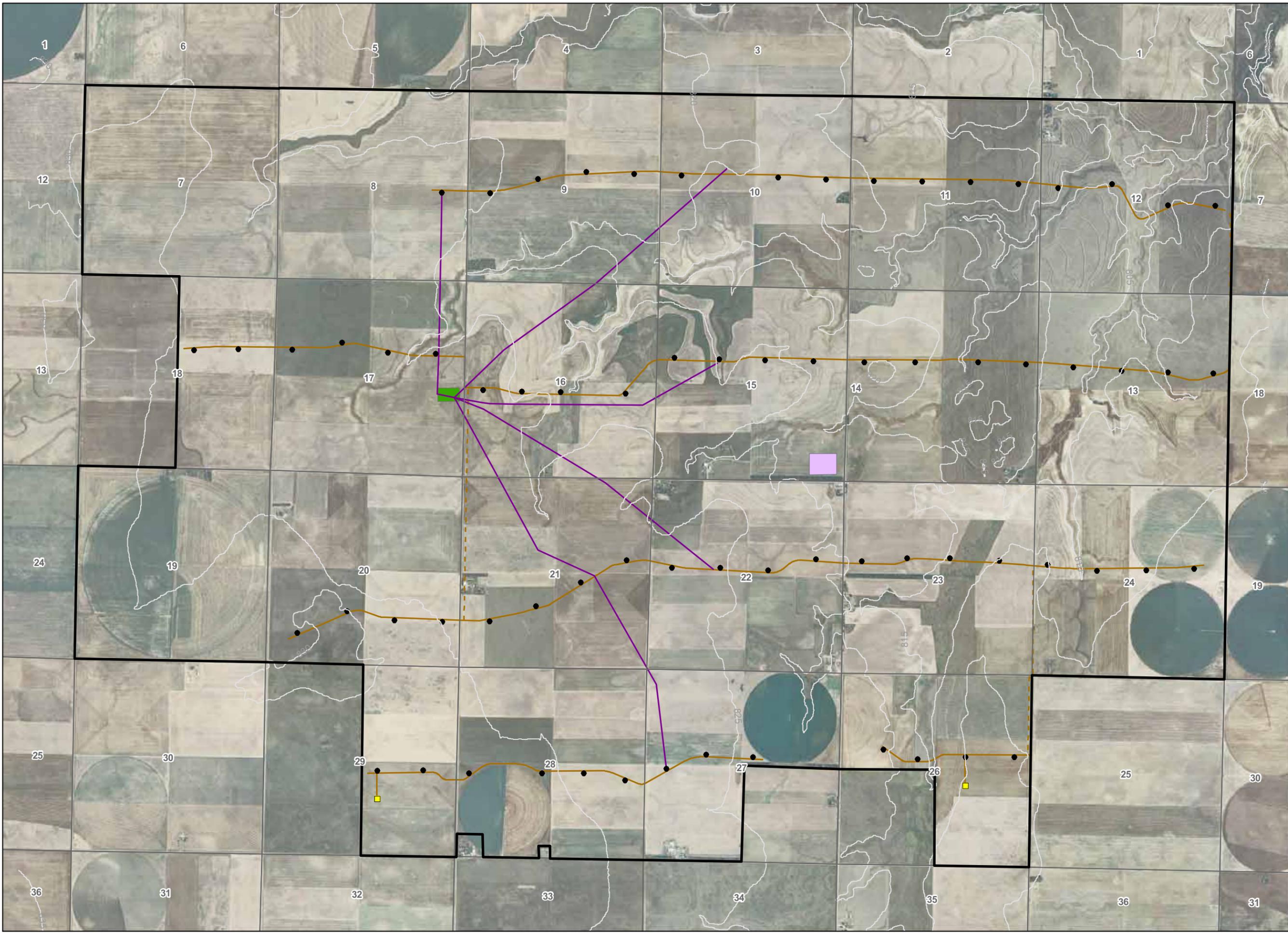
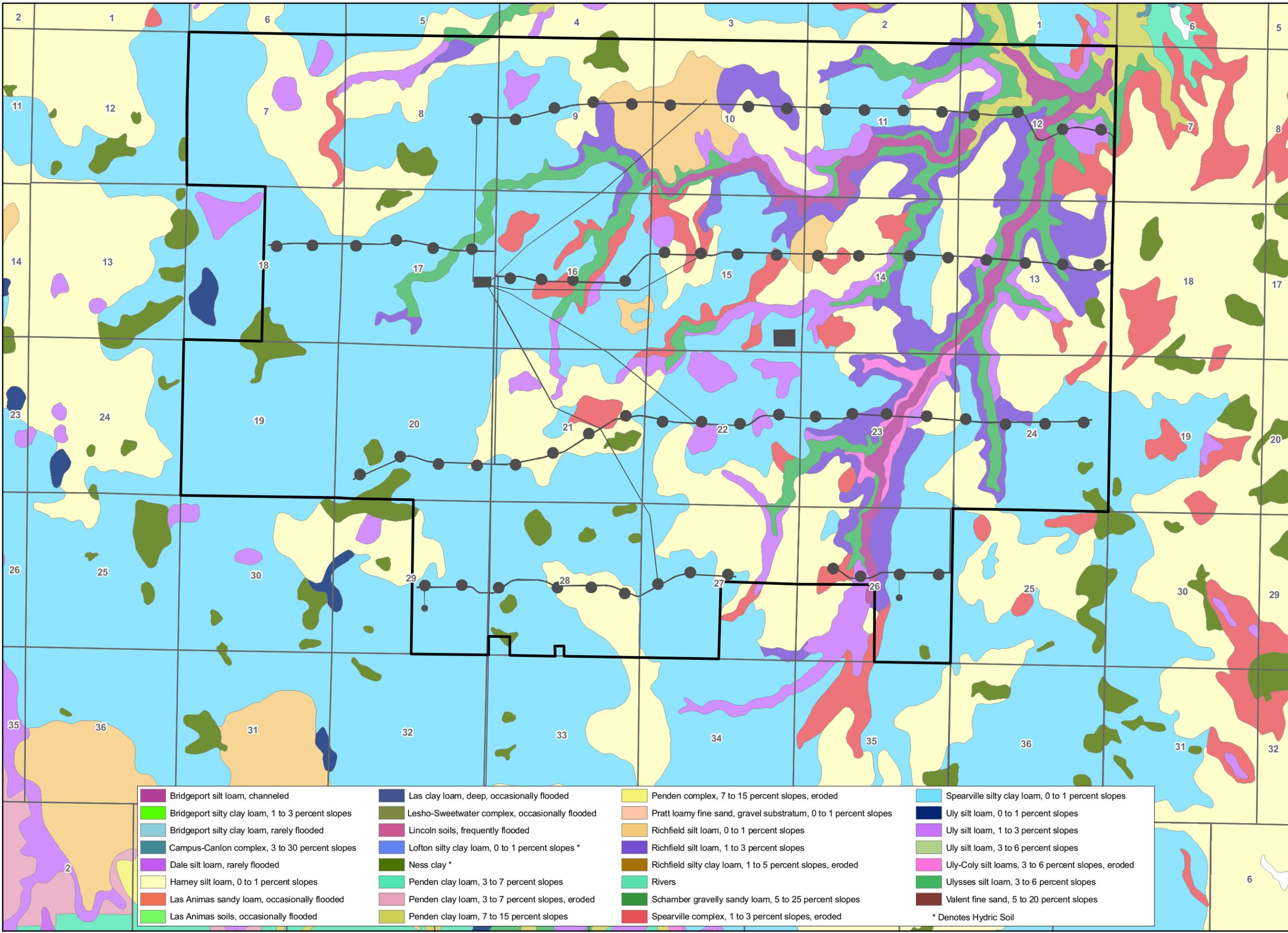


Figure 3
Soils

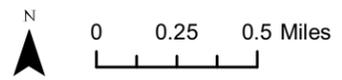
Cimarron Wind Energy Project-
Phase 1
Gray County, Kansas



- Legend
- Project Area
 - Archeological Survey APE
 - Sections



Source: USDA SSURGO database for Gray County, KS. 2008



 Bridgeport silt loam, channeled	 Las clay loam, deep, occasionally flooded	 Penden complex, 7 to 15 percent slopes, eroded	 Spearville silty clay loam, 0 to 1 percent slopes
 Bridgeport silty clay loam, 1 to 3 percent slopes	 Lesho-Sweetwater complex, occasionally flooded	 Pratt loamy fine sand, gravel substratum, 0 to 1 percent slopes	 Uly silt loam, 0 to 1 percent slopes
 Bridgeport silty clay loam, rarely flooded	 Lincoln soils, frequently flooded	 Richfield silt loam, 0 to 1 percent slopes	 Uly silt loam, 1 to 3 percent slopes
 Campus-Canlon complex, 3 to 30 percent slopes	 Lofton silty clay loam, 0 to 1 percent slopes *	 Richfield silt loam, 1 to 3 percent slopes	 Uly silt loam, 3 to 6 percent slopes
 Dale silt loam, rarely flooded	 Ness clay *	 Richfield silty clay loam, 1 to 5 percent slopes, eroded	 Uly-Coly silt loams, 3 to 6 percent slopes, eroded
 Harney silt loam, 0 to 1 percent slopes	 Penden clay loam, 3 to 7 percent slopes	 Rivers	 Ulysses silt loam, 3 to 6 percent slopes
 Las Animas sandy loam, occasionally flooded	 Penden clay loam, 3 to 7 percent slopes, eroded	 Schamber gravelly sandy loam, 5 to 25 percent slopes	 Valent fine sand, 5 to 20 percent slopes
 Las Animas soils, occasionally flooded	 Penden clay loam, 7 to 15 percent slopes	 Spearville complex, 1 to 3 percent slopes, eroded	

* Denotes Hydric Soil



Figure 4
Wetlands

Cimarron Wind Energy Project-
Phase 1
Gray County, Kansas

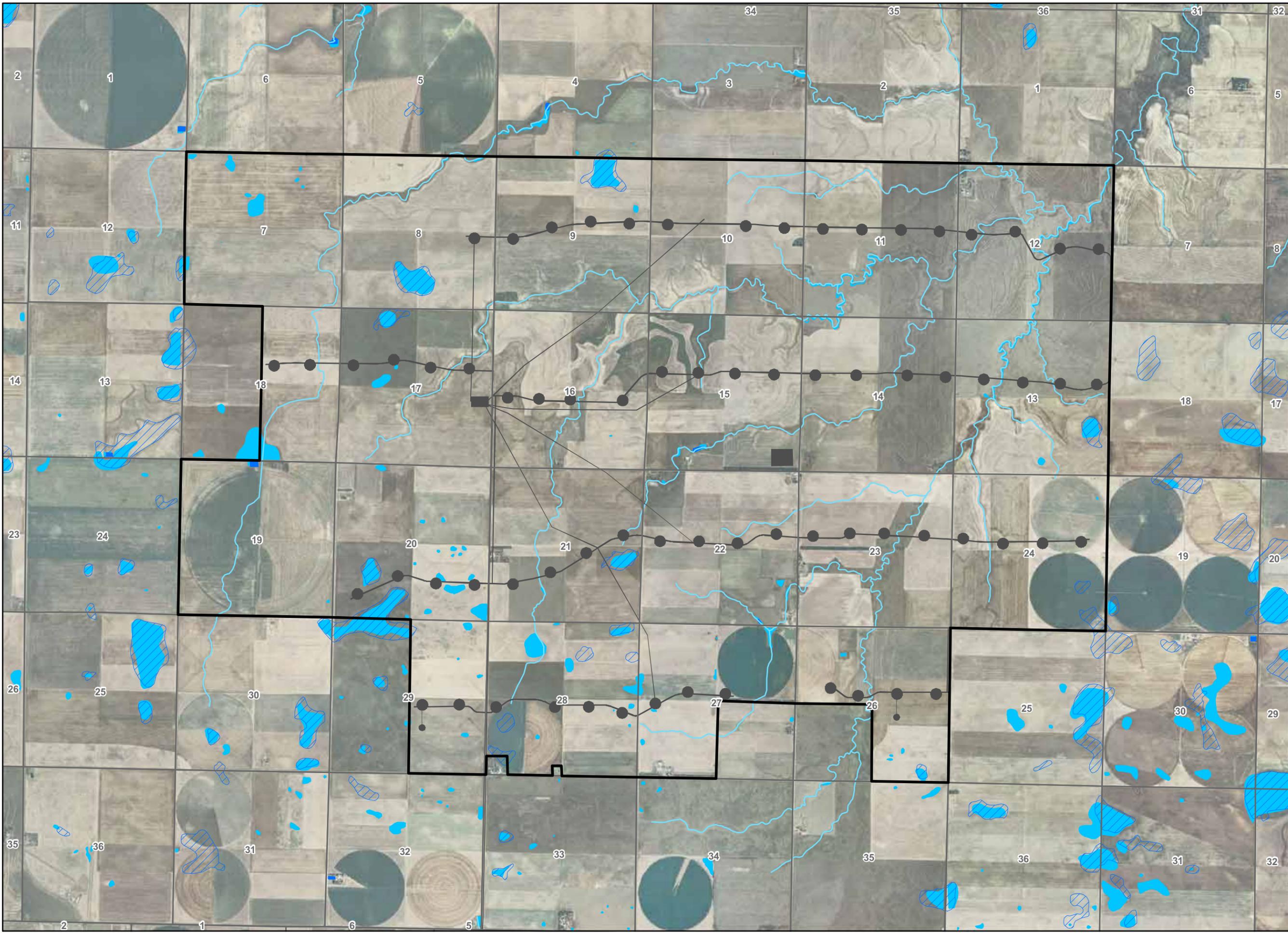
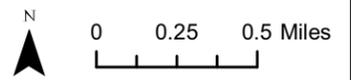


Legend

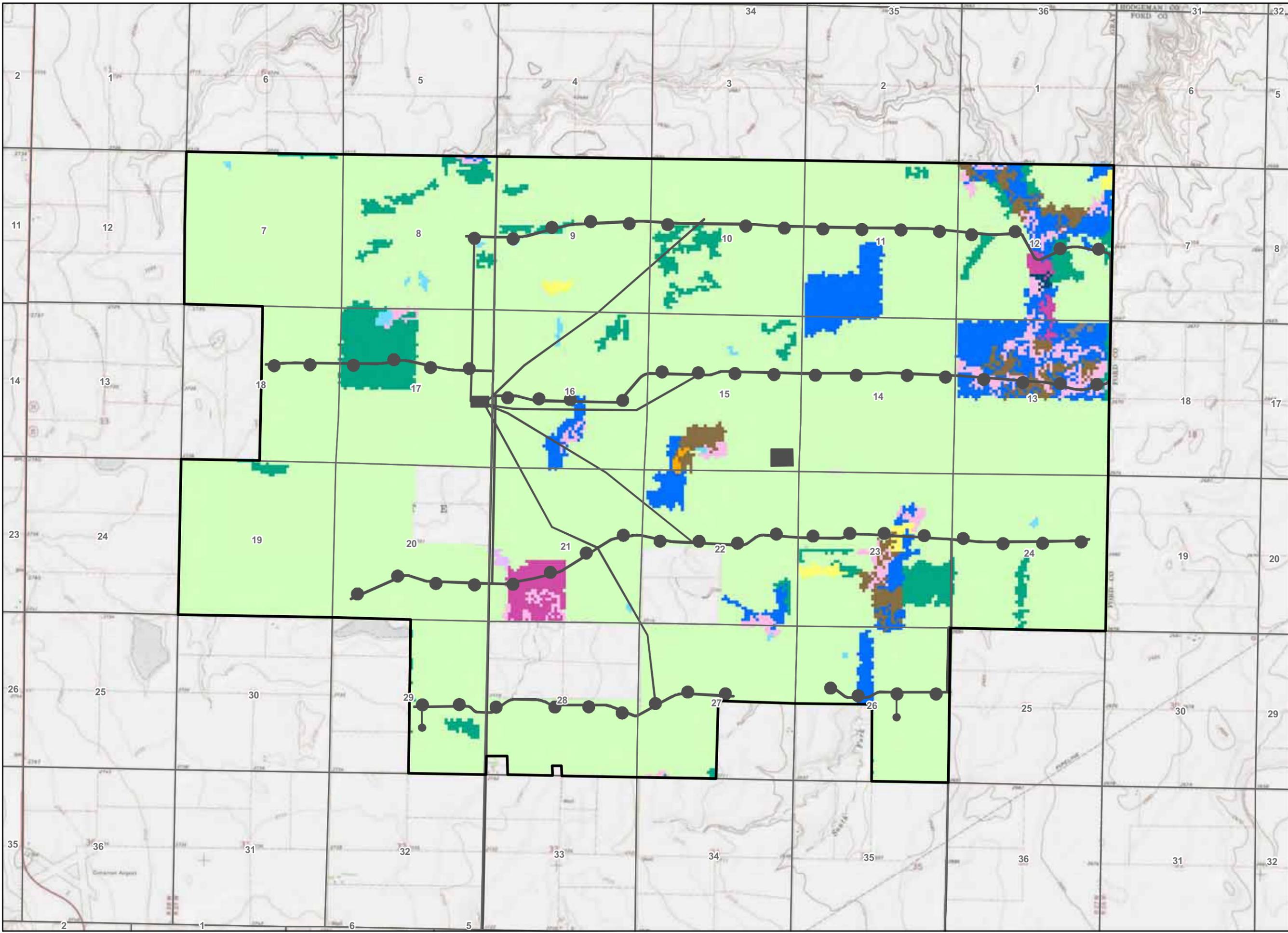
- Project Area
- Archeological Survey APE
- Sections
- NHD Flowline
- NHD Waterbody
- Playa Lakes
- NWI Wetlands

Note: Digital NWI wetlands data supplemented with digitized polygons from scanned and georeferenced NWI hardcopy maps.

Sources: Kansas Data Access and Support Center (<http://gisdata.kgs.ukans.edu/kgcc/kgcc.cfm>), NWI Wetlands (www.nwi.fws.gov), National Hydrography Dataset (nhd.usgs.gov)



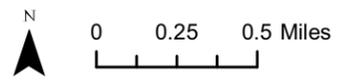
**Figure 5
Grasslands**
Cimarron Wind Energy Project-
Phase 1
Gray County, Kansas



- Legend**
- Archeological Survey APE
 - Sections
 - GAP Vegetation**
 - Alkali Sacaton Prairie
 - Bulrush Marsh
 - Cattail Marsh
 - Conservation Reserve Program (CRP) Lands *
 - Cottonwood Floodplain/Woodland
 - Cultivated Land
 - Mixed Prairie
 - Salt Marsh/Prairie
 - Sagesage Shrubland
 - Shortgrass Prairie
 - Water
 - Western Wheatgrass Prairie

*CRP Land estimated by GAP has not been verified by the Natural Resources Conservation Service.

Source: GAP-Vegetation is mapped from satellite imagery, using the National Vegetation Classification System, 2001. (<http://www.KansasGIS.org>), Platts Powermap 2009.



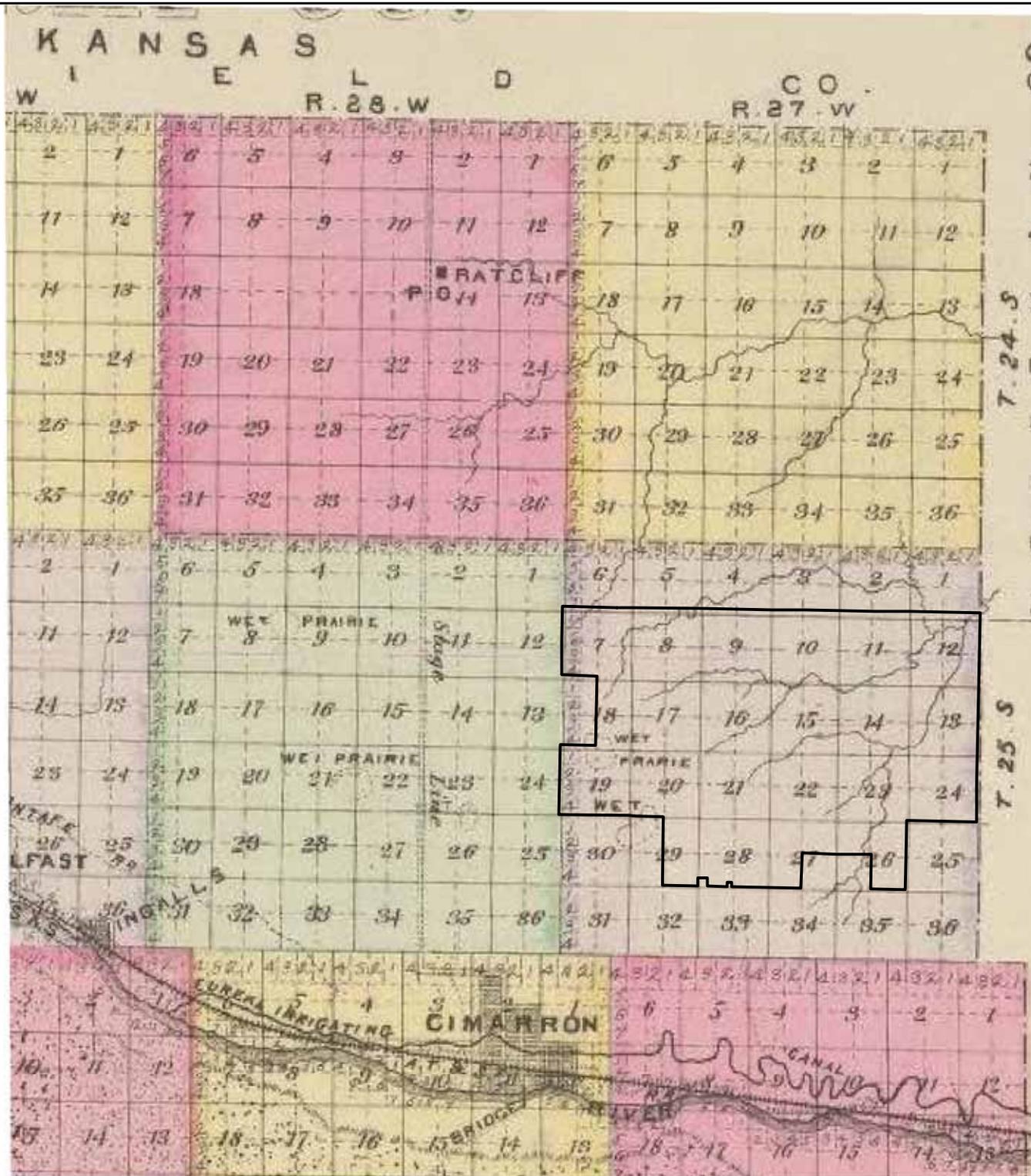


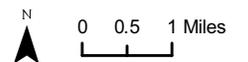
Figure 6
1887 Gray County map
showing the Project Area
Cimarron Wind Energy Project-
Phase 1
Gray County, Kansas



Legend

 Project Area

Source: Everts 1887



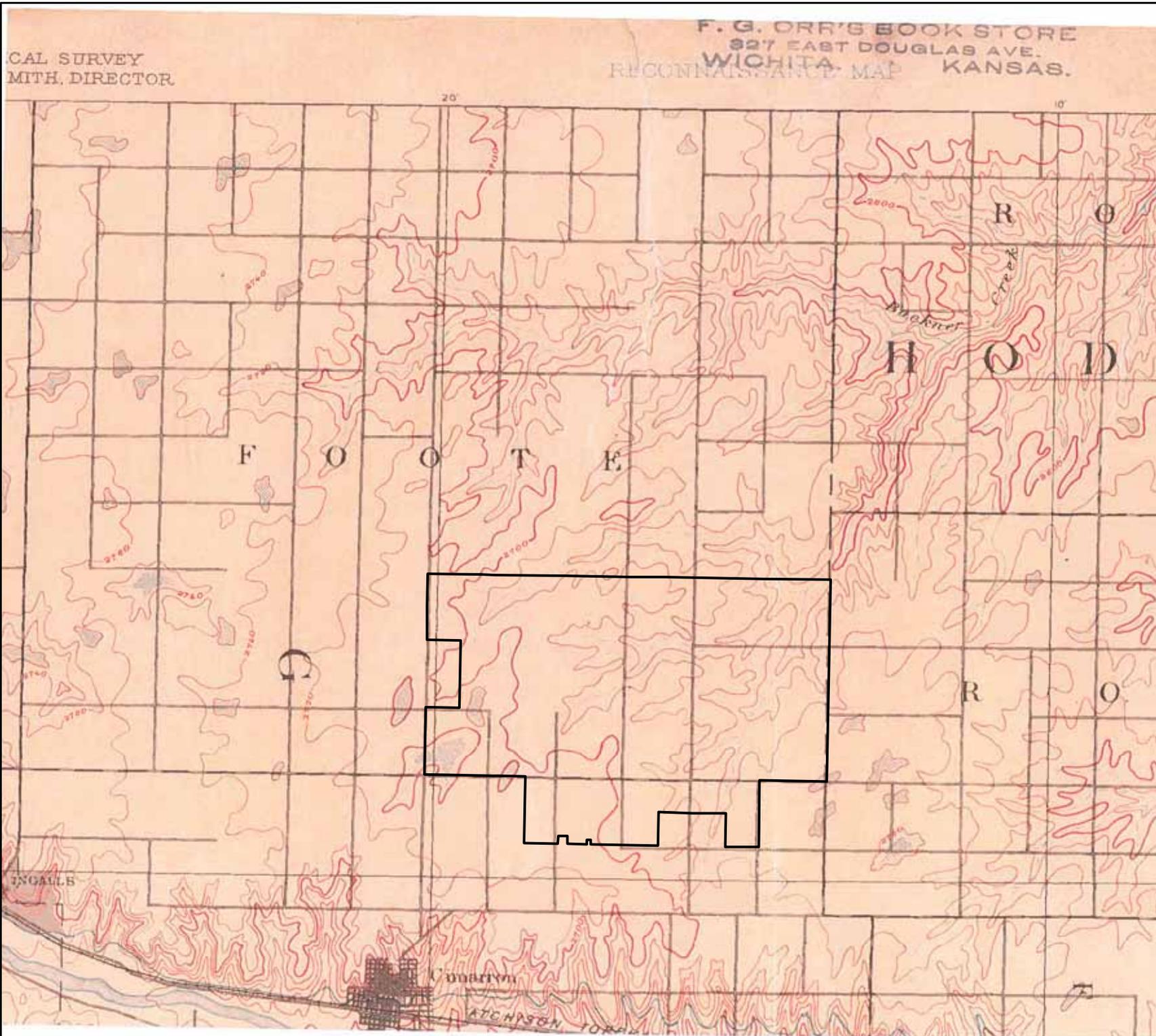


Figure 7
 1892 USGS quadrangle
 showing the Project Area
 Cimarron Wind Energy Project-
 Phase 1
 Gray County, Kansas



Legend
 [Black Outline] Project Area

Source: USGS 1892
 N
 0 0.5 1 Miles





David A. Lupton built onto his two room home in 1912. He homesteaded the ground northeast of Cimarron in 1891. Along with his homestead, Lupton also had a tree claim. He had an orchard in the front of the house.

Mrs. Johnson was born in 1894 and she married Geo. Johnson in 1922. Following their marriage they lived with her father for about eight years. Then they move three-quarters of a mile south of his home to a home of their own.

The Johnson's had one daughter, Verena Wilson, who now lives in Wichita. Mrs. Johnson's brother, Joe, had two daughters, Doris Miller and Catherine Davis.

Lupton acquired 12 quarters of land, during his lifetime, according to Mrs. Johnson.

Continued
on Page 3

Continued from page 1

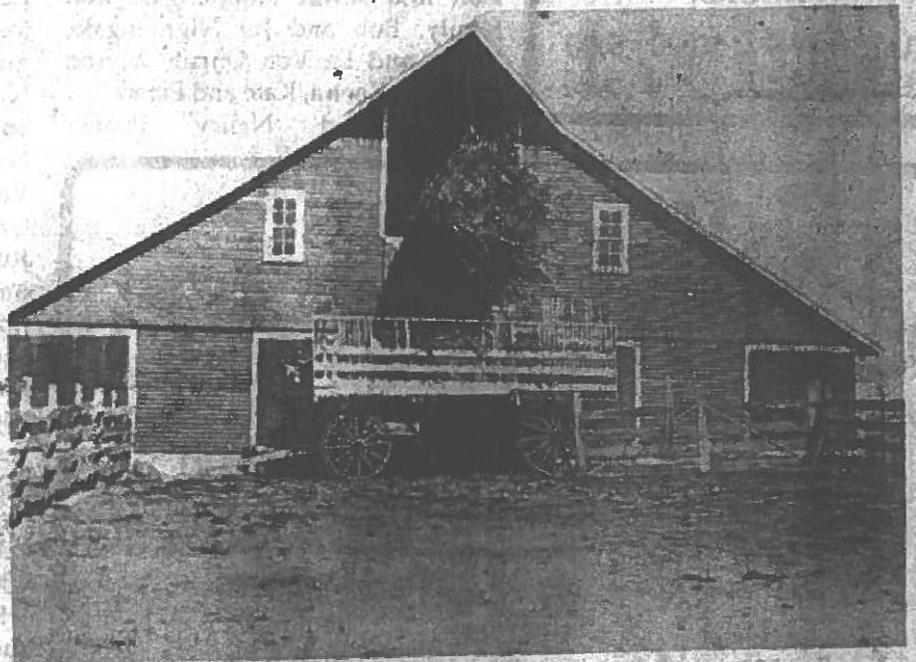
Father homesteaded in 1891

"All of the land is still in the Lupton family," Mrs. Johnson stated. She noted that Joe Salem farms the original homestead ground, while Frank Redger farms the remainder of Mrs. Johnson's ground and that of Verena Wilson's. Cecil Davis farms land, which was Joe's land, while David Voran farms the land, owned by Doris and Cecil Miller.

The original home still stands, but is currently

unoccupied. The Hesson Salem family lived there until about eight years ago. And, it has been vacant since. Onto the

original home, Lupton built an upstairs and a front portion. In four years the land will be in the family for 100 years.



David A. Lupton built a barn on his homestead ground northeast of Cimarron in 1910. He used it for cattle and hay storage.

Figure 8

The David Lupton Homestead
in newspaper clippings

Cimarron Wind Energy Project-
Phase 1
Gray County, Kansas



CPV
Renewable Energy Company, LLC



TETRA TECH EC, INC.

Figure 9
Sections 17 to 20, showing
agricultural practices,
wetlands and proposed
Project construction

Cimarron Wind Energy Project-
Phase 1
Gray County, Kansas



Legend

- Project Area
- Sections
- Turbine
- Permanent Met Tower
- Collection Lines
- Access Road
- Crane Path
- Substation
- Batch Plant and Laydown
- NWI Wetlands

Note: Digital NWI wetlands data supplemented with digitized polygons from scanned and georeferenced NWI hardcopy maps.

Source: NWI Wetlands
(www.nwi.fws.gov)

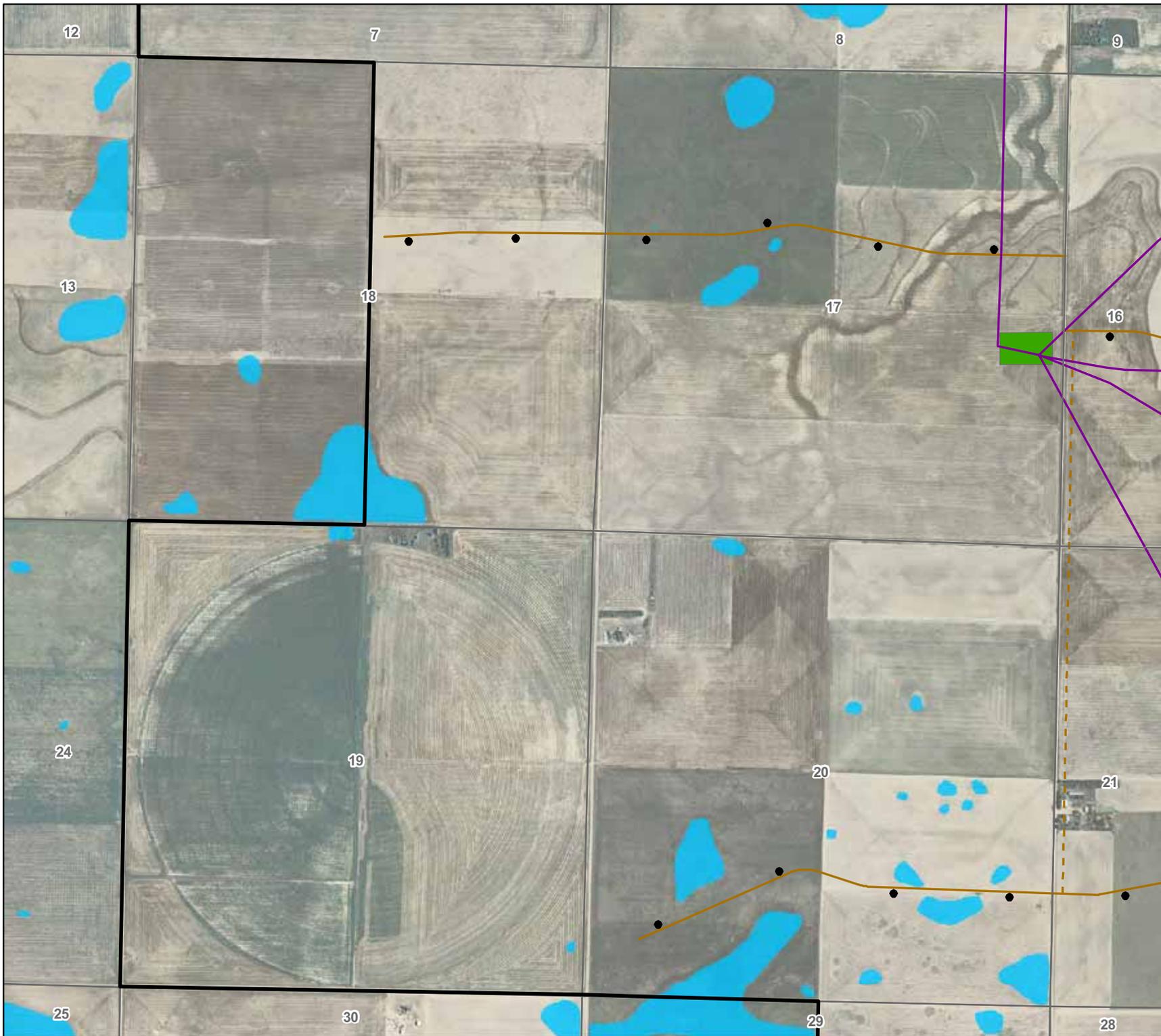
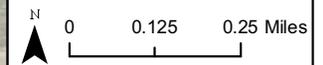


Figure 10
Sections 11 to 14, showing
agricultural terracing,
wetlands and proposed
Project construction

Cimarron Wind Energy Project-
Phase 1
Gray County, Kansas



Legend

-  Project Area
-  Sections
-  Turbine
-  Permanent Met Tower
-  Collection Lines
-  Access Road
-  Crane Path
-  Substation
-  Batch Plant and Laydown
-  NWI Wetlands
-  Historic Sensitivity

Note: Digital NWI wetlands data supplemented with digitized polygons from scanned and georeferenced NWI hardcopy maps.

Source: NWI Wetlands
(www.nwi.fws.gov)

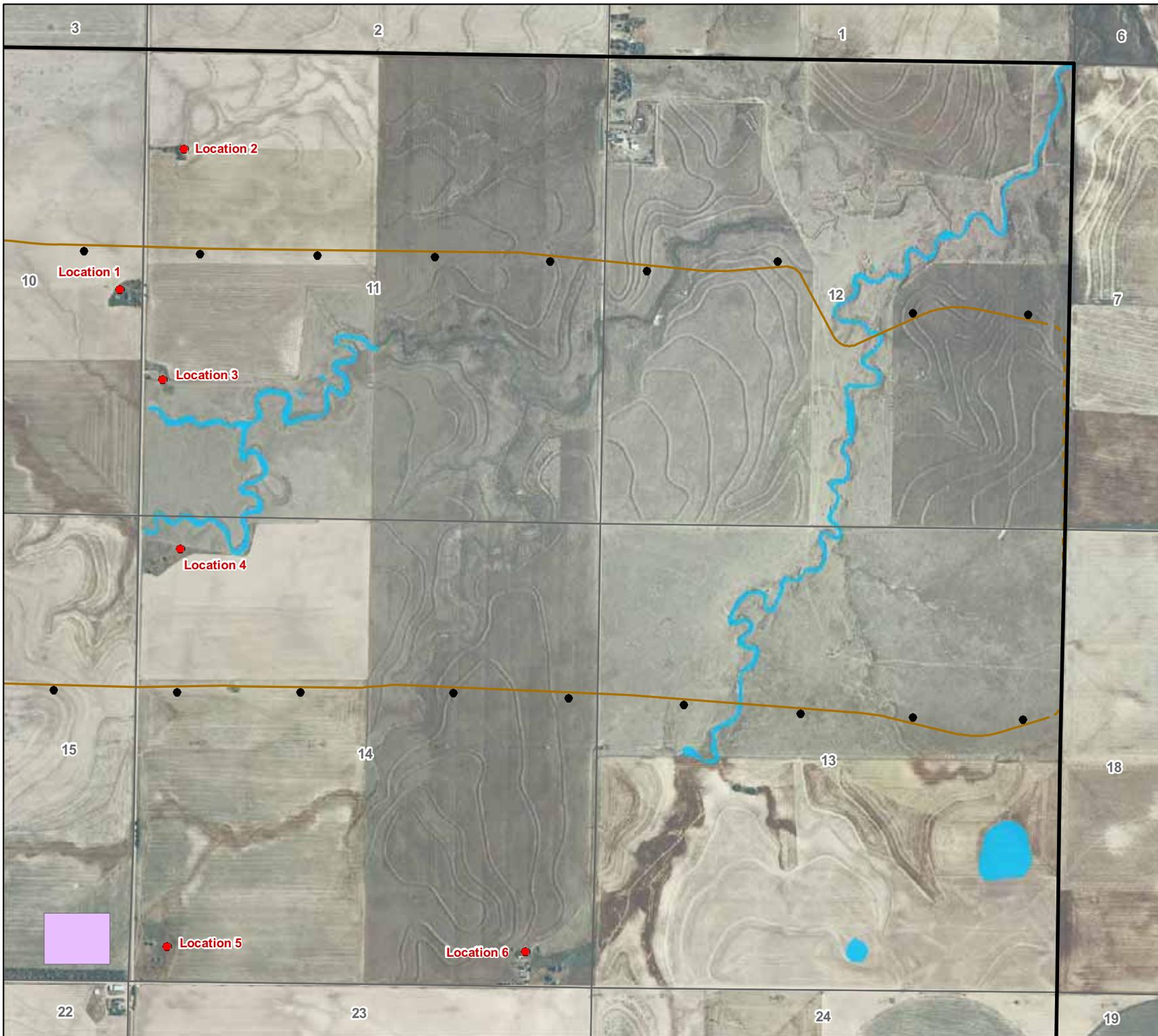
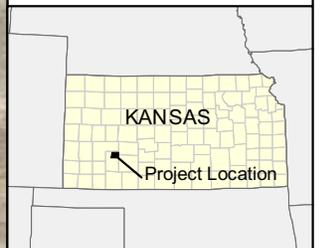
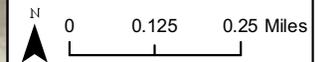


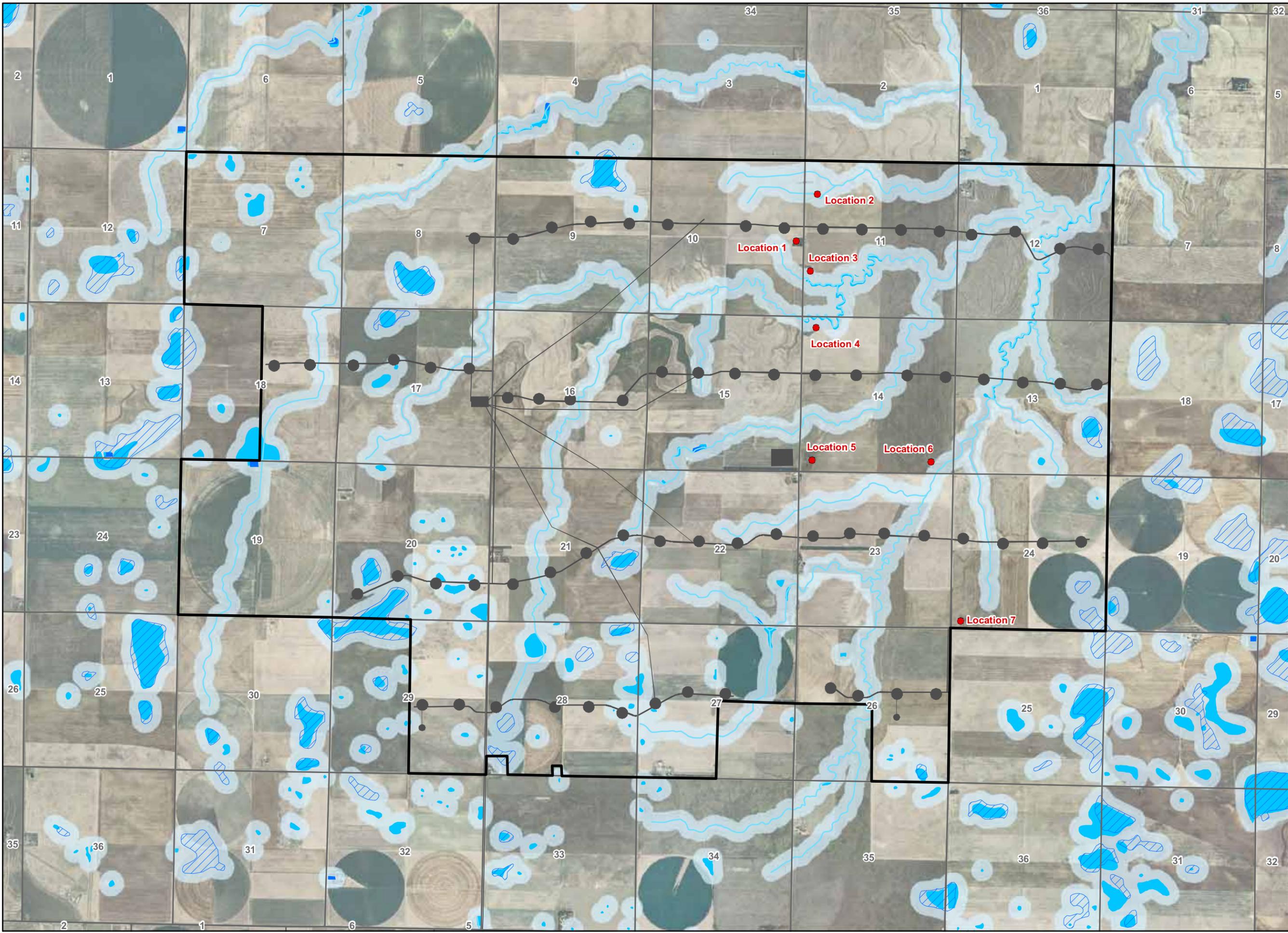
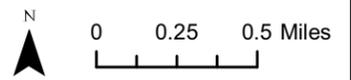
Figure 11
 Archeological Sensitivity
 Cimarron Wind Energy Project-
 Phase 1
 Gray County, Kansas



- Legend**
- Project Area
 - Archeological Survey APE
 - Sections
 - NHD Flowline
 - NHD Waterbody
 - Playa Lakes
 - NWI Wetlands
 - Prehistoric Sensitivity
 - Historic Sensitivity

Note: Digital NWI wetlands data supplemented with digitized polygons from scanned and georeferenced NWI hardcopy maps.

Sources: Kansas Data Access and Support Center (<http://gisdata.kgs.ukans.edu/kgcc/kgcc.cfm>), NWI Wetlands (www.nwi.fws.gov), National Hydrography Dataset (nhd.usgs.gov)



PHOTOGRAPHS



Photograph 1. Buckner Creek wetlands and adjacent terraces. View to the northeast (Stuart A. Reeve, November 14, 2010).



Photograph 2. Native grasslands, Section 22. View to the east (Stuart A. Reeve, November 14, 2010).



Photograph 3. Location 1, in the southeast quarter of Section 10. View to the northwest (Stuart A. Reeve, November 14, 2010).



Photograph 4. Location 2, in the northwest quarter of Section 11. View to the northeast (Stuart A. Reeve, November 14, 2010).



Photograph 5. Location 3, in the southwest quarter of Section 11. View to the northeast (Stuart A. Reeve, November 14, 2010).



Photograph 6. Location 4, in the northwest quarter of Section 14. View to the northeast (Stuart A. Reeve, November 14, 2010).



Photograph 7. Location 5, the former David Lupton homestead in the southwest quarter of Section 14. View to the southwest (Stuart A. Reeve, November 14, 2010).



Photograph 8. Location 6, in the southeast quarter of Section 14. View to the northwest (Stuart A. Reeve, November 14, 2010).



Photograph 9. Location 7, in the southwest quarter of Section 24. View to the north (Stuart A. Reeve, November 14, 2010).

APPENDIX

APPENDIX A

PROFESSIONAL QUALIFICATIONS

EXPERIENCE SUMMARY

Stuart Reeve has more than 35 years experience in professional archeology, including prehistoric and historic archeological studies with federal and state agencies, and cultural resources consulting in the New England, Middle Atlantic, Southeast, Rocky Mountains, Midwest, Northwest and Southwest regions. Dr. Reeve has been responsible for all aspects of cultural resource management plans, cultural resources sensitivity analyses, archeological field investigations, collection analyses and curation, technical and scientific report preparation, and coordination of multi-disciplinary environmental teams.

Dr. Reeve maintains project management duties, and assists senior personnel in planning and directing field investigations, preparing reports and proposals, providing technical support, and reviewing cultural resource phases of projects and reports.

EDUCATION

PhD (Doctor of Philosophy), Anthropology/Archeology, State University of New York, 1986
BA (Bachelor of Arts), Anthropology, State University of New York, 1971

CORPORATION PROJECT EXPERIENCE

Archeologist/ Cultural Resources Principal Investigator, 2010 Ridgeline Energy, LLC, Lewis Ranch Wind Project, Albany County, WY

Conducted a Phase I archeological investigation, initiating compliance with Section 106 of the National Historic Preservation Act under direction from the Western Area Power Administration, the lead federal agency. Reviewed SHPO site files, historic maps, deeds and environmental studies to developed historic contexts and an archeological sensitivity model for prehistoric and historic period archeological sites. A site visit assessed local environments and disturbances in areas of proposed construction. Phase II archeological field investigations have been recommended.

Archeologist/ Cultural Resources Principal Investigator, 2009-2010 CPV Ashley Renewable Energy Company, LLC, Ashley Wind Energy Project, McIntosh County, ND

Conducted a Class I Cultural Resources Survey for SHPO site file research, conducting SHPO site file research for archeological sites, survey reports and properties listed on the National Register of Historic Places, historic maps, local histories, historic trails, historic cemeteries, ethnographic data, and interested Native American tribes in order to avoid impacts on historic, archeological resources.

Conducted Class III archeological field investigations of over 990 acres, identifying 6 archeological sites. Five (5) sites were avoided through project redesigns. A sixth site, a twentieth-century farmstead, was recommended as not eligible for the National Register. The project complied with Section 106 of the National Historic Preservation Act, and SHPO and the Tennessee Valley Administration (TVA), the lead federal agency, concluded that the proposed project would have no adverse effects on cultural resources.

Archeologist/ Cultural Resources Principal Investigator, 2008-2010 CPV Cimarron Renewable Energy Company, LLC, Cimarron Wind Energy Project, Gray County, KS

Contributed cultural resources sections for a Critical Issues Analysis, including desk-top background research of properties listed on the National Register of Historic Places, National Archeological Database SHPO site files, archeological sites, historic maps, local histories, historic trails, ethnographic data, and interested Native American tribes in order to avoid impacts on historic, archeological resources.

Conducted a Phase I archeological investigation (Reconnaissance Survey per SHPO guidelines), initiating compliance with Section 106 of the National Historic Preservation Act under direction from TVA, the lead federal agency. Reviewed historic maps, deeds, census information and environmental studies to



develop an archeological sensitivity model for prehistoric and historic period archeological sites and historic contexts and conducted a site visit to assess environments and disturbances in areas of proposed construction. Phase II archeological field investigations have been recommended.

Archeologist/ Cultural Resources Principal Investigator, 2009
OwnEnergy, Blackwell Wind Energy Project, Kay County, OK

Contributed cultural resources sections for a Critical Issues Analysis, including desk-top background research of properties listed on the National Register of Historic Places, National Archeological Database references, archeological sites, historic maps, local histories, historic cemeteries, ethnographic data, and interested Native American tribes in order to avoid impacts on historic, archeological resources.

Completed an archeological sensitivity model for prehistoric and historic period archeological sites, and an unanticipated discoveries plan in order to reduce possible project impacts on cultural resources

Archeologist/ Cultural Resources Principal Investigator, 2010
Confidential Client, Wind Energy Project, Edgar County, IL

Conducted background research of National Register site files, SHPO archeological and architectural site files, historic maps and online historic resources for an area of over 12,000 acres as part of a Critical Issues Analysis for a proposed wind farm.

Archeologist/ Cultural Resources Principal Investigator, 2010
Confidential Client, Wind Energy Project, Pratt County, KS

Conducted background research of National Register site files, SHPO archeological and architectural site files, historic maps and online historic resources for an area of over as part of a Critical Issues Analysis for a proposed wind farm. At least 38 homesteads or other structures formerly stood within the lease area. These may survive as archaeological sites. Many homesteads were associated with unmarked family cemeteries that are protected by state statutes.

Archeologist/ Cultural Resources Principal Investigator, 2010
Confidential Client, Wind Energy Project, Audubon and Guthrie Counties, IA

Conducted background research of National Register site files, SHPO archeological and architectural site files, historic maps and online historic resources for an area of over as part of a Critical Issues Analysis for a proposed wind farm. In total, 49 architectural sites and 21 archeological sites have been recorded by SHPO within the Study Area.

Archeologist/ Cultural Resources Principal Investigator, 2009
US Army, Fort Dix, NJ. Joint Base Personnel Training Course, Burlington County, NJ.

Prepared a base-wide online cultural resources training course defining cultural resources, identifying Federal and State laws protecting cultural resources, base standard operating procedures.

Archeologist/ Cultural Resources Principal Investigator, 2009
Confidential Client, Wind Energy Project, Ford County, KS

Conducted archeological and National Register site file research and BIA and SHPO consultations for a Kansas NPDES permit as part of a Critical Issues Analysis for a proposed wind farm.

Archeologist/ Cultural Resources Principal Investigator, 2009
Confidential Client, Wind Energy Project, Thomas County, KS

Contributed cultural resources sections for a Critical Issues Analysis, including desk-top background research of properties listed on the National Register of Historic Places, National Archeological Database references, archeological sites, historic maps, local histories, historic trails, historic cemeteries, ethnographic data, and interested Native American tribes in order to avoid impacts on historic, archeological resources.



Archeologist/ Cultural Resources Principal Investigator, 2008-2009
Horizon-Alabama Ledge Wind Farm, LLC, Alabama Ledge Wind Farm, Town of Alabama, Genesee County, NY

Conducted environmental modeling and historical background research and completed a Phase 1A archeological survey report for a proposed wind energy project that included 56 proposed turbines, 16 miles of gravel access roads, 22 miles of buried electrical interconnect lines, a 0.6 mile transmission line and other facilities. The Project is located along post-glacial shorelines south of Lake Ontario, and straddles the Onondaga Escarpment, an area important to Prehistoric Native Americans for quarrying high quality chert. Several large Paleo-Indian camp sites and mastodon remains have been identified in the Project vicinity.

Supervised and conducted a Phase 1B archeological investigation of a wind farm that included 40 turbines and 152,138 feet of linear construction involving excavation of 1,597 shovel tests and 75,188 feet of pedestrian surveys. In total one historic-period and 14 prehistoric-period archeological sites, and 9 isolated finds were identified. SHPO consultations are continuing concerning possible requirements for additional archeological investigations.

Archeologist/ Cultural Resources Principal Investigator, 2009
Confidential Client, Wind Energy Project, Mercer and Rock Island Counties, IL

Contributed cultural resources sections for a Critical Issues Analysis, including desk-top background research of properties listed on the National Register of Historic Places, National Archeological Database references, archeological sites, historic maps, local histories, historic trails, historic cemeteries, ethnographic data, and interested Native American tribes in order to avoid impacts on historic, archeological resources.

Archeologist/ Cultural Resources Principal Investigator, 2009
Confidential Client, Wind Energy Project, Schuylkill County, PA

Contributed cultural resources sections for a Critical Issues Analysis, including desk-top background research of properties listed on the National Register of Historic Places, National Archeological Database references, archeological sites, historic maps, local histories, historic trails, ethnographic data, and interested Native American tribes in order to avoid impacts on historic, archeological resources.

Archeologist/ Cultural Resources Principal Investigator, 2009
Lucent Technologies Inc., Baseline Ecological Risk Assessment, Morris County, NJ

Conducted SHPO consultations concerning soil remediation plans. Based on documentation of disturbance, no archeological investigations were required

Archeologist/ Cultural Resources Principal Investigator, 2009
Confidential Client, Wind Energy Project, Schuylkill County, PA

Contributed cultural resources sections for a Critical Issues Analysis, including desk-top background research of properties listed on the National Register of Historic Places, National Archeological Database references, archeological sites, historic maps, local histories, historic trails, ethnographic data, and interested Native American tribes in order to avoid impacts on historic, archeological resources.

Archeologist/ Cultural Resources Principal Investigator, 2009
Confidential Client, Wind Energy Project, Barton and Ellsworth Counties, KS

Contributed cultural resources sections for a Critical Issues Analysis, including desk-top background research of properties listed on the National Register of Historic Places, National Archeological Database references, archeological sites, historic maps, local histories, historic trails, ethnographic data, and interested Native American tribes in order to avoid impacts on historic, archeological resources.



Archeologist/ Cultural Resources Principal Investigator, 2009
Confidential Client, Wind Energy Project, Summerset County, PA

Contributed cultural resources sections for a Critical Issues Analysis, including desk-top background research of properties listed on the National Register of Historic Places, National Archeological Database references, archeological sites, historic maps, local histories, historic trails, ethnographic data, and interested Native American tribes in order to avoid impacts on historic, archeological resources.

Archeologist/ Cultural Resources Principal Investigator, 2008
Confidential Client, Wind Energy Project, Trago, Ellis, Ness, Rush and Pawnee Counties, KS

Contributed cultural resources sections for a Critical Issues Analysis, including desk-top background research of properties listed on the National Register of Historic Places, National Archeological Database references, archeological sites, historic maps, local histories, historic trails, historic cemeteries, ethnographic data, and interested Native American tribes in order to avoid impacts on historic, archeological resources.

Archeologist/ Cultural Resources Principal Investigator, 2008
Horizon Wind Energy, Jericho Rise Wind Farm, Franklin County, NY

Supervised Phase 1B archeological fieldwork, including excavations of nearly 3,500 shovel tests. Conducted environmental analyses and contributed fieldwork summaries for the final report.

Archeologist/ Cultural Resources Principal Investigator, 2008
FPL, Horse Hollow and Blue Summit Transmission Lines, TX and OK

Contributed cultural resources sections for a Critical Issues Analysis, including desk-top background research of properties listed on the National Register of Historic Places, National Archeological Database references, archeological sites, historic maps, local histories, historic trails, historic cemeteries, ethnographic data, and interested Native American tribes in order to avoid impacts on historic, archeological resources.

Archeologist/ Cultural Resources Principal Investigator, 2008
Confidential Client, Wind Energy Project, Yuma County, CO

Contributed cultural resources sections for a Critical Issues Analysis, including desk-top background research of properties listed on the National Register of Historic Places, National Archeological Database references, archeological sites, historic maps, historic cemeteries, local histories, historic trails, ethnographic data, interested Native American Tribes and paleontological finds in order to avoid impacts on historic, archeological resources and paleontological resources.

Archeologist/ Cultural Resources Principal Investigator, 2008
Confidential Client, Wind Energy Project, Roosevelt County, NM

Contributed cultural resources sections for a Critical Issues Analysis, including desk-top background research of properties listed on the National Register of Historic Places, National Archeological Database references, archeological sites, historic maps, local histories, historic trails, historic cemeteries, ethnographic data, and interested Native American tribes in order to avoid impacts on historic, archeological resources.

Archeologist/ Cultural Resources Principal Investigator, 2008
CPV Renewable Energy Company, LLC, Keenan Wind Energy Project – Phase 1 and 2, Woodward County, OK

Contributed cultural resources sections for a Critical Issues Analysis, including desk-top background research of properties listed on the National Register of Historic Places, National Archeological Database references, historic maps, local histories, historic trails, ethnographic data and interested Native American



tribes, in order to avoid impact on historic and archeological resources. Procured supplemental funding for sensitivity modeling and an Unanticipated Finds Plan, submitted to SHPO.

Archeologist/ Cultural Resources Principal Investigator, 2008
Montana Construction Corp. Charlotte Circle Siphon, Northeast Interceptor Improvements, City of Jersey City, Hudson County, NJ

Conducted archeological monitoring, field mapping and photograph documentation of National Register-listed water pipelines during new siphon installation. Compiled an archeological letter report for the New Jersey Department of Environmental Protection.

Archeologist/ Cultural Resources Principal Investigator, 2007-2008
BP Alternative Energy Cultural Resources Inventory for the Golden Hills Wind Energy Development, Sherman County, OR

Conducted SHPO consultations and supervised Phase 1 archeological surveys, sensitivity modeling, and report preparation for over 7,000 acres for turbine strings, crane paths, underground collector lines and other components in satisfaction of Oregon Department of Energy, Oregon Energy Facility Siting Council Site Certification Application and SHPO requirements. In total, nine archeological sites and seven isolated finds were identified during the Phase 1 fieldwork. Assisted the client in avoiding impacts to identified sites including the Oregon Trail.

Archeologist/ Cultural Resources Principal Investigator, 2007
FLP Cultural Resource Investigation, Oliver II Wind Energy Center, Oliver County, ND

Conducted surface investigations of proposed wind turbine relocations and identified one rock-cache prehistoric site. Coordinated field results for an amended Phase 1B archeological report.

Archeologist/Cultural Resource Specialist, 2005-2008
U.S. Department of the Army, TACOM-ARDC-Picatinny, Phase 1 Cultural Resources Investigation, Picatinny Applied Research Center, NJ

Conducted background research, shovel testing and compiled an archeological report for 40 acres at Picatinny Arsenal. Archeologists were accompanied by UXO technicians to scan for unexploded ordinance. More than 350 shovel test units were excavated at three project areas. Historic landscape features were recorded, including one historic cistern archeological site. One prehistoric archeological site was identified. Conducted Phase 2 excavations at the Current Ballfield Prehistoric Site (28Mr314), including 62 shovel tests and nine one-meter test units were excavated. The site contained limited spatial and stratigraphic integrity and low artifact densities. No additional archeological investigations were recommended. Artifact collections were accepted by the US Army for curation.

Archeologist/Cultural Resource Specialist, 2006-2008
Central Hudson Electric and Gas, Phase 1A and Phase 1B Cultural Resources Investigations of the WL Line, Towns of Montgomery, Hamptonburg and New Windsor, Villages of Waldon, Montgomery and Maybrook, Orange County, NY

Compiled a Phase 1A report describing background research and field walkover for over 25 miles of alternate rights-of-way, compiled prehistoric and historic sensitivity models (including local mastodon finds) for alternate route selection, and recommendations for Phase 1B archeological testing. Conducted Phase 1B testing including excavation of 362 shovel tests at replacement pole locations and along new rights of way, identified two prehistoric isolated finds, one prehistoric site and one historic site. Assembled information for project review by the local Historic District Commission.



Archeologist/Cultural Resource Specialist, 2006-2009

St. Lawrence Windpower, LLC. Cultural Resources Investigations at the St. Lawrence Wind Energy Project, Towns of Cape Vincent and Lyme, Jefferson County, NY

Conducted environmental modeling and historical background research and completed a Phase 1A archeological survey report for a proposed wind energy project that included 96 proposed turbines, 30 miles of gravel access roads, 44 miles of buried electrical interconnect lines, an 8 mile transmission line and other facilities. The Project is at the outlet of Lake Ontario and south of the St. Lawrence River. Prehistoric sites in the project vicinity range from Paleo-Indian fluted points to Late Woodland Iroquoian villages. Historic sites include nineteenth-century farms from French expatriates fleeing the French Revolution and Napoleon Bonaparte's defeat in Europe. Assembled cultural resource sections for the DEIS.

Archeologist/Cultural Resource Specialist, 2006-2008

U.S. Environmental Protection Agency, Crown Cleaners of Watertown, Inc. Remediation Investigation/Feasibility Study, Jefferson County, NY

Conducted background research and field walkover for prehistoric and historic archeological sites for a six-acre Superfund site along the Black River at the Village of Herrings, Jefferson County, New York. The property formerly contained a nineteenth-century sawmill and paper mill. Compiled a Phase 1A cultural resources report, integrating results of a preliminary architectural and archeological assessment.

Archeologist/Cultural Resource Specialist, 2006-2008

Central Hudson Electric and Gas, Phase 1A and Phase 1B Cultural Resources Investigations of the CL Line, Town of Catskill and Village of Catskill, Greene County, NY

Conducted background research and field walkover for prehistoric and historic archeological sites over more than 15 miles of right-of-way. Prepared a cultural resources report describing environmental contexts, and cultural and historical contexts, areas of archeological sensitivity, and recommendations for Phase 1B testing. Conducted shovel testing at replacement pole locations and identified one prehistoric site. Phase 2 testing determined that the site was not eligible for the National Register of Historic Places.

Archeologist/Cultural Resource Specialist, 2006-2008

West Hill Windpower, LLC, Cultural Resource Investigations of the West Hill Wind Farm, Towns of Stockbridge, Smithfield and Lincoln, Madison County, NY

Completed background research, Phase 1 fieldwork at 25 wind turbine locations and more than 12 miles of roads, interconnects and transmission lines, identified prehistoric and historic archeological sites including historic Oneida Nation villages, on West Hill and Cowaselon Creek. Completed Phase 1A and Phase 1B archeological reports, including sensitivity modeling for field investigations. Field director for Phase 1B field investigations, including more than 1,840 shovel test units, identified seven prehistoric sites and three historic archeological sites.

Archeologist/Cultural Resource Specialist, 2006

Atlantic Energy, Phase 1A Cultural Resources Letter Report for the Atlantic Energy LNG Facility, Chesapeake, VA

Conducted background research for archeological sites, architectural resources and properties listed on the national Register of Historic Places in the vicinity of a proposed liquid natural gas (LNG) facility. Conducted a site visit to document the Glimerton Canal National Register-listed property and prior land disturbances in the area of proposed construction.



Archeologist/Cultural Resource Specialist, 2005
New York Power Authority, Phase 1A Cultural Resources Investigation Tri-Lakes Reliability Project, St. Lawrence County, NY

Compiled environmental archeological and historic data for more than 55 miles of proposed alternative transmission line upgrades through Adirondack State Park in New York. Supervised a pedestrian survey leading to discovery of 40 historic archeological sites. Compiled models for Phase 1B archeological testing for satisfying compliance with the New York State Environmental Quality Review Act. Compiled architectural survey study background research and compiled architectural inventory forms.

Archeologist/Cultural Resource Specialist, 2005
PSEG, Historic Documentary Research, PSEG New Brunswick MPG Site in the Vicinity of the Delaware and Raritan Canal and Washington Street, New Brunswick, NY

Compiled historic maps and photographs for residential and industrial land use along the Delaware and Raritan Canal from 1840 to 1980 in New Brunswick, New Jersey.

Archeologist/Cultural Resource Specialist, 2005
Invenergy Wind LLC. Cultural Resources Background Literature Review-Stamford Wind Project, Stamford and Roxbury Townships, Delaware County, NY

Compiled environmental archeological and historic data for state permitting of proposed wind energy-generating facilities in the western Catskill Mountain region or southern New York.

Archeologist/Cultural Resource Specialist, 2005
Invenergy Wind LLC. Cultural Resources Background Literature Review High Sheldon Wind Farm Project, Wyoming County, NY

Compiled environmental archeological and historic data for state permitting of proposed wind energy-generating facilities in the Allegheny Plateau region or western New York.

Archeologist/Cultural Resource Specialist, 2004-2005
NASA, Marshall Space Flight Center Huntsville, Alabama NASA Contract No. NAS8-00149, Task Order No. 0105. Letter Report Cultural Resources Pedestrian Survey, Marshall Space Flight Center, Madison County, AL

Compiled environmental archeological and historic data for prehistoric and historic land use on the Marshall Space Flight Center. Developed a statistical predictive model for prehistoric site locations and graphic models for historic sites. Conducted a pedestrian survey of 700 acres within 30 separate areas to document past ground disturbances and evidence for archeological sites. Seven new historic archeological sites were identified. Recommended priorities for future cultural resource investigations to comply with Section 110 of the National Historic Preservation Act and other federal laws and executive orders.

Archeologist/Cultural Resource Specialist, 2004
US Fish and Wildlife Service, Region 5. Archeological, Historical and Geomorphic Study Prime Hook National Wildlife Refuge, Sussex County, DE

A TtEC team conducted a coordinated geomorphological study, a historic records study and oral history related to historic minority communities. The geomorphological study included extraction of six vibracores from wetlands near archeological sites to study soil formation and pollen evidence. The historic records study assembled information pertaining to prehistoric and historic archeological sites, historic maps, deeds, census data and other records reflecting past land use. The oral history involved documentary research and informant interviews concerning Native Americans and African Americans living in the vicinity of the refuge.



Archeologist/Cultural Resource Specialist, 2003
Anderson-Mulholland & Associates, Inc. Supplemental Intensive Archeological Investigations at the Flat Swamp Cemetery #2 (413-9), Newtown, CT

Investigated an historic graveyard before well drilling and groundwater testing.

Archeologist/Cultural Resources Specialist, October 2002-2004
Department of the Navy Engineering Field Activities-Northeast, Jamaica Island Landfill, Portsmouth Naval Shipyard, Kittery, ME

Compiled environmental, archeological and historic data for an archeological sensitivity model of pre-landfill landforms and conducted archeological testing at sensitive areas. Monitored landfill excavations for historic landforms and possibly preserved archeological sites. Documented an 1871 schooner shipwreck beneath the landfill. Compiled cultural resource reports detailing environmental and cultural contexts and results of field investigations.

Archeologist/Cultural Resources Specialist, February-May 2003
U.S. Environmental Protection Agency Region 2, Cornell-Dubilier Electronics Superfund Site, South Plainfield Borough, Middlesex County, NJ

Compiled environmental, archeological and historic information for an archeological sensitivity model of industrial development and landscape modification. Compiled a descriptive cultural resources report.

Archeologist/Cultural Resources Specialist, August to November 2002-2004
U.S. Environmental Protection Agency Region 2, Rockaway Borough Wellfield Superfund Site, Rockaway Borough, Morris County, NJ

Compiled historic and land-use data for 62 properties within Rockaway Borough Wellfield Superfund Site, including industrial sites and portion of the Morris Canal. Completed a cultural resources report detailing historic and archeological sensitivity of an urban community.

Archeologist/Cultural Resources Specialist, November 2002-2003
Niagara Mohawk, Historic Manufactured Gas Plants, NY

Conducted historic and documentary research at seven historic manufactured gas plants in New York State. Compiled historic maps, and industrial data concerning industrial designs, preserved architectural features and environmental residues.

Archeologist/Cultural Resources Specialist, October 2002
Bay Energy LLC, Generating Station, Gowanus Canal, Brooklyn, NY

Compiled a cultural resources sensitivity model and report for a draft EIS for a proposed generating station, submitted to the New York State Department of Environmental Conservation. Contributed sections to the EIS describing cultural resources.

Archeologist/Cultural Resources Specialist, June 2002
Pennsylvania Department of Environmental Protection, Valley Forge National Park, PA

Conducted archeological monitoring for environmental testing in historic industrial areas of Valley Forge National Park. Completed sections for the final environmental report that described results of cultural resources monitoring.

Archeologist/Cultural Resources Specialist, May 2002
Royal D'Iberville Casino and Marina, Draft EIS, Cultural Resources. Biloxi and D'Iberville, MI

Conducted background research and prepared a technical cultural resources report describing sensitivity for prehistoric and historic archeological sites, and architectural resources at three alternative development sites along the Mississippi Gulf Coast.



Archeologist/Cultural Resources Specialist, February 2002

Florida Light and Power; Tesla Power Project, Alameda and San Joaquin Counties, CA

Senior historical archeologist for cultural resources issues pertaining to California Energy Commission (CEC) power plant licensing, conducted archeological testing at an early 20th-Century ranch, completed professional cultural survey report for the power plant site and lateral facilities, a Phase 1 archeological report for the Walter Gorman ranch (Site A), and compiled CEC data requests for cultural resources.

Archeologist/Cultural Resources Specialist, October 2001-2004

Department of the Navy Engineering Field Activities-Northeast, Naval Weapons Industrial Reserve Plant, Site 1-Northeast Disposal Area

Conducted environmental and archeological sensitivity modeling at glacial kettles in Long Island. Conducted Phase 1 and Phase 2 archeological testing and monitoring of machine access and debris storage area, and conducted monitoring for buried archeological sites during land fill remediation. Completed a technical archeological survey reports for prehistoric Native American occupations.

Archeologist/Cultural Resources Specialist, December 2001-February 2002

Calpine, Chippokes Energy Center, Surry County, VA

Conducted background research and archeological sensitivity modeling for prehistoric Native American sites, 17th-Century English settlements, and historic Euro-American and African American sites for a project area along the lower James River in Virginia. Completed a technical cultural resources report.

Archeologist/Cultural Resources Specialist, November 2001

Niagara Mohawk. Gravestone Documentation and Preliminary Recommendations for Preservation at the Johnstown Colonial Cemetery, Johnstown, NY

Photographed and analyzed 359 historic gravestones for effects from remediation activities planned at the adjacent Niagara Mohawk property. Prepared a preliminary technical report and protection plan for historic Johnstown Colonial Cemetery listed on the National Register of Historic Places.

Archeologist/Cultural Resources Specialist, November 2001

Texas Eastern Transmission LP. Phase 1 Cultural Resources Investigation, TIME Project, Lambertville Compressor Station, Hunterdon County, NJ

Conducted archeological and historical investigations for proposed natural gas compressor upgrades. Prepared a final cultural resources technical report.

Archeologist/Cultural Resources Specialist, November 2001

Texas Eastern Transmission LP. TIME Project, PA, NJ, and NY

Conducted consultations for a FERC application, including SHPO consultations, Native American consultations, and reviews of archeological reports. Prepared Resource Report 4 and an Unanticipated Discovery Plan for the FERC application.

Archeologist/Cultural Resources Specialist, October 2001

Niagara Mohawk. Stone Retaining Wall Documentation, Niagara Mohawk Johnstown (N. Market Street) Site, Johnstown, NY

Photo-documented a stone retaining wall before and after interim remedial measures at a former manufactured gas plant. Prepared a final cultural resources technical report.

Archeologist/Cultural Resources Specialist, October 2001-2004

National Aeronautics and Space Administration, Marshall Space Flight Center. Environmental Resource Document and Environmental Assessment, Huntsville, AL

Assembled archeological, architectural, historical and environmental information about Marshall Space Flight Center. Developed a predictive archeological model for prehistoric and prehistoric sites. Prepared a



final cultural resources technical report. Assembled archeological, architectural, historical and environmental information about the proposed site of the Propulsion Research Laboratory. Prepared a final cultural resources technical report.

Cultural Resources Specialist, October 2001-2004

Department of the Navy. Archeological Test Pit Monitoring at the Debris Area, Nomans Land Island, MA

Monitored machine test pitting at a former Navy debris areas in conjunction with waste removal and UXO-remediation, activities not defined as federal actions under Section 106 of the National Historic Preservation Act. Prepared a final cultural resources technical report.

Archeologist/Cultural Resources Specialist, September 2001

U.S. Army Corps of Engineers, Philadelphia, Airport Apron Environmental Assessment; Cultural Resources, Fort Dix, NJ

Reviewed archeological, historical and environmental information for Fort Dix, New Jersey. Prepared the final cultural resources technical report.

Consultant, August 2001

Trunkline LNG Company, Lake Charles Terminal, Calcasieu Parish, LA

Conducted consultations for a FERC application, including SHPO consultations, Native American consultations, and reviews of archeological reports. Prepared Resource Report 4 and an Unanticipated Discovery Plan for the FERC application.

Cultural Resources Specialist, June 2001

U.S. Army Engineering and Support Center, Huntsville, Delivery Order 0015, Contract No. DACA 87-94-D-0020, Savanna Army Depot Activity Engineering Evaluation/Cost Analysis, Savanna, IL

Analyzed cultural resources identified during geophysical magnetometer and unexploded-ordnance investigations at the Savannah Army Depot Activity. Prepared a cultural resources technical report.

PREVIOUS EXPERIENCE

Archeological Consultant, December 1995 – Present

Town of Redding Board of Selectmen and Redding Planning Commission, Redding, Connecticut

Major tasks included conducting a town-wide historical and archeological survey documenting 106 archeological sites, 852 historic structures, and archeological sensitivity modeling for more than 20,000 acres. Conducted Phase 1-3 excavations at archeological sites on town lands, including preparing 17 cultural resources reports. Procured funding for compiling a town history in cooperation with the Redding Historical Society. Developed a town-wide volunteer archeology program. Reviewed all subdivision applications for impacts of historic and archeological sites for the Redding Planning Commission. Developing a National Register Nomination for the Poverty Hollow Historic District.

Archeological Consultant, October 2000 - January 2001

Friends and Neighbors of Putnam Memorial State Park, Redding, Connecticut

Nominated Putnam State Park as Connecticut's First State Archeological Preserve for the protection of 1778-1779 Revolutionary War encampments.

Archeological Consultant, June 1998 - April 2000

Florence Griswold Museum and Connecticut College

Conducted an archeological field school for Phase 1-3 excavations at the Lyme Art Colony, Old Lyme, Connecticut, including specialized analyses of 18,000 historic artifacts from studios and other features, prepared a detailed archeological report and museum cultural resources management plan.



Environmental Specialist, GS-12, January 2000 - May 2001
Federal Emergency Management Agency, Region 1, Boston, Massachusetts

On-call disaster assistance for cultural resources, certified training in federal cultural resource and environmental regulations.

Project Archeologist, September 1992 - May 1995
John Milner Associates, Inc., Danbury, Connecticut

Conducted sensitivity modeling for diverse utilities, pipelines and transmission lines, Phase 1-3 archeological investigations for state and private clients, and completed 17 cultural resources technical reports, from the Southeast, Middle Atlantic and New England regions.

Assistant Administer of Research, January 1987 - September 1992
Maryland Historical Trust, Jefferson Patterson Park and Museum, St. Leonard, Maryland

Museum duties included conducting archeological surveys and excavations at prehistoric and Colonial archeological sites in Southern Maryland, exhibit development and Maryland Archeological Curation and Conservation Laboratory design, reviewed development projects and CRM reports for compliance with federal and state regulations, conducted volunteer training and education programs, compiled 7 technical reports, presented 3 professional papers and 2 publications, series editor for Jefferson Patterson Park and Museum Occasional Papers No 1-5.

Archeologist GS5-7, 1976 - 1989 (intermittent)
National Park Service, Midwest Archeological Center, Lincoln, Nebraska

Environmental modeling and Phase 1-3 archeological investigations in Grand Teton and Yellowstone National Parks, Wyoming, and Glen Canyon National Recreation Area, Utah, authored or co-authored 19 technical cultural resources reports, professional papers and publications.

PUBLICATIONS & PRESENTATIONS

Reeve, S.A. in preparation Before the Age of Reason: A Conspiracy against Orthodoxy and the Secret Affair of Young Benjamin Franklin. Under editorial review.

Reeve, S.A. 1999. An Historical and Archeological Assessment Survey of Redding, Connecticut. Office of the First Selectman, Town of Redding, Connecticut.

Reeve, S.A. 1992. Changes in Time: A Seriation Chronology for Southern Maryland Projectile Points. *Journal of Middle Atlantic Archaeology*. 8:107-138.

Reeve, S.A. 1986. Root Crops and Prehistoric Social Process in the Snake River Headwaters, Northwestern Wyoming. Ph.D. dissertation. SUNY Albany, University Microfilms, Ann Arbor.

Reeve, S.A. 1978. Ethnobotany and Archeology in Yellowstone and Grand Teton National Parks. In: Proceedings of the Conference on Scientific Research in the National Parks (2nd). 1:362-380. National Technical Information Service, Springfield, Ohio.

Reeve, S.A., L. Bradt, H.D. Juli and R. Gradie. 2000. The Archeology of the Lyme Art Colony, Florence Griswold Museum, Old Lyme, Connecticut. *Connecticut College Archaeology Laboratory Report* No. 11, New London, Connecticut.

Reeve, S.A. and K. Forgacs. 1999. Connecticut Radiocarbon Dates: A Study of Prehistoric Cultural Chronologies and Population Trends. *Bulletin of the Archaeological Society of Connecticut*. 62:19-66.

Reeve, S.A., J.C. Russo, D.J. Pogue and J.M. Herbert. 1991. Myrtle Point: The Changing Land and People of a Lower Patuxent River Community. Jefferson Patterson Park and Museum, Occasional Papers 3, St. Leonard, Maryland.

Reeve, S.A., and P. Siegel. 1996. Phase III Data Recovery at the Aud Site (Site 18ST634), St. Mary's County, Maryland. *Maryland State Highway Administration Archeological Report* 111. John Milner Associates, Inc., West Chester, New York.

Von Jena, K., and S.A. Reeve. 2005. Poverty Hollow: The Preservation of and Evolving Historic Landscape in Redding, Connecticut. *Bulletin of the Archaeological Society of Connecticut* 67:49-76.

Wright, G.A., S.J. Bender and S.A. Reeve. 1980. High Country Adaptations. *Plains Anthropologist*. 25:191-207.

Wright, G.A and S.A. Reeve. 1981. Prehistoric Resource Procurement and Climatic Change in Northwestern Wyoming, pp. 423-448. In: Quaternary Paleoclimate, W.C. Mahaney (ed.). Geo Abstracts Ltd. Norwich, UK.

Presentations

Reeve, S.A. 1997. Redding Archeology, New Appreciation for Old Places. Lecture presented at the Institute for American Indian Studies, Washington, Connecticut.

Reeve, S.A. 1997. Mitigating Environmental Disaster: Archeological Investigations at the Flat Swamp Cemeteries, Newtown. Presented to the Archaeological Society of Connecticut Meeting, Connecticut River Museum, Essex, Connecticut.

Reeve, S.A. 1997. Connecticut Radiocarbon Dates: Compilation and Comparisons. Presented to the Archeological Society of Connecticut Meeting, Fairfield Historical Society, Fairfield, Connecticut.

Reeve, S.A. 1991. The Material Relationships of Prehistoric Territoriality: PIXE Trace-Element Characterizations of Middle Woodland Rhyolite in Southern Maryland. Presented to the Conference of Middle Atlantic Archeology, Ocean City, Maryland.

Reeve, S.A. 1989. New Data on the Prehistoric Cultural Sequence for Southern Maryland. Presented to the Conference for Middle Atlantic Archeology, Rehoboth Beach, Delaware.

Reeve, S.A. 1988. A Middle Woodland Shell-Pit Burial along the Patuxent River, Maryland. Presented to the Archeology Society of Maryland Annual Meeting, Elkton, Maryland.

Reeve, S.A. 1978. Ethnobotany and Archeology in Yellowstone and Grand Teton National Parks. Presented to the Conference on Scientific Research in the National Parks (2nd), San Francisco, California.

Reeve, S.A. 1976. Plant Resources and Prehistoric Transhumance in Jackson Hole, Wyoming. Presented to the 23rd Plains Conference, Minneapolis, Minnesota.

Reeve, S.A., and A. Burger. 1998. Redding: Archeological Modeling and Historic Preservation in an Old Connecticut Town. Presented to the Archeological Society of Connecticut Meeting, Central Connecticut State University, Bristol, Connecticut.

Reeve, S.A., and K. Forgacs. 1999. Connecticut Radiocarbon Dates: A Study of Prehistoric Cultural Chronology and Population Trends. Presented to the Archeological Society of Connecticut Meeting for *Connecticut Archeology Today*, Peabody Museum of Natural History, Yale University, New Haven, Connecticut.

Reeve, S.A., S.B. Marshall, J.C.Sexton, M.A. Carper, and C.L. Borstel,2009. Assessing the Past to Secure the Future: Cultural Resources and Wind Energy. Poster presentation American Wind Energy Association Conference, Chicago, IL.

Reeve, S.A., and P. Siegel. 1996. Estuarine Habitats and Plant Gathering During the Woodland Period in Southern Maryland. Presented to the Conference on Archeobotany in the Northeast, New York State Museum, Albany, New York.

Reeve, S.A., and P. Siegel. 1995. Woodland Period Activity Organization in Southern Maryland: A View from the Aud Site. Presented to the 62nd Annual Meeting of the Eastern States Archeological Federation, Wilmington, Delaware.

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OTHER CULTURAL RESOURCES EXPERIENCE (NON-TETRA TECH)

2009 *Stage 1A Documentation and Survey Development Report, Germany Flats Water Pump Station, Township of Sparta, Sussex County, New Jersey.* Prepared for the Township of Sparta. Prepared by Aspetuck Landways, Budd Lake, NJ

2009 *Historical and Archeological Assessment Survey of Easton, Connecticut* (senior author). Prepared for the Town of Easton and the Connecticut Trust For Historic Preservation, with funding from the Connecticut Humanities Council. Prepared by Aspetuck Landways, Budd Lake, NJ, Redding, CT and Easton, CT

2007 *Historical and Archeological Assessment of Easton, Connecticut, Interim Report* (senior author). Prepared for the Town of Easton Planning and Zoning Commission and the Connecticut Trust for Historic Preservation. Prepared by Aspetuck Landways, Redding, CT

2006 *South Richmond Drainage: Conference House Park Watershed, Archeological Reconnaissance, Monitoring, and Mitigation, Satterlee Street and Massachusetts Street, Richmond County, New York* (senior author). Prepared for Cruz Construction and NYC Department of Design and Construction. Prepared by Historical Perspectives, Inc., Westport, CT

2005 *Phase 3 Archaeological Investigations at Area 11 Locus 1 Seven Springs Farms, North Castle, New Castle, Bedford, Westchester County, New York.* Prepared for Trump Partners, Seven Springs, LLC. Prepared by Historical Perspectives, Inc., Westport, CT

2004 *Seven Springs Phase 2 Archeological Evaluations: Area 2, Locus 2; Area 2 Locus 3; Area 6, Locus 1; Area 14 and Area 15, Bedford, North Castle and New Castle, NY* (senior author). Prepared for Seven Springs, LLC. Prepared by Historical Perspectives, Inc., Westport, CT

2004 *Stage 1A Archeological Assessment, The Ridge At Winchester, Town of Winchester, Litchfield County, Connecticut.* Prepared for Mitchandrew Development, LLC. Prepared by Historical Perspectives, Inc., Westport

2003 *Stage 1A Archeological Assessment, Proposed Javdan Project, Town of Wallkill, Orange County, New York* (senior author). Prepared for the Kushner Companies. Prepared by Historical Perspectives, Inc., Westport, CT

2002 *Archeological Reconnaissance Survey of the Sunset Revival Subdivision, 65 Sunset Hill Road, Redding, CT* (coauthor). Prepared for Redding Open Lands, Inc. Prepared by K. von Jena and S. A. Reeve, Consultants for the Redding Planning Commission, Redding, CT

2001 *Archeological Monitoring, Empire-Fulton Ferry State Park, Brooklyn, NY.* Prepared for New York State Office of Parks, Recreation and Historic Preservation. Prepared by Historical Perspectives, Inc., Westport, CT

- 2001 *Archeological Reconnaissance Survey of the Home Depot Property, Old Saybrook, Connecticut* (senior author). Prepared for TPA Design Group. Prepared by Historical Perspectives, Inc., Westport, CT
- 2001 *Putnam Park State Archaeological Preserve Nomination*. Prepared for the Friends and Neighbors of Putnam Memorial State Park. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 1999 *Phase 1 Archaeological Survey Report of the Crown Atlantic Telecommunications Facility in the Town of Guilford, Connecticut* (senior author). Prepared for Crown Atlantic Company, LLC. Prepared by Archaeological Consulting Services, Guilford, CT
- 2001 *Phase 1 Archaeological Survey Report of Three Crown Atlantic Telecommunications Facilities in the Town of Old Lyme, Connecticut* (senior author). Prepared for Crown Atlantic Company, LLC. Prepared by Archaeological Consulting Services, Guilford, CT
- 2001 *Archeological Reconnaissance Survey (Phase 1B) Of Lots 3, 4, and 5 Old Stagecoach Estates, Redding, Connecticut* (senior author). Prepared for Arrowhead Hills LLP. Prepared by Archaeological Consulting Services, Guilford, CT
- 2001 *Archeological Reconnaissance Survey of the Nevas Property, Post Road West, Westport, Connecticut*. Prepared for Alan Senie, Attorney at Law. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 2000 *Archeological Reconnaissance Survey at AT&T Wireless Tower Site L16, New Hartford, Litchfield County, CT, Docket No.184*. Prepared for URS Greiner Woodward Clyde. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 2000 *Archeological Reconnaissance Survey of the Proposed Yard Waste Facility, Sherwood Island Connector, Westport, Connecticut*. Prepared for the Town of Westport, Department of Public Works. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 2000 *Archeological Investigations Beneath the Old Town House (117-30), Redding, Connecticut*. Prepared for the Office of the First Selectman, Town of Redding. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 1999 *Archeological Investigations (Phase 3) of the Telephone Line at the Lonetown Manor Site (117-24), Redding, CT*. Prepared for the Redding Planning Comm. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 1999 *Intensive Archeological Survey for Proposed Swimming Pool Construction within the Lonetown Manor Site (117-24), Redding, Connecticut*. Prepared for the Redding Planning Commission. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 1999 *Archeological Assessment Survey of the Krueger/Jarkow Property, Gallows Hill Road and Old Stagecoach Road, Redding, Connecticut*. Prepared for the Redding Planning Commission. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 1999 *An Historical and Archeological Assessment Survey of Redding, Connecticut*. Prepared for the Office of the First Selectman, Town of Redding. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT



- 1999 *Archeological Reconnaissance Surveys at Great Pond and Rippowam Road, Ridgefield, Connecticut.* Prepared for the Federal Emergency Management Agency, Boston. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 1998 *Intensive Archeological Survey (Phase 2) of Portions of Lot 1 (Sites 117-23 and 117-24) and Lot 4 (Site 117-29), Lonetown Manor, Redding, CT.* Prepared for the Redding Planning Commission. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 1998 *Archeological Assessment Survey, Fort Trumbull MPD Area, New London, Connecticut* (senior author). Prepared for Milone & MacBroom, Inc. and New London Development Corporation. Prepared by S.A. Reeve, Archeological Consultant, West Redding and Keegans Associates LLC, Willington, CT
- 1998 *Native American Uses for Redding Plant Communities.* Prepared for the Office of the First Selectman, Town of Redding. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 1998 *Archeological Investigations at the Burritt Property, Redding, CT* (senior author). Prepared for the Office of the First Selectman, Town of Redding. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 1998 *Archeological Reconnaissance Survey, AT&T Wireless Tower Site L18, Colebrook, Litchfield County, CT.* Prepared for Land-Tech Consultants, Inc. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 1998 *Archeological Reconnaissance Survey, AT&T Wireless Tower Site L16A, New Hartford, Litchfield County, CT.* Prepared for Land-Tech Consultants, Inc. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 1998 *Archeological Investigations at Three Sites in Redding Center Historic District, Redding, Connecticut.* Prepared for the Town of Redding, Office of the First Selectmen. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 1998 *Archeological Reconnaissance Survey of Lonetown Manor, Redding, Connecticut.* Prepared for the Redding Planning Commission. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 1997 *Archeological Assessment Survey of Lonetown Manor, Redding CT.* Prepared for Alfred and Sharon Dietzel, and Cohn and Wolf, P.C. Attorneys at Law. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 1997 *Preliminary Report, Archeological Reconnaissance Survey of Lots 1 and 4, Dietzel Subdivision, Redding, Connecticut.* Prepared for Alfred and Sharon Dietzel, and Cohen and Wolf, P.C. Attorneys at Law. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 1997 *Intensive Archeological Survey at Flat Swamp Cemetery #2 (413-9), Newtown, CT.* Prepared for Holahan, Gumper & Dowling, Attorneys at Law, and Island Transportation Corporation. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT



- 1997 *Archeological Assessment Survey, Harbor Brook Flood Control Project (MMI #621-4), Meriden, Connecticut.* Prepared for Milone and MacBroom, Inc. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 1997 *Phase 1 Archaeological Reconnaissance Survey, Proposed Facilities Expansion, First Church of Christ, Congregational, Redding, Connecticut* (coauthor). Prepared for the First Church of Christ, Congregational. Prepared by Ernest Wiegand, III, Consultants in Archaeology, Wilton, CT
- 1997 *Archeological Reconnaissance Survey of the Flat Swamp #2 (413-9) Cemetery, Newtown, CT.* Prepared for Holahan, Gumper & Dowling, Attorneys at Law, and Island Transportation Corporation. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 1997 *Archeological Reconnaissance Survey of the Flat Swamp #1 (413-8) Cemetery, Newtown, CT.* Prepared for Holahan, Gumper & Dowling, Attorneys at Law, and Island Transportation Corporation. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 1996 *Archeological Assessment/Reconnaissance Survey, Silver Brook Stream Improvement Project (Project No. 93-2), Westport, Connecticut.* Prepared for Milone & MacBroom, Inc., and Westport Department of Public Works. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 1996 *Archeological Reconnaissance Survey of the Raymond Family Burial Ground, Darien, Connecticut.* Prepared for Mrs. Joanne Hart and Rucci, Burnham, Carta & Edelberg, Attorneys At Law. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 1996 *Archeological Assessment Survey of the Lampitelli Subdivision, PL #466, Whortleberry Hill Road, Redding, CT.* Prepared for the Redding Planning Comm. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 1996 *Luzerne County, S.R. 1018, Section 370, Dallas Township Bridge Replacement Phase I Archeological Survey and Historic Resources Investigation, E.R.#92-1690-079* (coauthor). Prepared for the Pennsylvania Department of Transportation. Prepared by John Milner Associates, Inc., West Chester, PA
- 1995 *Cliffdale Road Bridge (No. 0516) Replacement, Greenwich DPW No. 93-44, CT.* Letter report to the Office of the State Archeologist, Storrs, CT, August 26, 1995. Prepared for the Cliffdale Road Homeowners Association. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 1995 *Cultural Resources Contribution to the U.S. Forest Service DEIS for the Appalachian Power Company 750 kV Transmission Line from Oceana, West Virginia to Cloverdale, Virginia* (coauthor). Prepared for Woodward Clyde Consultants, Inc. and Jefferson National Forest. Prepared by John Milner Associates, Inc., Alexandria, VA
- 1995 *A Phase IB Archeological Survey in Association with the Upgrade of Segment 3 of the Cady's Falls to Johnson Transmission Line Facility, Johnson and Hyde Park, Vermont* (senior author). Prepared for the Village of Morrisville Water and Light Department. Prepared by John Milner Associates, Inc., Danbury, CT
- 1995 *Wyoming County S.R. 0292, Section 770, Bowman's Creek Bridge Replacement, Phase I Archeological Survey, E.R. No. 93-0454-131-D* (senior author). Prepared for the Pennsylvania Department of Transportation. Prepared by John Milner Ass., Inc., West Chester, PA



- 1995 *Archeological Reconnaissance Survey, State Receiving Home, East Windsor, Connecticut, DPW Project No. BI-YS-105-1, DTC No. 92-129-120* (coauthor). Prepared for Diversified Technologies Corporation. Prepared by John Milner Associates, Inc., Danbury, CT
- 1994 *A Phase IA Cultural Resources Investigation of the Portland Natural Gas Transmission System Pipeline, North Troy to the Connecticut River, Orleans, Caledonia, and Essex Counties, Vermont* (coauthor). Report prepared for Stone and Webster Engineering Corporation. Prepared by John Milner Associates, Inc., Danbury, CT
- 1994 *Phase IA and IB Archeological Investigations for the City of Bethlehem Raw Water Main Project, Upper and Lower Towanensing Townships, Carbon County, Pennsylvania, Northampton, Pennsylvania* (coauthor). Report prepared for Gannett Fleming, Inc. Prepared by John Milner Associates, Inc., West Chester, PA
- 1994 *A Phase I Cultural Resources Reconnaissance in Association with the Upgrade of Segment 3 of the Cady's Falls to Johnson Transmission Line Facility, Johnson and Hyde Park, Vermont* (senior author). Prepared for the Village of Morrisville Water and Light Department. Prepared by John Milner Associates, Inc., Danbury, CT
- 1994 *A Phase I Archeological Survey of Three U.S. Marine Corps Housing Locations, Craven County, North Carolina, Base Realignment, MCAS Cherry Point, North Carolina* (senior author). Prepared for TAMS Consultants, Inc. Prepared by John Milner Ass., Inc., Alexandria, VA
- 1994 *A Phase I Archeological Survey, Fountain Lake Commerce Park, Ansonia and Seymour, Connecticut* (senior author). Prepared for the Ansonia Redevelopment Agency. Prepared by John Milner Ass., Inc., Danbury, CT
- 1994 *Supplemental Stage IB Archeological Survey and Stage II Archeological Evaluation Report, King of Prussia Technical Corporation Site, Winslow Township, Camden County, New Jersey* (coauthor). Prepared for The King of Prussia Technical Corporation Site Committee. Prepared by John Milner Associates, Inc., West Chester, PA
- 1994 *A Phase I Archeological Survey for the Proposed By-Pass Road, Fairfield Hills Hospital, Newtown, Connecticut: DPW Project No. B1-JA-343-Archeological* (coauthor). Prepared for the Connecticut, Department of Public Works. Prepared by John Milner Associates, Inc., Danbury, CT
- 1993 *A Stage IB Archeological Survey of Proposed Remedial Activities at the King of Prussia Technical Corporation Site, Winslow Township, Camden County, New Jersey* (senior author). Prepared for the King of Prussia Technical Site Committee. Prepared by John Milner Associates, Inc., West Chester, PA
- 1993 *Phase I and Phase II Archeological Investigations; Station Square Project, Cumberland, Maryland* (coauthor). Maryland State Highway Administration Archeological Report 62. Baltimore. Prepared by John Milner Associates, Inc., Alexandria, VA
- 1993 *A Phase IA Archeological Survey of the Proposed Haverhill to Portland Pipeline Project, New Hampshire and Maine* (senior author). Report prepared for Stone & Webster Engineering Corporation. Prepared by John Milner Associates, Inc., Danbury, CT



- 1993 *Phase II Archeological Evaluation of Site 36CR83 City of Bethlehem Water Transmission Main, Carbon County, Pennsylvania* (senior author). Report prepared for Gannett Fleming, Inc. Prepared by John Milner Associates, Inc., West Chester, PA
- 1992 *Phase I Archeological Investigations, Pahaquarry Copper Mines Parking Area, Delaware Water Gap National Recreation Area, Warren County, New Jersey* (senior author). Report prepared for the National Park Service. Prepared by John Milner Associates, Inc., Alexandria, VA
- 1992 *A Phase I Shovel Test Pit Survey of the MAC/MSU Utility Corridor, And a Proposal for Phase II Testing*. Report on file, Jefferson Patterson Park and Museum, St. Leonard, MD
- 1992 *Patuxent Point Radiometric Dates*. Grant Report submitted to the PRAD Foundation, and the Maryland Historical Trust, Annapolis, MD
- 1991 *Shovel Test Pit Survey of the Kings Reach House (18CV17N) Septic System*. Report on file, Jefferson Patterson Park and Museum, St. Leonard, MD
- 1991 *Results of Shovel Testing Under the Asbury House*. Report on file, Jefferson Patterson Park and Museum, St. Leonard, MD
- 1989 *Prehistoric Settlements at the Yellowstone Lake Outlet, Yellowstone National Park, Wyoming*. Prepared in partial fulfillment of Package 294 and Purchase Order PX-6115-7-0115. National Park Service, Midwest Archeological Center, Lincoln, NE.
- 1988 *Results of Phase I Shovel Testing of the Asbury House Septic System*. Report on file, Jefferson Patterson Park and Museum, St. Leonard, MD
- 1987 *The St. Leonard Creek Archeological Survey*. Research report, Maryland Historical Trust, Annapolis, MD.
- 1985 *Data Recovery and Analysis at the Chittenden Bridge Site (48YE516), Yellowstone National Park, Wyoming* (coauthor). Report in partial fulfillment of Package 141. NPS, Midwest Archeological Center, Lincoln, NE
- 1984 *The Chittenden Bridge Site (48YE516) and the Paleoecology of Yellowstone National Park, Wyoming*. Report in partial fulfillment of Package 141. National Park Service, Midwest Archeological Center, Lincoln, NE
- 1983 *The Lizard Creek Sites (48TE700 and 48TE701): The Prehistoric Root Gathering Economy of Northern Grand Teton National Park, Wyoming*. Report in partial fulfillment of Package 201. National Park Service, Midwest Archeological Center, Lincoln, NE
- 1983 *The Foraging Potential of the Little Wahweep Creek Blackbrush Community, Glen Canyon National Recreation Area, Utah*. In *Five Sites Near the Lone Rock Development, Glen Canyon National Recreation Area* (Coauthor). National Park Service, Midwest Archeological Center, Lincoln, NE
- 1982 *Index to the Pollen Flora of Grand Teton National Park*. Research report on file, Midwest Archeological Center, Lincoln, NE
- 1982 *Palynology and Archeology: New Applications in Northwestern Wyoming*. Research report on file, Midwest Archeological Center, Lincoln, NE

- 1980 The Northern Jackson Hole-Southern Yellowstone Park Cultural Ecology Model. Research report on file, Midwest Archeological Center, Lincoln, NE
- 1980 *Archeological Investigations of the Lawrence Site (48TE509), Grand Teton National Park, Wyoming* (senior author). Report in partial fulfillment of Purchase Order No. PX-6115-7-0126. National Park Service, Midwest Archeological Center, Lincoln, NE
- 1979 *Mitigation of the Sheepwater Bridge Site (48YE320), Yellowstone National Park* (senior author). Report in partial fulfillment of Purchase Order No. PX-6115-7-0126. NPS, Midwest Archeological Center, Lincoln, NE
- 1977 Blacktail Butte Ecology and Resources. In *Report on Excavations at Blacktail Butte, Grand Teton National Park, Wyoming* (coauthor). Report in partial fulfillment of Purchase Order No. CX-6000-5-0181. National Park Service, Midwest Archeological Center, Lincoln, NE
- 1976 *A Preliminary Report on Two Ocean Lake 1 (48TE357): A Seasonal Camp in Grand Teton National Park* (coauthor). Report in partial fulfillment of Purchase Order No. CX-6000-5-0181. National Park Service, Midwest Archeological Center, Lincoln, NE
- 1975 *Report on Archeological Investigations and Excavations of Revolutionary Sites, Saratoga National Historical Park, New York* (senior author). Report in partial fulfillment of Contract No. CX-200-4-0030. National Park Service, Washington, D.C.

PROFESSIONAL ACCOMPLISHMENTS

Paul C. Lemon Award for Distinguished Research in Ecology and the Environmental Sciences, SUNY Albany. 1987.

Society for American Archaeology, Ph.D. Dissertation Competition: Honorable Mention. 1990.

