SUPPLEMENTAL PHASE II
INTENSIVE ARCHEOLOGICAL SURVEY
CIMARRON WIND ENERGY PROJECT – PHASE 1
GRAY COUNTY, KANSAS

KSR&C No. 09-12-054

PRIVILEGED INFORMATION--DO NOT RELEASE

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EXECUTIVE SUMMARY

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 proposed Project will include up to 72 wind turbine generators and associated facilities. 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 (NHPA) and under the National Environmental Policy Act. TVA will also consult with the Kansas State Historic Preservation Office (SHPO) and consulting Federally Recognized Indian Tribes. The SHPO project review number is Kansas State Review and Compliance No. 09-12-054. In addition, this Project will be subject to the *Kansas Unmarked Burial Sites Preservation Act* which protects human remains and associated objects.

Tetra Tech previously conducted a Phase II Intensive Archeological Survey of the Project's Area of Potential Effects (APE) during April 2011 (report dated August 2011); the APE was defined as the construction footprint plus a buffer, and equaled approximately 654 acres. One historic archeological site, Site 1 (14GY100) and two isolated finds were identified. These cultural resources were not recommended as eligible for the National Register of Historic Places (NRHP); SHPO concurred in a letter to TVA dated September 8, 2011.

Since April 2011, modifications to the Project layout increased the APE to 670 acres, of which approximately 57.7 acres had not been previously surveyed. Therefore, this Supplemental Phase II Intensive Archeological Survey (the Survey) was required of the approximately 57.7 acres of new APE (Survey APE). The Survey included pedestrian surveys at 15-meter transects and shovel testing at 15-meter intervals to identify prehistoric and historic period cultural remains in the Survey APE. One historic archeological site, Site 2 (14GY102), was identified in Survey segment 11-HR. No other historic or prehistoric artifacts were found in the Survey APE.

Site 2 was investigated by pedestrian survey in transects 5 meters apart and by 22 shovel tests at 5-meter intervals in a small area of clustered historic artifacts. Artifacts were only recovered from the surface and the plowzone. No artifacts were recovered from below the plowzone and no buried archeological features were identified. Artifacts were lightly scattered across an area of approximately 1.2 acres, however most artifacts were clustered within a smaller area of approximately 5,000 square feet. Artifacts suggested that Site 2 dated to the early twentieth century. Domestic, work and transportation-related artifacts, and lack of architectural artifacts or buried features, suggest that Site 2 possibly functioned as a short term camp, rather than as a homestead. Gray County deeds indicate that the property was leased for oil and gas exploration in 1917 and 1920. While archeological and documentary sources provide complementary information, additional archeological investigations are not likely to provide substantially more insights about site activities. The artifact cluster at Site 2 is small, and shovel testing provided no evidence for preserved structural or technological features. Therefore Tetra Tech EC, Inc. recommends that Site 2 in not eligible for the NRHP, and recommends no further investigations or avoidance by the Project.

In conclusion, no potentially significant archeological sites were discovered the Survey. TVA as federal Lead Agency has been consulting with SHPO in compliance with Section 106 of the NHPA and NEPA. TVA will also continue consultations with interested Native American tribes.

TABLE OF CONTENTS

1.0 INTRODUCTION 1

2.0 ENVIRONMENTAL AND CULTURAL CONTEXTS 2
- 2.1 Environmental Setting 2
- 2.2 Native American Cultural Contexts 3
- 2.3 Euro-American Cultural Contexts 3

3.0 FIELD OBSERVATIONS 4
- 3.1 Field and Laboratory Methods 4
- 3.2 Survey Results 5
  - 3.2.1 Pedestrian Survey Results 5
  - 3.2.2 Shovel Testing Results 6
  - 3.2.3 Site 2 (14GY102) 7

4.0 SUMMARY AND RECOMMENDATIONS 8

5.0 REFERENCES 9

TABLES

Table 1. Supplemental Phase II Intensive Survey: Survey Segments, Environmental Conditions, and Archeological Sensitivity

Table 2. Site 2 (14GY102) Artifact Descriptions

FIGURES

Figure 1. Project Area Location

Figure 2. Archeological APE Comparison

Figure 3. Proposed Project APE

Figure 4. Site 2 Location

Figure 5. Site 2 Plan View

Figure 6. Site 2 Artifacts

PHOTOGRAPHS

Photograph 1. Pedestrian survey in segment 10-SS, a field with wheat stubble and ground visibility of 50 percent. View to the south.

Photograph 2. Shovel testing at Site 2 in segment 11-HR, a plowed field with surface visibility of 90 percent. View to the west.

Photograph 3. Excavated area in segment 5-HR. View to the east.

Photograph 4. Retention pond in segment 6-HR. View to the southeast.

Photograph 5. Filled area of segment 6 with Milo (center left), approximately 1 meter higher than the adjacent plowed field (center right). View to the west.

Photograph 6. Well pump dating to the 1960s west of the retention pond in segment 6-HR. View to the north.

APPENDICES

Appendix A. Supplemental Phase II Intensive Archeological Survey Maps

Appendix B. Shovel Test Soil Descriptions

Appendix C. Kansas Archeological Site Form

Appendix D. Agency and Tribal Correspondence

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 21.7 square miles (13,883 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 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 26, 27, 28 and 29, and T25S R28W and portions of Sections 12, 13 and 24.

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. The area of potential effects (APE) includes buffered locations of possible ground disturbances resulting from construction, operation, and decommissioning of Project facilities, totaling approximately 670 acres (Figure 2).

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 is consulting with the Kansas State Historical Society (KSHS), which serves as the State Historic Preservation Office (SHPO), and consulting Federally Recognized Tribes. The SHPO project review number is Kansas State Review and Compliance (KSR&C) No. 09-12-054. In addition, this Project is 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.

In order to evaluate possible Project effects on archeological resources, Tetra Tech (2011a and 2011b) previously conducted a Phase I Reconnaissance Survey and Phase II Intensive Archeological Survey to identify possible Project effects on archeological sites that were potentially eligible for the National Register of Historic Places (NRHP). The APE was defined as the construction footprint plus a buffer, and equaled approximately 654 acres (Figure 2). Archeological field investigations included a pedestrian survey of the entire APE, and shovel testing (514 shovel tests) in APE segments with poor surface visibility (less than 40 percent visibility) that were within 500 feet of possible water sources (Tetra Tech 2011b). The Phase II Intensive Archeological Survey identified one historic-period archeological site (Site 1 [14GY100], an abandoned well derrick), one historic-period isolated artifact (a wire nail), and one prehistoric-period isolated artifact (a chalcedony flake). Isolated artifacts were not defined as archeological sites. These archeological resources were not recommended as eligible for the NRHP. In a letter to TVA, SHPO concurred that the proposed Project will have no adverse effects on significant archeological resources (Weston 2011).

Following completion of the Phase II Intensive Archeological Survey, modifications to the Project layout increased the APE to 670 acres, of which approximately 57.7 acres had not been previously surveyed (Figure 3). Therefore, this Supplemental Phase II Intensive Archeological

Survey (the Survey) was required of the approximately 57.7 acres of new APE (Survey APE). The results of the Survey are reported herein. Layout changes that created the Survey APE included:

- A new substation and O&M building location (to the south of the original substation location) in T25S R28W Section 24 = 10 acres;
- Relocated underground homerun collection lines in T25S R28W Section 24 and T25S R27W Sections 18, 19 and 20 = 33.8 acres;
- Circular set back areas around 2 existing transmission towers in T25S R27W Sections 18 and 16 = 11.4 acres;
- Laydown area extension = 1.5 acres; and
- Met tower spur road widening in T25S R27W Sections 9, 27 and 29 = 1 acre.

Following this Introduction, Section 2.0 describes important environmental and cultural contexts within the APE that guided the Survey. Section 3.0 describes field and laboratory methods and results of field investigations. 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 presents detailed Survey maps. Appendix B presents soil descriptions from shovel tests conducted during the Survey. Appendix C provides a Kansas archeological site form for Site 2. Agency and tribal correspondence relating to this Project is presented in Appendix D. Survey archeologists included Stuart A. Reeve, Ph.D. (39 years of experience), author of this report, Christopher Borstel, Ph.D. (30 years of experience), Robert Jacoby, MA (27 years of experience), and Jason Kindinger, BA (8 years of experience).

2.0 ENVIRONMENTAL AND CULTURAL CONTEXTS

Discussions of environmental and cultural contexts were presented in earlier reports (Tetra Tech 2011a and 2011b), and are briefly reviewed as these pertain to the revised layout.

2.1 Environmental Setting

The Project Area is within the Central Great Plains physiographic region, formed under shallow seas during the Mesozoic Era. 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.

During the last 12,000 years of possible human occupations, the Project Area has maintained grasslands associated with the High Plains (Chapman et al. 2001). Grasslands are sensitive to climatic trends, especially periodic droughts. Bison were the predominant herbivores on the prairies and were a major food resource for Native Americans through most of the last 12,000 years. Bison populations 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 (Wilson 1978). Water was a critical resource

to people and bison on the arid Plains and was most predicable along the Arkansas River or at springs along creeks.

General Land Office surveys in 1872 (Everts 1887) mapped expansive "wet prairies" and playas in upland headwater sections of the Project Area. Most playa lakes form from ponding of precipitation on compacted soils (Ladner 2011). Therefore, wet prairies and playas expand or dry due to seasonal and long term precipitation trends. Since Euro-American settlement in the 1880s, many playas have been drained, plowed, terraced, ditched, or filled (United States Department of Interior 1990; Tetra Tech 2008). Formerly mapped wet prairies in the Survey APE were apparently associated with Spearville silty clay loam on modern soils maps (Tetra Tech 2011c). A former playa was noted in the Survey APE in T25S R27W Sections 18 and 19 by the General Land Office survey in 1872 (Everts 1887) and by the United States Geological Survey (USGS) (USGS 1892). This former playa is presently defined by Lesho-Sweetwater complex soils and has occasionally flooded in recent times (Tetra Tech 2011c).

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 (Tetra Tech 201la and 2011b). 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 in Gray County. Most sites were described near streams or playa lakes. None of the known sites occur near the Survey APE or Project Area (KSHS 2010a).

2.3 Euro-American Cultural Contexts

Euro-American settlements in Gray County began following the establishment of the Santa Fe Trail in 1821, along the Arkansas River (Barry 1973). 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 and commercial buffalo hunters. The AT&SFRR was completed to Santa Fe, New Mexico in 1880, and most of the Santa Fe Trail was abandoned (Connelley 1918; Gallagher et al. 1993).

In 1872, the General Land Office surveyed Township, Range and Section lines in the Project Area as a prelude to settlement. The City of Cimarron was founded along the railroad line in 1878. The 1880 United States (U.S.) census reported only 411 people living in the area of Gray County. There were 27 farms and 1,318 acres had been improved for agriculture in Gray County (University of Virginia Library 2007). Most early homesteads were dugouts or constructed of sod (Luther 1955:2-3). None of these pioneer dwellings have survived to the present. However, archeological remains might be located in the Project Area.

In 1887 a local government was established in Gray County. That year, a county census listed 4,896 people and 912 households (Blackmor 1912 1:782). The northeastern corner of the county was named Foote Township, an area of approximately 120 square miles that included most of the Project Area. Blizzards, droughts, dust storms, and insect pests drove many early settlers away from Gray County (Luther 1955:2-3; Malin 1946). 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 (Ancestry.com 2010).

From 1900 to 1930, populations increased in Gray County and Foote Township, driven by expanding farms and croplands. New settlers continued to file claims on quarter-section (160 acres) homesteads and tree claims. 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, aided by programs by the United States Department of Agriculture (USDA) Soil Conservation Service.

The 1969 *Gray County, Kansas Farm & Ranch Directory* (Anonymous 1969) provided detailed information about Project Area settlements, including locations of 16 dwellings. In 2000, there were 126 people and 57 households/farms in Foote Township. Records of the Gray County Appraiser provide possible dates of construction for 13 existing dwellings in the Project Area (Gray County Appraiser 2010). None of these structures are within the Survey APE.

Since Gray County was founded, agriculture has a key element of local economy. Principal products today including beef cattle, corn, wheat, sorghum (Milo), and sunflower seed (KSHS 2010b). Most lands have been plowed, and only 3.5 percent of the Project Area remains in native grasslands (Tetra Tech 2010). Soil conservation practices have included draining and grading of playa lakes, field leveling for construction of pivot irrigation systems, and field terracing and berm construction to reduce water runoff and soil erosion (Ladner 2011).

3.0 FIELD OBSERVATIONS

3.1 Field and Laboratory Methods

Archeological field investigations included pedestrian survey and shovel testing to identify prehistoric and historic period cultural remains in the Survey APE. Field methods corresponded to archeological testing employed during the April 2011 Phase II Intensive Survey (Tetra Tech 2011b; KSHS 2010c).

Table 1 lists 20 survey segments associated with homerun collection lines (HR), substation (SS), transmission towers (TT), laydown area (Laydown), and met tower spur road widening (Met) (Appendix A). Information recorded for segments included field notes of local landforms, wetlands, ground disturbances, vegetation (crops or grasslands), and percentages of ground visibility (Table 1). Landscape photographs were taken at each survey segment. Locations of archeological finds were mapped utilizing geographic positioning system (GPS) technology, and were described in field records.

The pedestrian survey was conducted along the entire Survey APE, totaling approximately 57.7 acres, following layout maps loaded onto Trimble handheld GPS units (Appendix A). The Survey APE was walked along transects at 15-meter (50-foot) widths (KSHS 2010c). Ground surfaces were searched for prehistoric and historic period artifacts, rock alignments and scatters,

and for landscape features indicating cultural activities and/or ground disturbances. At Site 2, a cluster of historic period artifacts, pedestrian survey transects were conducted at 5-meter intervals. Individual artifacts and groups of artifacts were recorded as find spots (FS) and the location of each FS was recorded on GPS units. Most artifacts were described in field records and left *in-situ*. Only functionally or chronologically diagnostic artifacts were collected for laboratory analyses from FS-1, FS-2, and FS-3.

Shovel testing was conducted within areas of prehistoric sensitivity, including 100-meter (330-foot) wetland buffers in areas with less than 40 percent ground visibility (Appendix A). Shovel tests were dug at 15-meter (50-foot) intervals along transects staggered 15 meters apart (KSHS 2010c). Shovel tests were 35 centimeters (14 inches) or greater in diameter, excavated in 15 centimeter (8-inch) levels, to 10 centimeters (2.5 inches) or greater below plow zones, where practical. Field records described shovel test locations by survey segments, and were assigned numbers from 515 to 620, following the initial April 2011 Phase II Intensive Archeological Survey results. However, several assigned shovel tests were treated as observation points and were not actually excavated since they were in areas having extensive ground filling and disturbances (Appendix B). In total, 89 shovel tests were excavated at 15-meter intervals within survey segments. The location of each shovel test was recorded on GPS units. At Site 2, 22 shovel tests were dug at 5-meter intervals within and around a surface cluster of historic-period artifacts. All excavated soils were screened through 0.6 centimeter (¼-inch) hardware cloth on shaker screens for recovery of artifacts. Soil strata were described by soil texture, Munsell soil colors, gravel and cobble inclusions and artifact contents, if any. Artifacts recovered from shovel tests were described in field records and returned to shovel test holes, since no diagnostic artifacts were recovered in shovel tests. All shovel tests were backfilled.

Following fieldwork, field photographs and other field records were reviewed in relation to archeological finds. GPS locations for shovel test locations and identified archeological sites and artifacts were converted into geographic information systems (GIS) shape files and placed on survey maps (Appendix A). Notes from the pedestrian survey were tabulated (Table 1). Soils were described from shovel testing (Appendix B). Recovered artifacts were cleaned, analyzed, and described (Table 2). A KSHS site form was prepared for Site 2 (Appendix C).

3.2 Survey Results

Supplemental field investigations were conducted in the Survey APE (57.7 acres) between September 22 and 27, 2011 by a team of four Tetra Tech archeologists. The Survey APE was divided into 20 segments for data investigation (Table 2). Field conditions for the survey were excellent. Most of the Survey APE is on formerly or actively plowed uplands. Gray County was experiencing a severe drought, so crops were stunted and winds had dispersed dried ground litter vegetation, assuring good visibility for most survey segments (Photograph 1). Soils were parched and hard for shovel testing.

3.2.1 Pedestrian Survey Results

The pedestrian survey investigated all 20 Survey APE segments (Table 1). Ground visibility was 40 percent, or greater, in 13 of the 20 Survey segments (Photograph 1). Crops were observed on 16 segments, 3 segments were recently plowed, and 1 segment was covered by grass and trees (Table 1). Soils were silt loam. Gravel or pebbles were rarely observed on field surfaces, and no cobbles were observed. Cobbles, if present, might have resulted from human transport. No

prehistoric artifacts were identified during the pedestrian survey. One historic period archeological site, Site 2, was identified in in plowed fields of segment 11-HR (Photograph 2). No other historic period artifacts or prehistoric period artifacts were observed during the Survey.

Ground disturbances relating to agricultural practices were observed in Section 19 of T25S R27W. A stream drainage and playa formerly ran north through Sections 19 and 18 to the headwaters of Buckner Creek. In Section 19, construction of retention ponds and pivot irrigation modified ground surfaces. Survey segment 4-HR was graded deeper than the level of Section 19, to the north. Retention ponds were excavated in segments 5-HR and 6-HR (Photographs 3 and 4). Filled areas were observed in portions of segments 6-HR (Photograph 5) and 16-HR. Analyses of historic aerial photographs suggest that the retention ponds were excavated earlier than the installation of pivot irrigation on Section 18. The irrigation ponds appear on aerial photographs between 1966 and 1972 (USGS 2011a). This construction date seems to be verified by an abandoned well head adjacent to the retention pond in segment 6-HR. The well was powered by an Oldsmobile *Rocket Power* 8-cylinder engine (number GM380145LH / D256), manufactured during the 1960s for irrigation pumps (Photograph 6). However, aerial photographs indicate that the pivot irrigation system in Section 19 was installed between 1991 and 1997 (USGS 2011b and 2011c).

In segment 11-HD, historic period artifacts were identified during the pedestrian survey, defined as Site 2. Site 2 was then walked in transects 5 meters apart and identified artifacts were flagged and mapped using GPS units. In total, 36 FS locations were mapped, and 51 historic artifacts were identified during pedestrian survey at Site 2 (Table 2). Following, completion of investigations at Site 2, an additional 30-meter (100-foot) wide transect was surveyed east from segments 11-HR, 12-HR and 13-HR, beyond the Survey APE. Only one historic artifact, an iron T-shaped handle probably from an augur (FS-33), was observed east of the 11-HR corridor. This additional survey corridor east of the Survey APE allows CPV to offset construction away from property lines or avoid most Site 2 artifacts, should avoidance be requested by TVA or SHPO. Tetra Tech is not recommending avoidance of Site 2.

3.2.2 Shovel Test Results

Shovel tests were excavated within Survey segments that were located in areas of prehistoric sensitivity within 100 meters or less from mapped streams and wetlands, where surface visibility was less than 40 percent, and in areas that were not previously disturbed by grading or filling. In total, 2 shovel tests were excavated in undisturbed portions of segment 5-HR, 21 shovel tests were excavated in undisturbed and disturbed portions of segment 16-HR, 16 shovel tests were excavated at segment 6-HR, and 50 shovel tests were excavated at segment 8-HR (Table 1, Appendix A). In total, 17 shovel test locations were not excavated at 6-HR and 16-HR, due to soil disturbances observed in nearby excavated shovel tests. No historic or prehistoric period artifacts were observed in shovel tests in these survey segments. In addition, 22 shovel tests were excavated during investigation of Site 2, and 7 of the 22 shovel tests at Site 2 contained historic artifacts in plowzone strata. Site 2 is discussed in Section 3.2.3 and Appendix C, below.

On plowed uplands, plowzone soils (stratum A) ranged very dry, dark grayish brown to brown silt loam extending from 20 to 50 centimeters (8 to 20 inches) below ground surfaces. Plowzone excavations were usually obstructed by hard, compacted soils relating to hydric conditions. Subsoils ranged from very dark grayish brown silt loam associated with wetland soils, to brown

to very pale brown silt loam. Limestone gravel was rare in subsoils and cobbles were absent. Soil disturbances were observed in portions of segments 5-HR, 6-HR, and 16-HR by mixed dark and light colored fill (Appendix B).

3.2.3 Site 2 (14GY102)

During the pedestrian survey of a recently plowed field in segment 11-HR, Site 2 was identified by dispersed historic artifacts along the western edge of the southeast quarter of Section 18, T25S R27W (Figures 4 and 5). Historic period artifacts were below the terrace slope of a former playa depression (Photograph 2). The rarity of historic artifacts in other parts the Project APE focused attention on understanding of the chronology and function of Site 2. Historical background research suggested several possibilities, such as a nineteenth century pioneer homestead, a twentieth century farm midden, or some other function. Therefore additional pedestrian surveys at 5-meter intervals and shovel testing at 5-meter intervals helped define the horizontal and stratigraphic boundaries of Site 2 and examine possible site activities.

Figure 5 illustrates the distribution for 36 FS identified during pedestrian survey and 22 shovel tests at Site 2. The site extended for approximately 137 meters (450 feet) north and south and approximately 45 meters (150 feet) east west (1.2 acres), on both sides of the quarter section property boundary. Historic artifacts associated with Site 2 were observed to extend for approximately 50 feet into the non-leased property in the southwest quarter of Section 18 (Figure 5). Artifacts on the non-leased property west of segment 11-HR were not collected, inventoried or mapped due to the lack of access rights. Most surface artifacts were mapped within a relatively small cluster approximately 30 meters (100 feet) north-south and 15 meters (50 meters) east-west (5,000 square feet) in segment 11-HR (Figure 5).

Shovel tests encountered relatively shallow silt loam plowzones ranging from 10 to 45 centimeters (4 to 18 inches) below ground surfaces, overlying compact very dark grayish brown silt loam subsoil related to playa deposits. All historic artifacts were recovered from the plowzone. No evidence was observed in shovel tests for deeply buried artifacts or preserved cultural features such as charcoal concentrations or evidence of dugout or sod hut structures.

Site 2 artifacts reflect domestic, work, and transportation activities. Domestic artifacts were relatively numerous and diverse, including ceramics (22 items), decorative table glass (1 item) and vessel glass (21 items). Ceramics included 8 sherds of gray salt-glazed stoneware, 4 sherds of buff salt-glazed stoneware including a jug rim with handle (Figure 6d), 3 sherds of blue glazed stoneware, 1 sherd of brown glazed stoneware 1 sherd of Albany slip stoneware, 3 ironstone sherds and 2 undecorated whiteware sherds. Vessel glass included 11 solarized (manganese) bottle fragments (Figure 6c), 7 clear and 3 aqua vessel glass fragments. One clear molded table glass bowl fragment was recovered.

Architectural artifacts were very rare, including 1 brick fragment and 1 flat window glass fragment. No nails were recovered that might have suggested proximity to a wooden structure.

Tools and transportation-related artifacts were relatively common. These include an iron T-shaped augur handle, a leather harness fragment, 3 ribbed headlight glass fragments (Figure 6a), 4 carbon rods from zinc-carbon dry cell batteries (Figure 6b), and a thin fragment of lamp glass. One large mammal bone (non-human) was also identified.

Several artifacts suggested that Site 2 dated to the early twentieth century. The carbon rods are analogous to 6-inch, 1.5 volt Columbia dry cell batteries manufactured after 1896 by the National Carbon Company (About.com 2011). Batteries were used for an array of activities, including automobile ignitions, flash lights, radios, and numerous other purposes. The ribbed glass headlight fragments were similar to headlights from the 1920s, and probably earlier, manufactured by the McKeelite Company for cars, trucks, tractors and bicycles (eBay.ca 2011). Solarized manganese-tinted bottle glass was manufactured until World War I (eHow Home 2011).

The small cluster of domestic, work, and transportation-related artifacts and lack of architectural artifacts or buried features suggest that Site 2 possibly functioned as a short term camp, rather than as a homestead. Tetra Tech reviewed documents on file at the Gray County Register of Deeds to identify when the southeast quarter of Section 18 might have been occupied. A claim for the southeast quarter of Section 18 was filed in 1890 by John Lunderberger (*Gray County Records* 2:51). Lunderberger probably briefly occupied the claim, and the General Land Office issued the patent in 1891 (*Gray County Records* 27:11). Artifacts at Site 2 are too recent to be associated with the occupation of this land claim. Deeds from 1892 to 1899 mentioned no structures or improvements of the property (*Gray County Records* 32:28; 17:55, 276, 456; 6:362). However in 1917, owner John S. Herron leased oil and gas rights to the Empire Gas & Fuel Company, and this lease was renewed in 1920 (*Gray County Records* 1:119; 2:258). These oil and gas leases correspond with the dates of artifacts at Site 2. Therefore, Site 2 might be related to oil and gas exploration.

While archeological and documentary sources provide complementary information, additional archeological investigations are not likely to provide substantially more insights about site activities. The artifact cluster at Site 2 is very small (approximately 5,000 square feet), and shovel testing at 5-meter intervals provided no evidence for preserved structural or technological features. Therefore Tetra Tech recommends that Site 2 is not eligible for the NRHP, and does not merit further field investigations or Project avoidance.

Following, completion of investigations at Site 2, an additional 30-meter (100-foot) wide transect was surveyed east from segments 11-HR, 12-HR and 13-HR, beyond the Survey APE extent. Only one historic artifact was observed (FS-33). This additional survey corridor allows CPV to offset construction away from property lines and avoid most Site 2 artifacts, if recommended by TVA or SHPO. Tetra Tech is not recommending Project avoidance of Site 2.

4.0 SUMMARY AND RECOMMENDATIONS

This Survey was conducted in compliance with Section 106 of the NHPA. The Survey APE for supplemental archeological investigations includes buffered areas of possible construction around a relocated substation and O&M building, relocated homerun collection lines, existing transmission tower, an expanded laydown area, and widened met tower spur roads Appendix A. The Survey APE totals approximately 57.7 acres.

The Survey included pedestrian survey and shovel testing to identify prehistoric and historic period cultural remains in the Survey APE. Twenty (20) survey segments were investigated

during the pedestrian survey (Table 1). Ground visibility was 40 percent, or greater, in 13 of the 20 survey segments. Crops were observed on 16 segments, 3 segments were recently plowed, and 1 segment was covered by grass and trees (Table 1). Ground disturbances associated with retention pond excavations and filling for pivot irrigation were observed in survey segments 4-HR, 5-HR, 6-HR and 16-HR. One historic archeological site, Site 2, was identified in Survey segment 11-HR. No other historic or prehistoric artifacts were found in the Survey APE.

Shovel tests were excavated in areas of prehistoric sensitivity (within 100 meters of a mapped stream, playa or wetland) where surface visibility was less than 40 percent, and were soils were not disturbed by grading or filling. In total, 89 shovel tests were excavated in Survey segments 5-HR, 6-HR, 8-HR and 16-HR, and no historic or prehistoric artifacts were found.

Site 2 was identified by dispersed historic artifacts in Survey segment 11-HR (Figures 4 and 5). Historic period artifacts were below the terrace slope of a former playa depression (Photograph 2). Artifacts were scattered over an area of approximately 1.2 acres. Artifacts were observed to extend for a short distance into the adjacent non-leased property in the southwest quarter of Section 19. Most surface artifacts were mapped within a relatively small cluster of approximately 5,000 square feet in segment 11-HR (Figure 5). At Site 2, 22 shovel tests were excavated within and around a cluster of historic period artifacts. All artifacts were restricted to the surface and plowzone. Cultural deposits do not extend below the plowzone. At Site 2, 51 historic-period artifacts were mapped during pedestrian survey, and 11 historic-period artifacts were found in 7 of 22 shovel tests excavated at Site 2 (Table 2). Artifacts suggested that Site 2 dated to the early twentieth century. The small cluster of domestic, work and transportation-related artifacts, and lack of architectural artifacts or buried features, suggest that Site 2 possibly functioned as a short term camp, rather than as a homestead. Gray County deeds indicate that the property was leased for oil and gas exploration in 1917 and 1920. While archeological and documentary sources provide complementary information, additional archeological investigations in the APE are not likely to provide substantially more insights about site activities. The artifact cluster at Site 2 is very small, and shovel testing at 5-meter intervals provided no evidence for preserved structural or technological features. Therefore Tetra Tech recommends that Site 2 in not eligible for the NRHP and therefore does not need to be avoided by the Project.

In conclusion, no potentially significant archeological sites were discovered as a result of the Survey. No additional archeological investigations are recommended for this Project. TVA as federal Lead Agency has been consulting with SHPO in compliance with Section 106 of the NHPA and NEPA. TVA will also continue consultation with consulting Federally Recognized Tribes.

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TABLES

Table 1. Supplemental Phase II Intensive Survey: Survey Segments, Environmental Conditions, and Archeological Sensitivity

Survey Segments	Township	Range	Section	Landforms	Wetlands	Disturbances	Vegetation Cover	Visibility (%)	Shovel Tests	Archeological Sensitivity
1-HR	25S	27W	20	upland flat	none	none	crop	40	0	not sensitive
2-HR	25S	27W	20	upland flat	playa	none	crop	40-60	0	not sensitive
3-HR	25S	27W	20	upland flat	none	none	crop	30	0	not sensitive
4-HR	25S	27W	19	upland flat	none	pivot irrigation	crop	30	0	not sensitive
5-HR	25S	27W	19	stream valley	buffer	dugout, fill	trees, grass	0	2	not sensitive
16-HR	25S	27W	19	stream valley	buffer	pivot irrigation	crop	10-35	21	not sensitive
6-HR	25S	27W	19	stream valley	buffer	dugout, fill	crop	30	16	not sensitive
7-HR	25S	27W	19	upland flat	none	pivot irrigation	crop	30	0	not sensitive
8-HR	25S	27W	19	upland flat	buffer	pivot irrigation	crop	30	50	not sensitive
9-SS	25S	28W	24	upland flat	none	none	crop	50	0	not sensitive
10-SS	25S	28W	24	upland flat	buffer	none	crop	50	0	not sensitive
11-HR	25S	27W	18	stream valley	playa	none	plowed	90	22	Site 2
12-HR	25S	27W	18	upland flat	none	none	plowed	70	0	not sensitive
13-HR	25S	27W	18	upland flat	none	none	crop	60	0	not sensitive
14-TT	25S	27W	18	upland flat	none	none	crop	60	0	not sensitive
15-TT	25S	27W	16	upland flat	none	none	plowed, crop	50-90	0	not sensitive
17-Laydown	25S	27W	15	upland flat	none	none	crop	50	0	not sensitive
18-Met	25S	27W	9	upland flat	none	none	crop	40	0	not sensitive
19-Met	25S	27W	27	upland flat	none	none	crop	40	0	not sensitive
20-Met	25S	27W	29	upland flat	buffer	none	crop	80	0	not sensitive

Legend: HR = homerun collection line; SS = substation; TT = transmission tower; Laydown = laydown area; Met = meteorlogical tower spur road widening

Table 2. Site 2 (14GY102) Artifact Descriptions

Unit	Stratum	Depth (cm)	Artifact Descriptions	Count
FS-1	A	surface	carbon rod fragments, probably from Columbia dry cell batteries (Figure 6B)*	2
FS-1	A	surface	gray salt-glazed stoneware crock sherds*	3
FS-1	A	surface	blue salt-glazed stoneware bowl sherd*	1
FS-1	A	surface	undecorated whiteware plate or bowl sherd*	1
FS-1	A	surface	ribbed flat glass fragments from automobile or tractor headlamp (Figure 6A)*	3
FS-1	A	surface	clear vessel glass fragment*	2
FS-1	A	surface	solarized (manganise) vessel glass bottle (Figure 6C)*	2
FS-2	A	surface	Albany slip salt-glazed stoneware jug base sherd*	1
FS-3	A	surface	buff salt-glazed stoneware jug rim and handle (Figure 6D)*	1
FS-3	A	surface	tin sheets*	2
FS-4	A	surface	clear vessel glass fragment	1
FS-5	A	surface	solarized vessel glass fragment	1
FS-6	A	surface	ironstone sherd	1
FS-7	A	surface	gray salt-glazed stoneware sherd	1
FS-8	A	surface	solarized vessel glass fragment	1
FS-9	A	surface	brown salt-glazed stoneware sherd	1
FS-10	A	surface	solarized vessel glass sherd	1
FS-11	A	surface	gray salt-glazed stoneware sherd	1
FS-12	A	surface	flat glass fragment	1
FS-13	A	surface	gray salt-glazed stoneware sherd	1
FS-14	A	surface	carbon rod fragment, probably from Columbia dry cell battery	1
FS-15	A	surface	solarized vessel glass sherd	1
FS-16	A	surface	solarized vessel glass sherd	1
FS-17	A	surface	ironstone sherd	1
FS-18	A	surface	aqua vessel glass fragment	1
FS-19	A	surface	gray salt-glazed stoneware sherd	1
FS-20	A	surface	solarized vessel glass sherd	1
FS-21	A	surface	large mammal bone (non-human)	1
FS-22	A	surface	leather, riveted harness part	1
FS-23	A	surface	pressed clear table glass fragment	1
FS-24	A	surface	ironstone sherd	1
FS-25	A	surface	gray salt-glazed stoneware sherd	1
FS-26	A	surface	buff salt-glazed stoneware sherd	1
FS-27	A	surface	buff salt-glazed stoneware sherd	1
FS-28	A	surface	buff salt-glazed stoneware sherd	1
FS-29	A	surface	solarized vessel glass sherd	1
FS-30	A	surface	aqua vessel glass fragment	1
FS-31	A	surface	blue salt-glazed stoneware sherd	1
FS-32	A	surface	brick fragment	1
FS-33	A	surface	iron T-shaped augur handle	1
FS-34	A	surface	blue salt-glazed stoneware sherd	1
FS-35	A	surface	gray salt-glazed stoneware sherd	1
FS-36	A	surface	solarized vessel glass sherd	1
ST-01	A	0-36	clear vessel glass fragment	1
ST-04	A	0-37	carbon rod fragment, probably from Columbia dry cell battery	1
ST-04	A	0-37	tin sheet fragment	1
ST-05	A	0-22	undecorated whiteware sherd	1
ST-10	A	0-30	clear vessel glass fragment	2
ST-10	A	0-30	tin sheet fragment	1
ST-11	A	0-42	clear vessel glass fragment	1
ST-11	A	0-42	aqua vessel glass fragment	1
ST-17	A	0-38	clear lamp glass fragment	1
ST-21	A	0-10	solarized vessel glass sherd	1

Note: * artifacts collected, all other artifacts left *in-situ* in the field

FIGURES

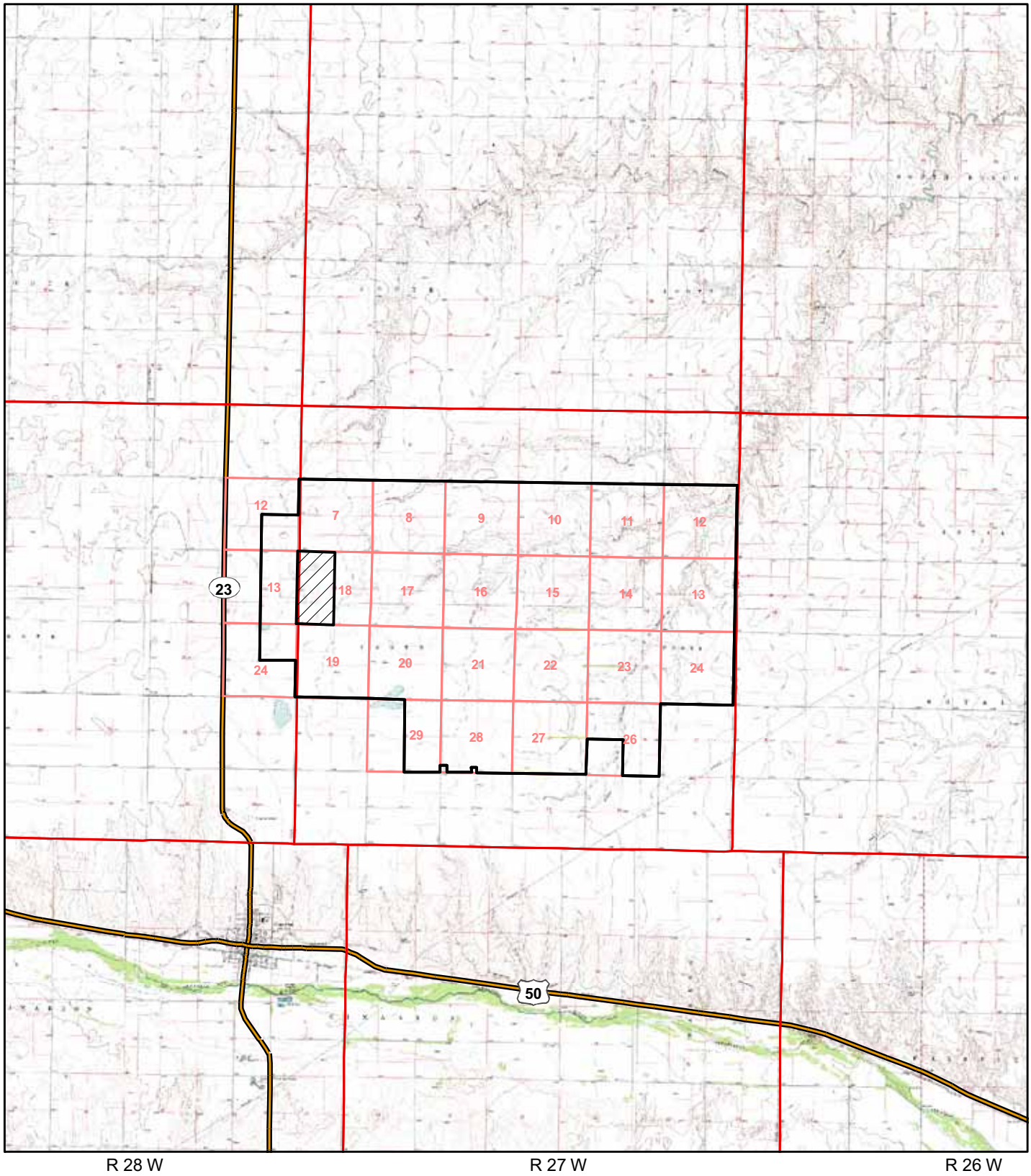

Figure 1
Project Area Location

Supplemental Phase II
Intensive Archeological Survey
Cimarron Wind Energy Project - Phase 1
Gray County, Kansas

Legend

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

N

0 1 2 Miles

Source:USGS 100k Quad, 1985.

CPV Renewable Energy Company, LLC

TETRA TECH EC, INC.

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Figure 2
Archeological APE Comparison

Supplemental Phase II
Intensive Archeological Survey
Cimarron Wind Energy Project - Phase 1
Gray County, Kansas

CPV Renewable Energy Company, LLC

Legend

- Project Area
- Non-Leased Area
- 4 Sections
- Proposed Turbine
- Proposed Permanent Met Tower
- APE (v3) from April 2011 Phase II Intensive Survey
- APE (v4.2)

N

0 0.25 0.5 Miles

Source: v3 and v4.2 Layouts.

KANSAS

Project Location

TETRA TECH EC, INC.

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Figure 3
Proposed Project APE

Supplemental Phase II
Intensive Archeological Survey
Cimarron Wind Energy Project - Phase 1
Gray County, Kansas

CPV Renewable Energy Company, LLC

Legend

- Project Area
- Non-Leased Area
- Sections
- Proposed Turbine
- Proposed Permanent Met Tower
- APE (v4.2)
- APE (v4.2) Not Previously Surveyed

N

0 0.25 0.5 Miles

Source: v4.2 Layout.

KANSAS

Project Location

TETRA TECH EC, INC.

Laydown

Substation and O&M Building

T25S R28W

T25S R27W

T25S R26W

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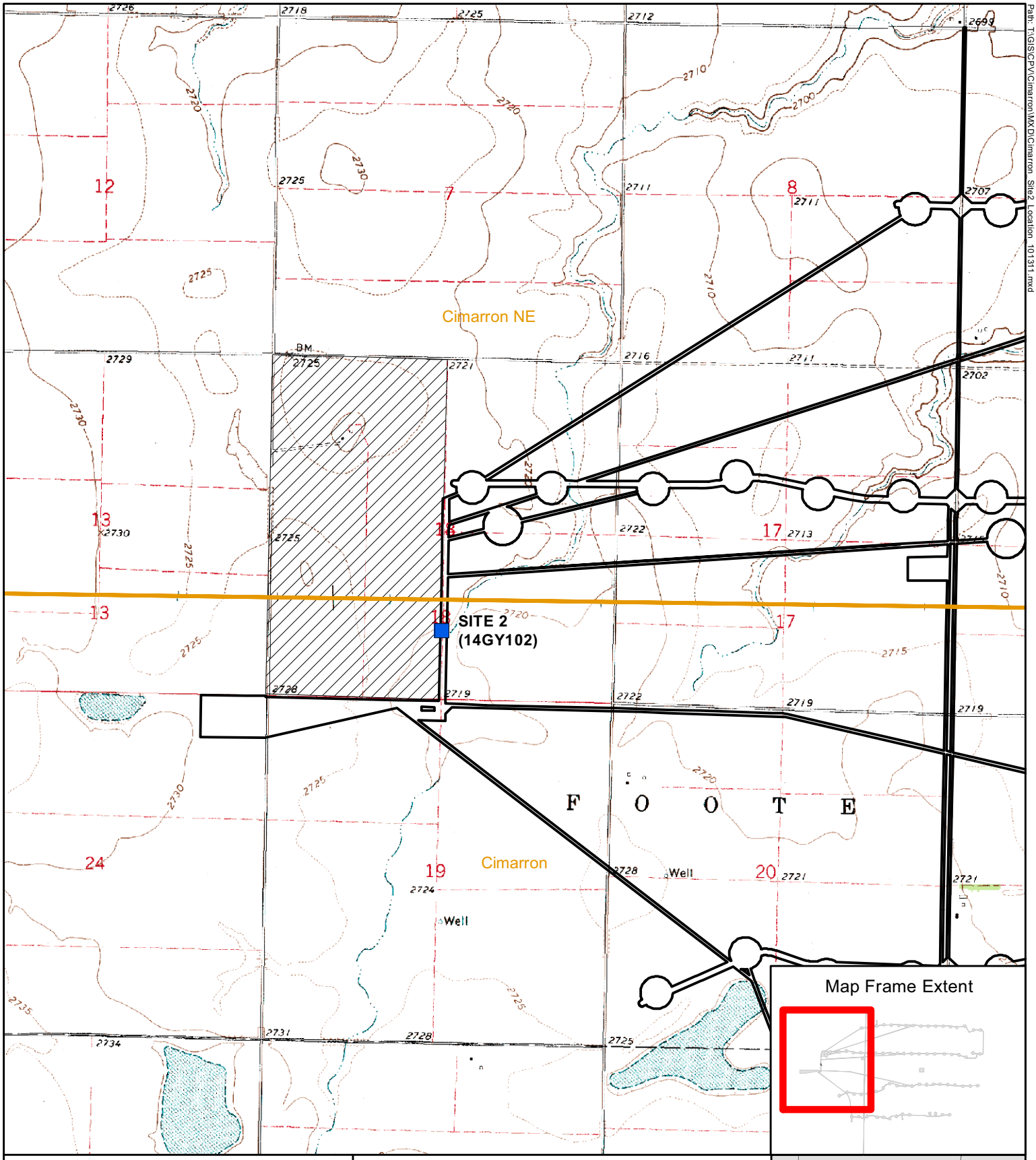

Figure 4
Site 2 Location

Supplemental Phase II
Intensive Archeological Survey
Cimarron Wind Energy Project - Phase 1
Gray County, Kansas

Legend

- Site Location
- Archeological Survey APE
- Quad Sheet Boundary
- Non-Leased Land

Source:
Layout v4.2.
USGS 7.5 Minute Topographic Quadrangle:
Cimarron NE KS 1970, PR 1980
Cimarron KS 1969, PR 1981

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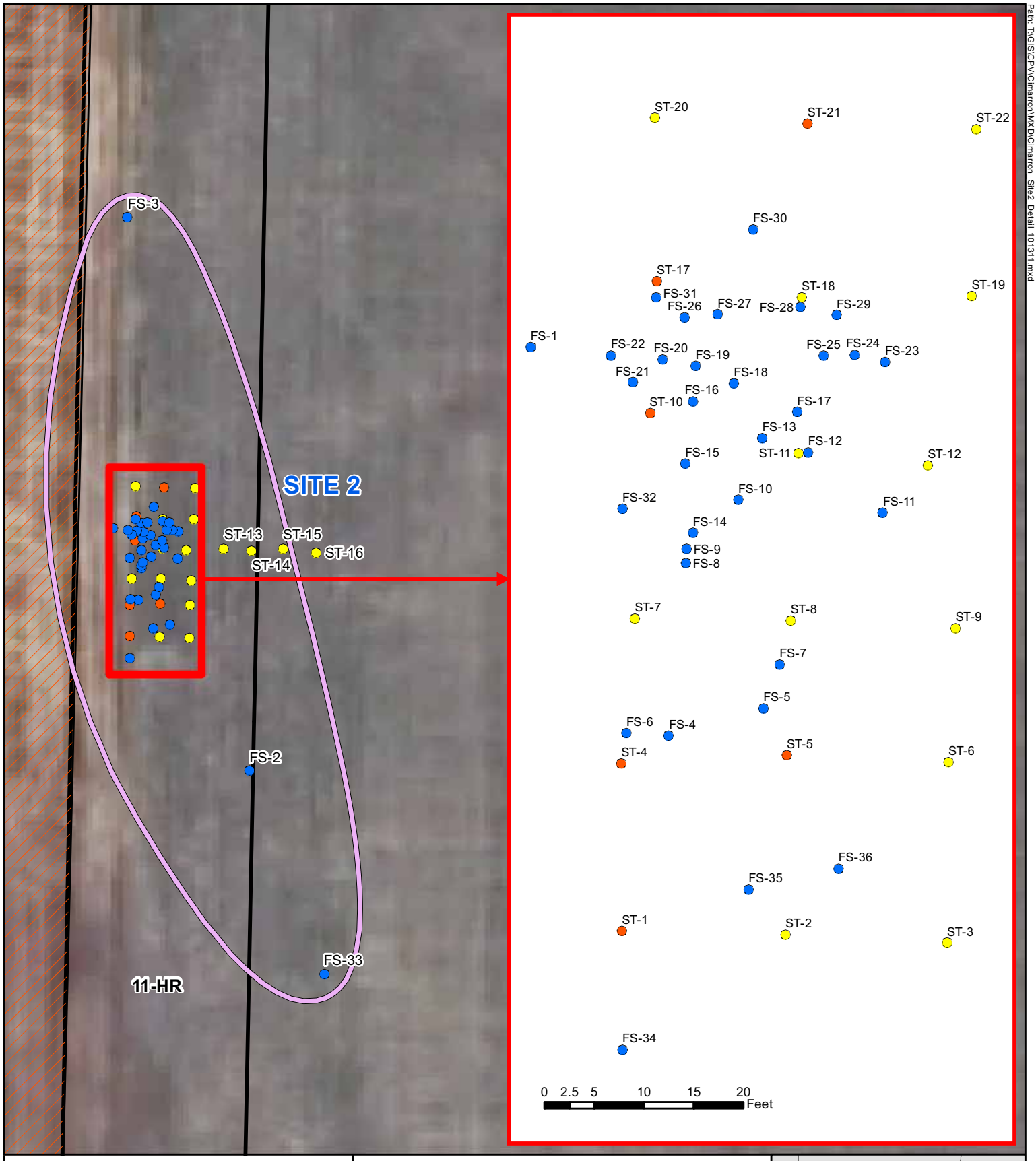

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Figure 5
Site 2 Plan View

Supplemental Phase II
Intensive Archeological Survey
Cimarron Wind Energy Project - Phase 1
Gray County, Kansas

CPV Renewable Energy Company, LLC

TETRA TECH EC, INC.

Legend

Pedestrian Survey Findspot (FS#)
- Historic Artifact

Shovel Tests (ST#)
- Historic Artifact
- No Artifact

- Site 2 Boundary (Approximate)
- Non-Leased Area
- Archeological Survey APE
- **11-HR** Survey Segment

N

0 50 100 Feet

Source: Layout v4.2

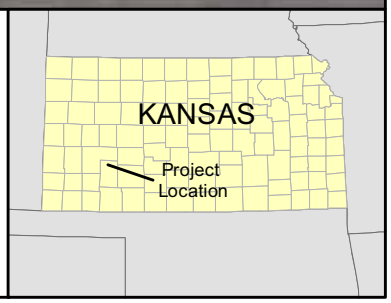


Figure 6. Site 2 Artifacts

A. FS-1 ribbed headlight glass. B. FS-1 carbon battery rod. C. FS-1 solarized bottle glass base.

D. FS-3 gray salt-glazed jug rim and handle.

PHOTOGRAPHS

Photograph 1. Pedestrian survey in segment 10-SS, a field with wheat stubble and ground visibility of 50 percent. View to the south (Photographer Stuart A. Reeve, September 23, 2011).

Photograph 2. Shovel testing at Site 2 in segment 11-HR, a plowed field with surface visibility of 90 percent. View to the west (Photographer Stuart A. Reeve, September 25, 2011).

Photograph 3. Excavated area in segment 5-HR. View to the east
(Photographer Stuart A Reeve, September 22, 2011).

Photograph 4. Retention pond in segment 6-HR. View to the southeast
(Photographer Stuart A. Reeve, September 22, 2011).

Photograph 5. Filled area of segment 6 with Milo (center left), approximately 1 meter higher than the adjacent plowed field (center right). View to the west (Photographer Stuart A. Reeve, September 22, 2011).

Photograph 6. Well pump dating to the 1960s west of the retention pond in segment 6-HR. View to the north (Photographer Stuart A. Reeve, September 27, 2011).

APPENDICES

APPENDIX A

SUPPLEMENTAL PHASE II INTENSIVE ARCHEOLOGICAL SURVEY MAPS

Appendix A
Supplemental Phase II Intensive
Archeological Survey Maps

MAP 1 OF 9

Supplemental Phase II
Intensive Archeological Survey
Cimarron Wind Energy Project – Phase 1
Gray County, Kansas

CPV Renewable Energy Company, LLC

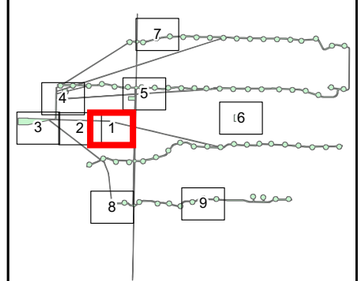
- Findspots
- Shovel Tests
- Shovel Tests - Not Excavated
- Site 2 Boundary (Approximate)
- Non-Leased Area
- September 2011 Survey (v4.2 APE)
- April 2011 Survey (v3 APE)
- Project Area
- Prehistoric Sensitivity

Source: v3 and v4.2 Layouts

N

0 150 300 Feet

0 50 100 Meters



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Appendix A
Supplemental Phase II Intensive
Archeological Survey Maps

MAP 2 OF 9

Supplemental Phase II
Intensive Archeological Survey
Cimarron Wind Energy Project – Phase 1
Gray County, Kansas

CPV Renewable Energy Company, LLC

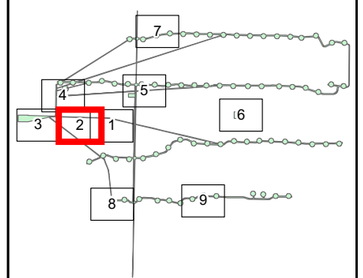
- Findspots
- Shovel Tests
- Shovel Tests - Not Excavated
- Site 2 Boundary (Approximate)
- Non-Leased Area
- September 2011 Survey (v4.2 APE)
- April 2011 Survey (v3 APE)
- Project Area
- Prehistoric Sensitivity

Source: v3 and v4.2 Layouts

N

0 150 300 Feet

0 50 100 Meters



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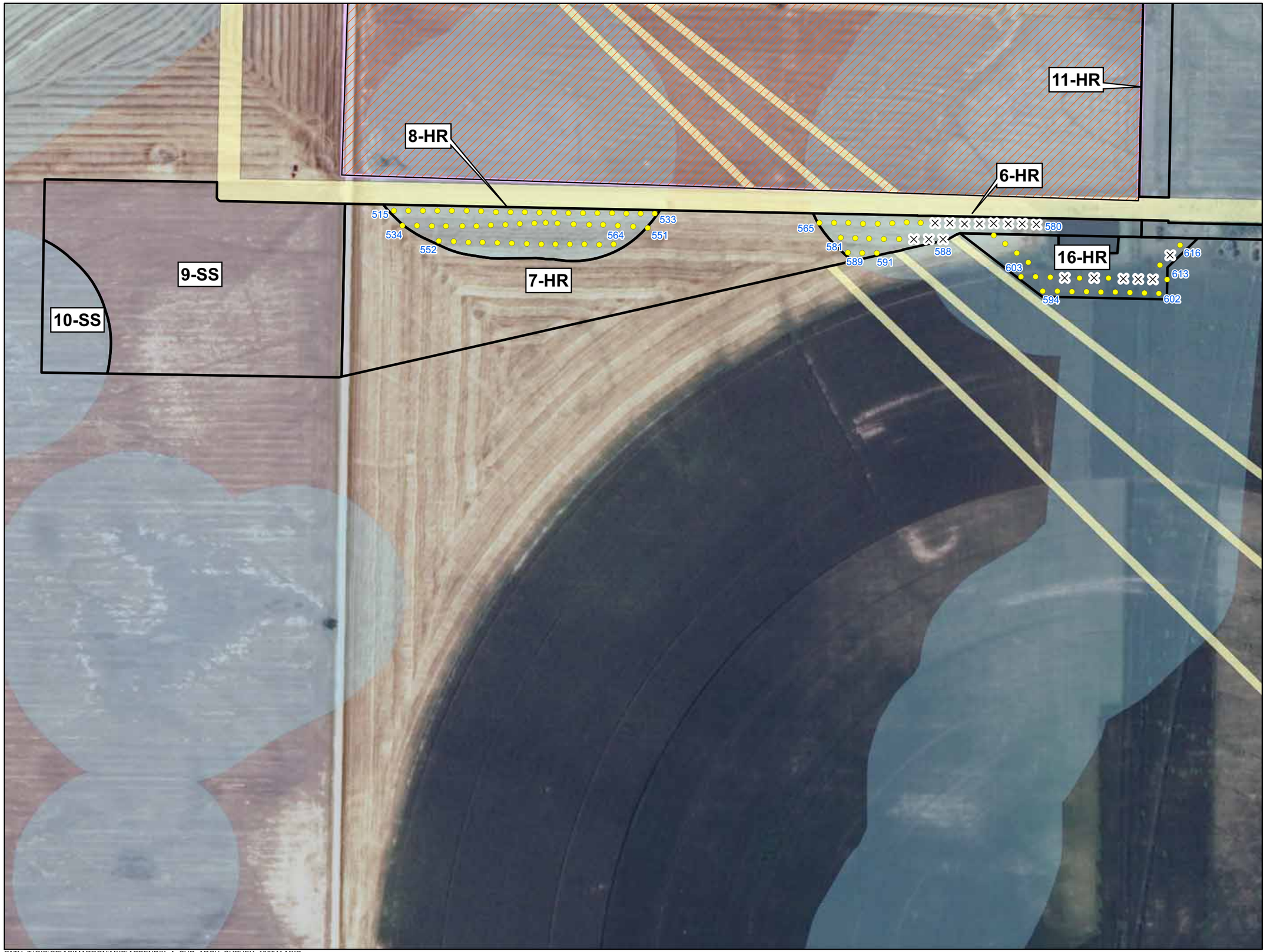


Appendix A
Supplemental Phase II Intensive
Archeological Survey Maps

MAP 3 OF 9

Supplemental Phase II
Intensive Archeological Survey
Cimarron Wind Energy Project – Phase 1
Gray County, Kansas

CPV Renewable Energy Company, LLC

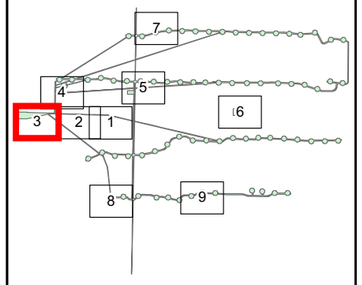
- Findspots
- Shovel Tests
- Shovel Tests - Not Excavated
- Site 2 Boundary (Approximate)
- Non-Leased Area
- September 2011 Survey (v4.2 APE)
- April 2011 Survey (v3 APE)
- Project Area
- Prehistoric Sensitivity

Source: v3 and v4.2 Layouts

N

0 150 300 Feet

0 50 100 Meters



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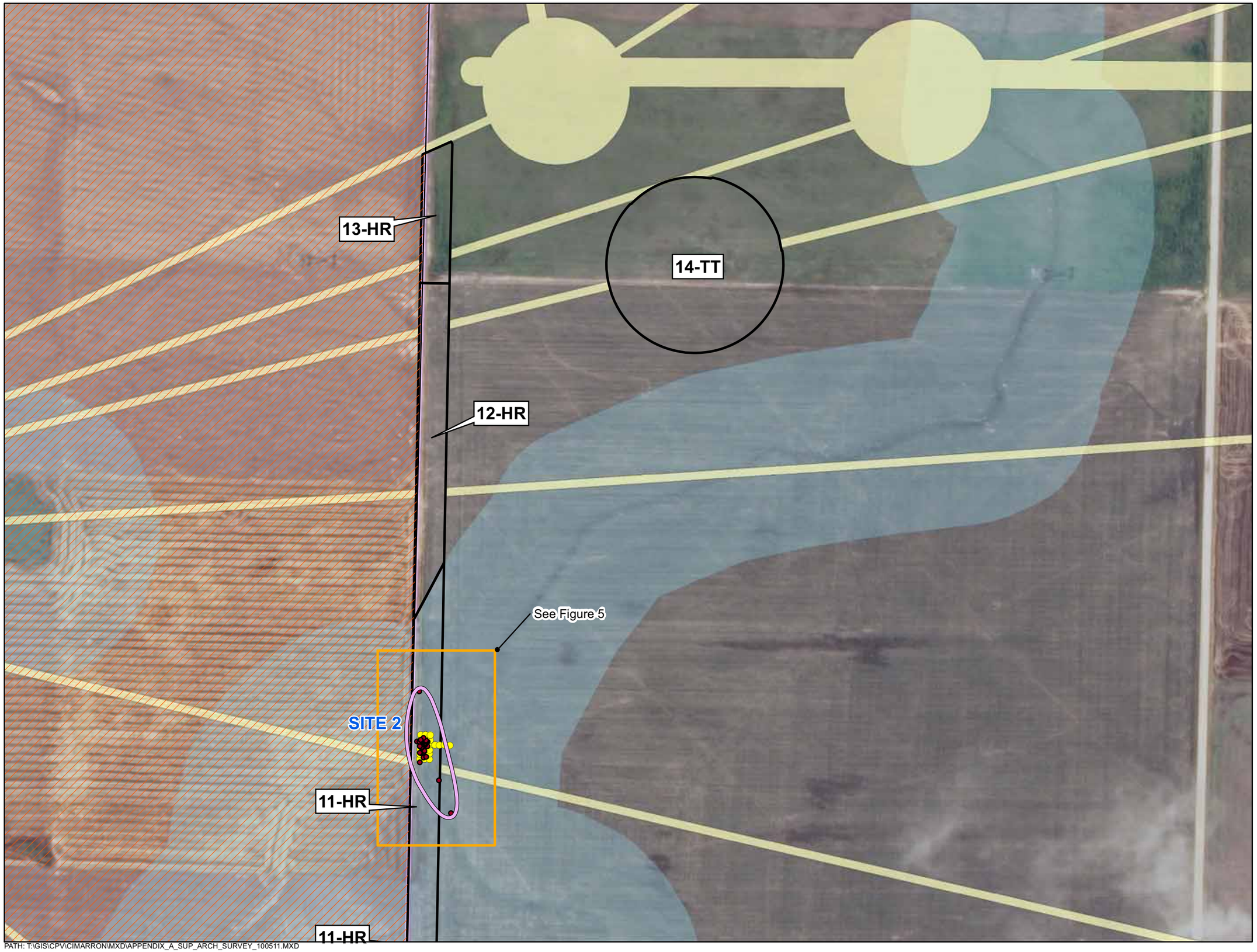
Appendix A
Supplemental Phase II Intensive
Archeological Survey Maps

MAP 4 OF 9

Supplemental Phase II
Intensive Archeological Survey
Cimarron Wind Energy Project – Phase 1
Gray County, Kansas

CPV Renewable Energy Company, LLC



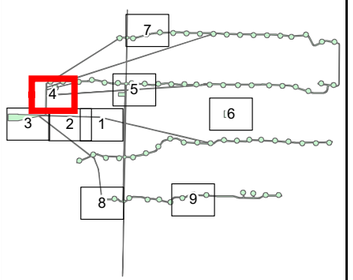
- Findspots
- Shovel Tests
- Shovel Tests - Not Excavated
- Site 2 Boundary (Approximate)
- Non-Leased Area
- September 2011 Survey (v4.2 APE)
- April 2011 Survey (v3 APE)
- Project Area
- Prehistoric Sensitivity

Source: v3 and v4.2 Layouts

N

0 150 300 Feet

0 50 100 Meters



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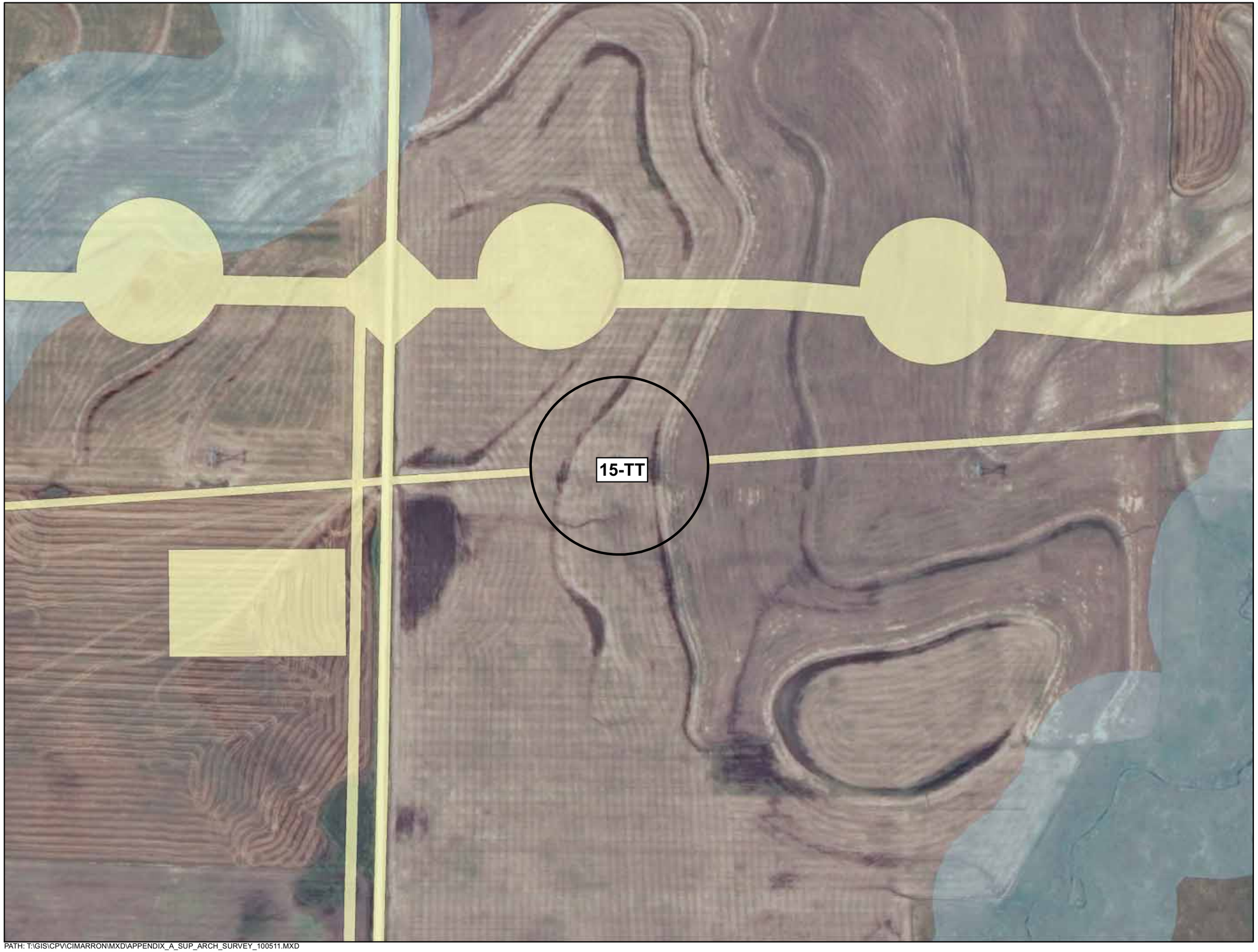


Appendix A
Supplemental Phase II Intensive
Archeological Survey Maps

MAP 5 OF 9

Supplemental Phase II
Intensive Archeological Survey
Cimarron Wind Energy Project – Phase 1
Gray County, Kansas

CPV Renewable Energy Company, LLC

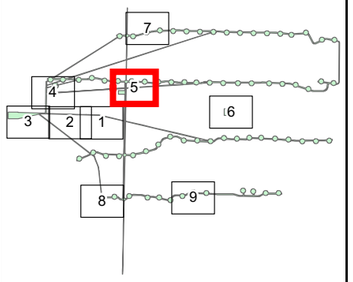
- Findspots
- Shovel Tests
- Shovel Tests - Not Excavated
- Site 2 Boundary (Approximate)
- Non-Leased Area
- September 2011 Survey (v4.2 APE)
- April 2011 Survey (v3 APE)
- Project Area
- Prehistoric Sensitivity

Source: v3 and v4.2 Layouts

N

0 150 300 Feet

0 50 100 Meters



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Appendix A
Supplemental Phase II Intensive
Archeological Survey Maps

MAP 6 OF 9

Supplemental Phase II
Intensive Archeological Survey
Cimarron Wind Energy Project – Phase 1
Gray County, Kansas

CPV Renewable Energy Company, LLC

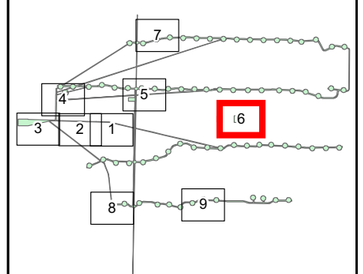
- Findspots
- Shovel Tests
- Shovel Tests - Not Excavated
- Site 2 Boundary (Approximate)
- Non-Leased Area
- September 2011 Survey (v4.2 APE)
- April 2011 Survey (v3 APE)
- Project Area
- Prehistoric Sensitivity

Source: v3 and v4.2 Layouts

N

0 150 300 Feet

0 50 100 Meters



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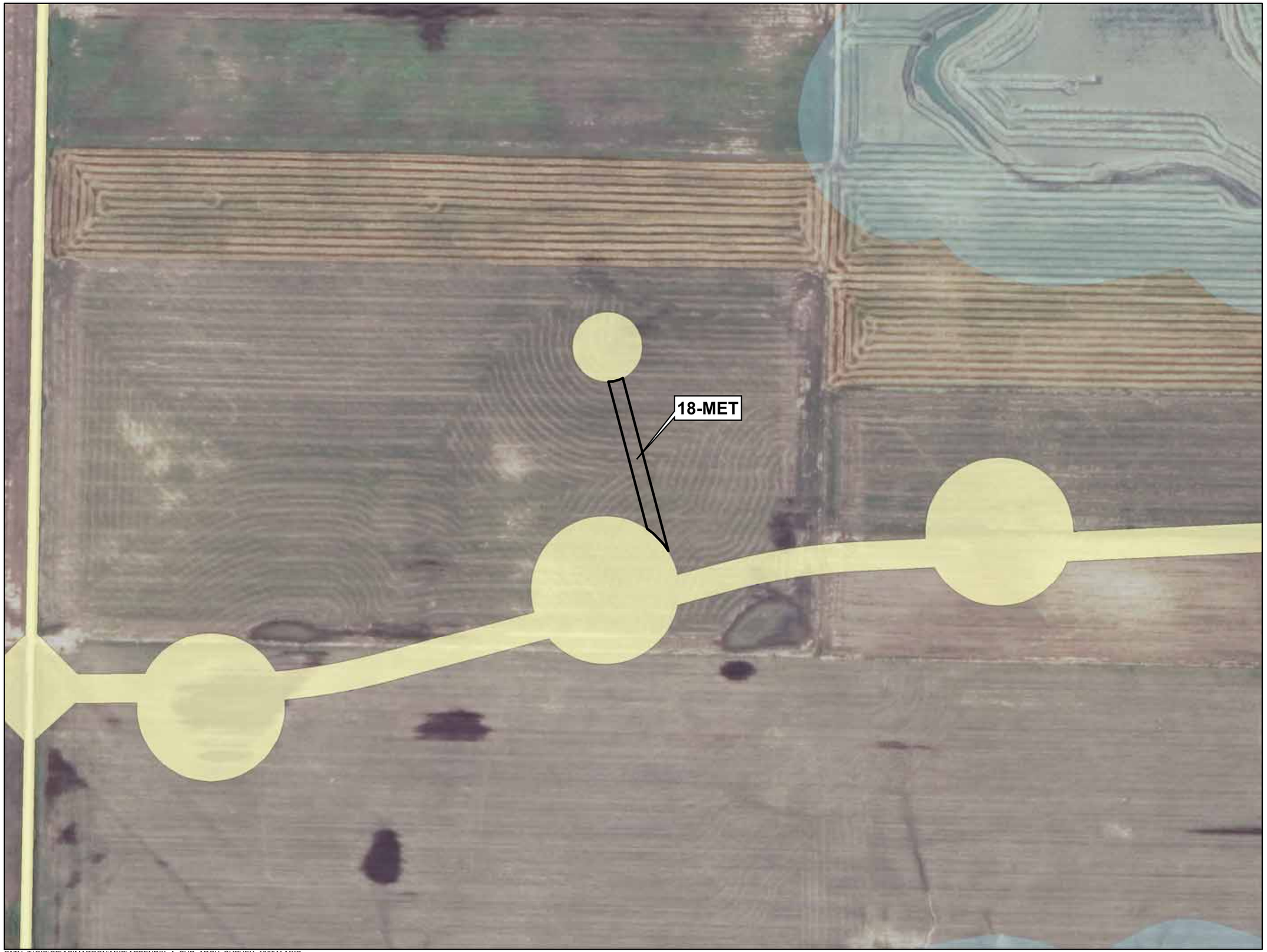

Appendix A
Supplemental Phase II Intensive
Archeological Survey Maps

MAP 7 OF 9

Supplemental Phase II
Intensive Archeological Survey
Cimarron Wind Energy Project – Phase 1
Gray County, Kansas

CPV Renewable Energy Company, LLC

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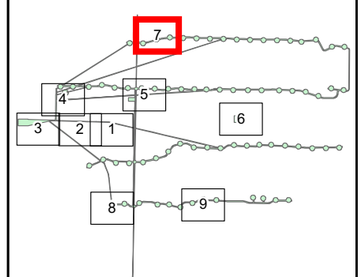
Source: v3 and v4.2 Layouts

N

0 150 300 Feet

0 50 100 Meters



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Appendix A
Supplemental Phase II Intensive
Archeological Survey Maps

MAP 8 OF 9

Supplemental Phase II
Intensive Archeological Survey
Cimarron Wind Energy Project – Phase 1
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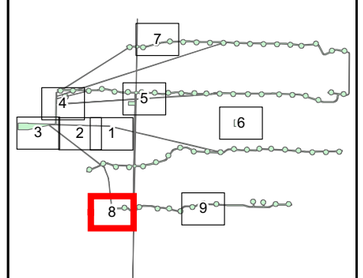
Source: v3 and v4.2 Layouts

N

0 150 300 Feet

0 50 100 Meters



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Appendix A
Supplemental Phase II Intensive
Archeological Survey Maps

MAP 9 OF 9

Supplemental Phase II
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Cimarron Wind Energy Project – Phase 1
Gray County, Kansas

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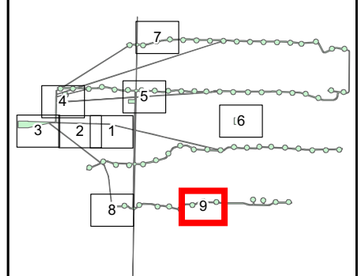
Source: v3 and v4.2 Layouts

N

0 150 300 Feet

0 50 100 Meters



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APPENDIX B

SHOVEL TEST SOIL DESCRIPTIONS

Appendix B. Shovel Test Soil Descriptions

Survey Area	Site	Shovel Test	Strata	Depth (cm)	Soil Color	Soil Texture	Comments	Historic Artifacts
8-HR	-	515	A	0-40	10YR4/3	silty loam	stopped at compact layer	0
8-HR	-	516	A	0-40	10YR3/3	silty loam	stopped at compact layer	0
8-HR	-	517	A	0-40	10YR4/3	silty loam	stopped at compact layer	0
8-HR	-	518	A	0-41	10YR4/3	silty loam	stopped at compact layer	0
8-HR	-	519	A	0-30	10YR4/3	silty loam	stopped at compact layer	0
8-HR	-	520	A	0-24	10YR4/3	silty loam	-	0
8-HR	-	520	B	24-31	10YR7/4	silty loam	limestone flecks; stopped at compact layer	0
8-HR	-	521	A	0-40	10YR4/3	silty loam	stopped at compact layer	0
8-HR	-	522	A	0-30	10YR4/3	silty loam	-	0
8-HR	-	522	B	30-35	10YR7/4	silty loam	limestone flecks; stopped at compact layer	0
8-HR	-	523	A	0-26	10YR4/3	silty loam	-	0
8-HR	-	523	B	26-40	10YR7/4	silty loam	-	0
8-HR	-	524	A	0-38	10YR4/3	silty loam	limestone flecks; stopped at compact layer	0
8-HR	-	525	A	0-42	10YR4/3	silty loam	stopped at compact layer	0
8-HR	-	526	A	0-30	10YR4/3	silty loam	-	0
8-HR	-	526	B	30-48	10YR3/3	silty loam	limestone flecks; stopped at compact layer	0
8-HR	-	527	A	0-28	10YR4/3	silty loam	-	0
8-HR	-	527	B	28-40	10YR3/3	silty loam	isolated gravel; stopped at compact layer	0
8-HR	-	528	A	0-38	10YR3/3	silty loam	stopped at compact layer	0
8-HR	-	529	A	0-41	10YR3/2	silty loam	limestone flecks; stopped at compact layer	0
8-HR	-	530	A	0-30	10YR3/2	silty loam	stopped at compact layer	0
8-HR	-	531	A	0-35	10YR4/3	silty loam	stopped at compact layer	0
8-HR	-	532	A	0-30	10YR4/3	silty loam	stopped at compact layer	0
8-HR	-	533	A	0-27	10YR4/3	silty loam	-	0
8-HR	-	533	B	27-38	10YR3/3	silty loam	stopped at compact layer	0
8-HR	-	534	A	0-27	10YR4/3	silty loam	-	0
8-HR	-	534	B	27-45	10YR3/3	silty loam	stopped at compact layer	0
8-HR	-	535	A	0-28	10YR4/3	silty loam	-	0
8-HR	-	535	B	28-38	10YR3/2	silty loam	stopped at compact layer	0
8-HR	-	536	A	0-30	10YR4/3	silty loam	stopped at compact layer	0
8-HR	-	537	A	0-31	10YR4/3	silty loam	stopped at compact layer	0
8-HR	-	538	A	0-30	10YR4/3	silty loam	stopped at compact layer	0
8-HR	-	539	A	0-34	10YR4/3	silty loam	-	0
8-HR	-	539	B	34-51	10YR3/3	silty loam	stopped at compact layer	0
8-HR	-	540	A	0-25	10YR4/3	silty loam	-	0
8-HR	-	540	B	25-43	10YR3/3	silty loam	stopped at compact layer	0
8-HR	-	541	A	0-28	10YR4/3	silty loam	-	0
8-HR	-	541	B	28-40	10YR3/2	silty loam	stopped at compact layer	0
8-HR	-	542	A	0-35	10YR4/3	silty loam	-	0
8-HR	-	542	B	35-45	10YR3/3	silty loam	stopped at compact layer	0
8-HR	-	543	A	0-32	10YR4/3	silty loam	-	0
8-HR	-	543	B	32-44	10YR3/3	silty loam	stopped at compact layer	0
8-HR	-	544	A	0-30	10YR4/3	silty loam	-	0
8-HR	-	544	B	30-38	10YR3/3	silty loam	stopped at compact layer	0

Appendix B. Shovel Test Soil Descriptions

Survey Area	Site	Shovel Test	Strata	Depth (cm)	Soil Color	Soil Texture	Comments	Historic Artifacts
8-HR	-	545	A	0-43	10YR4/3	silty loam	stopped at compact layer	0
8-HR	-	546	A	0-40	10YR4/3	silty loam	stopped at compact layer	0
8-HR	-	547	A	0-47	10YR4/3	silty loam	stopped at compact layer	0
8-HR	-	548	A	0-33	10YR4/3	silty loam	isolated pebble	0
8-HR	-	548	B	33-47	10YR3/3	silty loam	stopped at compact layer	0
8-HR	-	549	A	0-30	10YR4/3	silty loam	-	0
8-HR	-	549	B	30-43	10YR3/3	silty loam	stopped at compact layer	0
8-HR	-	550	A	0-47	10YR4/3	silty loam	stopped at compact layer	0
8-HR	-	551	A	0-44	10YR4/3	silty loam	stopped at compact layer	0
8-HR	-	552	A	0-63	10YR4/2	silty loam	stopped at compact layer	0
8-HR	-	553	A	0-47	10YR4/2	silty loam	stopped at compact layer	0
8-HR	-	554	A	0-44	10YR4/2	silty loam	-	0
8-HR	-	554	B	44-56	10YR3/2	silty loam	stopped at compact layer	0
8-HR	-	555	A	0-24	10YR4/2	silty loam	-	0
8-HR	-	555	B	24-49	10YR3/2	silty loam	stopped at compact layer	0
8-HR	-	556	A	0-38	10YR4/2	silty loam	-	0
8-HR	-	556	B	38-53	10YR3/2	silty loam	stopped at compact layer	0
8-HR	-	557	A	0-39	10YR4/2	silty loam	-	0
8-HR	-	557	B	39-51	10YR3/2	silty loam	stopped at compact layer	0
8-HR	-	558	A	0-47	10YR4/2	silty loam	-	0
8-HR	-	558	B	47-57	10YR3/2	silty loam	stopped at compact layer	0
8-HR	-	559	A	0-46	10YR4/2	silty loam	stopped at compact layer	0
8-HR	-	560	A	0-50	10YR4/2	silty loam	stopped at compact layer	0
8-HR	-	561	A	0-48	10YR4/3	silty loam	stopped at compact layer	0
8-HR	-	562	A	0-50	10YR4/3	silty loam	stopped at compact layer	0
8-HR	-	563	A	0-24	10YR4/3	silty loam	-	0
8-HR	-	563	B	24-36	10YR3/2	silty loam	stopped at compact layer	0
8-HR	-	564	A	0-20	10YR4/3	silty loam	-	0
8-HR	-	564	B	20-26	10YR3/2	silty loam	stopped at compact layer	0
6-HR	-	565	A	0-38	10YR4/3	silty loam	limestone gravel; stopped at compact layer	0
6-HR	-	566	A	0-45	10YR3/3	silty loam	stopped at compact layer	0
6-HR	-	567	A	0-54	10YR3/3	silty loam	limestone gravel; stopped at compact layer	0
6-HR	-	568	A	0-44	10YR3/3	silty loam	limestone gravel; stopped at compact layer	0
6-HR	-	569	A	0-50	mixed 10YR3/3 10YR4/3	silty loam	stopped at compact layer	0
6-HR	-	570	A	0-40	10YR3/3	silty loam	limestone gravel; stopped at compact layer	0
6-HR	-	571	A	0-39	10YR3/2	silty loam	fill	0
6-HR	-	571	B	39-51	10YR7/4	silty loam	fill	0
6-HR	-	572	A	0-38	mixed 10YR4/3 10YR3/2 10YR7/4	silty loam	limestone gravel; stopped at compact layer; fill	0
6-HR	-	573	-	-	-	-	fill, not excavated	-
6-HR	-	574	-	-	-	-	fill, not excavated	-

Appendix B. Shovel Test Soil Descriptions

Survey Area	Site	Shovel Test	Strata	Depth (cm)	Soil Color	Soil Texture	Comments	Historic Artifacts
6-HR	-	575	-	-	-	-	fill, not excavated	-
6-HR	-	576	-	-	-	-	fill, not excavated	-
6-HR	-	577	-	-	-	-	fill, not excavated	-
6-HR	-	578	-	-	-	-	fill, not excavated	-
6-HR	-	579	-	-	-	-	fill, not excavated	-
6-HR	-	580	-	-	-	-	fill, not excavated	-
6-HR	-	581	A	0-45	10YR4/2	silty loam	stopped at compact layer	0
6-HR	-	582	A	0-48	10YR4/2	silty loam	stopped at compact layer	0
6-HR	-	583	A	0-49	10YR4/2	silty loam	stopped at compact layer	0
6-HR	-	584	A	0-48	10YR4/2	silty loam	stopped at compact layer	0
6-HR	-	585	A	0-39	mixed 10YR4/2 10YR6/4 10YR7/4	silty loam	fill	0
6-HR	-	585	B	39-54	10YR3/2	silty loam	stopped at compact layer	0
6-HR	-	586	-	-	-	-	fill, not excavated	-
6-HR	-	587	-	-	-	-	fill, not excavated	-
6-HR	-	588	-	-	-	-	fill, not excavated	-
6-HR	-	589	A	0-45	10YR4/2	silty loam	stopped at compact layer	0
6-HR	-	590	A	0-48	10YR4/2	silty loam	stopped at compact layer	0
6-HR	-	591	A	0-50	10YR4/2	silty loam	stopped at compact layer	0
5-HR	-	592	A	0-48	10YR4/2	silty loam	stopped at compact layer	0
5-HR	-	593	A	0-34	10YR4/2	silty loam	fill	0
5-HR	-	593	B	34-46	mixed 10YR4/2 10YR5/4	silty loam	fill; stopped at compact layer	0
16-HR	-	594	A	0-30	10YR4/2	silty loam	-	0
16-HR	-	594	B	30-52	10YR3/2	silty loam	stopped at compact layer	0
16-HR	-	595	A	0-66	10YR4/2	silty loam	-	0
16-HR	-	596	A	0-40	mixed 10YR4/2 10YR4/3 10YR6/3	silty loam	fill	0
16-HR	-	596	B	40-60	10YR3/2	silty loam	stopped at compact layer	0
16-HR	-	597	A	0-76	10YR4/2	silty loam	-	0
16-HR	-	598	A	0-34	mixed 10YR4/2 10YR6/3	silty loam	fill	0
16-HR	-	598	B	34-60	10YR3/2	silty loam	stopped at compact layer	0
16-HR	-	599	A	0-60	mixed 10YR4/2 10YR6/3	silty loam	fill	0
16-HR	-	599	B	60-78	10YR4/2	silty loam	Ap-horizon	0
16-HR	-	599	C	78-80	10YR3/2	silty loam	wetland soil; stopped at compact layer	0
16-HR	-	600	A	0-44	mixed 10YR4/2 10YR6/3	silty loam	fill	0
16-HR	-	600	B	44-58	10YR3/2	silty loam	stopped at compact layer	0

Appendix B. Shovel Test Soil Descriptions

Survey Area	Site	Shovel Test	Strata	Depth (cm)	Soil Color	Soil Texture	Comments	Historic Artifacts
16-HR	-	601	A	0-44	mixed 10YR4/2 10YR4/3 10YR6/3	silty loam	fill; stopped at compact layer	0
16-HR	-	602	A	0-70	mixed 10YR4/2 10YR4/3 10YR6/3	silty loam	fill; stopped at compact layer	0
16-HR	-	603	A	0-28	10YR4/3	silty loam	limestone pebbles	0
16-HR	-	603	B	28-42	mixed 10YR3/3 10YR7/4	silty loam	fill; limestone pebbles; stopped at compact layer	0
16-HR	-	604	A	0-34	10YR4/3	silty loam	limestone pebbles	0
16-HR	-	604	B	34-48	10YR7/4	silty loam	limestone pebbles	0
16-HR	-	605	A	0-27	10YR4/3	silty loam	limestone pebbles	0
16-HR	-	605	B	27-48	mixed 10YR3/3 10YR7/4	silty loam	fill; limestone pebbles; stopped at compact layer	0
16-HR	-	606	-	-	-	-	fill, not excavated	-
16-HR	-	607	A	0-40	mixed 10YR3/3 10YR7/4	silty loam	fill; limestone pebbles; stopped at compact layer	0
16-HR	-	608	-	-	-	-	fill, not excavated	-
16-HR	-	609	A	0-20	10YR3/3	silty loam	limestone pebbles	0
16-HR	-	609	B	20-40	mixed 10YR3/3 10YR7/4	silty loam	fill; limestone pebbles; stopped at compact layer	0
16-HR	-	610	-	-	-	-	fill, not excavated	-
16-HR	-	611	-	-	-	-	fill, not excavated	-
16-HR	-	612	-	-	-	-	fill, not excavated	-
16-HR	-	613	A	0-48	10YR3/2 mottled w/ 10YR5/4	silty loam	stopped at compact layer	0
16-HR	-	614	A	0-35	mixed 10YR4/2 10YR4/3 10YR6/3	silty loam	fill; stopped at compact layer	0
16-HR	-	615	-	-	-	-	not excavated	-
16-HR	-	616	A	0-40	10YR3/2	silty loam	stopped at compact layer	0
16-HR	-	617	A	0-26	10YR3/3	silty loam	-	0
16-HR	-	617	B	26-40	mixed 10YR3/3 10YR7/4	silty loam	fill; stopped at compact layer	0
16-HR	-	618	A	0-40	mixed 10YR3/2 10YR3/3	silty loam	limestone pebbles; stopped at compact layer	0
16-HR	-	619	A	0-20	10YR3/3	silty loam	-	0

Appendix B. Shovel Test Soil Descriptions

Survey Area	Site	Shovel Test	Strata	Depth (cm)	Soil Color	Soil Texture	Comments	Historic Artifacts
16-HR	-	619	B	20-42	mixed 10YR3/2 10YR7/4	silty loam	fill; stopped at compact layer	0
16-HR	-	620	A	0-25	10YR3/3	silty loam	-	0
16-HR	-	620	B	25-40	7.5YR5/4 mottled 10YR3/3	silty loam	fill; limestone pebbles; stopped at compact layer	0
11-HR	2	1	A	0-36	10YR4/2	silty loam	stopped at compact layer	1
11-HR	2	2	A	0-32	10YR4/2	silty loam	stopped at compact layer	0
11-HR	2	3	A	0-20	10YR4/2	silty loam	stopped at compact layer	0
11-HR	2	4	A	0-37	10YR4/2	silty loam	stopped at compact layer	2
11-HR	2	5	A	0-22	10YR4/2	silty loam	stopped at compact layer	1
11-HR	2	6	A	0-21	10YR4/2	silty loam	-	0
11-HR	2	6	B	21-43	10YR4/3	silty loam	stopped at compact layer	0
11-HR	2	7	A	0-24	10YR4/2	silty loam	stopped at compact layer	0
11-HR	2	8	A	0-17	10YR4/2	silty loam	stopped at compact layer	0
11-HR	2	9	A	0-15	10YR4/2	silty loam	stopped at compact layer	0
11-HR	2	10	A	0-30	10YR4/2	silty loam	stopped at compact layer	3
11-HR	2	11	A	0-42	10YR4/2	silty loam	stopped at compact layer	2
11-HR	2	12	A	0-15	10YR4/2	silty loam	stopped at compact layer	0
11-HR	2	13	A	0-20	10YR4/2	silty loam	stopped at compact layer	0
11-HR	2	14	A	0-42	10YR4/2	silty loam	stopped at compact layer	0
11-HR	2	15	A	0-41	10YR4/2	silty loam	stopped at compact layer	0
11-HR	2	16	A	0-35	10YR4/2	silty loam	stopped at compact layer	0
11-HR	2	17	A	0-38	10YR4/2	silty loam	stopped at compact layer	1
11-HR	2	18	A	0-45	10YR4/2	silty loam	stopped at compact layer	0
11-HR	2	19	A	0-38	10YR4/2	silty loam	stopped at compact layer	0
11-HR	2	20	A	0-20	10YR4/2	silty loam	-	0
11-HR	2	20	B	20-30	10YR3/2	silty loam	stopped at compact layer	0
11-HR	2	21	A	0-10	10YR4/2	silty loam	-	1
11-HR	2	21	B	10-20	10YR3/2	silty loam	stopped at compact layer	0
11-HR	2	22	A	0-25	10YR4/2	silty loam	-	0
11-HR	2	22	B	25-35	10YR3/2	silty loam	stopped at compact layer	0

APPENDIX C

KANSAS ARCHEOLOGICAL SITE FORM

14GY102 — Kansas Archeological Site Inventory

Site number: 14GY102
Site name: Site 2
County: Gray
Site type: Camp
Industrial
Possible oil exploration camp
Original or revision: First
UBS number: Not assigned
Component: Single

General Time Period(s):	Specific time period(s):
Historic European/American/Afro-American:	1900-1954

Cultural affiliation: Euro-American, possibly Empire Gas & Fuel Company

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Site description: Site 2 was identified in a plowed field by dispersed historic artifacts. Historic period artifacts were below the terrace slope of a former playa depression. The site extends for approximately 137 meters (450 feet) north and south and approximately 45 meters (150 feet) east west. Most surface artifacts were mapped within a relatively small cluster approximately 30 meters (100 feet) north-south and 15 meters (50 feet) east-west (1.2 acres). Artifacts were observed but were not mapped or described on the portion of Site 2 that is on land not under easement agreement with the developer. The portion of Site 2 not under easement for archeological survey extends for approximately 15 meters (50 feet) into the southwest quarter of Section 18. At Site 2, 51 historic-period artifacts were mapped during pedestrian survey, and 11 historic-period artifacts were found in 7 of 22 shovel tests excavated at Site 2. All artifacts were recovered from the surface or the plowzone. No sub-plowzone features or artifacts were observed. Most artifacts were clustered within an area of approximately 5,000 square feet in the southeast quarter of Section 18.

Artifacts observed but not collected: Ceramics included 5 sherds of gray salt-glazed stoneware, 3 sherds of buff salt-glazed stoneware, 2 sherds of blue glazed stoneware, 1 sherd of brown glazed stoneware, 3 ironstone sherds and 1 whiteware sherd. Vessel glass included 9 solarized (manganese) bottle fragments, 4 clear and 3 aqua vessel glass fragments. One clear molded table glass bowl fragment was present. Architectural artifacts include 1 brick fragment and 1 flat window glass fragment. Tools and transportation-related artifacts were 1 iron T-shaped augur handle, a leather harness fragment, 2 carbon rods from zinc-carbon dry cell batteries, and a thin fragment of lamp glass. One large mammal bone (non-human) was also identified.

Artifacts collected: Ceramics included 3 sherds of gray salt-glazed stoneware, 1 jug rim with handle, 1 blue glazed stoneware, 1 sherd of Albany slip stoneware, and 1 undecorated whiteware sherd. Vessel glass included 2 solarized (manganese) bottle fragments and 2 clear vessel glass fragments. Tools and transportation-related artifacts included 3 ribbed headlight glass fragments, 2 carbon rods from zinc-carbon dry cell batteries, and 2 tin sheet fragments.

Location of artifacts: Tetra Tech EC; Inc.

Present condition: Cultivated

Disturbance to site: Plowing

Site has been tested: Yes **Site has been excavated:** No **NRHP status:** None reported.

Recommendations for further work: Dispersed historic domestic artifacts, tools and transportation artifacts are found on the surface and in the plowzone. No buried cultural features were identified. The site is recommended as not eligible for the National Register of Historic Places. No additional investigations are recommended.

Comments: No documents specifically refer to this site.

Historic maps, references, or informants:
Everts, L.H. 1887. Gray County, Montezuma, Stowe, Kansas. David Rumsey Collection. Online at http://www.davidrumsey.com/BrowserInsight/BrowserInsight?cmd=image=print&lr= 8500. Accessed March 25, 2008.
United States Geological Survey (USGS). 1892. Dodge Sheet, Kansas, 1:125,000 quadrangle. USGS, Washington, D.C.
Gray County Registrar of Deeds, Gray County Records 1:119; 2:51, 330; 6:362; 17:55, 276, 456; 27:11; 32:28.

Site owner or tenant: Diane Warner
4307 West 112th Street
Leawood , KS 66211
620-855-2469

Topographic location: Playa

Drainage: Buckner Creek to Pawnee River to Arkansas River

USGS map name: Cimarron **USGS map date:** 1968

Legal location:

1.	2.	3.	4.
Section: NW, SW, SE of 18	Section: NE, SE, SW of 18	Section: None listed	Section: None listed
Township: 25 S	Township: 25 S	Township:	Township:
Range: 27 W	Range: 27 W	Range:	Range:

UTM datum: None listed
Zone:

Area: 1.22 acres

Recorded by: Stuart Reeve
1000 The American Road
Morris Plains
NJ , 07950 973 630 8131
stuart.reeve@ttecl.com

Affiliation: Archeological Contractor **Agency/Company name:** Tetra Tech EC, Inc.

Record Date: 14-Oct-2011
Last updated 14-Oct-2011

Radiocarbon dates: None listed.

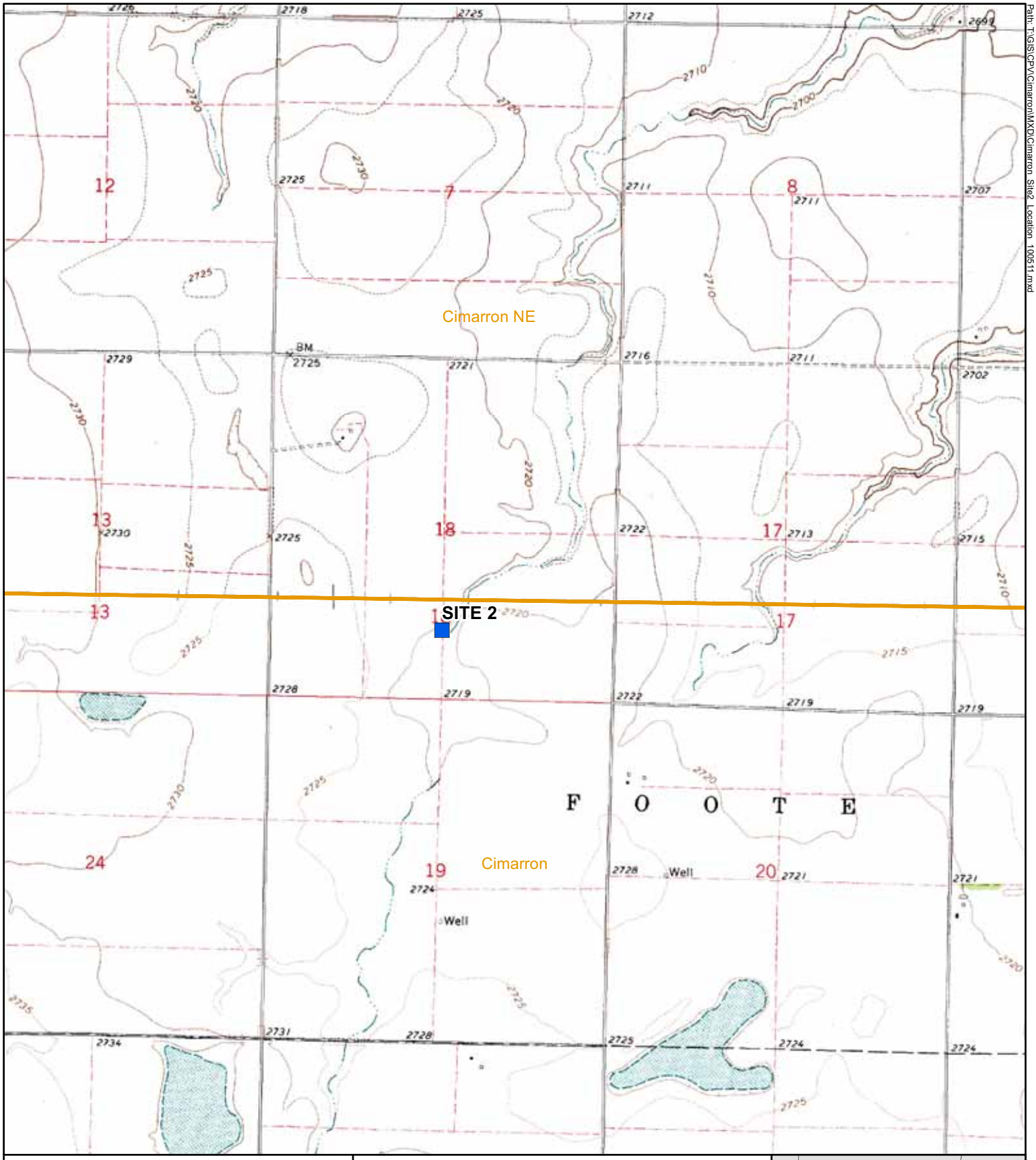
Bibliography: None listed.

Map files

None uploaded

Supporting Documents

Site 2 Artifact Descriptions: *20111014_1_APPENDIXC3ARTIFACTLOG101411.PDF*



Site 2 Location

Supplemental Phase II
Intensive Archeological Survey
Cimarron Wind Energy Project Phase 1
Gray County, Kansas

Legend

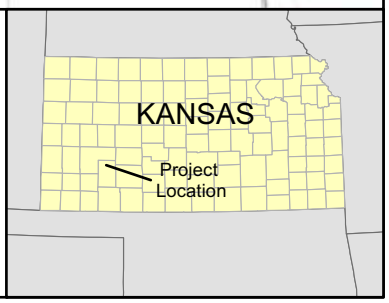
Site Location

Quad Sheet Boundary

N

0 500 1,000 2,000 Feet

Source:
USGS 7.5 Minute Topographic Quadrangle:
Cimarron NE KS 1970, PR 1980
Cimarron NW KS 1982, PR 1985
Cimarron KS 1969, PR 1981
Dodge City SW KS 1982, PR 1984



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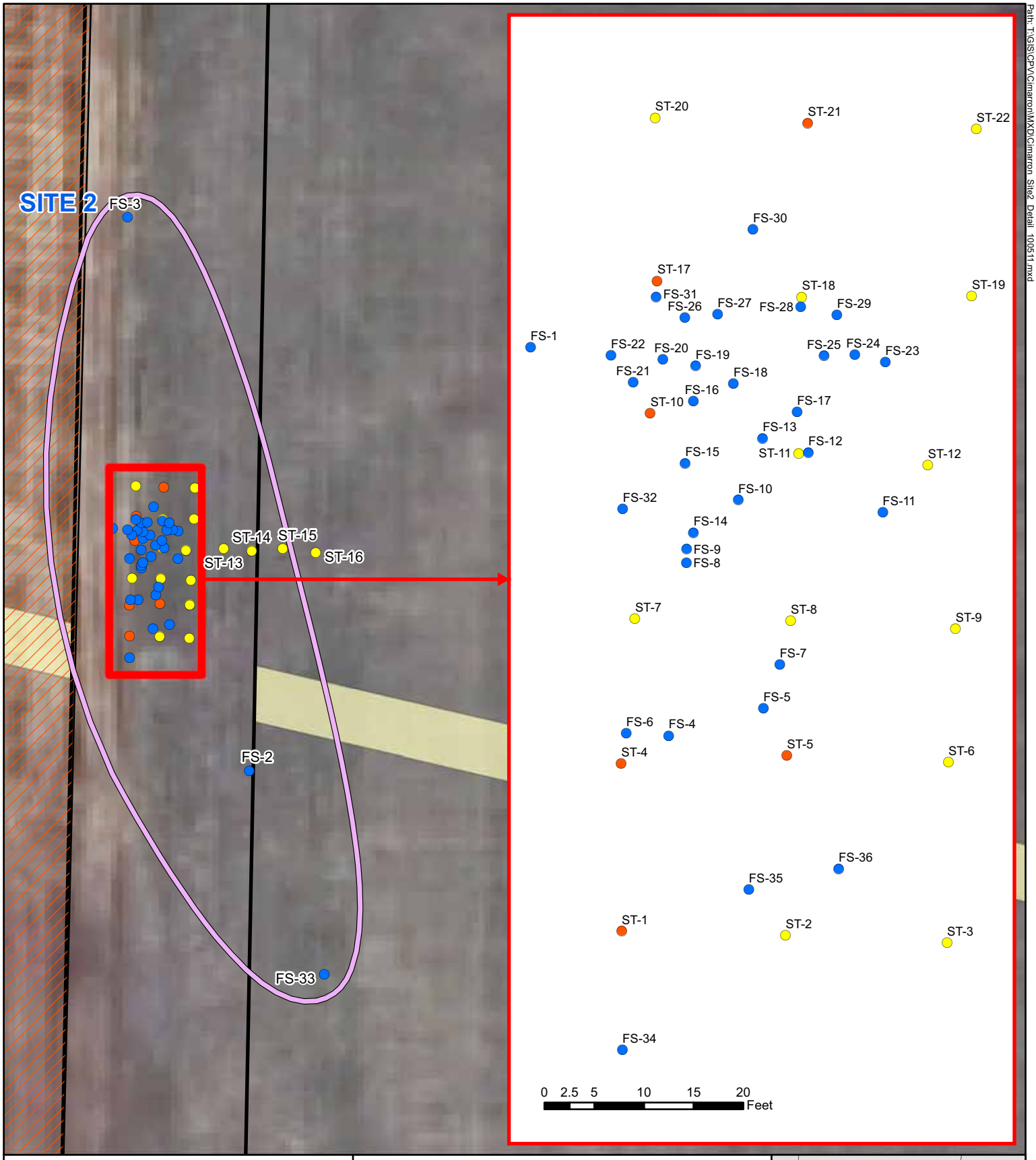


Path: T:\GIS\CPV\Cimarron\MXD\Cimarron_Site2_Detail_100511.mxd

Site 2 Plan View

Supplemental Phase II
Intensive Archeological Survey
Cimarron Wind Energy Project Phase 1
Gray County, Kansas

CPV Renewable Energy Company, LLC

TETRA TECH EC, INC.

Legend

Pedestrian Survey Findspot (FS#)
- Historic Artifact

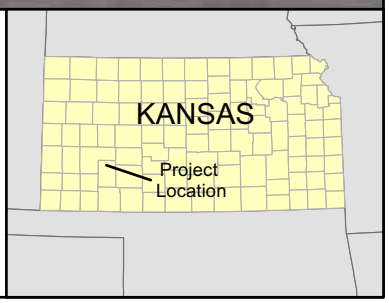
Shovel Tests (ST#)
- Historic Artifact
- No Artifact

- Site 2 Boundary (Approximate)
- Non-Leased Area
- September 2011 Survey (v4.2 APE)
- April 2011 Survey (v3 APE)

N

0 50 100 Feet

Source:
v3 and v4.2 Layouts



Site 2 Artifact Descriptions

Unit	Stratum	Depth (cm)	Artifact Descriptions	Count
FS-1	A	surface	carbon rod fragments, probably from Columbia dry cell batteries (Photograph 2B)*	2
FS-1	A	surface	gray salt-glazed stoneware crock sherds*	3
FS-1	A	surface	blue salt-glazed stoneware bowl sherd*	1
FS-1	A	surface	undecorated whiteware plate or bowl sherd*	1
FS-1	A	surface	ribbed flat glass fragments from automobile or tractor headlamp (Photograph 2A)*	3
FS-1	A	surface	clear vessel glass fragment*	2
FS-1	A	surface	solarized (manganise) vessel glass bottle (Photograph 2C)*	2
FS-2	A	surface	Albany slip salt-glazed stoneware jug base sherd*	1
FS-3	A	surface	buff salt-glazed stoneware jug rim and handle (Photograph 2D)*	1
FS-3	A	surface	tin sheets*	2
FS-4	A	surface	clear vessel glass fragment	1
FS-5	A	surface	solarized vessel glass fragment	1
FS-6	A	surface	ironstone sherd	1
FS-7	A	surface	gray salt-glazed stoneware sherd	1
FS-8	A	surface	solarized vessel glass fragment	1
FS-9	A	surface	brown salt-glazed stoneware sherd	1
FS-10	A	surface	solarized vessel glass sherd	1
FS-11	A	surface	gray salt-glazed stoneware sherd	1
FS-12	A	surface	flat glass fragment	1
FS-13	A	surface	gray salt-glazed stoneware sherd	1
FS-14	A	surface	carbon rod fragment, probably from Columbia dry cell battery	1
FS-15	A	surface	solarized vessel glass sherd	1
FS-16	A	surface	solarized vessel glass sherd	1
FS-17	A	surface	ironstone sherd	1
FS-18	A	surface	aqua vessel glass fragment	1
FS-19	A	surface	gray salt-glazed stoneware sherd	1
FS-20	A	surface	solarized vessel glass sherd	1
FS-21	A	surface	large mammal bone (non-human)	1
FS-22	A	surface	leather, riveted harness part	1
FS-23	A	surface	pressed clear table glass fragment	1
FS-24	A	surface	ironstone sherd	1
FS-25	A	surface	gray salt-glazed stoneware sherd	1
FS-26	A	surface	buff salt-glazed stoneware sherd	1
FS-27	A	surface	buff salt-glazed stoneware sherd	1
FS-28	A	surface	buff salt-glazed stoneware sherd	1
FS-29	A	surface	solarized vessel glass sherd	1
FS-30	A	surface	aqua vessel glass fragment	1
FS-31	A	surface	blue salt-glazed stoneware sherd	1
FS-32	A	surface	brick fragment	1
FS-33	A	surface	iron T-shaped augur handle	1
FS-34	A	surface	blue salt-glazed stoneware sherd	1
FS-35	A	surface	gray salt-glazed stoneware sherd	1
FS-36	A	surface	solarized vessel glass sherd	1
ST-01	A	0-36	clear vessel glass fragment	1
ST-04	A	0-37	carbon rod fragment, probably from Columbia dry cell battery	1
ST-04	A	0-37	tin sheet fragment	1
ST-05	A	0-22	undecorated whiteware sherd	1
ST-10	A	0-30	clear vessel glass fragment	2
ST-10	A	0-30	tin sheet fragment	1
ST-11	A	0-42	clear vessel glass fragment	1
ST-11	A	0-42	aqua vessel glass fragment	1
ST-17	A	0-38	clear lamp glass fragment	1
ST-21	A	0-10	solarized vessel glass sherd	1

Note: * artifacts collected, all other artifacts left in-situ in the field

Photograph 1. Shovel testing at Site 2, a plowed field with surface visibility of 90 percent. View to the west (Photographer Stuart A. Reeve, September 25, 2011)

Photograph 2. Site 2 artifacts.

A. FS-1 ribbed headlight glass.

B. FS-1 carbon battery rod.

C. FS-1 solarized bottle glass base.

D. FS-3 gray salt-glazed jug rim and handle.

APPENDIX D

AGENCY AND TRIBAL CORRESPONDENCE

KSR&C No. 09-12-054

6425 SW 6th Avenue
Topeka, KS 66615

Kansas

phone: 785-272-8681
fax: 785-272-8682
email@kshs.org

Kansas Historical Society

Sam Brownback, Governor
Jennie Chinn, Executive Director

September 8, 2011

RECEIVED 9/14/11

Kim Pilarski
Acting Manager, Cultural Compliance
Federal Determinations
Tennessee Valley Authority
400 West Summit Hill Drive
Knoxville, Tennessee 37902-1499

RE: Cimarron I Wind Power Project
Phase II Archeological Survey
Tennessee Valley Authority
Gray County

Dear Ms. Pilarski:

The Kansas State Historic Preservation Office has reviewed a report entitled *Phase II Intensive Archeological Survey Cimarron Wind Energy Project – Phase I Gray County, Kansas,* prepared by Tetra Tech EC, Inc. We find the report to be acceptable and concur with its conclusion that the proposed project will have no effect on archeological resources as defined in 36 CFR 800. Our office will await further information regarding steps to mitigate visual impacts to those architectural properties already determined to be eligible.

Our small staff enters and maintains cultural resource information on the agency's GIS system. Given the time-consuming nature of that task it would be most helpful if the archeological consultant could forward the project's pedestrian survey shape files, if available.

If you have questions or need additional information regarding these comments, please contact Tim Weston at 785-272-8681 (ext. 214) or Kim Gant at 785-272-8681 (ext. 225). Please refer to the Kansas Review & Compliance number (KSR&C#) above on all future correspondence relating to this project.

Sincerely,

Jennie Chinn
Executive Director and
State Historic Preservation Officer

Timothy Weston for

Patrick Zollner
Deputy State Historic Preservation Officer

TRIBAL HISTORIC PRESERVATION OFFICE

Date: **June 2, 2011** **File: 1011-280KS-10**

RE: **Tennessee Valley Authority (TVA), Cimarron Wind Energy Project, Gray County, Kansas**

Pat Bernard Ezzell
Tribal Liaison and Corporate Historian
Tennessee Valley Authority
400 West Summit Hill Drive
Knoxville, TN 37902-1499

Dear Ms. Ezzell,

The Osage Nation Historic Preservation Office has received the initial report and accompanying materials for the proposed project listed as Tennessee Valley Authority (TVA), Cimarron Wind Energy Project, Gray County, Kansas.

In accordance with the National Historic Preservation Act, (NHPA) [16 U.S.C. 470 §§ 470-470w-6] 1966, undertakings subject to the review process are referred to in S101 (d)(6)(A), which clarifies that historic properties may have religious and cultural significance to Indian tribes. Additionally, Section 106 of NHPA requires Federal agencies to consider the effects of their actions on historic properties (36 CFR Part 800) as does the National Environmental Policy Act (43 U.S.C. 4321 and 4331-35 and 40 CFR 1501.7(a) of 1969).

The Osage Nation has a vital interest in protecting its historic and ancestral cultural resources. **The Osage Nation requests that a pedestrian cultural resources survey (Phase II) be conducted for the entire APE for the proposed Tennessee Valley Authority (TVA), Cimarron Wind Energy Project, Gray County, Kansas.**

Please contact the Osage Nation Historic Preservation Office with your response to this request. The Osage Nation looks forward to receiving and reviewing the cultural resource survey report for the Tennessee Valley Authority (TVA), Cimarron Wind Energy Project, Gray County, Kansas. The Osage Nation requires that cultural resource survey personnel and reports follow the Secretary of Interior's standards and guidelines. Please provide a detailed topographic map depicting the locations of the shovel tests and test units excavated during the survey along with a table indicating their depth, soils, the amount and type of material found, and reason for termination.

Should you have any questions or need any additional information please feel free to contact me at the number listed below. Thank you for consulting with the Osage Nation on this matter.

James Munkres
Archaeologist I

627 Grandview. Pawhuska. OK 74056. (918) 287-5328. Fax (918) 287-5376

KSR&C NO. 09-12-054

6425 SW 6th Avenue
Topeka, KS 66615

Kansas

phone: 785-272-8681
fax: 785-272-8682
email@kshs.org

Kansas Historical Society

Sam Brownback, Governor
Jennie Chinn, Executive Director

March 16, 2011

Date Rec'd.:
Saved:
Sent to:
File:

Eric Howard
Manager, Cultural Compliance
Tennessee Valley Authority
400 West Summit Hill Drive
Knoxville, Tennessee 37902-1499

RE: Cimarron Wind Energy Project
Tennessee Valley Authority (TVA)
Gray County

Dear Mr. Howard:

In accordance with 36 CFR 800, the Kansas State Historic Preservation Office has reviewed a report entitled *Phase I Reconnaissance Survey Cimarron Wind Energy Project – Phase I Gray County, Kansas,* prepared by Tetra Tech, EC, Inc. We find the report to be acceptable and concur with its recommendation that a Phase II archeological survey of the project APE be conducted.

We have also reviewed the *Historic Architecture Reconnaissance Survey –Cimarron Wind Energy Project – Phase I Gray County, Kansas,* prepared by Tetra Tech, EC, Inc. We do not concur with the finding that no historic properties are present. The SHPO has determined that TTCW8 (farmstead) and TTCW20 (barn) are potentially eligible for the National Register of Historic Places under the *Historic Agriculture Related Resources of Kansas* Multiple Property Documentation Form. We recommend that a Phase II study be conducted for these properties.

This information is provided at your request to assist you in identifying historic properties, as specified in 36 CFR 800 for Section 106 consultation procedures. If you have questions or need additional information regarding these comments, please contact Tim Weston at 785-272-8681 (ext. 214) or Kim Gant at 785-272-8681 (ext. 225). Please refer to the Kansas Review & Compliance number (KSR&C#) above on all future correspondence relating to this project.

Sincerely,

Jennie Chinn
Executive Director and
State Historic Preservation Officer

Patrick Zollner
Deputy State Historic Preservation Officer

KSR&C No. 09-12-054

6425 SW 6th Avenue
Topeka, KS 66615

Kansas

phone: 785-272-8681
fax: 785-272-8682
email@kshs.org

Kansas Historical Society

Sam Brownback, Governor
Jennie Chinn, Executive Director

March 16, 2011

Date Rec'd.:
Saved:
Sent to:
File:

Eric Howard
Manager, Cultural Compliance
Tennessee Valley Authority
400 West Summit Hill Drive
Knoxville, Tennessee 37902-1499

RE: Cimarron Wind Energy Project
Tennessee Valley Authority (TVA)
Gray County

Dear Mr. Howard:

In accordance with 36 CFR 800, the Kansas State Historic Preservation Office has reviewed a report entitled *Phase I Reconnaissance Survey Cimarron Wind Energy Project – Phase I Gray County, Kansas,* prepared by Tetra Tech, EC, Inc. We find the report to be acceptable and concur with its recommendation that a Phase II archeological survey of the project APE be conducted.

This information is provided at your request to assist you in identifying historic properties, as specified in 36 CFR 800 for Section 106 consultation procedures. If you have questions or need additional information regarding these comments, please contact Tim Weston at 785-272-8681 (ext. 214) or Kim Gant at 785-272-8681 (ext. 225). Please refer to the Kansas Review & Compliance number (KSR&C#) above on all future correspondence relating to this project.

Sincerely,

Jennie Chinn
Executive Director and
State Historic Preservation Officer

Timothy Weston for

Patrick Zollner
Deputy State Historic Preservation Officer

KANSAS

KSP&C No. 09-12-054

Kansas Historical Society
Jennie Chinn, *Executive Director*

MARK PARKINSON, GOVERNOR

December 8, 2009

Erika Roberts
Project Manager
Tetra Tech EC, Inc.
133 Federal Street, 6th Floor
Boston, MA 02110

RE: Wind Farm Project
Gray County

Dear Ms. Roberts:

The Kansas State Historic Preservation Office has received your letter and attached documentation dated December 1, 2009 showing the proposed location of a wind farm project north of Cimarron in Gray County. We appreciate the willingness of the project developer to take cultural resources into consideration during the design process in what appears to be a non-Section 106 case. However, we do have a few concerns as outlined below.

As noted in your report, there are no recorded archeological sites or properties listed on the State or National registers within the proposed project area. Nevertheless, our office requests that a portion of the project area be surveyed by a professional archeologist prior to beginning construction, as it is in an area of high and/or moderate archeological potential. 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. We therefore request that turbine locations and access roads in those portions of the project, as illustrated on the attached map, be surveyed. We also request that structures/farmsteads older than 50 years within the project area, of which there are likely very few, be photographed so that their historic significance (if any) may be assessed.

As noted in your letter, since this project will require only state and/or county level permits our agency has no legal authority to compel your firm to fund an archeological survey. If, as you pointed out, any federal funds are to be used or if any federal permits (such as a Section 404 permit from the Corps of Engineers) might ultimately be required, then Section 106 of the National Historic Preservation Act will apply and this recommendation will become a requirement.

6425 SW 6th Avenue • Topeka KS 66615-1099
Phone 785-272-8681, ext. 205 • Fax 785-272-8682 • jchinn@kshs.org • TTY 785-272-8683
kshs.org

Any archeologist meeting the Minimum Professional Qualifications of this office as outlined in *The State Historic Preservation Officer's Guide For Archeological Survey, Assessment, and Reports* (SHPO's Guide), is eligible to perform the requested work. A list of archeological contractors meeting these standards is available from our web site at http://www.kshs.org/resource/section106home.htm.

This information is provided at your request to assist you in identifying historic properties, as specified in 36 CFR 800 for Section 106 consultation procedures. If you have questions or need additional information regarding these comments, please contact Tim Weston at 785-272-8681 (ext. 214) or Kim Gant at 785-272-8681 ext. 225. Please refer to the Kansas Review & Compliance number (KSR&C#) above on all future correspondence relating to this project.

Sincerely,

Jennie Chinn
Executive Director and
State Historic Preservation Officer

Timothy Weston for

Patrick Zollner
Deputy State Historic Preservation Officer

Site Location Map
Cimarron Wind Energy Project
Gray County, Kansas
Competitive Power Ventures, Inc.
Legend
Proposed Substation
Proposed Permanent Met Tower
Approximate Turbine String Locations
Existing Transmission Line
County Line
Existing Roads
Leased Parcel
REQUESTED SURVEY AREAS HIGHLIGHTED IN YELLOW
Source: USGS 24k Quad, 1985, Ratts Powermap 2009
0 0.5 1 Miles
KANSAS
Project Location
TETRA TECH EC, INC.
C Rd
D Rd
E Rd
F Rd
G Rd
H Rd
I Rd
K Rd
L Rd
M Rd
25th Rd
24th Rd
23rd Rd
22nd Rd
21st Rd
20th Rd
19th Rd
18th Rd
17th Rd
16th Rd
15th Rd
14th Rd
13th Rd
HODGEMAN CO
FORD CO
Municipal Airport
Arkansas
36
31
1
6
23
50
Z:\Gdrive\Projects_2008\CPV_Cimarron\Maps\SHPO topo.mxd