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May 21, 2008

Mr. Paul Picha  
State Historical Society of North Dakota  
North Dakota Heritage Center  
612 East Boulevard Avenue  
Bismarck, ND 58505-0830

Re: **NDSHPO: 08-0343 RUS/RDUP**  
PSC 230-kV Transmission Line, Pillsbury to Fargo Generation Outlet Project

Dear Mr. Picha:

On February 8, 2008, HDR Engineering, Inc. (HDR) contacted the North Dakota SHPO (SHPO) on behalf of Minnkota Power Cooperative, Inc (Minnkota) to request a review of potential project-related impacts on known or suspected cultural resources along a proposed 230-kV transmission line route in Cass and Barnes Counties, North Dakota. The NDSHPO responded with a letter dated February 11, 2008, recommending that Minnkota sponsor a Class I literature search generally not more than one-mile-wide centered on the proposed route (1/2 mile on each side of the centerline) to determine the nature of previous cultural resource investigations and the location of known cultural resources in the proposed project vicinity. Enclosed for your review and concurrence are the results of that Class I Literature Search, Class II Reconnaissance Inventory and Class III Intensive Resources Inventory.

Township, range, and section locations reviewed for previous cultural resources and previous cultural resource investigations are: Barnes Co. 143N 57W 12, 13; 143N 56W 7-10, 14-18, 21-26 Cass Co. 143N 55W 19, 27-35; 142N 55W 1-3, 12; 142N 54W 5-8, 16-21, 25-29, 33-36; 142N 53W 19, 20, 25-36; 142N 52W 31-36; 142N 51W 31-36; 142N 50W 31; 141N 52W 1-6, 8-15; 141N 51W 1-6, 12, 13, 17-22, 24-29, 34-36; 141N 50W 6, 7, 18, 19, 30-32; 140N 51W 1-3, 10-15, 140N 50W 5-18; 140N 49W 7, 8, 16-18, 20, 21, 28, 29.

In total twelve previous cultural resource investigations and nineteen cultural resource sites were reviewed. The proposed transmission route has been found to follow a previously intensively surveyed Cenex Pipeline. Two cultural resource sites have been found near the route vicinity that are eligible for the National Register of Historic Places, but are not located within the project route. No new cultural resource sites were identified in the Class II/Class III survey.

HDR recommends that the project proceed as planned. However, locations identified within the project route that contain historic trash scatters should be avoided.

**35** **PU-08-48** Filed: 5/27/2008 Pages: 57  
**Final Pedestrian Survey Report - Pillsbury-Fargo  
Generation Outlet**

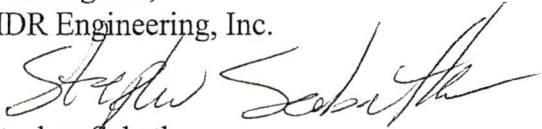
Minnkota Power Coop., Inc.

Pearce & Durick by Jerome Kettleson

PSC 230-kV Transmission Line, Pillsbury to Fargo Generation Outlet Project

Please contact me if you have any questions or need additional information to complete your review. You can contact me by phone at 763.278.5992 or by email at [stephen.sabatke@hdrinc.com](mailto:stephen.sabatke@hdrinc.com). Thank you for your attention to this matter.

Best Regards,  
HDR Engineering, Inc.

  
Stephen Sabatke  
Archaeologist

Enclosure: Class I Literature Search, Class II Reconnaissance Inventory and Class III Intensive Resources Inventory

cc w/o enclosure: Al Koeckeritz, HDR  
Mitchell Shields, HDR

**Manuscript Number:**

**SHPO Reference #: NDSHPO: 08-0343 RUS/RDUP**

**Author: Stephen Sabatke**

**Minnkota Power Cooperative, Inc: Gen-Tie Project: Class I Literature Search, Class II  
Reconnaissance Inventory and Class III Intensive Cultural Resource Inventory in Barnes  
and Cass counties, North Dakota**

**May 23, 2008**

**41 pages**

**Class II Reconnaissance Inventory and Class III Intensive Cultural Resource Inventory**

<u>County</u>	<u>TWP</u>	<u>R</u>	<u>SEC</u>
Barnes	143N	57W	12, 13
	143N	56W	7-10, 14-18, 21-26
Cass	143N	55W	19, 27-35
	142N	55W	1-3, 12
	142N	54W	5-8, 16-21, 25-29, 33-36
	142N	53W	19, 20, 25-36
	142N	52W	31-36
	142N	51W	31-36
	142N	50W	31
	141N	52W	1-6, 8-15
	141N	51W	1-6, 12, 13, 17-22, 24-29, 34-36
	141N	50W	6, 7, 18, 19, 30-32
	140N	51W	1-3, 10-15
	140N	50W	5-18
	140N	49W	7, 8, 16-18, 20, 21, 28, 29

**Minnkota Power Cooperative, Inc:  
Pillsbury-Fargo Generation Outlet Project  
Class I Literature Search, Class II Reconnaissance Inventory and Class  
III Intensive Cultural Resources Inventory  
In Barnes and Cass Counties, North Dakota**

**For**

**Minnkota Power Cooperative, Inc  
Grand Forks, North Dakota**

**By**

**Stephen Sabatke, M.A.**

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**Project No: 77817  
May 23, 2008**

## **Abstract**

This report documents the cultural resources data collection for the proposed 230 kV transmission line from near Pillsbury, North Dakota, to Maple River Substation in West Fargo, North Dakota (approximately 56 miles long). The study area for cultural resources for the project was defined as a one mile wide corridor centered on the proposed route. The survey corridor was determined to be a 200 foot wide corridor centered on the project route. A primarily pedestrian field survey was used to examine the project route. No new cultural resources were identified during the survey.

## Introduction

This report documents the cultural resources data collection (Class II Reconnaissance Inventory and Class III Intensive Cultural Resource Inventory) for the proposed 230 kV transmission line from near Pillsbury, North Dakota, to Maple River Substation in West Fargo, North Dakota (approximately 56 miles long), also known as the Pillsbury-Fargo Generation Outlet project. In January 2008, HDR Engineering, Inc. (HDR) began assisting Minnkota Power Cooperative, Inc (Minnkota) in preparing the application for the Certificate of Corridor Compatibility and Route Permit, planning and creating maps of the proposed route, and participating in open house meetings to gather public input on the transmission line. The study area for cultural resources for the project was defined as a one-mile-wide corridor centered on the proposed route. The North Dakota State Historic Preservation Office (SHPO) felt that there was a potential for unrecorded cultural properties to exist in the project area. Therefore, the SHPO suggested that a field survey, primarily pedestrian, take place in the proposed project area. The SHPO also confirmed that tribal consultations would not be needed since the project is not a federal undertaking as defined by Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations (36CRF 800). However, the SHPO did recommend that Minnkota submit a notification in good faith to the Indian Affairs Office in Bismarck, North Dakota, as part of other federal, state and local project notifications.

In February, March, and April of 2008, HDR Archaeologist Stephen Sabatke reviewed information on file at the SHPO located in Bismarck, North Dakota, to ensure that relevant cultural properties in the study area were considered during project planning. Cultural resource data, housed at the SHPO, consisted of cultural resource site files, cultural resource site leads, and previous professional cultural resource surveys and reports. In addition, HDR reviewed 19<sup>th</sup>-Century Public Land Survey (PLS) maps to identify potential historic-period cultural features in the project area.

During the week of April 28 through May 2, 2008 and during the time period of May 14 through May 16, 2008, HDR archaeologist Stephen Sabatke and archaeological technician Rod Johnson surveyed the project route using primarily pedestrian survey techniques. The project is located in the following township, range and sections (see Table 1).

**Table 1. Study Area (Pillsbury-Fargo Generation Outlet project).**

County	Township	Range	Section
Barnes	143N	57W	12, 13
	143N	56W	7-10, 14-18, 21-26
Cass	143N	55W	19, 27-35
	142N	55W	1-3, 12
	142N	54W	5-8, 16-21, 25-29, 33-36
	142N	53W	19, 20, 25-36
	142N	52W	31-36

County	Township	Range	Section
	142N	51W	31-36
	142N	50W	31
	141N	52W	1-6, 8-15
	141N	51W	1-6, 12, 13, 17-22, 24-29, 34-36
	141N	50W	6, 7, 18, 19, 30-32
	140N	51W	1-3, 10-15
	140N	50W	5-18
	140N	49W	7, 8, 16-18, 20, 21, 28, 29

## Environment

The project route is located in an area of North Dakota that extends from West Fargo to Pillsbury. The project route travels in a relatively northwest/southeast direction. This area of North Dakota is referred to as the Red River Valley or simply the Valley. The land type in this area of North Dakota is devoid of any features except for the occasional river that cuts through the surrounding plain. The reason this area does not have any features is because during the last glacial expansion period this area was covered and shaped by the glaciers. Immediately following this glacial expansion a large lake formed at the edge of the retreating glacier. This lake, known as Glacial Lake Agassiz, was present on the landscape for thousands of years. The combination of the Wisconsin sub-lobe glacier and Lake Agassiz lake bottom has made this area of North Dakota devoid of any features and vary minimally in elevation (Figure 1).

Figure 1: Shows the general landscape and visibility of the survey corridor. Photo taken looking west on ½ mile section line between 22<sup>nd</sup> ST SE and 23<sup>rd</sup> ST SE along road 141<sup>st</sup> AVE SE.



The Red River Valley itself is about 50 miles wide in the project area. Traveling north, the valley expands from its more constricted southern terminus. The valley is defined by prehistoric beach ridges on its eastern and western sides. These prehistoric beach ridges correlate with the extent of the Glacial Lake Agassiz throughout its existence. About 9,000 years ago the block that was preventing Glacial Lake Agassiz from draining into Hudson Bay was removed. As the glacial lake grew smaller and smaller, the beach ridges that defined the lake's east and west boundary moved closer together. These minor beach ridges were in existence for shorter amounts of time and are not well defined. However, as one ascends out of the lake bottom it is possible to see a series of beach ridges in a tiered organization.

There are few rivers that cross this plain. The major river in the area is the Red River, which flows to the north and empties into Hudson Bay. It is a relatively slow-moving river, except during times of spring runoff or times of heavy precipitation. Other rivers and tributaries in the project area are the Maple River, Rush River, and Sheyenne River. These rivers travel basically in an easterly direction and empty into the Red River. These rivers are also relatively slow moving except during spring runoff or times of heavy precipitation.

In addition, there are a few intermittent seasonal streams and a few scattered wetlands in the area. All these bodies of water in the area show evidence of significant fluctuation in water level. In

general, water level maximums will be during the spring and water level minimums will be during the fall and winter months. However, these water levels will have a direct correlation to changing weather patterns and conditions each year.

The majority of the natural fauna in the area can be found near these rivers and wetland areas. Mammals of this area include the swift fox, the black-footed ferret, the black-tailed prairie dog, and other rodents such as the Plains pocket gopher, prairie vole and Franklin's ground squirrel (Kay 1998). Wedel and Frison (2001) also identify white-tailed deer, beaver, river otter, raccoon, mink, muskrat, desert cottontail and jackrabbits as mammals common to the area. Birds in the area can include wild turkey, sharp-tailed grouse, greater prairie chicken, sage grouse, geese, various duck species, swans, eagles, hawks, owls and other raptors (Wedel and Frison 2001). Also, a variety of fish and mussels can be found in the Red River and in the major tributaries.

Native flora to the area consists of elm, ash, and cottonwood along the Red River and major tributaries. Additional plant species include the prairie turnip, sunflower, Jerusalem artichoke, purple poppy mallow, bush morning glory, American Lotus, cattails and arrowheads, sand dropseed, vine mesquite, barnyard grass, pignut, pigweed, ragweed, and a variety of other long and short grass prairie species, ground plum, wild onion, lamb's quarters, ground cherries, purslane, curly dock, prairie spiderwort and a variety of other plants (Wedel and Frison 2001).

Soils observed in the field indicated that the general deposition of sediment occurred as follows: O horizon: the top 10 to 15 cm is dark loamy clay 10YR 2/1 black (Munsell, 2000); B horizon: 15cm and deeper (usually meters thick) is compact heavy clay 10YR 4/2 dark grayish brown, (Munsell, 2000). In addition, the soils contained very little gravel, stone, or larger rocks. Along the ancient beach ridges, however, nodules of stone of decent crafting quality can be found (Gibbon, Johnson, and Hobbs, 2002). Ancient peoples existing in this area most likely traveled to other locations to obtain high quality stone for crafting, although if stone of appropriate size and quality was found in these beach ridges, it would have been used.

In general, rainfall amounts decrease as you move west across the plains. From an average of 100 cm in the east, the rainfall totals drop to about 35 cm in eastern Colorado and 25 cm in southern Alberta and Manitoba (Wedel and Frison, 2001). However, three large air masses—mild dry Pacific air coming east over the mountain, cool dry air coming south from Canada and the Arctic, and warm moisture-laden air coming north from the Gulf of Mexico—collide in the plains and can cause significant variation in weather patterns from year to year. Temperature variation in the area is related to the dominant air mass of any given year. In general, average July temperatures can reach 90°F and average January temperatures can fall to 0°F (Gibbon, Johnson, and Hobbs, 2002). The area has about 130 frost-free days a year.

In general, the project route follows section lines from Pillsbury to West Fargo. Around 98 percent of the project area is cultivated farmland, and since surveying occurred during the spring of the year, very little vegetation cover existed in the survey corridor. This allowed for 98 percent

surface visibility of the project route. In general, the fields were relatively dry and easy to walk through.

## **Historic Environment and Context**

The following section is not intended to be an exhaustive description of the project area's prehistoric environment. Rather it is intended to be a brief explanation of the project area that documents the significant themes of each time period. The general themes that will be touched on here are climate, fauna, flora, terrain, technology, and human occupation. No significant climate or terrain changes have occurred since the end of the Plains Woodland time period, so themes such as climate, fauna, flora, and terrain from that period to the present will not be discussed.

### **Paleo-Indian**

Beginning around 75,000 years ago, climatic shifts to cooler environments allowed for the creation and expansion of the Laurentide Ice Sheet (Ojakangas and Matsch 2001). The Laurentide Ice Sheet was generally centered over present-day Hudson Bay, but expanded far south into the United States. At its maximum expansion, glacial ice reached as far south as central Iowa. This glacial expansion into present-day Iowa is known as the Des Moines Sub-Lobe and occurred around 14,000 years ago. It is generally thought that around 13,000 year ago humans entered North America and spread out into an environmentally suitable habitat.

Around 13,500 years ago, environmental shifts in climate had warmed enough to cause the Des Moines Sub-Lobe to begin to retreat. By 12,000 years ago, the lobe had retreated far enough north to allow the majority of present-day South Dakota to be ice-free. Also at this time, the retreating glacier dammed the natural outlet for the Red River, causing the creation of Glacial Lake Agassiz. The lake fluctuated in size many times over the next several thousand years and eventually disappeared from area around 9,500 years ago.

Environmental conditions around the project area would have been tundra-like immediately adjacent to the glacier and gradually turning to forest farther away from the glacier. Eventually climate shifts would push the forests out, to be replaced by prairie. Some of the floras identified from this period are poplar, willow, sage, grasses, chenopods, sedges, oak, aspen, cottonwood, ash, spruce, and pine (Kay, 1998). Some of the faunas identified from this period are American mastodon, Columbian mammoth, long-nosed peccary, Harlan's ground sloth, horse, camel, giant bison, dire wolves, saber-toothed tigers, along with a variety of other species (Kay, 1998).

For the majority of this time period the project route was buried beneath either ice or water. Paleo-Indian sites found in the area are scattered and generally restricted to the beach ridges that defined the east and west boundaries of the lake. It should be noted that the sites that have been found on these beach ridges are small and very few in nature.

The *Historic Preservation in North Dakota, II: A Statewide Comprehensive Plan* generated by the North Dakota State Historic Preservation Office (NDSHPO) in 2003 defines this time period to

be between 11,500 years ago to 7,500 years ago. The tradition is characterized by hunting extinct big game animals and gathering other local resource for human use. Diagnostic artifacts are: Clovis, Goshen, Folsom, Hell Gap-Agate Basin, Cody knives, Parallel Oblique Flaked, Pryor Stemmed, and Caribou Lake Paleo-Indian complexes. Lifeways of these people is not well known but site types include: camps, Knife River flint quarries, other lithic procurement areas, lithic workshops and isolated artifact finds.

## **Archaic**

The climatic shift during this time period trends to a warmer and dryer climate (Kay 1998). Tall and short grass prairie environments expand into states east of the Mississippi River and into the northern plains. Around 7,000 years ago the average temperature increased in the plains area by about 2°Celsius and average annual precipitation was about 1 inch less. This time period is often called the Hypsithermal or the prairie period or prairie maximum. Terrain in the project area from this time period up to modern times would have stayed the same.

At this time modern flora and fauna took over as the dominant wildlife in the area. Sites identified from this time period indicate a heavy reliance on bison hunting (Dyck and Morlan, 2001). However, other fauna such as elk, white-tail deer, ground squirrel, wolf, coyote, fox, muskrat, pocket gopher, chipmunk, deer mouse, rabbit, fish when accessible, waterfowl, along with a variety of other modern flora show up in the soil matrix at sites.

Site locations during this time period are generally tied to locations near water. These locations would have been occupied for longer periods of time and would show larger amounts of artifact deposition. However, small encampments can be found scattered throughout the environment. These types of sites often represent an area of specific resource extraction or a location that takes advantage of a seasonal event such as a bison kill site, a flora gathering site, or a waterfowl breeding site. Artifact deposition at these locations is generally very minimal.

This time period can be divided into three periods: Early (7,500 to 4,500 years ago), Middle (4,500 to 3,000 years ago), and Late (3,000 to 2,400 years ago) (NDSHPO 2003). The tradition is characterized by development of the atlatl along with hunting and gathering essentially modern flora and fauna. Diagnostic artifacts include Oxbow, McKean Lanceolate, Duncan, Hanna, Pelican Lake, and Yonkee. Known site types include animal kill sites, camps, Knife River flint quarries, lithic workshops, and burial sites.

## **Plains Woodland**

The modern environment of today was established during the Plains Woodland time period (Kay 1998). Climate shifts to a cool and wetter environment occurred at this time. This climate shift in turn allowed forest areas to reclaim some their pre-archaic locations. Flora and fauna from this time period is essentially the same as what we see today.

Essentially, site locations during this time period are similar to those seen in the archaic. However, because of increased precipitation, sites from this time period were pushed back along the expanding shorelines of water bodies as they grew in size. It is theorized by some archaeologists that many archaic sites have been inundated by water. Site from the Plains Woodland time period would have been occupied for long periods of time and would show large amounts of artifact deposition. However, numerous small encampments can be found scattered throughout the environment. These types of sites often represent an area of specific resource extraction or a location that takes advantage of a seasonal event such as a bison kill site, a flora gathering site, or a waterfowl breeding site. Artifact deposition at these locations is generally very minimal. Also, during this time period site relating to mortuary practices and ceremonial practice may show up in the archaeological record.

This time period can be divided into three periods: Early (2,400 to 2,100 years ago), Middle (2,100 to 1,500 years ago), and Late (1,500 to 150 years ago) (NDSHPO 2003). The tradition is characterized by the development of the bow and arrow around 1,400 years ago, the development of ceramic vessels, an increased reliance on plants and grasses as food, the practice of mound burial and mortuary ceremonialism, and a more intense method of resource extraction related to hunting and gathering. Cultural complexes recognized in North Dakota relating to this time period are Sonota/Besant, Laurel, Avonlea, Blackduck, Mortlach, Old Women's and Sandy Lake. Known site types include burial mounds and other burial sites, occupations camps, quarries and lithic procurement areas, and bison kill sites.

### **Plains Village**

The Plains Village time period is defined as the time from 1,000 to 150 years ago (NDSHPO 2003). The tradition is characterized by the development of horticulture (corn production) and a more sedentary population. In general, hunting and gathering still played an important role in this time period but an increased reliance on raised crops becomes apparent. This access to a more reliable and permanent food base set the stage for larger villages and communities to develop. Around the end of this time period diseases from European contact are thought to have decimated native populations. Known sites relating to this time period are fortified and unfortified earthlodge villages, winter villages, camps, flint quarries, eagle trapping sites, conical timber lodges, burials, lithic workshops, bison kill sites, and rock art sites.

### **Equestrian Nomadic**

The NDSHPO defines this time period as 300 to 150 years ago (NDSHPO 2003). The tradition is characterized by a heavy reliance on the horse. This reliance on the horse had a dramatic effect on subsistence economics, demographics, social organization, and settlement patterns in the project area. Known site types are camps, battle sites, and animal kill sites.

### **Fur Trade/Contact**

The first fur trade contact in this area occurred in 1738 when a French explorer named of La Verendrye reached the Missouri River, and the contact period lasted until about 1850 (Remele

1998). Increasing numbers of explorers and fur traders would reach the area in the years following first contact. This time period is recognized by the establishment, operation, and adaptation of gathering mammals of a fur bearing nature in exchange for other goods and materials. This exchange linked the Northern Plains to a world-wide economic and political system. Increased demand for furs by European societies led to the establishment of settlements or forts in strategic locations throughout the Northern Plains. One of these locations in North Dakota is Pembina, located along Red River near the Canadian border. Pembina was established in 1812 by the British Crown. Other forts, such as Fort Union and Fort Clark, were soon to follow in Pembina's footsteps. These areas of centered interaction allowed the furs to be procured in an orderly fashion and transport to markets in Europe as quickly as possible. Known site types include fur trading posts and forts, trails, loading and shipping facilities, trapping, trading and hunting grounds, camps and camp sites, steamboat docks, stores, dwellings, warehouses, and residences of prominent fur trade participants.

### **Military Confrontation**

This time period, defined as between 1862 and 1870, is characterized by an increasing Federal presence in the form of a chain of military outposts (Remele 1998). An unfulfilled treaty between the Federal government and the Dakota led to a violent uprising in Minnesota in 1862. This in turn led to major military expeditions by the United States government in 1863, 1864, and 1865. Battles at Whitestone Hill and Killdeer Mountain in 1863 and battles in the Badlands in 1864 diminished Dakota resistance. However, strained relations between Federal entities and Dakota populations existed well into the 1890s and to some extent still exist today. Known site types include forts, posts, armories, battlefields, trails, roads, bridges, fords, mail stations, cemeteries, villages, camps, camp sites, dumps, defensive works corrals, barns, storage areas, and dwellings and residences.

### **American Settlement/Statehood**

The American Settlement time period ran from 1861 through North Dakota's statehood on November 2, 1889 (Remele 1998). The settlement of North Dakota has a direct tie to creation of railroads and railroad lines across the state. Towns and settlements developed in order to serve the homesteaders, frontier citizens, and railroad crews working in the territory. Around 1879, a population boom occurred that had direct ties to the development of organized, highly mechanized, and large bonanza farms. These bonanza farms had a dramatic effect on the landscape. For the first time, large sections of the project area were able to be cultivated and farmed. This led to a dramatic decrease in wild prairie land in the project area.

On November 2, 1889, President Benjamin Harrison approved the admission of North Dakota to the United States. The new state was a Republican stronghold, with the state government dealing with issues concerning large amounts of resources and wealth being extracted from the state with no reinvestment. This eventually led to the Democratic Party winning elections and in turn reinvesting wealth and resources back into the state. Known site types may include towns, colonies, settlements, reservations, businesses, residences, farms, courthouses, city halls,

township halls, government office buildings, office jails, police and sheriff's offices, fire stations, maintenance shops, storage yards, buildings and facilities, dumps, warehouses, roads, highways, streets, alleys, bridges, water and sewer treatment facilities, and homes of prominent local political leaders.

## **The Great Depression**

During the Great Depression (1929-1940), a slowing national economy, heavy farm debt, low prices for agricultural goods, crop failures, dust storms, and extreme weather resulted in series of farm forecloses, bank failures, and residential dwelling and business abandonment. Known site types may include abandoned farms, banks, businesses buildings, city parks, civic improvements, relief facilities, WPA projects, Civilian Conservation Corps camps and project sites

## **Modern Industrial Development**

Remele defines this time period as the 1940s, 50s, and 60s (Remele 1998). During this time period, a post-war economy was driving the development of large industrial facilities in order to change raw materials into products for local and national consumption. Large construction projects, such as dam building and reservoirs, allowed farms, corporations, and citizens of the state to control their access to water resource throughout the year in a more predictable manner. Discovery of natural resources, such as oil and coal, allowed for the development of these industries in the state. Additionally, the beginnings of Cold War stress between the United States and foreign governments generated a perceived need for strategic placement of military bases. In 1960 two large Air Force bases were built in North Dakota at Grand Forks and Minot. Known site types include Air Force installations, armories, storage areas, dwellings and residences, brick plants, concrete plants, bottling plants, meat packing plants, food processing plants, assembly plants, factories, foundries, saw mills, gristmills, gravel potash and uranium mines, tipples, mines, mine entrances, loading and transportation facilities, storage yards, railroad spurs, office buildings, camps, oil wells, gas wells, petroleum product refineries, tank batteries, pipelines, and pumping stations.

## **Research Goals**

The purpose of the project is to create a 230 kV transmission line from near Pillsbury, North Dakota, to the Maple River substation near West Fargo, North Dakota. The design of the project is to eventually carry power created in the rural environment around Pillsbury to West Fargo.

The basic function of this type of examination is to locate sites inside of the survey corridor. The survey corridor was determined by HDR in consultation with North Dakota SHPO to be a 200-foot corridor centered on the project route. In addition, the role of the archaeological research and examination is to help further construct and refine the historic context of the region in order to establish cultural resource management strategies. Historic properties identified in the area may contribute to our general knowledge of life ways in prehistoric, contact, and historic time periods. Sites identified in the area are representative of Archaic, Plains Woodland, Plains Village,

Equestrian Nomadic, Fur Trade, Territorial, Settlement/Exploration, Statehood, Farming/Ranching, Mining/Petroleum, Military, and Transportation time periods.

## **Methodology**

Initial definition of the project corridor was delineated in January of 2008 in a meeting between SHPO, PSC, Minnkota Power Cooperative, Inc, Otter Tail Power Company, Pearce & Durick, and HDR. Through consultation with the SHPO a strategy was developed to evaluate previous historic properties and surveys in the project corridor. HDR and the SHPO decided that the background research for the literature search should not extend more than 1 mile wide centered on the project route (1/2 mile to either side of the project center line). In February, March, and April of 2008 HDR reviewed information on file at the North Dakota State Historic Preservation Office to ensure that relevant cultural properties in the defined project area were considered during project planning. Cultural resource data, housed at the SHPO in Bismarck, North Dakota, consisted of cultural resource site files, cultural resource site leads, and previous professional cultural resource surveys and reports.

In-depth information concerning the literature search results can be found in Appendix C of the *Pillsbury to Fargo Generation Outlet Project: Amendment to the Application for a Waiver of Procedures and Timelines, and Consolidated Certificate of Corridor Compatibility Permit* April 16, 2008, or Appendix A of this document. However, in summary, the literature search revealed that there were 15 previous cultural resource investigations in the study area. Ten of these cultural resource investigations coincided with areas of the project route and five of the cultural resource investigations were located within the project route vicinity. In addition 15 cultural resource sites and ten cultural resource site leads were found near the project route. Two of the cultural resource sites in the inventory have been determined eligible to the NRHP by an NDDOT. The two cultural resources are both bridges and are both located outside the project route.

On April 1, 2008, HDR, in consultation with SHPO, determined that the survey area could be divided into high, medium, and low potential areas for the presence of archaeological resources. Areas of high to medium potential where owner permission was granted to survey their property received 100% examination while areas of low potential received 25% to 30% examination. Areas of high potential were considered to be locations near permanent water sources with very little slope. Areas of medium potential were considered to be locations with elevation in relation to the surrounding plain and sources near seasonal drainage systems. Areas of low potential were considered to be locations away from water source and away from elevated areas. Roughly 1% of the survey area was considered to be of high to medium potential for archaeological resources. One high to medium potential area along the project route was not physical observed because land owner permission had not been granted at the time of field survey. This area is located in western half of section 21 T40N R49W of Reed Township.

In consultation with the SHPO it was decided that an intensive Class II Reconnaissance Inventory and Class III Intensive Cultural Resource Inventory be completed in areas of the project route where previous survey had not occurred in order to identify additional historic properties.

During the week of April 28 through May 2, 2008 and during the time period of May 14 through May 16, 2008, HDR archaeologist Stephen Sabatke and archaeological technician Rod Johnson surveyed the project route. Approximately 38 miles of the 56-mile-long project route needed to be surveyed in order to accommodate the agreed-upon terms. This intensive survey was primarily pedestrian in nature and covered a 200 foot survey width centered on the project route (100 feet to either side of the project center line). Approximately 18 miles of the project was examined by pedestrian survey. An additional 20 miles of project route was visually inspected and spot checked for historic properties.

The entire survey route was examined for historical architecture properties. Historic architecture properties were identified through consultations with maps and by visual inspection of the entire project route. No historic architecture properties were identified within the project route.

Shovel testing, if needed, was restricted to areas where soil exposure was 25% or less, or areas having good to moderate potential to produce archaeological remains. Soils removed in this way were screened through ¼-inch hardware mesh. No artifacts were recovered in this way.

A Trimble ProXH GPS unit (ProXH) was used to locate and follow the project route. In order to survey the project area effectively the ProXH zoom function was used to show an area of 100m (or 300ft). The ProXH unit was also used to mark locations along the route that identified areas of interest and/or areas requiring shovel testing. The ProXH has sub-meter accuracy and the ability to write comments on all locations identified during the survey.

An Olympus Stylus 300 Digital Camera was used to photograph areas along the survey route. The photos were taken using the high quality function on the camera. Photos were taken along the survey route in order to show the general landscape of the area surveyed. Photos were also used to document areas of interest identified during survey.

Notes were taken to keep a record of events that occurred during the day. These notes were used as way for HDR to keep track of information pertinent to the project. Items recorded are; date, weather condition during the day, travel time, start time of survey, locations of survey, locations of interest, shovel tests, meals, brief conversations with informants during survey, soil information, email time, and photographic log.

Nineteenth-century Public Land Survey (PLS) maps were consulted to identify potential historic-period properties in the project area. In addition, maps located online at [http://alabamamaps.ua.edu/historicalmaps/us\\_states/northdakota/index.html](http://alabamamaps.ua.edu/historicalmaps/us_states/northdakota/index.html) were consulted as another resource for the identification of historic period properties in the project survey area.

Maps located here date from 1873-1939. The maps show the general transition of North Dakota from territory to statehood.

No artifacts were recovered during the survey.

## **Inventory of Resources**

Cultural resources suspected to be in the project route may relate to any of the time periods mentioned in the environmental section of this document. Site density is anticipated to be minimal because the majority of the terrain along the project route is not favorable to historic and prehistoric rural settlement. In general it is not until modern times that technology and infrastructure was well enough established in the state to allow for rural settlement. Site distribution is anticipated to very minimal for the project.

No additional cultural resources were identified during the survey in April or May of 2008. In depth information concerning the Literature Search results can be found in Appendix C of the *Pillsbury to Fargo Generation Outlet Project: Amendment to the Application for a Waiver of Procedures and Timelines, and Consolidated Certificate of Corridor Compatibility Permit* April 16, 2008, or Appendix A of this document. However, 15 cultural resource sites and 10 cultural resource site leads were found near the project route. In general the previously identified sites are all of historic age and relate to farming, homesteading, railroad, town, religious, and/or transportation activities. The majority of these sites have not been evaluated and therefore further discussion of their context is not needed. However, two of the cultural resource sites have been determined eligible to the NRHP by NDDOT. These two cultural resources represent bridges and are both located outside the project route. Both of these bridges dated to the Modern Industrial Development time period.

As documented in the maps generated for this project a few locations of interest were identified during survey. Five of these locations are related to modern historic scatters or farm dump areas and one of the locations is related to a railroad bridge. In most cases the locations identified are outside of the project route or can be easily avoided by project construction. The following paragraphs will summarize these locations.

Location RR1 is situated in the southeast quarter of section 7 T143N R56W of Ellsbury Township. The location is a railroad bridge (Figure 2) that allows access from one field into another. The piers of the bridge have a 1927 construction date on them. The bridge is located outside of the project route.

**Figure 2: The railroad bridge. Photo taken looking northeast.**



Location TA1 is situated in the southeast quarter of section 7 T143N R56W of Ellsbury Township. The location is a historic farm dump/trash area, about 8 meters square, which contains an early 1900s scythe bar mower, two 1940s/1950s Ford car bodies, and other pieces of metal of varying size. The trash area is located in a low wet grassy area. The dump/trash area is located outside of the project route.

Location TA2 is situated in the southeast quarter of section 7 T143N R56W of Ellsbury Township. The location is a lightly scattered trash area, about 5 meters square, that contains glass and ceramics of varying size and color. The trash area is located in a cultivated field. The trash area is located outside of the project route.

Location ST1 is situated in the southeast quarter of section 8 T143N R56W of Ellsbury Township. ST1 is a shovel test that was dug in a fallow field within the project route. ST1 was dug to a depth of 38 cm. The top 15cm was a loam/clay 10YR 2/1. The remaining 18cm was clay 10YR 7/3. No artifacts were recovered from the shovel test. The shovel test showed that the fallow field had previously been cultivated.

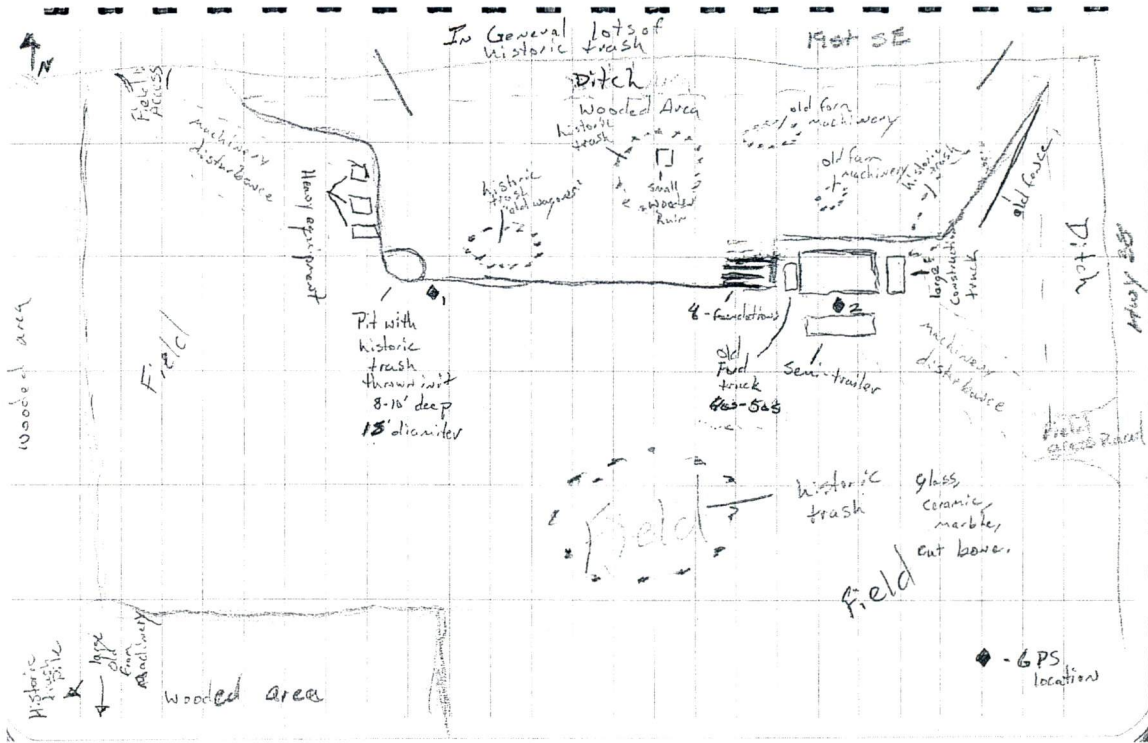
Location TA3 is situated in the northwest quarter of section 12 T142N R55W of Lake Township. The location is a historic farm dump/trash area that contains one standing structure with an 1940s/1950s ford truck parked next to it (Figure 3), one small wooden structural ruin, four

concrete foundations found in a parallel orientation next to each other, large amounts of historic trash scattered in an adjacent wooded area along with farm machinery, a small amount of glass and ceramic trash scattered in the surrounding field (Figure 4). The area is approximately 70 meters square in size. This area is planned to be a lay-down/staging/storage area for transmission poles for the project.

**Figure 3: The standing structure and the 1940s/1950s Ford Truck. Photo taken looking northeast near the intersection of 19<sup>th</sup> ST SE and HWY 38.**



**Figure 4: Hand drawn map of Lay-down/staging area/storage area.**



Location TA4 is situated in the center of section 28 T142N R54W Rich Township. The location is a lightly scattered trash area, about 5 meters square, that contains varying sizes of glass, ceramic, and metal pieces. The trash area is located in a cultivated field. Some of the scatter extends into the railroad embankment. The trash area is located within the project route.

Location TA5 is situated in the southwest quarter of section 35 T142N R52W Arthur Township. The location is lightly scattered trash area, about 10 meters square, that contains, modern concrete blocks, metal pieces/chunks of varying size and density, copper tubing, foundations to a small building, and a turn-of-the-century plow (Figure 5). The trash area is located in grassy area with immediate adjacent cultivated fields surrounding it. Immediately adjacent to this trash area are ten Butler grain storage bins. This location is to be found within the project route.

**Figure 5: Turn of the century Plow. Photo taken looking southwest near the intersection of 24<sup>th</sup> ST SE and 154<sup>th</sup> AVE SE.**



Location TA6 is situated in the southwest quarter of section 35 T142N R52W Arthur Township. The location is a 5 meter tall by 7 meter diameter dirt mound with a few pieces of metal trash laid along its base. No other trash was located in the vicinity of the mound. Two shovel tests were dug here to help determine the nature of the mound. ST2 was located half way up the mound on a modified ledge probably created by farm machine (Figure 6). ST2 was dug to a depth of 50cm with no artifacts being retrieved. The soil was uniform loam/clay 10YR 3/4. ST3 was dug 2.5 meters to the east of ST2 at the base of the mound. ST3 was dug to a depth of 43cm with no artifacts being retrieved. The first 20cm was loam/clay 10YR 3/2, the next 17cm was sand 10YR 3/4, and the last 5cm was clay 10YR 2/1. The mound is located in a cultivated field. The mound appears to be nothing more than a dirt pile. The mound is located within the project route.

**Figure 6: Showing mound and ledge area. Photo taken looking southwest near the intersection of 24<sup>th</sup> ST SE and 154<sup>th</sup> AVE SE.**



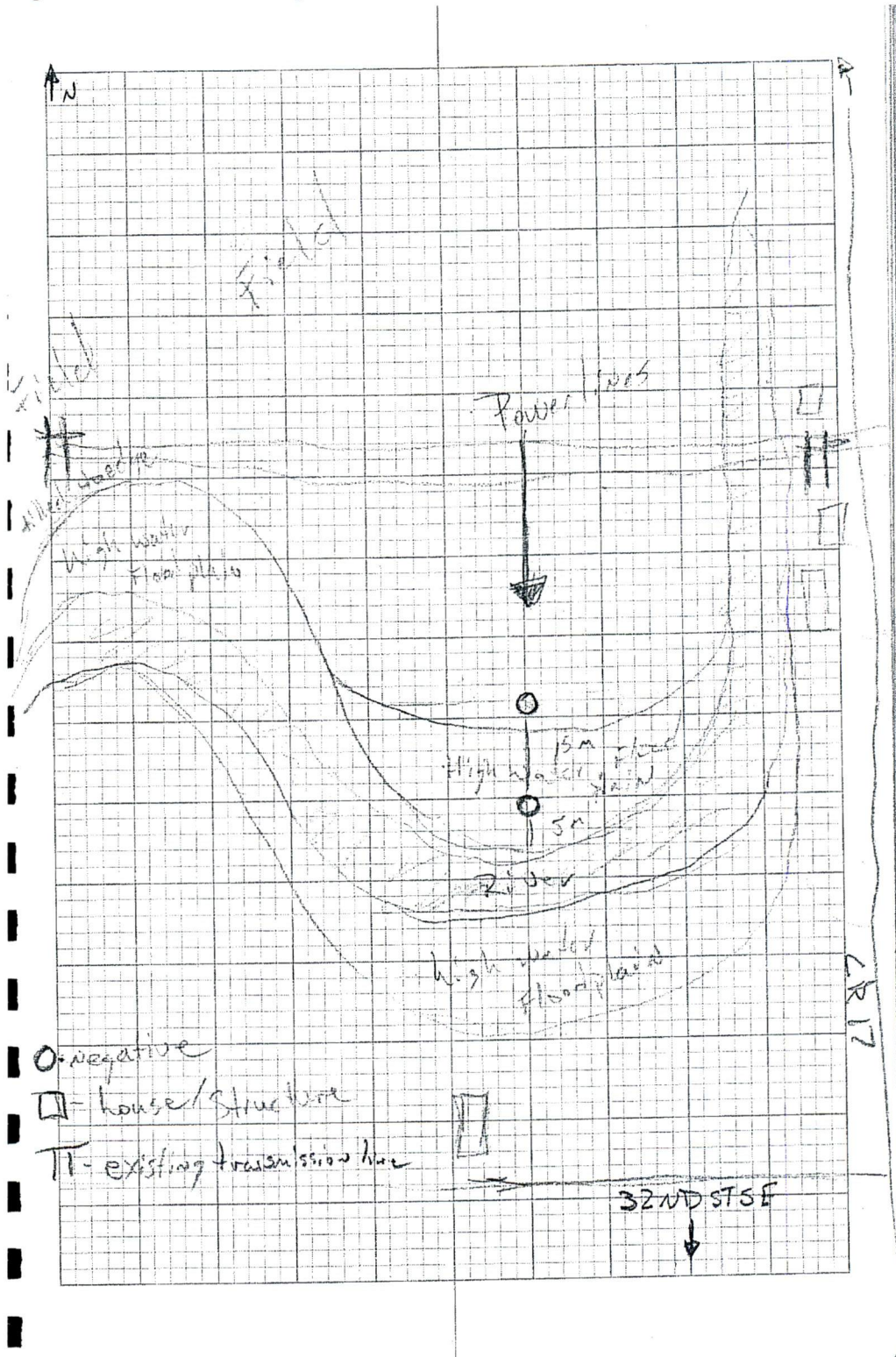
Location TA7 is to be found in the southeast quarter of section 10 T140N R50W Raymond Township. The location is a historic scatter trash area, about 5 meters square, that contained varying sized of glass, ceramic, and metal. The trash area is located in cultivated field. This location is found within the project route.

ST4 and ST5 are located in the southeast quarter of section 7 T140N R49W Reed Township. The location is a shovel test area where 2 shovel tests were dug (Figure 7 and 8). ST4 was dug to a depth of 10cm with no artifacts recovered. The soil was uniform heavy clay 10YR 2/2. ST5 was dug 15meters to the north of ST4. ST5 was dug to a depth of 30cm with no artifacts recovered. The first 20cm was loam/clay 10YR 2/2. The next 10cm was heavy clay 10YR 4/2. The shovel tests were dug inside the project route.

**Figure 7: Showing shovel test area 4 and 5. Photo taken looking east.**



Figure 8: Hand drawn map of shovel test areas 4 and 5.



## **Evaluation of Resources**

No additional cultural resources were identified during the survey in April or May of 2008. The two identified NRHP listed properties are discussed in Appendix C of the *Pillsbury to Fargo Generation Outlet Project: Amendment to the Application for a Waiver of Procedures and Timelines, and Consolidated Certificate of Corridor Compatibility Permit* April 16, 2008, or Appendix A of this document. Both identified properties are located outside of the project route.

## **Statement of Impact**

No additional cultural resources were identified during the survey in April or May of 2008. No cultural resources are anticipated to be impacted or indirectly impacted by the project.

## **Recommendations**

HDR recommends that the locations described under Inventory Resource be avoided by construction activities. A 20 meter buffer surrounding each location should be sufficient in order to avoid the identified area. In relation to location TA3, lay-down/staging/storage area, HDR recommends no ground disturbing activity near the structure or in the small wooded area immediately surrounding the structure. HDR also recommends that monitoring of the west half of section 21 T140N R49W of Reed Township occur to ensure that no cultural resources are present in the project route.

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