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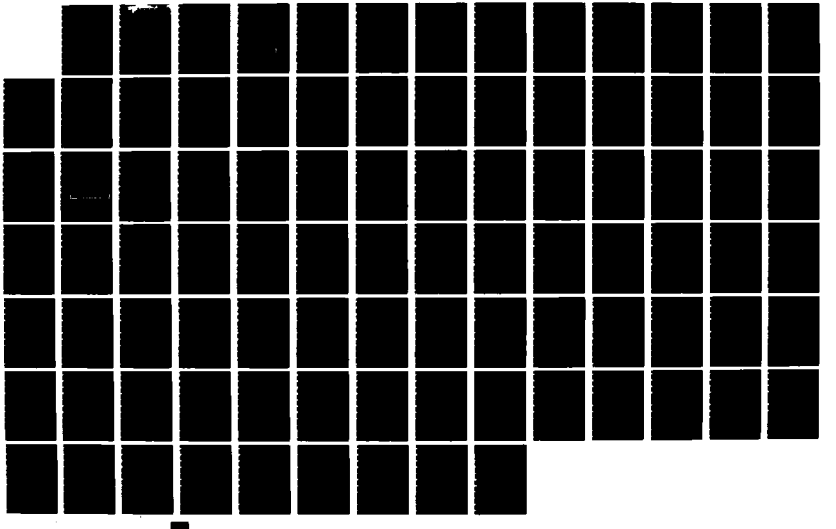

AD-A171 822

A CULTURAL RESOURCE ASSESSMENT OF THE PEMBILLER LAKE AND DAM FLOOD CONTROL PROJECT (A Literature and Records Search) Pembina River, Pembina and Cavalier Counties North Dakota

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A literature and records search was conducted for the area to be affected by the proposed Pembilier Lake and Dam Flood Control Project. The area is along the Pembina River, near the Cavalier-Pembina county line, North Dakota. Investigations included the examination of books, articles, and reports pertinent to the study area as well as local and state records. A total of 18 archaeological and 6 historical sites were reported. Sixteen of the 18 archaeological sites are in danger of being adversely affected by construction of the proposed dam. Of the six historical sites, only two appear to be adversely affected by the dam construction. It is recommended that the area be surveyed and an intensive archaeolgical testing program be initiated for the study area to identify the valuable resources.

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# A CULTURAL RESOURCE ASSESSMENT OF THE PEMBILIER LAKE AND DAM FLOOD CONTROL PROJECT (A Literature and Records Search)

Pembina River, Pembina and Cavalier Counties, North Dakota

Kent N. Good
James C. Dahlberg
Larry J. Sprunk

HISTORICAL AND ARCHAEOLOGICAL SURVEYS, INC.
Grand Forks and Garrison, North Dakota

November 1980



Final Report for Period March 1980-November 1980

Prepared for:

U.S. Amry Corps of Engineers
St. Paul District
St. Paul, Minnesota

U.S. Army Corps of Engineers Contract No.: DACW37-80-C-0027

Principal Investigator: Kent N. Good

Historical & Archaeological Surveys, Inc.

2207 Springbrook Ct.
Grand Forks, North Dakota 58201

Box 277
Garrison, North Dakota 58540

3 November 1980

Mr. Robert F. Post, Authorized
Representative of the Contracting Officer
Department of the Army
St. Paul District, Corps of Engineers
1135 U.S. Post Office and Custom House
St. Paul, MN 55101

Dear Mr. Post:

We are indebted to your office for the constructive comments and recommendations in response to the Draft Copy of the Cultural Resource Assessment of the Pembilier Lake and Dam Project. Compliance with most of your requests has been incorporated into the final report. A few matters, however, are better discussed in this reply letter. The "points" referenced below correspond to the recommendations made by your office.

Point 12. Our term "general" is in reference to the geographic location of certain plants and not to the plants themselves. The botanist, Perry, speaks in terms of "hilly areas" or, rarely, "hilly regions in Minnesota" (Owens 1852). At the time of the expedition, the Pembina Hills of North Dakota were part of the Minnesota Territory.

Point 13. We feel that an expansion of the ecological section would go beyond the time and money allotted for this report and beyond the professional expertise of our staff. This would, in our opinion, represent an interesting project for a person with a solid background in the ecological sciences.

Point 45. In North Dakota, site numbers are distributed by the State Historical Society. In the past, the Historical Society assigned 'blocks' of numbers to archaeologists, historians, and historical architects prior to their entering the field. Kenneth Ames, for instance, may have received a block from 32CV201 to 32CV300, or even 32CV400. Numbers not used by the archaeologists, etc., during a particular field season are given back to the Historical Society to be used in the future. At times there may be several blocks in the field at once. Backlogging of records and the failure of field persons to promptly report sites created a situation in which unused blocks were not being filled. This system of "block assigning" was recently abolished by the State Historical Society.

Point 64. To the best of our knowledge, none of the 16 archaeological sites recorded by Wheeler or Ames which may be adversely affected by the Pembilier Lake and Dam Project have been nominated to the National Register of Historic Places.

Point 66. We are of the opinion that the Recommendation Section at the concluding portion of this final report is in compliance with Section 6.02(i) - Scope of Work.

We sincerely hope that this final report satisfies your requirements, and will provide an aid to those involved in subsequent research in the Pembilier Lake and Dam Project Area.

It has been a pleasure working with you.

Sincerely,

HISTORICAL AND ARCHAEOLOGICAL
SURVEYS, INC.

Kent N. Good
President

JCD/mhs

## ADMINISTRATIVE SUMMARY

A literature and records search was conducted for the area to be affected by the proposed Pembilier Lake and Dam Flood Control Project. This area is along the Pembina River, southwest of Walhalla, North Dakota, near the Cavalier-Pembina county line. The majority of the study area lies within Cavalier County (Map 1, p.2). Investigations included the examination of books, articles, and published and unpublished reports pertinent to the study area. Records maintained by local and state agencies, e.g., the State Historical Society of North Dakota, were reviewed so as to document the locations of known cultural resources. Most work was accomplished at the State Historical Society and at the University of North Dakota, Chester Fritz Library and Department of Anthropology and Archaeology--Archaeological Research library. Records and documents were checked, however, at Dresden and Langdon, North Dakota, as well as the Hudson Bay Company and Manitoba Provincial Archives.

A total of 18 archaeological sites and 6 historical sites were reported and/or recorded in the literature and records. Sixteen of the 18 archaeological sites are in danger of being adversely affected by construction of the proposed dam (Figure 3, p.19). All 16 endangered archaeological sites are composed of cultural debris scattered in areas disturbed by agricultural practices. The historical sites include two small communities established in the late 19th century, one site of a Post Office established in the late 19th century, one site of an early 20th century brick plant and associated community, one school house erected in the 20th century, and one site of a Metis massacre, a result of a Sioux uprising in 1874. None of the historical sites is presently occupied. Of the six historical sites, only two appear to be in danger of being adversely affected by construction of the proposed dam; one of the communities and the brick plant and associated hamlet. The location of the former community is not firmly established.

Since little archaeological testing has taken place at the 16 endangered sites, it is difficult to suggest which archaeological sites will provide the most valuable information. Moorhead State (Minnesota) spent approximately 2 weeks in the study area recording and testing sites. We recommend that the area be resurveyed to record further resources, both archaeological and historical. Furthermore, we recommend an intensive archaeological testing program be initiated for the study area to identify the valuable resources.

Probably the most important historic site recorded in the study area is the Mayo Brick Plant. Although we did not attempt to locate it in the field, local residents indicated that remnants of the plant are still in existence. Very little is known concerning these types of plants; the plants responsible for manufacturing alternative building materials in the Plains during the early part of the 20th century. Also, the process of manufacturing the bricks

is not well-documented. We recommend further investigation of the Plant, including photography of existing equipment and possible standing structures. In conjunction with the fieldwork, an indepth deed search and an oral history of the area should be performed.

One criticism of the literature and records search is the lack of much-needed time to do a thorough documentation of particular sites, such as the Mayo Brick Plant. We are aware, however, that it is virtually impossible to complete any research project, since research is a self-perpetuating process. With the timeframe established by the Corps of Engineers, we feel our company has provided the Corps of Engineers with a very usable product. Another problem encountered were the inaccuracies in records and documents about when particular events took place. This problem is compounded, since most research projects are under the duress of time and thus, very often second-hand information is accepted as fact. The vast amount of information needed to accomplish a "primary source" literature and records search is directly related to time.

TABLE OF CONTENTS

## LIST OF MAPS

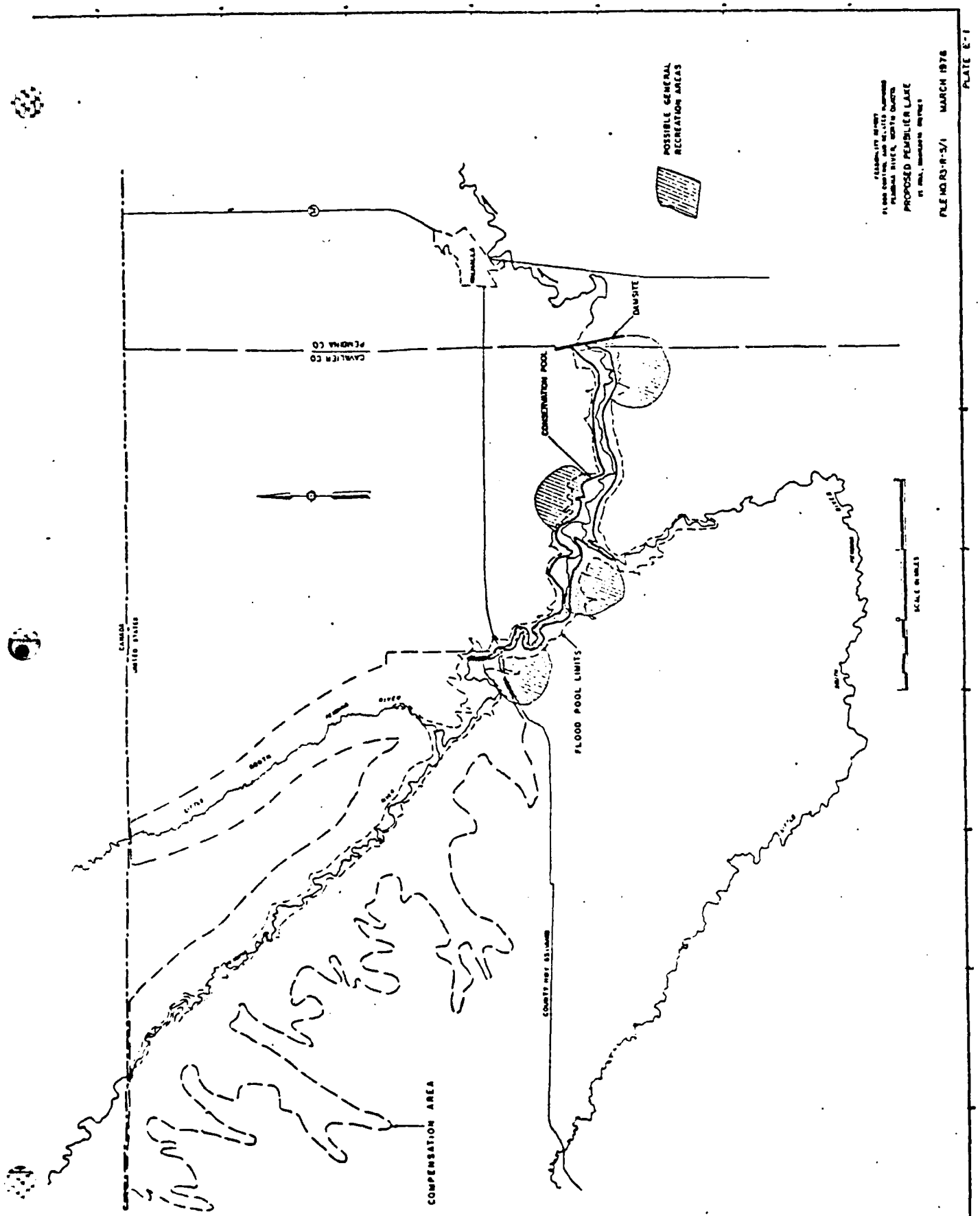


## LIST OF FIGURES

# INTRODUCTION

The following report represents a cultural resource literature search and records review of the Pembilier Lake and Dam Flood Control Project, North Dakota. This investigation is based on a comprehensive review of existing records as well as a review of published and unpublished literature pertinent to the study area. The objectives of the literature search and records review are to identify all the known cultural resources which may be affected by the implementation of the proposed project, to identify gaps existing in our knowledge of the cultural resources of the area, to identify biases which may be inherent in the data base, and to recommend research goals for further investigation. The report of this investigation not only fulfills federally-mandated legal requirements, but also serves as a scientific reference for future professional study.

According to the Scope of Work, "The purpose of the proposed Pembilier Lake and Dam Project is to reduce economic damage and social problems associated with floods on the Pembina River. This will be accomplished by the construction of a rolled earth-fill dam and associated structures on the Pembina River southwest of Walhalla, North Dakota, near the Cavalier-Pembina County line (Map 1). The reservoir created by the construction of the dam would be 1/2 to 3/4 mi. wide, 7 mi. long, and would have a surface area of about 800 acres. Other aspects of the project may include road modifications, recreation facilities, and the purchase of wildlife compensation areas," (U.S. Army Corps of Engineers 1980, Contract No. DACW37-80-C-0027). The project area is covered by the following U.S. Geological Survey Quadrangle Maps: Walhalla Quadrangle (1964); Vang Quadrangle (1972); and Olga, NW Quadrangle (1969).




Map 1. U.S. Army Corps of Engineers, Contract No. DACW37-80-C-0027

## STUDY METHODS

The body of this report is separated into two major divisions; the first deals with prehistoric events in and about the Pembina Hills (Figure 1), the second describes the area's historic past. The prehistoric portion is further divided into the following sections: 1) geology, 2) paleontology, 3) ecology, and 4) archaeology. The first three sections have been created to supply the reader with a better overall picture of the area's environment. The archaeological section relates previous archaeological studies in the area and states recommendations for further work. The historic portion of the report contains two sections. The first deals with the American Indian and Metis occupations of the study area and its surroundings. The second section describes some of the cultural influences on the area from Alexander Henry's temporary post in 1800 to the establishment of the Mayo Brick Plant in the early part of the 20th century.

The geology section is very basic and has been drawn largely from an article by Dr. Wilson Laird (1951), who was at the time the North Dakota State Geologist. Supplementary information was taken from professional geological journals.

The paleontological section is based primarily on select portions of a report by Holland (1977), which deals with paleontological finds in Cavalier County. Again, supplementary materials have been obtained from professional geological and paleontological publications and theses found in the University of North Dakota Geology Library.

The main source for the analysis of archaeological work previously undertaken in the Pembina River Coulee has come from Kenneth Ame's (1975) survey and test report submitted to the U.S. Army Corps of Engineers. Additional information pertaining to archaeological sites or potential sites in the specific study area was obtained from reviews of certain site and site lead files contained at the State Historical Society of North Dakota in Bismarck.

The archaeological record of Cavalier and Pembina counties, in particular, and eastern North Dakota in general, is quite incomplete. The reasons for these data gaps are the relative paucity of archaeological fieldwork undertaken there, and the apparent lack of attempts to synthesize existing material.

Because so little is known about this area archaeologically, the focal point of the report is expanded to include selective work from a geographical and Plains Indian cultural region defined by Wedel (1961) as the Northern Periphery Region of which our study area is a part (Figure 2). Discussion of the region is facilitated in part by reviews of articles contained in professional journals, such as the Plains Anthropologist and American Antiquity. A greater proportion of published archaeological material in the form of books has come from the state of Minnesota and the province of Manitoba as

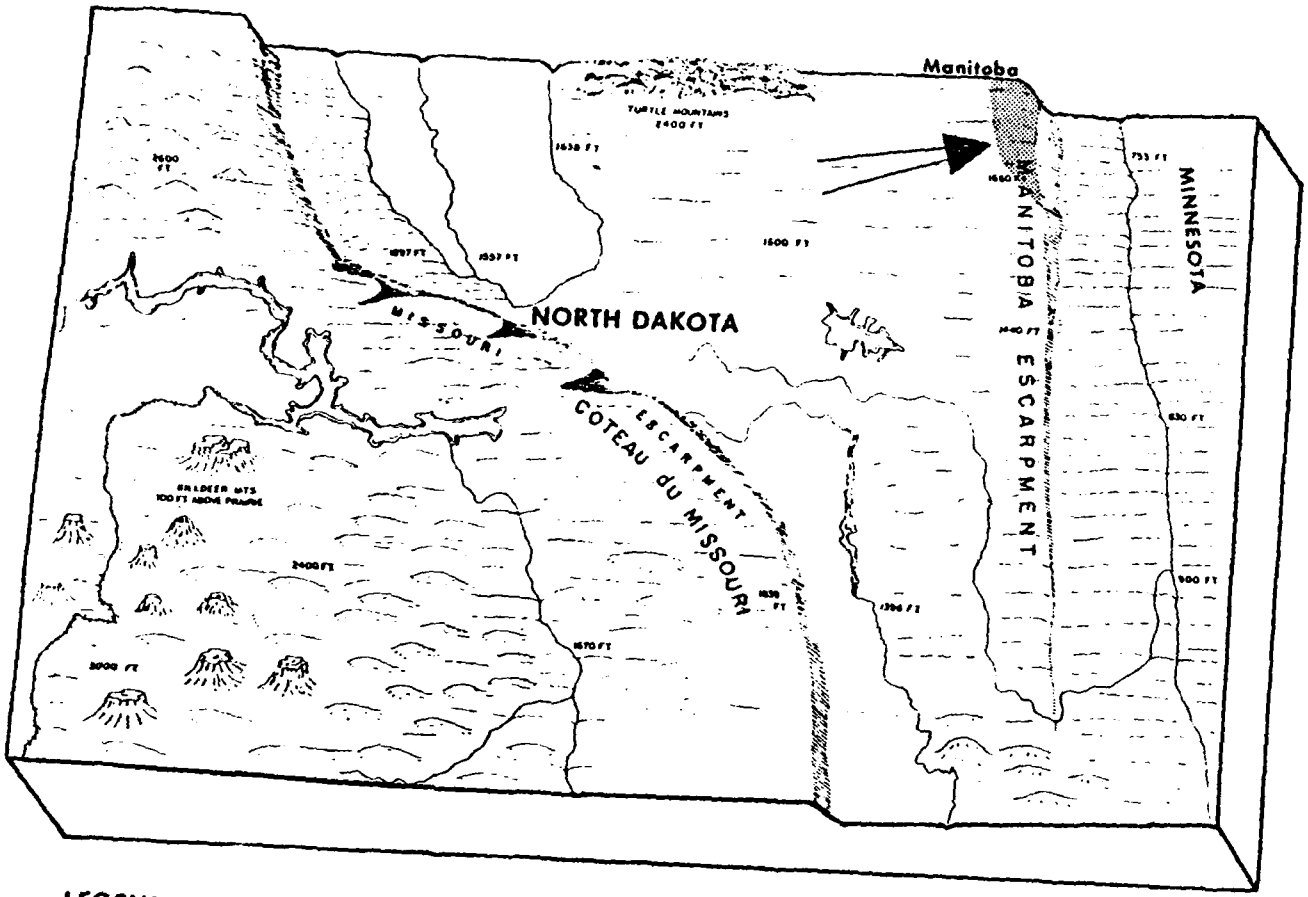
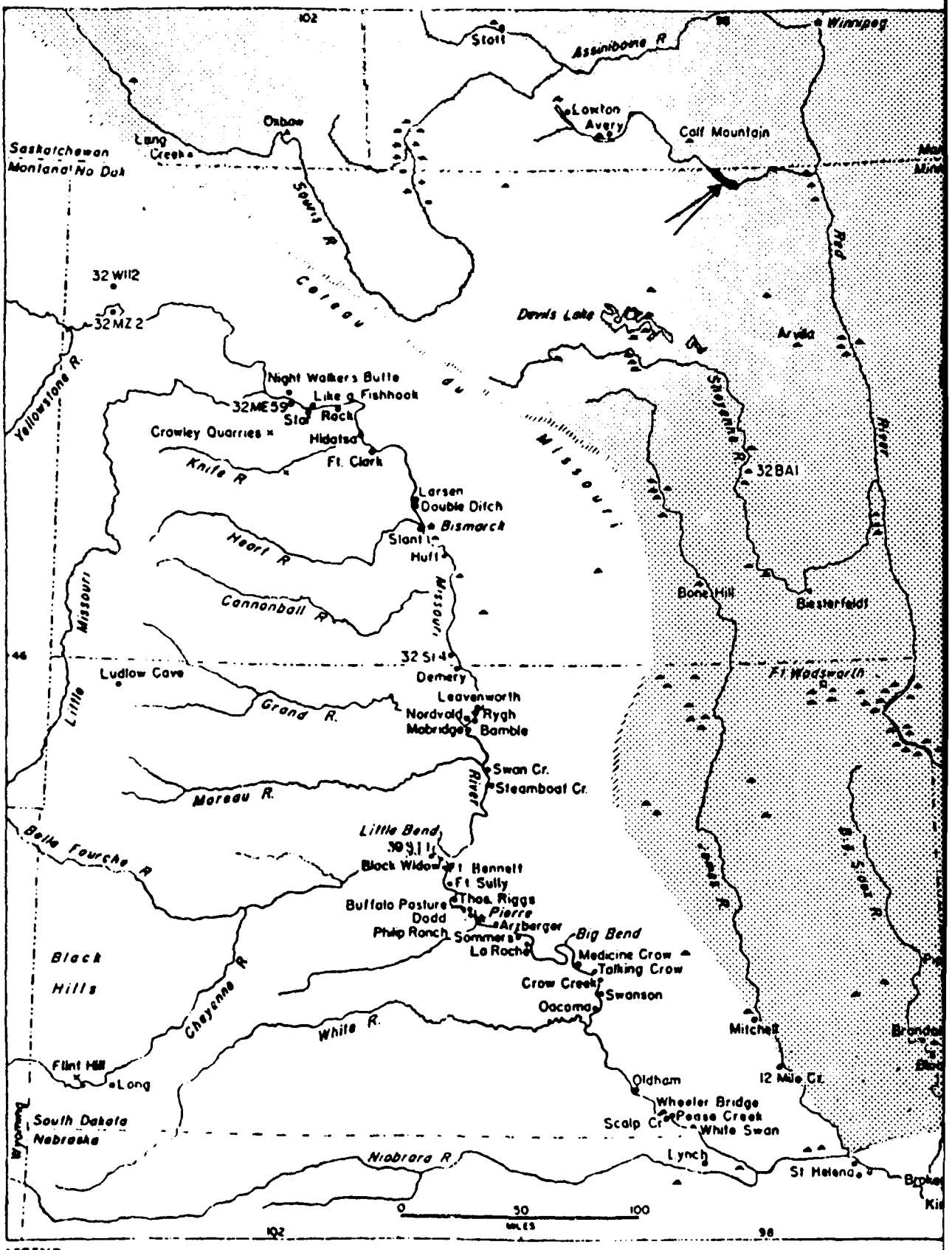



Figure 1. Location of Pembina Mountains in North Dakota. (Note, Pembina Mountains extend

Figure 2. Northeastern Plains Periphery and Middle Missouri Regions in Relation to the Study Area.



compared with material from North Dakota. Ten Thousand Years Archaeology in Manitoba (Hlady 1970) is a classic attempt to synthesize archaeological endeavors in Manitoba. The text and references list many unpublished eastern North Dakota site reports, included in the holdings of the State Historical Society of North Dakota and the University of North Dakota Department of Anthropology and Archaeology.

The historical portion of the report, which deals with Indian-Metis culture profiles and these groups' occupation of the area, has been drawn from articles by professional and amateur historians from publications such as the Collections of the State Historical Society of North Dakota and reports published by the Bureau of American Ethnology. Unpublished manuscripts by tribal historians are also cited.

In the section dealing with the later history of the area, a considerable amount of text is dedicated to describing the settlement of St. Joseph, later known as Walhalla. This community lies a few miles east of the actual study area. So little has been written about the occupation of the Pembina Hills that it became necessary to study the much more extensively documented case of Walhalla, in hope that mention would be made of the "mountains" to the west. The major literary source for the early fur trade influence on the area comes from Alexander Henry, Jr.'s journal recorded from 1800-1808 (Coues 1897). Unfortunately, there seems to be little first-hand documentation of the fur company's emergence into the area and the eventual establishment of the Mission of St. Joseph in the 1840's and 1850's. Consequently, there is a great deal of disagreement between the various professional and amateur historians who have written about the area during this period. The major sources for information concerning the early development of Walhalla and the surrounding area are from letters and reminiscences by Miss Ernestine Mager and collected by Winifred Working. Miss Mager spent over half of a century in the area, first coming to Walhalla in the early 1870's. A great deal was learned from old atlases and plat maps. Unfortunately, the earliest atlas that was found involving the Pembina Hills was not published until 1910. The "Hills" in the study area were apparently not surveyed until sometime after 1884. A search for property deeds was conducted at the Cavalier County Courthouse in Langdon, but time was allowed for only a cursory review. Old newspaper articles found in the Cavalier County Museum in Dresden were also helpful, but again, temporal constraints did not allow an adequate search.

## BASIC GEOLOGY AND PHYSIOGRAPHY OF THE PEMBINA HILLS

Most of the land affected by construction of the proposed Pembilier Dam, as defined earlier in this report, is contained within an area known as the Pembina Hills. What follows is a brief physiographical sketch of this area. Most of the information was drawn from a short article by Dr. Wilson Laird (1951) who was at the time the North Dakota State Geologist. More detailed information may be obtained from Bluemle (1972) and Arndt (1975).

The part of the geological time table pertinent to the discussion of the formation of the Pembina Hills starts in the upper part of the Cretaceous Period, approximately 100 million years ago. At the beginning of the Upper Cretaceous Period, the seas were beginning to spread onto the continental interior from both the Arctic and the Gulf. Before this period ended, the seaway extended 3,000 mi. north to south and from central Minnesota to the Rockies.

The areas bordering this seaway were constantly undergoing erosion, and were furnishing large amounts of sediment to the sea. This sediment formed the great masses of shale which we see in the Pembina Hills today.

After the deposition of the Dakota sandstone, which formed as the sea gradually spread eastward and blanketed the area with a relatively thin layer of sand and mud, the sea deepened and only the black carbonaceous clays of the Benton Formation were deposited. This formation is more commonly known as the Carlyle Formation.

After the Benton or Carlyle clays were deposited, living conditions in the sea improved and the gray clays making the Niobrara Formation were laid down. They are now gray limey shales which at the top have such a high lime content that they are almost limestone and are referred to as "cement rock." During this formation, sea life became more abundant.

Overlaying the Niobrara Formation is the Pierre Formation, also of Cretaceous age. The Pierre Formation, particularly those units nearest the basal portion of the formation, is extremely bentonitic; the clays are volcanic in origin. These clays were definitely deposited in the sea, however, their original source may have been hundreds of miles away. This formation locally contains abundant remains of the clam Incocemmus (Laird 1951).

After the Pierre shales formed, deposition of sediment in this area ceased until relatively recently. After the deposition of the Pierre, the sea bottom was gradually uplifted, and erosion resulting from running water began to take place. Streams began to cut valleys and eventually the area was worn down to a relatively flat surface or a peneplain.

Today the upper surface of the Pembina Hills shows a relatively level, slightly rolling surface. Geologists generally agree that

with slight modifications, the hills probably resembled their present appearance before glacial ice covered the area.

While some erosional modification was taking place in the Pembina Hills, the climatic conditions in the far north had been gradually changing. While the annual temperature had been falling, the snowfall each winter had been increasing. Consequently, with the end of each summer, some snow remained unmelted. The snow accumulated year after year and finally began to compact into ice, which in turn accumulated to such thickness that it began to flow outwardly, due to pressure of depth accumulation.

The study area was glaciated several times during the Pleistocene. However, most of the surficial deposits in Cavalier County, including the Pembina Hills, are the direct result of deposition of sediments by glaciers which occupied most of North Dakota as late as 13,000 years ago (Arndt 1975). These surficial till units are all Late Wisconsin in age and are probably the result of the same ice advance (Arndt 1975).

An important secondary effect of glaciation was the damming of northward flowing streams such as the Red and Souris rivers. The large lakes formed by the ponding of the rivers were Lake Agassiz and Lake Souris, respectively.

As the ice front kept receding, meltwater from Glacial Lake Souris in northcentral North Dakota and southern Manitoba overflowed with great force through the present Pembina valley, thus creating the Pembina River Gorge and the gorge on the Little Pembina River. The large quantities of sediments, consisting chiefly of granite and Pierre shale, were carried along and deposited at the river's mouth in Lake Agassiz as a delta (Bluemle 1972). This delta is present at the eastern-most portion of the study area.

After the glacial lakes disappeared entirely, the prime agent in the formation of landscape was running water. The streams are still downcutting in the area.

## BRIEF ECOLOGICAL SKETCH OF THE PEMBINA HILLS AREA

### PAST AND PRESENT

Alexander Henry, Jr., fur trader for the North West Fur Company, established a number of trading posts in and about the present state of North Dakota during the period 1800-1808. For most of this period Henry annually established a wintering post in or about the "Hair Hills," in this instance a term synonymous with Pembina Hills.

As part of his duties, Henry was required to record the annual fur returns from each of his posts. In addition, Henry's journals contain numerous entries which relate to the animal species of the region. Elliot Coues (1897) has edited Henry's journals adding many timely footnotes. Russel Reid and Clell Gannon (1929) have synthesized the faunal data contained in Henry's journals (Coues 1897) and, consequently, present a detailed account of the types and quantities of wildlife thought to be present in the Pembina River basin during the initial decade of the 19th century.

This section attempts a comparison of the faunal types reportedly found in the area of the Pembina River in the early 1800's with a list of wildlife reportedly found in the same area today. The source for current species composition of the area is the Draft Environmental Impact Statement for Pembilier Lake and Dam in the Pembina River Basin North Dakota (Corps of Engineers 1975). While both sources, past and present, deal with the area of the Pembina River basin as a whole, this section attempts to focus on the Pembina Hills in particular. The order in which these species are presented has been adopted from Reid and Gannon's (1929) article.

It was our original intent to present a comparison of the floral species found in the area similar to the comparison of the faunal species. However, Henry wrote less about the plants of the area than he did the animals, and there does not appear to have been an attempt to synthesize the floral data which he did report. In the latter part of the 1840's, Dale Owen, a geologist, conducted a scientific expedition through a portion of the mid-western United States which includes the Pembina and present Walhalla area (Owen 1852). The expedition included a botanist named Parry who presented an extensive list of the floral species encountered on the trip (Owen 1852). The geographic locations of these plants are of too general a nature to be of much value to this study.

In lieu of a botanical comparison, past and present, for the Pembina Hills, a list of the ground cover species currently found within the study area is provided in this report. The list was extracted from an exhibit in the Draft Environmental Impact Statement (Corps of Engineers 1975). This list was recorded in an area which, at the time, was slated to be inundated. Even though this is no longer the case, the list should supply a good general feel for

for the native vegetation of the Pembina Hills. A similar list will be supplied for the fish currently found in the Upper Pembina River valley of North Dakota.

Mammals

Bison bison - There are many references to the vast number of buffalo encountered along the Pembina River by Henry (Coues 1897). Historically, the presence of huge bison herds was the major factor for the occupation of the area. With the extermination of the bison east of the White Earth River (western North Dakota) in the late 1860's and early 1870's, a major decline in the human population in and about the study area is seen. No native bison are found within the Pembina River basin today.

Antilocapra americana - Henry referred to pronghorned antelope as "cabri" or "jumping deer" (Coues 1897). Apparently they were very rare to the area even then. In 1801 Henry states that an Indian brought a fat "cabri" to his Pembina River post. The antelope is not presently found in the area because it is too far west of their range.

Alces alces - The largest number of moose recorded in Henry's return books were from his Pembina and Hair Hills posts. He noted that many moose frequented the swampy areas between the Pembina and Tongue rivers (Coues 1897). While a regionally rare animal, some moose are thought to reside in the area, particularly in the Little North Pembina Gorge Natural Area (Corps of Engineers 1975).

Cervus canadensis - Elk were referred to by Henry as "red deer." He states that with the exception of the buffalo, this animal was the most important source of food for his party (Reid and Gannon 1929). Elk have been reported in the area in recent years, but their occupation is probably transitory (Corps of Engineers 1975).

Ondatra zibethica - Muskrats, though probably common in the area during Henry's time, did not possess trade pelts. This fact is probably supported by the relatively small numbers of muskrat furs recorded in Henry's returns. Muskrats are found in the area today, but the relative population of the species is not currently known.

Castor canadensis - Beaver, along with bison, were the most important animals in the days of the plains fur trader. Henry states that in 1800 his Indian trappers had found relatively large numbers of beaver at the Hair Hills but would not kill more than they could carry on their backs (Coues 1897). By 1805 or 1806 when the beaver had become scarce in the hills, Henry discontinued his wintering post there (Coues 1897). Today, beaver are considered numerous in North Dakota and the Upper Pembina valley is considered one of the best beaver habitats in the state (Corps of Engineers 1975).

Lepus townsendii - Henry mentions the presence of jackrabbits in the area, but since they were not taken for their fur, it is impossible to estimate the relative specie population. No mention is made of jackrabbits in the Draft Environmental Impact Statement (Corps of Engineers 1975).

Lynx canadensis - From 1801 to 1804, lynx appear to have been fairly common in the area, many being taken from the hills. After this time, few lynx pelts were counted. It is not known whether this indicates an actual decline in the species in this area. Lynx, though exceedingly rare in the region today, may reside within the Little North Pembina Gorge Natural Area (Corps of Engineers 1975).

Canis lupus and Canis latrans (wolf and coyote) - While Henry resided along the Pembina River, wolves were reportedly very common in the entire region. During five seasons in the Hair Hills, 943 wolf pelts were taken (Reid and Gannon 1929). It must be noted, however, that a good portion of this number was probably represented by coyotes, since Henry differentiated the two species by size only. Today, wolves are exceedingly rare along the Pembina River, but have been sited on occasion in the St. Joseph Woods Natural Area--about 10 mi. east of Walhalla (Corps of Engineers 1975). Coyotes have also been reported in the general area in recent years.

Vulpes vulpes - The red fox was apparently very common in the entire region during the early 1800's (Reid and Gannon 1929). This species is apparently still present in the area, but how extensively was not noted in the Draft Environmental Impact Statement (Corps of Engineers 1975).

Vulpes velox - The swift fox, though much less common to the area than the red fox (even in Henry's day), was reportedly most numerous in the Hair Hills (Reid and Gannon 1929). No mention of this species of fox is made in the Draft Environmental Impact Statement (Corps of Engineers 1975).

Mustela sp. - While weasels are not mentioned by Henry (except in Canada), Reid and Gannon (1929) believe that the ermine (Mustela erminea) resided along the Pembina River in the early 19th century. Weasels are said to exist along the Pembina River in North Dakota today (Corps of Engineers 1975).

Mustela vison - Many mink were taken to Henry's Pembina River post, while the proportion was much less at the Hair Hills establishment (Reid and Gannon 1929). The mink is still an important fur-bearer found along the Pembina River today (Corps of Engineers 1975).

Martes americana and Martes pennanti (marten and fischer) - The marten and fischer were both very common animals in the vicinity of the Hair Hills in the initial part of the 19th century (Reid and Gannon 1929), Neither specie is apparently found in the Pembina River valley today (Corps of Engineers 1975).

Gule luscus - While wolverines were never common in the area during Henry's occupation of present day North Dakota, they did reside there and a few were taken from the Hair Hills area (Reid and Gannon 1929). None apparently exist in the entire region today.

Lutra canadensis - Otter appear to have been fairly common along the Pembina River between 1801 and 1808, however, the number of otter pelts taken from the Hair Hills area was very low (Reid and Gannon 1929). There is reportedly some evidence of the existence of otter in the Pembina River valley today (Corps of Engineers 1975).

Taxidea taxus - Judging from return accounts, the badger was uncommon in the region, as very few were brought in by Henry's trappers. Of course, this may also indicate that the fur was considered of little value. The Hair Hill posts yielded the greatest numbers of badger pelts, however, most of these were recorded from the later wintering establishments, presumably located in present day Manitoba (Reid and Gannon 1929). The Corps of Engineers (1975) does not mention the presence of badgers in the Pembina River valley, and it is assumed that none have been reported in the area within recent years.

Mephitis mephitis - Skunk are not entered in Henry's account books, however, he does mention their existence in present day North Dakota in 1800 (Coues 1897). Skunk are represented in the study area today. The extent of this population is not known.

Procyon lotor - Raccoons appear to have been common throughout the entire region in the early 1800's. According to Henry's return books, however, the Hair Hills was an area which supported one of the smaller populations (Reid and Gannon 1929). Raccoons are still quite common along the Pembina River valley.

Ursus americanus - Henry reports that black or cinnamon bear were found in abundant numbers throughout the entire region. During five seasons in the Hair Hills, nearly 200 "common bear" pelts were collected (Reid and Gannon 1929). An albino bear was reportedly sited near the Hair Hills post in 1800 (Reid and Gannon 1929). This post was probably located a short distance south of the present town of Walhalla. Black bear have been reported on rare occasions within the Pembina River valley. However, these occupations have probably been transitory (Corps of Engineers 1975).

Ursus horribilis - Grizzly bear, while apparently very rare in the Red River valley, were said by Henry to be much more numerous in the Hair Hills (Reid and Gannon 1929). No grizzlys are thought to be present anywhere in the entire region today.

Odocoileus virginianus - White-tailed deer, referred to by Henry as "fallow deer," seem to have been exceptionally rare in the Red River valley, but were said to be common along the Red Lake River, a short distance east (Reid and Gannon 1929). Today, the study area supports a large population of white-tailed deer (Corps of Engineers 1975).

## Birds

Henry was not a naturalist, and his interest in natural history was only from the standpoint of a fur trader. He usually made reference to birds in general terms and made no specific mention of birds in the Hair Hills.

The following list was extracted from Reid and Gannon's (1929) article, and consists simply of a number of Henry's bird sitings. These sitings were made in present day northeastern North Dakota between 1800 and 1808.

Larus sp. - Gulls
Pelecanus sp. - Pelicans
(Many unspecific references) - Ducks
Mergus sp. - Shell drake
Branta canadensis - Canadian geese (and possibly others) (Reid and Gannon 1929)
Olor sp. - Swans
Ardea herodias - Great Blue Heron (according to Henry's claims)
Grus americana - White or Whooping crane (Reid and Gannon 1929)
Grus canadensis - Sandhill crane (Reid and Gannon 1929)
Bonasa umbellus - Ruffed grouse Reid and Gannon (1929) believe a reference to pheasant is a reference to ruffed grouse.
Eclopistes migratorious - Passenger pigeons

The orange-crowned warbler (Vermivora celata), the eastern rufus-sided towhee (Pipilo erythrophthalmus), and the white-throated sparrow (Zonotrichia albicollis) are specifically said to reside within the Little North Pembina Gorge Natural Area (Corps of Engineers 1975).

The leading upland game bird within the Pembina River valley is the ruffed grouse (Bonasa umbellus). Other upland game birds in the general area include the Hungarian partridge (Perdix perdix), the sharp-tailed grouse (Pediocetes phasianellus), ring-necked pheasant (Phasianus colchicus), and the wild turkey (Meleagris gallopayo). Pheasants and wild turkeys were being stocked in the area in 1975 (Corps of Engineers 1975).

The area also supports the wood duck (Aix sponsa). Slackwater areas along the Pembina River and its tributaries also provide brood cover for a few mallards (Anas platyrhynchos), pintails (Anas acuta), and blue-winged teal (Anas discors) (Corps of Engineers 1975).

## Fish

Henry makes much mention of fishing nets being placed in the Red River near his Pembina post. It is unclear whether or not Henry's men fished in the Pembina River. A list of the possible types of fish netted from the Red River between 1801 and 1808 is found in Coues (1897).

Because of the lack of adequate permanent summer flows in the Pembina River, the population of game fish is not large and fishing pressure is very limited. At least 12 species of harvestable fish are thought to be present in the Pembina River today (Corps of Engineers 1975). Those species are listed below.

Esox lucius - Northern pike
Stizostedion canadense - Sauger
Stizostedion vitreum - Walleye
Ictalurus punctatus - Channel catfish
Pomoxis nigromaculatus - Black crappie
Ictalurus melas - Black bullhead
Ictalurus nebulosus - Brown bullhead
Catostomus commersoni - White sucker
Ictiobus cyprinellus - Bigmouth buffalo
Moxostoma macrolepidotom - Shorthead redhorse
Cyprinus carpio - Carp
Carpiodes forbesi - Plains quillback

Along with these harvestable fish, 16 species of forage fish were noted (Corps of Engineers 1975), but not listed per se.

Flora

Henry makes a few comments about the vegetation of the Pembina River area. These statements appear to be too few in number and general in nature to use in comparison with floral species known to exist in the area today.

The following list is of vegetative species encountered along the Pembina River. The list has been taken from the appendix section of the Draft Environmental Impact Statement (Corps of Engineers 1975). It should be noted that the reproduction of this list is not intended to represent a thorough inventory of vegetative species to be inundated by the dam project. It does, however, supply a general feel for the vegetation of the Pembina River valley.

Trees

Ulmus americana L. - American elm
Populus balsamifera L. - Balsam poplar
Tilia americana L. - Basswood
Acer negundo - Boxelder
Quercus macrocarpa Michx. - Bur oak
Fraxinus pennsylvanica var. subintegergma - Green ash
Betula papyrifera Marsh. - Paper birch
Salix amygdaloides Anders - Peachleaf willow
Populus tremuloides Michx. - Quaking aspen

Shrubs and Other Ground Cover

Corylus cornuta Raf. - Beaked hazel
Prunus virginiana L. - Chokecherry

Ribes sp. - Current or Gooseberry
Viburnum rafinesquianum Schultes - Downy-leaved arrowwood
Corylus americana Walt. - Hazelnut
Stachys palustris L. - Hedge nettle
Lonicera dioica L. - Honeysuckle
Ostrya virginiana (Mill.) Koch - Ironwood
Amelanchier alnifolia Nutt. - Juneberry
Rhus radicans L. - Poison ivy
Rosa arkansana Porter - Prairie wild rose
Cornus stolnifera Michx. - Red osier dogwood
Rubus idaeus L. - Red raspberry
Rhus glabra L. - Smooth sumac
Symphoricarpos albus L. - Snowberry
Cirsium sp. - Thistle
Parthenocissus inserta Fritsh - Virginia creeper
Aralia nudicaulis L. - Wild sarsaparilla
Symphoricarpos occidentalis Hook - Wolfberry

## PALEONTOLOGY OF THE PEMBINA HILLS

With the knowledge that the Pembina Hills were originally formed by marine deposition of various clays, the shales from which represent the oldest exposed geologic formation in North Dakota (Carlyle shale), there should be little surprise that the hills area has yielded a relatively abundant number of paleontological localities. A report by Holland (1977) lists the presence of 15 paleontological sites or localities within Cavalier County. We were able to locate only 14 of this number from a list on file with the State Historical Society of North Dakota. Nevertheless, 6 of these 14 find areas appear to be directly within the bounds of the study area, the remainder are scattered within a few miles to the south, generally about the vicinity of Olga, North Dakota.

The following list represents a brief summation of the six paleontological localities found within the proposed dam area. Dr. F.E. Holland, Jr., of the Department of Geology, University of North Dakota, has expressed a wish that the exact legal location of these find areas not be published at this time.

1) The first locality is represented by plant and vertebrate fossils. These specimens are present in Niobrara shale found in Section 18, T.163N, R.57W. The source of this find is not known.

2) These specimens are the result of a 30 ft. section of the Niobrara Formation, tested in Section 18, T.163N, R.57W (Grunseth 1955). Grunseth identified 14 species of Foraminafera (Order of Protozoa), all of which were dwarfed. This dwarfism may have been the "result of transgression of Arctic Seas during Niobrara time" (Grunseth 1955). Grunseth feels that the sea was shallow but open when these specimens lived.

3) This find area represents an informal locality, similar to a site lead. The specimens are invertebrate and trace fossils found in Carlyle shale. This informal locality is reportedly found in Section 29, T.163N, R.57W (Holland, personal communication).

4) The fossils from this locality were reported by a University of North Dakota, M.A. Candidate (Wosick 1977). The specimens are represented by vertebrate and invertebrate fossils found in Carlyle shale within Section 29, T.163N, R.57W. We were unable to locate descriptions of the particular specimens.

5) This locality was recorded by Warren Upham (1896). The specimens, all found in Pierre shale, represent fossil mollusks, gastropods, and fish. Upham states that "in the talus numerous cycloid fish scales, and a vertebral bone, 1 3/4 in. in diameter, belonging to some selachian fish, were obtained" (Upham 1896). Selachian fish, incidentally, are a group containing sharks, rays and skates. This find area is located in Section 30, T.163N, R.57W.

6) The final locality was recorded by J.R. Gill and W.A. Cobban (1965). They mention abundant fish scales contained in the uppermost 3 ft. of Pierre shale that they examined. The fossils were found in a road cut within Section 30, T.163N, R.57W.

In conclusion, all fossils appear to be indicative of a marine environment. Fossils are represented in all three shale formations found in the Pembina Hills and include vertebrate, invertebrate, and plant fossils and microfossils.

## PREVIOUS ARCHAEOLOGICAL WORK IN THE PEMBINA RIVER COULEE

### Selected Archaeological Sites in Cavalier and Pembina Counties

As previously stated, archaeological investigations in Cavalier and Pembina counties have been minimal. According to the survey files contained at the State Historical Society of North Dakota, only one archaeological site was recorded in Cavalier County prior to 1975. The site, designated site 32CV1, was recorded by Richard Wheeler (1948) and is located within the study area. During portions of May and June, 1975, Kenneth Ames and a crew from Moorhead State College, undertook an archaeological survey of the Pembina River Coulee in the Pembilier Dam Project area (Ames 1975). This survey, funded by the U.S. Army Corps of Engineers, recorded 17 archaeological sites in Cavalier County, two of which were tested. It must be mentioned, however, that two of the sites recorded by Ames, 32CV204 and 32CV205, are actually the same site as 32CV1, recorded by Wheeler. Because of this, the State Historical Society of North Dakota recognizes only 16 recorded archaeological sites along the Pembina River in Cavalier County, all of which could be inundated by the construction of the proposed Pembilier Dam (Figure 3). One additional site has been recorded in Cavalier County, site 32CV401. Site 32CV401 is a burial site recorded on 15 June 1976 by Dr. Fred Schneider of the University of North Dakota Anthropology and Archaeology Department. Dr. Schneider was called to the site after the human skeletal remains had been removed by construction activities. No apparent burial goods were associated with the remains. This site is located approximately 9 mi. west of the study area and will not be discussed below.

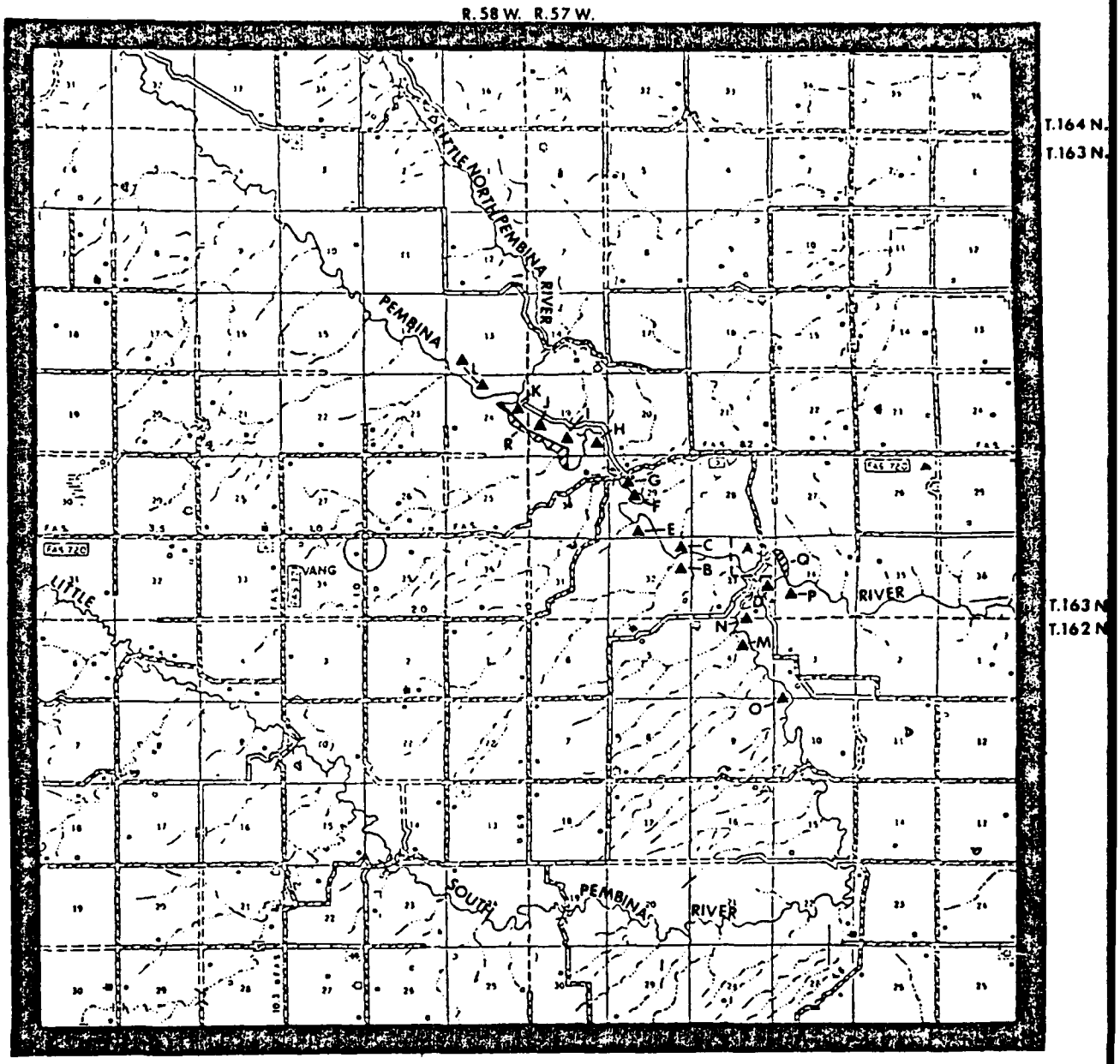
Ames recorded a site along the Pembina River in Pembina County. This lithic scatter site, 32PB201, is located in the SW¼ of the NW¼ of Section 28, T.163N, R.56W. Situated approximately 1 mi. south of Walhalla, this site will not apparently be affected by the construction of the proposed dam, and thus the site will not be discussed below.

The following is a brief description of each of the 16 sites which may be adversely affected by the proposed Pembilier Dam Project.

32CV1 - This site is located in the NE¼ of Section 33, T.163N, R.57W, and was first recorded by Wheeler (1946). Wheeler merely mentions that "a small collection of stone tools, cores, chips and unidentifiable bone was accumulated from the bottom of the furrows and on the surface of this area" (Survey Form, University of North Dakota Archaeological Research).

Ames (1975) recorded two sites, 32CV204 (Carpenter I) and 32CV205 (Carpenter II) in the same area. The Carpenter I site is located on the bank of the Pembina River approximately 4 mi. west of Walhalla and the Carpenter II site is located nearby. Both of these sites are considered to actually be site 32CV1.

Surface debris found at 32CV204 includes flakes, cores, small bifaces, and a single, side-notched projectile point. Ten artifacts




**LEGEND**

General area of 32CV1

Possible location

▲ Site location

A — General area of 32CV1
B — 32CV201
C — 32CV203
D — 32CV206
E — 32CV208
F — 32CV209
G — 32CV210
H — 32CV211
I — 32CV212
J — 32CV213
K — 32CV214
L — 32CV215
M — 32CV216
N — 32CV217
O — 32CV218
P — 32CV219
Q — Possible location of Mayo Brick Plant
R — Possible location of Valmont

N

0 1 2
miles

Figure 3. Known Archaeological and Historic Sites in Proposed Pembilier Dam Project Area--Northeast Cavalier County, North Dakota.

were recovered from two test pits on the site. These artifacts include the basal end of a side-notched projectile point, two bifaces and several cores and core fragments. All items were found within the plow zone. Among the surface materials observed at site 32CV205 were two projectile points (Ames 1975).

It should be noted that none of the surface materials apparently were collected from any of these sites by Ames in 1975.

32CV201, The Woodtick Site - This site is located in the NE¼ of Section 32, T.163N, R.57W, and was also chosen by Ames for testing. The surface material consisted of lithic debris. The artifacts recovered from three test pits (the fourth pit yielded no artifacts) include one plow blade fragment, one crockery fragment, a metal punch, one beaked end scraper, a grooved stone, two indented basal portions of a projectile point(s), and a core fragment. This site is located along the south bank of the Pembina River and, like many sites recorded in this survey, is situated on the first terrace above the present floodplain. The foundation of an European-style house is also present.

32CV203 - This site is situated on the north bank of the Pembina River, and is located in the NE¼ of Section 32, T.163N, R.57W. The site surface contains an unspecified amount of lithic debirs.

32CV204 and 32CV205 - As previously stated, these two sites are considered parts of site 32CV1, and were described under that section.

32CV206, Carpenter III - 32CV206 is situated on the southeastern bank of the Little South Pembina River in the SE¼ of Section 33, T.163N, R.57W. The observed surface material consists of scattered lithic debris.

32CV208 - Located in the SW¼ of Section 29, T.163N, R.57W along the west bank of the Pembina River, this site consists of lithic debris and an undisclosed amount of unidentified bone.

32CV209 - Situated on the northern bank of the Pembina River in the SW¼ of Section 29, T.163N, R.57W, this site consists of a light scattering of lithic debris and an undisclosed amount of bovis skeletal remains.

32CV210 - Located in the NW¼ of Section 29, T.163N, R.57W, this site lies along the western bank of the Pembina River. The surface debris is concentrated in two localities. The first contains lithic debris including flakes and bifaces. Approximately 200 m south of this point, bones of Bovids, Canids and Odocoelius were observed.

32CV211 - Situated along the southern banks of the Pembina River in the SE¼ of Section 19, T.163N, R.57W, this site consists of surface lithic debris.

32CV212 - Located in the SW¼ of Section 19, T.163N, R.57W and situated on the northern banks of the Pembina River, this site's surface materials include lithic debris.

32CV213 - Site 32CV213 is located in the SW¼ of Section 19, T.163N, R.57W just west of site 32CV212. The site consists of a heavy concentration of lithic debris, quartz and chert being the dominant materials. This is one of the few sites found along the second terrace above the present floodplain.

32CV214 - Consisting of lithic debris and faunal remains of Bovids, Odocoelius and freshwater mussel shells, this site is located in the NE¼ of Section 24, T.163N, R.57W and lies along the southeastern bank of the Pembina River.

32CV215 - 32CV215 is positioned along the north bank of the Pembina River in the SW¼ of Section 13, T.162N, R.58W, and the NW¼ of Section 24, T.163N, R.58W. Lithic debris, bone and mussel shell were found along the surface of this site.

32CV216 - This site is found in the NE¼ of Section 4, T.162N, R.57W. The site consists of two separate localities situated along the western bank of the Little South Pembina River. The first locality is found on the initial terrace above the present floodplain and consists solely of lithic debris. The second area is located on a higher terrace approximately 200 m north and west of the first area. The second area consists of lithic debris and one ceramic rim sherd.

32CV217 - Located in the SE¼ of Section 33, T.163N, R.57W and the NE¼ of Section 4, T.162N, R.57W, this site lies along the southeastern bank of the Little South Pembina River. The site consists of lithic debris with small amounts of Bovid bone.

32CV218 - Found along the second terrace above the Little South Pembina River, this site is located in the SW¼ of Section 3, and the NW¼ of Section 10, T.162N, R.57W. An unspecified amount of lithic debris along with a slight amount of Bovid bone were observed on the surface.

32CV219 - The final site recorded in Cavalier County by Ames (1975) is located in the SW¼ of Section 34, T.163N, R.57W. The site is situated along the first terrace above the present floodplain of the southern bank of the Pembina River. The site consists of a light surface scatter of lithic debris, mostly consisting of flakes and cores of quartzite.

## Summary

Ames (1975) report contains only a minuscule amount of descriptive information, and no analytical data pertaining to the artifacts or lithic debris encountered during survey or excavation. These inadequacies are not reflectant of Ames' expertise, however, but rather of the incredibly short time in which Ames was contracted to do both his field and lab work. The time allotted Ames was 3 weeks for field and lab work, and report preparation. Therefore, it is the author's belief that Ames' survey should be viewed only as a preliminary investigation.

Ames, aware of the temporal constraints on his project, has supplied an excellent list of recommendations for further archaeological work, which should be undertaken within the Pembilier Dam Project study area. The following is a brief summation of his recommendations.

1) Those areas not surveyed in 1975 because of the excessively brushy, woody nature of portions of the survey area should be randomly sampled through a system of test pits and auger cores. This would also potentially disclose the presence of deeply buried sites, if such sites do indeed exist.

2) A system of augering and/or test pitting should be established in areas already surveyed. This should be done for the same reasons listed above.

3) A program of controlled surface collection of known sites should be undertaken in a precise fashion. Each site should also be mapped to include this surface collection data.

Recommendations for excavation include the following.

1) Test excavation of known sites should be extended to supply a better sample of the coulee floor. These excavations should be conducted in undisturbed areas as well as in plowed locations and should be performed in conjunction with extensive surface collection.

2) Based on several models of possible settlement patterns in the coulee, test excavations should be conducted in localities with no surface indications. Ames does not supply the source for these models, nor are they relevant at present.

Ames (1975, p.18) summations should be regarded as preliminary statements based on a small number of sites and a scanty amount of cultural material. Ames states that:

1) All sites display relatively light surface distribution of lithic debris which primarily consists of decortication flakes, cores and very few tools.

2) No habitation debris was encountered, e.g., hearths, structural remains.

3) Cultural debris is most dense at a distance of 30 to 40 ft. above the river, along terrace edges, but may extend to the coulee rim. Major concentrations are found at the edge of the first terrace above the floodplain.

4) There are no good direct associations between faunal and artifactual material.

## Selected Archaeological Site Leads in Cavalier and Pembina Counties

In addition to the 17 sites recorded in Cavalier County, 16 of which are contained within the study area, the survey files list a few "site Leads." Site leads are sites visited, recorded or mentioned in the literature, which have never been verified, re-evaluated, or assigned site numbers. The site leads presented below were taken from questionnaires developed by the North Dakota Historical Museum and distributed to North Dakota school children by the WPA in 1930. The questionnaires, which deal with the locations of historic or prehistoric sites in the childrens' townships, were answered by relatives of the children. Those site leads dealing with historic materials are discussed in the historical section of this report.

1) A "mound," thought by the informant to be an Indian Mound, is located in T.163N, R.58W. Not only is this location too vague to allow for verification of the site, but in all likelihood the site has been modified or destroyed by agricultural activities, curio seekers and/or flooding activities. Upham (1895 and 1896) does not mention a mound in such a location.

2) A mound reported by W.A. Andrews (WPA File 1930) is located on a map as being situated near the Center of Section 6 in the Fremont Township. Andrews states that this "Indian Mound is supposed to be a monument in line with a mound at Devils Lake and one in Manitoba - separating Tribes of Indians" (Andrews WPA File 1930). Upham, however, speaks of a mound known as "Heart Mound...in the Center of Section 6, T.163N, R.57W"(1896). He continues that "some have erroneously supposed it an artificial mound" (Upham 1896). He states that it is actually a combination of glacial drift and an outcrop of Fort Pierre shale. This mound should not be affected by the activities associated with the dam project.

3) W.A. Andrews in the same questionnaire located a "fish trap" in the NE¼ of the SW¼ of Section 20 in the Fremont Township. Upham describes "fish trap" as "a rude weir of brush and poles, in the northeast corner of the northwest quarter of Section 30, Township 163, Range 57"(Upham 1896). Lowie (1954) states that nowhere in the area (Plains) were fish the staple, but sundry tribes caught fish at least when other food was scarce. Thus, if short of meat, the Cree caught river fish with the aid of weirs (Lowie 1954). Lowie also illustrates a Plains Cree fish weir. This is not to suggest that this fish trap was built by the Plains Cree or any other Indian group. It does serve to illustrate that literature on Plains Indian customs does make mention of such tools. It is highly unlikely that anything presently remains of this site, however, in the case that the area be resurveyed, some effort should be extended to locate the remains. The area of the river, if the weir still exists, should be south and slighty east of site 32CV212.

There are a number of site leads for Pembina County in the 1930 WPA Records File located at the State Historical Society of North

Dakota, mostly dealing with Indian mounds. None of the resources in these leads will be affected by construction of the Pembilier Dam.

Selective Summary of Archaeological Endeavors in the Northeastern Periphery Region

As mentioned in a previous section of this report, archaeological investigations in the northeastern corner of North Dakota have been minimal in number and rather poorly reported. While the former statement is true about eastern North Dakota as a whole, it is especially true in Cavalier and Pembina counties. Because of this, we feel it important to expand the view of the archaeological record to include selective work from a geographic and Plains Indian cultural region defined by Wedel (1961) as the Northeastern Periphery Region, of which the study area is a part (Figure 2, p. 5).

The textual portion of this subsection is designed to give the reader a general feel for some types of archaeological sites encountered in the region. Neither time nor money was adequate for this report to supply the reader with a detailed archaeological history of this region. The text deals disproportionately with areas lying outside North Dakota (predominantly Manitoba), which reflects the fact that this area has produced a greater amount of published material than has the area in North Dakota. This is partly compensated for in the references, which concentrate on eastern North Dakota, and consist of a great deal of non-published work, a large part of which pertains to Indian mounds. It should be noted that not all of the entries in the list of references are mentioned in text.

For the purpose of this report, the known archaeological time table of the North American Plains area may be divided into four periods as follows: Early Prehistoric or Paleo-Indian Period (circa 11,000 B.C. to 4,000 B.C.); Middle Prehistoric or Archaic/Woodland (circa 4,000 B.C. to A.D. 1000); Late Prehistoric Period (circa A.D. 1000 to the time of Euro-American contact, circa 1737); and the Historic Period (A.D. 1738 to the present).

We will briefly discuss selected archaeological sites found within or near the Northeast Periphery which represent each of the temporal periods. Possibly of particular interest to this study are the archaeological findings at and near the Avery Site in southwestern Manitoba (Figure 2, p. 5). The Avery Site is located at Rock Lake on the Pembina River, approximately 45 air miles north and west of the study area. Like the study area, the Avery Site is situated in a transitional ecological zone, between mixed forest and prairie. The site was excavated by Chris Vickers between the years 1944 and 1948, and again by Mayer-Oakes during the summer of 1966. Much of the data from the excavation of this and nearby sites has been extracted from an article by Dennis C. Joyes (1970). The Avery Site consists of a number of cultural components which span a period from approximately 1,500 B.C. to the 17th century.

## Paleo-Indian Period

In an attempt to avoid terminological problems, the term Paleo-Indian will be used here to refer to the New World's oldest inhabitants. It will apply in this discussion to people who occupied the western portion of the United States prior to 6,000 years ago. The Paleo-Indian Period may be further divided into the Llano, Plano, and Folsom complexes (Wedel 1961).

The Llano Complex is represented by Fluted Clovis type spear points made by mammoth hunters who occupied the Plains from at least 13,000 to 11,000 years ago. No Clovis points are known by the authors to have been found within the Northeast Periphery Region. The only Llano Complex site recorded in North Dakota is from surface finds at the Moe Site, 32MN101, on the west bank of Lake Sakakawea on the Missouri River (Schneider 1975). A single Clovis point was found in southern Manitoba near the community of Mentmore (Pettipas 1970). This find area is located approximately 110 mi. north and slightly west of the study area, and just outside of the Northeast Periphery Region.

The Folsom Complex is represented by Fluted Folsom and possibly Midland type spear points (Pettipas 1970), manufactured by hunters of now extinct forms of bison. These hunters are believed to have occupied the Plains between approximately 11,000 and 9,000 years ago. Fluted Folsom point finds closest to the study area are probably those from near the Manitoba communities of Treherne and Boissevan in the southwestern portion of the province (Pettipas 1970). Treherne is located along the northern foot of the Pembina Hills, approximately 60 mi. north of the study area, while Boissevan is located slightly north of the source of the Pembina River, and approximately 110 mi. north and west of the study area (Canada Survey and Mapping Branch 1979). Other Folsom find sites within 200 mi. of the study area are along the Souris River near the Manitoba towns of Souris and Melita (Pettipas 1970). All four sites are within the Northeast Periphery Region.

The Plano Complex is represented by a variety of spear point types made by Plains hunters, who subsisted largely on the presently existing form of bison (Bison bison). These hunters occupied the Plains from about 9,000 to 6,000 years ago. An apparently early type point of the Plano Complex (Alberta point) was found near the Manitoba community of Manitou (Pettipas 1970), located in the Pembina Hills approximately 25 air miles north of the study area (Canada Survey and Mapping Branch 1979). Another Alberta point was reportedly found near the town of Ninette on the shore of Pelican Lake (Pettipas 1970). This lake, which feeds the Pembina River, is located approximately 75 air miles northwest of the study area. A Hell Gap point was found in the Glenora District near Rock Lake. As previously mentioned, Rock Lake is located on the Pembina River in Manitoba, approximately 45 air miles northwest of the study area. It should be noted that all late Paleo-Indian Period find areas mentioned above are located on or near the Pembina River, and well within 100 air miles of the study area.

## Archaic/Woodland Period

The most fully reported Archaic sites in the Northern Plains belong to the McKean Complex. This complex is represented by the McKean Lanceolate point type, and the stemmed Duncan and Hanna point types. Many archaeologists also include the large, "eared" (concave based, side-notched) Oxbow point type.

Husted (1969) believes that the McKean Complex represents spear or lance points left by hunters who moved down from the foothills of the Rockies as the exceedingly dry conditions of the Altithemal improved more than 5,000 years ago. This hypothesis is supported by the fact that the McKean Complex sites with the oldest dates appear to cluster around the Big Horn Basin of northwestern Wyoming, while the dated McKean sites to the east in Saskatchewan and western North Dakota appear to be as much as 1500 years more recent (Syms 1970).

The only McKean components reported from North Dakota sites appear to be present at the Fischer and Red Rox sites in Bowman County in the extreme southwest corner of the state. Occupation 4 at the Fischer Site has been dated at 1820 B.C. $\pm$ 90 in association with a Duncan type projectile point (Syms 1969). Both of these sites lie outside the Northeast Periphery Region.

There is a concentration of McKean Complex points around the shores of Rock Lake (Pembina River). McKean points have been found at the Lake Shore Site, about 150 m south of the Avery Site (Vickers 1949), and also from excavations of the United Church Site about a quarter of a mile west of the Avery Site (MacNeish and Capes 1958). The earliest known occupation of the Avery Site (Figure 2, p. 5) appears to be represented by Duncan and Hanna type points. Joyes (1970) tentatively estimates the McKean occupation of the Lake Shore Site at 1750 B.C., the McKean occupation of the United Church Site as being slightly later, and the Duncan-Hanna occupation of the Avery Site as having occurred about 1500 to 1000 B.C. The terminal date of the McKean Complex has been set at about 1000 B.C. or perhaps as late as 600 B.C. in the marginal Canadian Plains (Syms 1970).

The campsites of the McKean-Duncan-Hanna Phase are small and were evidently briefly occupied by small groups. At Rock Lake the small, temporary camps and the inferred bison hunting subsistence pattern would suggest the presence of small nomadic bands (Joyes 1970).

Beginning in approximately 1000 B.C. the McKean-Duncan-Hanna Phase was being replaced by the Pelican Lake Phase over much of the Northern Plains. Joyes (1970) believes that, at least in some parts of the Plains, the latter phase was indigenous, growing out of the McKean component. The Pelican Lake Phase is most commonly represented by large corner-notched points, but on rare occasions large unnotched points are associated with it. Both point types are pre-bow, however, atlatls or spear throwers appear to have been in use throughout this phase (Reeves 1970).

Fourteen Pelican Lake Phase points have been recovered from the Avery Site (Joyes 1970). Joyes (1970) estimates the Pelican Lake occupation of the Avery Site as occurring between 500 B.C. and the time of Christ. Pelican Lake points have also been reported at the Calf Mountain and Shewfelt sites in Manitoba. Both sites are in the Pembina Mountains and within 30 air miles of the study area.

The people who represent this phase appear to have been specialized big game hunters, who concentrated on bison. No ceramics have been associated with the Pelican Lake Phase. Their campsites were not extensive, but rather, suggest occupations by small groups. There is evidence associating some people of the Pelican Lake Phase with habitation in tipi or tipi-like structures (Reeves 1970). Joyes (1970) theorizes that these people existed in nomadic bands which probably coalesced into large groups for seasonal bison hunts. These people had definitely mastered the techniques of taking bison in pounds and jumps (Reeves 1970).

The Besant Phase, which appears to be geographically restricted to the Northern Plains, first began to appear in the Middle Missouri Region in or about the Christian Era (Neuman 1967). This phase is characterized by side-notched points of greatly varying sizes. A marked preference for Knife River flint in the manufacture of these points and associated tools is noted (Reeves 1970).

The source of the Besant Phase is a matter of great controversy. Davis and Stallcop (1965) believe it to be an indigenous development out of the preceeding Pelican Lake Phase. Reeves (1970) believes it to be a separate Plains adapted cultural tradition, which had been resident in the Northeastern Periphery since late Archaic or Early Woodland times (1,000 B.C. to 500 B.C.). Husted and Mallory (1967) favor the Boreal Forest of the north.

The Besant Phase is viewed as a time of great transition in the Northern Plains. It is during this time, and in apparent association with Besant point types, that pottery first appeared in the region. Sometime between the time of Christ and A.D. 800, the atlatl was replaced by the bow and arrow on the Northern Plains (Reeves 1970). Hewes (1949) excavated a portion of a burial mound group which was apparently associated with Besant type points. The site, 32BA1 (Figure 2, p. 5), is located just north of Valley City in eastern North Dakota, and has been dated by the radio-carbon method at A.D. 90 $\pm$ 150 (Trautman 1963). The association of Besant points with secondary burials in log-covered chambers such as evidenced at the 32BA1 site may indicate a mound building tradition in the early Besant Phase (Joyes 1970).

The Besant Phase is well represented at the Avery Site where this occupation has been estimated at A.D. 300 to A.D. 500 (Joyes 1970). Joyes (1970) believes that Besant type points at the Avery Site are associated with Avery Corded pottery ware and that the Besant Phase may be derived from the Woodland tradition cultures to the southeast. He continues to hypothesize that the apparent scarcity of Besant

pottery on the northwestern Plains may be the result of a population gradually giving up pottery making as they moved farther out onto the Plains.

The Calf Mountain Site (Figure 2, p. 5) has yielded a moderate amount of Besant material (Vickers 1948a) and a Besant point may be associated with a burial mound at the site (Reeves 1970). This site, located near the Pembina River, lies approximately 20 mi. northwest of the study area. The Besant component at the site has been dated at A.D. 845 ± 85 (Reeves 1970). The hypothesized terminal date for the Besant Phase is around A.D. 800 (Reeves 1970).

To the manufacturers of Besant tools, taking bison in jumps and pounds may have been commonplace. There is some evidence to indicate an increase in human population in the Northern Plains during Besant times, compared with that of the Pelican Lake Phase (Joyes 1970). At least in southwestern Manitoba, "Besant Phase campsites appear to represent fairly lengthy or repeated occupations by moderately large groups. Nomadic bands were probably the rule as far as social organization was concerned, with seasonal multi-band groupings for communal bison hunts," (Joyes 1970).

Nothing is apparently known concerning habitation structures for Besant peoples in southwestern Manitoba. In Alberta, tipi rings have been associated with both summer and winter campsites of Besant tool makers (Reeves 1970). At the Mortlach Site, in southcentral Saskatchewan (Wettlaufer 1955) a post-mold pattern was found which is very similar to those from a Woodland type structure at the LaRouche Site on the Missouri River in central South Dakota (Hoffman 1968).

The Avonlea Phase has initial dates of A.D. 90 ± 120 at the Head-Smashed-In Site in Alberta (Reeves 1970) and A.D. 210 ± 60 at the Gull Lake Site in southwestern Saskatchewan (Kehoe 1966). Reeves (1970) suggests an initial date for the Avonlea Phase in the Upper Missouri-Black Hills and southwestern Manitoba areas at A.D. 400 to 500 with a termination date of A.D. 650 to 700 in southwestern Manitoba, but as late as A.D. 900 in the Upper Missouri-Black Hills areas. These dates indicate that the Besant and Avonlea phases were at least partially contemporary.

The Avonlea Phase is represented by small, delicate projectile points. First appearing as corner-notched points, perhaps at such sites as Head-Smashed-In in Alberta (Reeves 1970), they were apparently soon replaced by the much more numerous and familiar Avonlea side-notched points (Kehoe 1966). The points from this phase are associated entirely with the bow and arrow. A gradual transition from atlatl to bow and arrow is not represented in Avonlea points, which may suggest that this transaction was very rapid on the Plains, or that it took place elsewhere--possibly in the Rocky Mountains (Reeves 1970). It is entirely possible that Besant peoples were introduced to the bow and arrow by the makers of Avonlea points (Reeves 1970).

The origin of the Avonlea Phase is a question involving much speculation. Kehoe (1966) points to the one time caribou-driving Athebascans to the north, while Husted and Mallory (1967) favor an affiliation with peoples of the Middle Missouri region. Reeves (1970) suggests that the Avonlea Phase is a Plains adapted culture, sequent to the Pelican Lake Phase.

Regardless of its origin, the Avonlea Phase is well represented at the Avery Site (Joyes 1970) (Figure 2, p. 5 ), which appears to be the only Avonlea Phase representative recorded along the Pembina River (Reeves 1970).

While pottery is very rarely associated with Avonlea Phase sites, Joyes (1970) believes that simple-stamped Truman Plains Rim ware may be representative of the Avonlea component at the Avery Site. Elsewhere, Avonlea ceramics are characterized by fabric-impressed, bossed or punctated, conoidal vessels, and possibly dentate-stamped and cord-marked sherds.

Very little is known about the Avonlea burial system. There remains no evidence of Avonlea burial mounds. In the Powder River area of Wyoming and Montana, Avonlea burials are characterized by primary pit burials with much ornamental and utilitarian grave goods (Reeves 1970).

Avonlea people were obviously very dependent upon the bison as attested to by the large number of bison kill sites containing Avonlea points (Joyes 1970). While most of these kill sites were pounds, a few have been reported to represent true jumps (Davis 1966).

Avonlea campsites appear to be fairly small, temporary camps of nomadic tribes people. Seasonally these people appeared to settle in multi-band grouping in order to hunt bison communally (Joyes 1970). Little is known about Avonlea habitation structures, although Reeves (1970) suggests the use of the tipi.

## Late Prehistoric Period

The Manitoba Phase is estimated to have first appeared in the Northern Plains about A.D. 1000 (MacNeish 1958). There is evidence to indicate the presence of this phase in Minnesota approximately 200 years earlier (Cooper and Johnson 1964).

The phase is characterized by the presence of Blackduck ceramic ware and Late-Side-Notched type projectile points. It has been hypothesized that Blackduck ware and the Manitoba Phase represent the cultural remains of the prehistoric Assiniboine (Wilford 1945, Vickers 1948a, and MacNeish 1954). Evan (1961) attributes the Manitoba Phase to the Cree. Mandan-like sherds have been found in Manitoba Phase sites, including the Avery Site (Joyes 1970), which may indicate trade with the Middle Missouri tribes.

The Manitoba Phase is poorly represented at the Avery Site, however, its presence is well established at the nearby United Church Site (MacNeish and Capes 1958), within 50 air miles of the study area. Large amounts of Manitoba Phase materials were reported by Chris Vickers at the Calf Mountain Site (Joyes 1970). As mentioned previously, the latter site is situated approximately 20 mi. northwest of the study area.

Manitoba Phase sites in southwestern Manitoba are quite small and appear to represent nomadic bison hunting bands. Sites of this phase in southeastern Manitoba, however, indicate extensive use of mollusks, deer and fish (Joyes 1970).

Mound building activities can be ascribed to the Manitoba Phase. Grave goods and secondary burials are associated with many of these Manitoba Phase mounds (Joyes 1970).

The Selkirk Phase, as represented by fabric-impressed ceramic wares and Late-Side-Notched projectile point types, has an estimated time span of from A.D. 1350 to A.D. 1750 (MacNeish 1958). Joyes (1970) feels that the Selkirk occupation of the Avery Site took place in the early part of this interval.

MacNeish (1958) believes the Selkirk Phase to be a manifestation of the prehistoric and early historic Cree. The validity of this theory has recently been supported through data collected from the northern forest region. While Selkirk Phase materials are well represented in southeastern and northern Manitoba, they are exceedingly rare in the southwestern portion of the province. No fabric-impressed pottery has been found on the grasslands of Manitoba with the exception of those sherds recovered at the Avery and United Church sites (MacNeish 1958), both at Rock Lake on the Pembina River. Joyes (1970) suggests that this may "indicate that the Rock Lake locality served as an outlying hunting camp for peoples living primarily to the north and east or a favorite campsite of the westernmost vanguard of Cree beginning to adapt to a prairie bison hunting way of life.

Selkirk Phase pottery types, Winnipeg and Alexander Fabric-impressed wares, are the most abundant types at the Avery Site. This prevalence of Selkirk Phase pottery is recorded at many sites in southeastern Manitoba (MacNeish 1958). It may indicate the involvement of larger groups of individuals, or longer periods of occupation at the sites. Nomadic bands were probably the prominent social unit of these people, and these bands probably enlarged for seasonal bison hunts on the grasslands. The latter may have been the case at the Avery and United Church sites (Joyes 1970).

The economy of the Selkirk inhabitants of the Avery Site was centered around the killing of bison. On the other hand, Selkirk Phase sites in southeastern Manitoba contained much deer, fish and shellfish, but few bison.

## Historic Period

The most thoroughly reported historic site near the study area is the trading post and house of Antoine Gringras, located approximately 1 mi. northeast of present day Walhalla. The house and post have been restored by funds appropriated by the North Dakota State Legislature. This historic site is described in more detail on page 42 of this report. Historic sites within the study area are described in this report in the Historic Occupation of the Pembina River Area section, pp.33-48.

## Archaeological Materials from the Pembilier Dam Area: A Comparative Study

The paucity of cultural debris found in the Pembilier Dam study area and the poor manner in which this material has been recorded practically negates a comparative study with those other sites in the Northeastern Periphery Region. We will, however, briefly discuss the potentially diagnostic materials reported by Ames (1975).

Wheeler (1948), in describing the cultural debris collected from 32CV1 (Figure 3, p. 5), merely mentions stone tools. This indicates very little besides the fact that the site may have existed prior to Euro-American contact.

At site 32CV204, which is actually part of 32CV1, Ames (1975) recovered a single side-notched projectile point. This artifact is not illustrated in Ames' report and no descriptive data is supplied, beyond that the artifact contained side notches. If we assume that the specimen is small and functioned as an arrow point, we may tentatively assign this artifact a relative date of between A.D. 400 and the latter half of the 19th century. These dates correspond to the estimated initial appearance of Avonlea side-notched points in southwestern Manitoba (Reeves 1970), and a time when stone projectile points were totally replaced by metal points and firearms. If we assume that the point is large and represents an early side-notched tradition, a date in excess of 7,000 year ago is possible. Large side-notched points have been dated at 5680 B.C. at Mummy Cave in Wyoming (Husted 1978), while even older dates come from similar tools at the Simonsen Site in northwestern Iowa.

Ames (1975) collected two projectile points from 32CV205, which (like 32CV204) is actually part of site 32CV1. This data, as it stands, is too general for use in a comparative study.

Site 32CV201 (Ames 1975) is apparently a multi-component site. A European-style house, crockery and plow fragments represent an historic occupation of the site. A metal punch may represent a trade item and, therefore, indicate a proto-historic or historic occupation of the site. Ames (1975) mentions, but does not illustrate, two indented basal portions of a projectile point(s). We may speculate that these basal portions represent a concave base(s) of an Oxbow-type or another "eared" type of projectile point, thought to be

associated with the McKean Complex of the Archaic Period.

This comparative analysis is speculative. The importance of detailed descriptions and illustrations of artifacts is emphasized in further work done in the Pembilier Dam project area.

## HISTORIC OCCUPATION OF THE PEMBINA RIVER AREA

The archaeological record as discussed in this report reveals evidence of the early occupation of the Pembina River Coulee. Some of the sites discussed are most probably pre-European contact in age. Items such as the cultural affiliations of the inhabitants of the sites, and the time at which a site was occupied, as well as the purpose for which it was used are not presently known.

A good deal more is known historically about the people who lived along North Dakota's Pembina River. However, when dealing with the specific study area, little has been written. Therefore, in dealing with the history of the Pembina River Coulee, the area surrounding the Coulee is also discussed.

### The Indians and Metis

The following is a brief discussion of four American Indian groups who reportedly occupied land in and around the Pembina River. The Metis, or half-breed products of the fur trade, who played an important role in the early history of the Pembina River will also be discussed.

#### Cree

A map presented in Robinson's (1966) history illustrates that the northeastern corner of North Dakota was the territorial land of the Cree in and around 1750. The Cree are an important Algonquin speaking tribe who are closely related to the Chippewa or Ojibway, both linguistically and in reference to other cultural charateristics. Like the Chippewa, the Cree were essentially forest people; however, a portion of their number were attracted to the Plains by the buffalo. These people eventually formed a separate group known as the Plains-Cree. Hodge (1907) fixed the habitat of the Cree to the provinces of Manitoba and Saskatchewan between the Saskatchewan and Red rivers, and areas even farther north. He does mention, however, that some Cree inhabited the region around the Red River, intermingling with the Maskegon and the Chippewa. Alexander Henry (in Coues 1897) makes mention of Cree camps along the Red River in 1800, but most appear to have been in what is not Manitoba. Henry (in Coues 1897) relates that in 1804, 40 Muskegoes and large numbers of Ojibwa and Cree prepared to march against the Sioux. In the same year, Henry states that 50 tents of Assiniboine and Cree were camped around his post in the "Hair Hills." The post was probably located near the present town of Treherne, Manitoba, at the northern foot of the Pembina Hills and approximately 60 mi. north of the study area.

#### Assiniboine

The land to the west and north of the study area appears to be part of the traditional home of the Assiniboine, from at least the middle of the 18th century onward (Robinson 1966, Schulenberg 1956). The Assiniboine are a large Siouxian tribe, originally constituting a part of the Yanktonai. The split from the parent stem must have

happened prior to 1640 (Hodge 1907) when the Assiniboine were first mentioned as representing a totally distinct group. While much of the Assiniboine's early history took place north of the present international border, sometime before 1738, a number of them were trading with the Mandan on the Missouri River, and apparently spending much of their time south of the 49th parallel (Schulenberg 1956).

The Assiniboine have always been rather firmly allied with the Cree, and somewhat less so with the Chippewa. The association with the Cree has been documented by Henry (in Coues 1897) as mentioned above.

## Sioux

From at least the middle portion of the 18th century, the land located immediately south of the study area appears to have been occupied by member tribes of the Dakota Sioux, the Yanktonai people being the most dominant group in or near the area (Robinson 1966, Schulenberg 1956). The Yanktonai migration from their eastern homes north of Mille Lac, Minnesota, probably took place at the beginning of the 18th century. It is likely that they followed or accompanied the Teton, while the Yankton turned more and more toward the southwest (Hodge 1907, Howard 1976).

Lewis and Clark state that the Yanktonai roved on the headwaters of the Sioux (Big Sioux), James and Red rivers in 1804 (Biddle 1962). Henry (in Coues 1897) describes a number of old Sioux war camps and "old elm-back cabins" which were supposedly erected by the Sioux during the summer of 1800. These camps and cabins were located on the present city of East Grand Forks, Minnesota. In 1923, Major Stephen H. Long of the U.S. Army Topographical Engineers, stated that the hunting grounds of the Yanktonai extended from the Red River to the Missouri (Keating 1959). In 1855, their habitat was said to lie as far north as Devils Lake (Hodge 1907). They may have resided in the Devils Lake area much earlier than this (Robinson 1966).

The Sioux presence in and about the study area in the early portion of the 17th century appears to be related for the most part to warfare. In September 1800, having a post on the Park River, Alexander Henry was contemplating having a temporary post erected at the "Hair Hills." Henry was informed, however, that the area he intended to build in was the common war road of the Sioux, and that he should therefore not set out until October (Coues 1897). It should be noted that the term "Hair Hills" appears to be roughly synonymous with the geographic feature now known as the Pembina Hills. Coues (1897) indicates, however, that Henry's term is broad enough to cover not only the Pembina Hills, but all the elevated country on the west of the Red River Basin.

Henry, while living on or near the Pembina River in the early 1800's, relates that his Saulteurs (Ojibwa) seemed constantly fearful of being destroyed by the Sioux. The only actual occurrence of a

Sioux massacre in the area during Henry's occupancy appears to have taken place in July 1805. The battle occurred on the Tongue River, not many miles from the "Fort" (Pembina). In all, approximately 200 Sioux killed or took hostage 14 persons--men, women, and children. Among those killed was Henry's father-in-law, an Ojibwa chief (Coues 1897). Robinson (1966) believes, perhaps mistakenly, that the Siouxian tribe involved was the Yankton. Because of the undisputed presence of Wanotan at the Battle (Coues 1897), it appears that the group was the Yanktonai. (Wanotan later became an important chief of the Yanktonai (Hodges 1907)).

## Chippewa

The Indian tribe most important to the present discussion is the Chippewa or, more properly, the Plains-Chippewa. The Chippewa nation is Algonquin and represents one of the largest Indian tribes north of Mexico. Gourneau (1973) states that the term Chippewa is the latest corruption of the native word Ojibway. For the purpose of this report, the terms Chippewa and Ojibway will be used synonymously. The reason for referring to the Chippewa here as the Plains-Chippewa is that the Chippewa originally emerged from the woodlands of Michigan, Wisconsin, Minnesota and Ontario to follow the white-man; the fur trader (Delemore 1955; Gourneau 1973; Hodge 1907; Schulenberg 1956; Warren 1885). The loosely organized symbiotic relationship between whites and members of the Chippewa nation brought the latter group early possession of fire arms which aided them in pushing the Sioux westward.

In 1800 many Chippewa followed Alexander Henry into an area that later become North Dakota. The following year Henry established a permanent post at the confluence of the Pembina and Red rivers (Pembina, North Dakota) (Coues 1897). Henry referred to the Indians who camped around his fort as "his Indians" or Saulteurs (also Saulteaux). The latter terms are derived from the fact that these Indians once lived near Sault Ste Marie (the rapids in the St. Mary's River between northeastern Michigan and Ontario, Canada). The Chippewa around Henry's post became the group from which the Pembina Band of the Plains-Ojibway derived. The Turtle Mountains Band of the Pembina Band later became the principal group of Plains-Ojibway (Gourneau 1973, Schulenberg 1956). The newly formed Pembina Band coupled with a few loosely organized Chippewa bands who entered the area prior to Henry's arrival in 1800, and gained a relatively firm territorial hold on a large section of land located in the northern portion of what is now North Dakota (Robinson 1966, Schulenberg 1956).

The transition of Chippewa people from an established Woodland lifestyle to a Plains Indian lifestyle makes an interesting study. When Henry's Saulteurs left their forested environment for the Plains areas of southern Manitoba and northern North Dakota, they were in no way prepared for the new subsistence requirements of their surroundings. However, during a relatively short time period--less than a century,

from 1790 to around 1870--they completely adapted to the Plains way of life. During this period, nearly every aspect of the former Chippewa lifestyle was required to change. For example, the Plains style teepee, made from the hides of bison, replaced the birchbark and cattail-covered wigwams and wauginogans of the forest (Gourneau 1973). The canoe was replaced by the horse and travois, then later by the ox-driven Red River carts. Even religious beliefs were changed. The Grand Medicine Ceremony was abandoned for the Plains Sun Dance and eventually to a following of Christianity.

## Metis

During the middle portion of the 19th century, an ethnic group known as the Metis composed the largest population element along the Pembina River in North Dakota. The term "Metis" is French, meaning "mixed breed" and referring to the offspring of white, fur trade-connected fathers (of French, Scottish, Irish and English heritage) and Indian mothers (from the Chippewa, Cree, Assiniboine, or Ottowa tribes). The tribes with which the white men most frequently formed unions were the Chippewa and Cree (Delorme 1975). Havard (1880) states that the Chippewa element predominated in the Pembina region, while the Metis of the Canadian northwest were almost exclusively Cree. Stanley (1936) indicates, however, that the Metis never believed themselves to be hanging on the white population. Rather, they developed a resolute feeling of independence and a strong sense of their own identity, which lead them to regard themselves as a separate racial and national unit which found expression in the name "The New Nation."

Havard (1880) recorded a detailed description of Metis physical characteristics. In 1880, he stated that the Metis were of middle stature, well-proportioned and well-developed, but rather slender. While generally no stronger than whites, they possessed great stamina and consequently, made excellent 'voyageurs.' The peculiarities of the Indian face; salient cheeks, hooked noses, semi-lunar profile, etc., were often noticeable but softened and actually unapparent in many individuals. The Metis' complexions were generally tawny, varying in shade from near copper to pure white. The women, often somewhat pale and sallow, were fairer than the men and were known for their comeliness. The males, generally beardless, tended to grow long hair (Havard 1880).

Economically, the Metis who inhabited the general study area during the 19th century represented a compromise between a sedentary, agrarian way of life and the nomadic lifestyle of the Plains Indian. They settled in log cabins with a few possessions including carts, horses, crude tools, and sometimes a few cattle, and cultivated gardens and small grain fields. At the same time, they hunted, set traplines, and the fur trade drew them away seasonally (Delorme 1955). Plants cultivated included Indian corn, potatoes, tobacco, barley, and a bearded variety of wheat (Robinson 1966). The horses the

Metis raised were fast for hunting, and oxen were raised for a variety of draft functions.

While these limited agricultural activities represented a portion of Metis life, the focal point of their economy was the annual, highly organized, bison hunt. Robinson (1966) describes these hunts as a mania among the Metis.

The Metis engaged in two hunts each year, a summer hunt after the crops were planted in mid-June, and a fall hunt beginning in October. The summer hunt was the larger of the two, the fall hunt often consisting of only one-third of the hunters of the summer one. While both hunts provided necessary provisions--pemmican, jurked meat, grease, and buffalo hides for production of leather--the fall hunt provided the Metis with the thick-coated bison hides used for the manufacture of robes.

It should be noted here that until the final emergence of the American Fur Company in the 1840's at Pembina and St. Joseph (Walhalla), the buffalo robe was not a valued trade item. Powdered, dried meat (pemmican), however, always was valued. The heavy buffalo robes were simply too difficult to transport by canoe to the Hudson Bay Company headquarters at the Red River settlement, approximately 60 mi. north of Pembina. Pemmican production, therefore, was the principal source of Metis cash income, since fur traders and trappers needed a nutritious and easily carried food source (Delorme 1955).

Until the emergence of the American Fur Company, the vast majority of Metis lived, at least seasonally, around the Red River settlement, near present Winnipeg (Ross 1957, Woolworth 1975). Only during the summer and fall hunts did they travel in large numbers along the plain of the Pembina River. The woods near the Pembina Hills were the last place for the Metis to obtain young trees for making the portable buffalo-drying racks used in the hunt. The area around the Pembina River was also used as a place to stock up on fish and deer meat (Woolworth 1975).

Ross (1957) provides an excellent account of a combined Metis-Chippewa hunt that took place during the summer of 1840 (also see Belcourt 1971, Nelson n.d.). During the hunt of 1840, the Metis participants numbered 1,630 men, women and children and employed 1,210 Red River carts. Further, between the years 1820 and 1840, the number of carts used in the hunts had increased from 540 to 1,210.

Emergence of Fur Trade into the Area

From the latter part of the 18th century until the early 1870's, the economy of what is presently northeastern North Dakota was dependent on the actions taken by individuals involved in fur trade. The area along the Pembina River was one of the first and most directly effected areas in the entire state.

Literature contains documentation of the possible existence of at least 19 trading posts (including temporary wintering posts) along the Pembina River between present day Pembina and Walhalla, North Dakota. This data may be somewhat misleading; 11 such sites are reported to have been located at or near Pembina, 6 (including temporary posts) at or near Walhalla (formerly known as St. Joseph), and the remaining 2 between the two communities. These posts were established between 1797 and the 1860's. The approximate locations for most of these posts are currently on file with the State Historical Society of North Dakota. The locations and other data pertaining to these posts are located in Appendix 2. However, since the majority of these locations have been drawn from available literature, the locations of many cannot be considered absolutely correct. Further, the chance remains that some of these posts may never have existed.

Although the communities of Pembina and Walhalla lie outside the immediate study area, some of the early history which took place there will be synthesized. Schneider (1978) provides a more detailed literature review for the Pembina River area from Pembina to Neche, the latter community lying approximately 15 mi. west of the former.

On 5 September 1800, Alexander Henry, a fur trader with the North West Company, first traveled into the area of North Dakota and recorded the abandoned North West Company fur post and fort located on the south side of the Panbian (Pembina) River at its confluence with the Red River (Coues 1897). This post was reportedly built by Charles Jean Baptiste Chaboillez on 28 September 1797 and was abandoned on 17 May of the following year.

Henry continued southward and established his first North Dakota post on the Park River near its confluence with the Red (Coues 1897). From this fort, which became a permanent one, Henry established a number of temporary winter posts. One of these posts was the "Hair Hills Post" built by Andre Lagasse and Joseph Dubois between 11 and 13 October 1800. The post (hut) was 15 sq. ft. and was used as a dwelling, storehouse and shop. On 15 October, these men were replaced by Joseph Hamel and two unidentified men (Coues 1897). In reference to this first Hair Hills post, Henry wrote that the hut stood at the foot of the "mountain" and that the country from the Red River to this mountain was one level plain, without a hill or stone. Henry also climbed the mountain and described the surrounding area (Coues 1897). Although it has been suggested that the location of the initial Hair Hills post was at or near the site of present day LeRoy, this location is suspect. The nearest rise in elevation from LeRoy is approximately 3 mi. southwest and by following the river, the Pembina Hills would not be reached for about 7 mi. (U.S. Geological Survey 1964). It is most feasible that this post was built at or near the eastern tip of the Pembina Delta, presently located in Section 13, T.162N, R. 56 W and Section 19 and 30 T. 162N R.55W (Hallson Quadrangle 1964). This location lies approximately 5 to 7 mi. south of the study area.

On 10 October 1801 Henry wrote that he went to the Hair Hills with a Mr. Cameron and found that Langlois had built a hut three leagues higher than the year before, exactly at the foot of the steep, sandy banks where the river first leaves the mountain (Coues 1897). This appears to be an apt description of the area surrounding Walhalla and very similar to Libby's (1920) description of Walhalla State Park (partly located in Section 29, T.163N, R.56W) where the cellar of an old trading post which Libby reports was built by Henry in 1801 is located. Further, an opposition post was built near Langlois' post in October 1801 by Cournoyer and four unnamed men for the X.Y. Company. This post was also located in the Hair Hills (Coues 1897).

Henry's 1801 post was abandoned in favor of a different location at least as early as 1804. On 11 April 1804, Henry settled with Mr. Langlois and three men to summer at the new post location and build a new fort (Coues 1897). This post was likely located near the present community of Treherne, Manitoba at the northern base of the Pembina Hills.

Records of the Lower Red River Department of the North West Company indicate that the North West Company occupied posts in the Hair Hills from 1801 to 1805. The post established in 1800 was, according to Henry, a trial post. Records of financial returns for the years 1805 to 1806 mention nothing about a Hair Hill post nor do they mention Mr. Langlois who had apparently been in charge of the posts between 1801 and 1802, and again between 1803 and 1805. Mr. Langlois is not mentioned in connection with the Hair Hill post between 1806 and 1807; at that time he was heading a post at Sandy Hill River. According to Coues (1897) this river is one and the same with the Sand Hill River in west-central Minnesota. Langlois was reportedly back in the Hair Hills again between 1807 and 1808, where Henry went hunting in July 1808 and slept at the Hair Hills fort (Coues 1897).

From May 1801 until August 1808, the headquarters of the North West Company's Lower Red River Department was located at Alexander, Henry's main outpost at Pembina. At the time, the post was situated 100 paces north of the Pembina River and 100 west of the Red. Opposition to the North West Company at Pembina during this time came from the X.Y. Company and the Hudson's Bay Company. In 1802, the X.Y. Company established a post at the north side of the "little brook" while in 1805 the Hudson's Bay Company built a fort near Henry's complex. The Hudson's Bay Company had also built a post in September 1801 on the east side of the Red River, probably near the site of present St. Vincent, Minnesota, while the X.Y. Company built a post above the 49th parallel in present Manitoba in the same year (Coues 1897).

Following the completion of his houses in 1801, Henry sent to the Hair Hills for a particular type of soil which he used to make white wash. Henry stated that this soil could not be found near

the Red River. It appears that the lime-like soil to which Henry refers was a type of clay (Coues 1897).

A coalition between the North West and X.Y. companies was formed on 5 November 1804. This coalition ended the existence of the X.Y. Company as a separate organization (Coues 1897). It also created a new kind of occupant of the Red River area, since the coalition left many former fur company employees without positions. These individuals resided in Indian country not employed by trading companies, and were known as freemen (Robinson 1966).

Henry commented that by October 1807 gangs of freemen were seen along the Hills when Henry was traveling near Turtle River near present Grand Forks, North Dakota (Coues 1897). However, it is assumed that these men were also living in or near the study area. Robinson (1966) states that in 1808 many freemen, with their wives and Metis children, were living in camps on Park River and in the Pembina Hills. They owned many horses and carts and made provisions to sell to the fort at Pembina. Since the North West Company post at Pembina was abandoned by Henry in the summer of 1808, it is assumed that Robinson is referring to the Hudson's Bay Company trading post.

During the fall of 1812, refugees from the Selkirk settlement along the Red River in Manitoba relocated on the north side of the Pembina River, west of the Red, at present Pembina (Robinson 1966). The outpost these settlers created was named Fort Daer (Pritchett 1942). It, along with the previously mentioned Hudson's Bay post, flourished until the spring of 1823 when the facilities were dismantled and the timbers were floated down the Red River to Fort Douglas (Keating 1959). Fort Douglas was situated near present Winnipeg. The only other post at Pembina between 1808 and 1824 was reportedly built in 1816 by the North West Company and captured shortly after by employees of the Hudson's Bay Company.

The first Catholic Mission in present North Dakota was established at Pembina by Severe Dumoulin during 1818 (Nute 1942). In the fall of the same year, William Edge established the first missionary school in North Dakota. Nute (1942), Pritchett (1942), Ross (1957) and Keating (1959) have all written works which deal in part with other facets of this time period in the history of the Pembina area and Schneider (1978) provides an overview of the area.

On 26 March 1821, the Hudson's Bay and North West companies united under the name of the Hudson's Bay Company (Pritchett 1942). This merger created a great many more freemen (Robinson 1966) and it is expected that some of these freemen and their families located in or near the study area.

In 1823 Major Stephen H. Long of the U.S. Army Topographical Engineers lead an expedition which fixes the 49th parallel

(international boundary) just north of Pembina. The entire settlement of Pembina, with the exception of one log house near the left bank of the river, was included in the territory of the United States. This was one of the major factors which lead the Hudson's Bay Company to dismantle its trading post and Fort Daer, floating the logs north to Fort Douglas in 1823 (Keating 1959).

The merger of the North West and Hudson's Bay companies and the eventual move had created a monopoly for Hudson's Bay. A great many freemen, Metis and Indians of the area were forced to move from their settlements along the Red and its tributaries in North Dakota in order to follow the Hudson's Bay traders to Fort Douglas and other establishments in present Manitoba (Ross 1957). After the move, most of the occupation of the area along the Pembina River was in the form of seasonal habitation, associated with the Metis bison hunts. The Chippewa and Cree more than likely had seasonal camps along the Pembina, too.

There is little recorded about the Pembina River area between 1824 and 1840, with the exception of reports of annual hunts. There were apparently no posts at Pembina from 1823 until 1829 or 1830 when the American Fur Company sent William Aitkin there to trade (Robinson 1966). The Hudson's Bay Company evidently came back and drove Aitkin out. Following that event, the Hudson's Bay Company is said to have paid the American Fur Company an annual fee to stay away from this border region (Belleau 1932). No recorded accounts of trading posts in or about the Walhalla area from 1808 to the 1840's was found.

In or about 1840, Joseph Rollette was sent to Pembina by the fur trade partners Henry Sibley and Norman Kittson (Lee 1897; Robinson 1966; Woolworth 1975). Rollette reportedly did not have a free hand against the Hudson's Bay Company until Pierre Chouteau, Jr., and Company of St. Louis supplanted the American Fur Company in 1842. Sibly took a partnership in the new organization (Robinson 1966). In 1840 (Woolworth 1975) or in 1843 (Lee 1897) Rollette is reported to have sent off the first trade-laiden oxcarts from Pembina to St. Paul.

Sometime between 1843 and 1844, Norman Kittson moved to Pembina and took over the American post from Rollette who then served as Kittson's First Lieutenant. At about the same time, Kittson established a line of posts along the border; one at the Hair Hills (which was soon to be called St. Joseph) and others along the Souris River and in the Turtle Mountains (Gillman et al. 1979; Lee 1897; Robinson 1966; Woolworth 1975).

Sibley and Kittson's plan was to establish Pembina as the main source of supply for the entire Red River valley, based on the successful smuggling of furs trapped on Hudson's Bay Company land. This endeavor depended upon the amount of cooperation that they received from the Metis trappers and businessmen. The cooperation from the Metis living north of the border was good, due to their dissatisfaction with the Hudson's Bay Company monopoly on trade. Because of

Hudson's Bay Company policy, trappers were forced to sell their peltries at Company prices and to buy all their goods from the Company. It was Sibley and Kittson's ultimate goal to divert enough trade from the Hudson's Bay Company to eventually cause the Company to buy them out at a profit to them (Franke 1973). Such efforts to break the Company's monopoly eventually lead to a Metis migration back south of the 49th parallel to land in or near the study area.

Kittson's Hair Hills post is reported to have been built in 1843 at present day Walhalla (Woolworth 1975); however, the exact location and builder of this post are both in question.

The trading post and family house built by Antione Gingras near present day Walhalla is, however, more clearly documented. The post is thought to have been built in 1844 and the house sometime around 1847 (Franke 1973). Gingras was a very successful Metis trader who, while apparently licensed by the Hudson's Bay Company, was doing considerable business with Kittson and the American Company (Franke 1973). Woolworth (1975) states that they operated by building the oxcarts at St. Joseph, going to Winnipeg to gather goods for St. Paul, and then returning to the Pembina and St. Joseph's stores for more buffalo hides, tongues, and pemmican.

Through funds appropriated by the North Dakota State Legislature, the Gingras store and house have been restored. The Gingras Historic Site is located in the NW¼ of the SE¼ of Section 16, T.163N, R.56W. Franke (1973) also provides a detailed record of the life of Gingras. The posts built by Kittson and Gingras represent the beginning of the settlement of St. Joseph.

The major migration of Metis to St. Joseph is reported to have taken place in 1845 (Woolworth 1975). The U.S. Army was known to encourage Metis hunters and free traders from north of the border to become American citizens and by 1849 over 1,000 Metis were supposedly living in the United States (Woolworth 1975). In 1849 Father G.A. Belcourt, while residing at his mission at Pembina, cites a number of reasons why the Metis were then inclined to live south of the Canadian border (Woods n.d.). Woods (n.d.) puts the non-Indian population of Pembina at 1,026 in 1849. The U.S. Census (1850) counted 1,116 non-Indian persons living in the Pembina District of the Minnesota Territory (Collections of the North Dakota Historical Society 1906).

A rather famous Indian-Metis battle occurred slightly south of the study area around this time. O.G. Libby (Collections of the North Dakota Historical Society 1920), while describing the state parks in North Dakota, mentions Cavalier County State Park on the outskirts of Olga, North Dakota as being the site of a battle which pitted Metis and Chippewa hunters against their enemies, the Dakota, in 1848. The fortification which defended the camp of the hunters was still to be seen in a field 1 mi. west of Olga and about the same distance from the Cavalier County State Park in 1920 (Collections of the North Dakota Historical Society 1920). An historical wall map confirms the location

of the "Battle of O'Brien Coulee - 1848" (Wemett 1939, wall map). A number of W.P.A. questionnaires on file with the State Historical Society of North Dakota also mention a battle field and/or remnants of a battle fortification near the present village of Olga, although dates and circumstances vary considerably.

In or about the early 1850's, Father George A. Belcourt permanently moved his Catholic Mission from Pembina to the Hair Hills. It was at this time that the settlement was given the name St. Joseph. At about the same time, Norman Kittson also moved his headquarters from Pembina to St. Joseph. It appears that both of these moves were precipitated by the almost annual flooding of the Red River with a particularly disastrous flood reportedly occurring at Pembina in 1851 (Robinson 1966).

Between 1852 and 1853 a Protestant Mission was established in St. Joseph by Reverend Alonzo Barnard, a Presbyterian; Reverend David Spencer, a Congregationalist; and a Metis Baptist by the name of James Tanner (Lee 1897, The Record 1899). Tanner accompanied by Mr. Elijah Terry arrived in St. Joseph first, in 1852. Terry was killed in a Sioux attack on 23 June 1852 (The Record 1899), thus aborting the first non-Catholic Mission attempt recorded for St. Joseph. The following year the Reverends Barnard and Spencer with their families and a man named John Smith arrived at the foot of the Pembina Mountains (Lee 1897). These missionaires were friends of Kittson and were apparently pursuaded by him to St. Joseph, in order to attract more Metis and Indians to settle about his stores.

In October of 1853 Mrs. Barnard died of consumption, while Reverend Spencer's wife was killed by the Sioux on 30 August 1854. These two women, along with Elijah Terry, all connected with the Protestant Mission at St. Joseph, have been labeled the "Martyrs of St. Joe." Their graves are presently located at the Walhalla State Historic Site.

It is apparent that Kittson, Belcourt, and Gingras were all residing at St. Joseph at the time that the Protestant Mission began (Lee 1897, The Record 1899). The activities of the traders along with the efforts to establish missions caused a great influx of population. Robinson (1966) states that in 1853 Isaac I. Stevens heard that 4,000 lived about the Pembina Hills. Stevens was referring to Metis.

By the mid-1850's, St. Joseph was becoming an important fur trading center. After the departures of Kittson and Belcourt from Pembina to St. Joseph, the latter must have become the largest settlement in the Pembina District of the Minnesota Territory. When Minnesota Territory became a state in 1858 and Pembina District became a federally unorganized territory (Libby 1923), the U.S. Congress was petitioned to have the territory organized with St. Joseph as its capital (Woolworth 1975). This did not happen, but St. Joseph did become the temporary county seat of Kittson County in 1862 (Libby 1923).

In 1867 an election held in St. Joseph polled 250 voters (Woolworth 1975). Armstrong (Woolworth 1975) describes the thatched-roofed log houses of the St. Joseph Metis and states that the woods were full of such buildings for 16 mi. below (east) of that settlement.

With the extermination of buffalo herds east of the White Earth River (northwestern North Dakota) complete by the early 1870's, St. Joseph's role as a trading center had come to an end. Gingras' trading post was being referred to as a general store and in 1873, "The Jolly Metis" was selling pork (May 1913). Woolworth (1975) states that in 1873 only Gingras' store and a handful of families occupied the town. The steamboat business on the Red and at Pembina in the early 1870's also added to the exodus of many St. Joseph residents.

No references to a definite single attempt to occupy the Pembina Coulee area during the mid to late 1800's has been found. With the large flux of Metis into the St. Joseph area during this period, at least a few inhabitants probably settled there, near the river. The fear of attack by Sioux may have been too great a deterent, however. Further research into the issue is warranted.

Development of Walhalla and the Surrounding Area

The chief literature sources for the early European and Icelandic settlement of the Walhalla area are from manuscripts found in the Winifred Working Papers contained in the O.G. Libby Collection on file in the Chester Fritz Library, University of North Dakota and a 1898 manuscript by Charles Lee entitled The Long Ago. The Winifred Working Papers include a number of letters and reminiscences written by Miss Ernestine Mager, who had resided in Walhalla or St. Joseph in 1874 or possibly earlier. Charles Lee was an early North Dakota historian and was editor of the Walhalla Mountaineer before and after 1900 (The Record 1899). Winifred Working was a journalist who wrote Red River history columns for such papers as the Cavalier Chronicle and the Thief River Falls Times between 1932 and 1938. During this period, Working corresponded with Ernestine Mager in search of material for his columns.

Miss Mager states that when her brother-in-law, Mr. George Emmerling, came to St. Joseph in 1871, it was a small "hamlet" of a dozen or so log cabins with not more than 50 residents. She mentions that George Reed had resided there as the U.S. Customs Inspector since 1870 (Winifred Working Papers n.d.). Lee (1898) notes that in addition to these duties, Mr. Reed ran a mail route between St. Joseph and Pembina. It has been reported that George Reed was appointed Post Master of the Walhalla Post Office (renamed) on 21 July 1871 (Williams 1966). Miss Mager relates that the name "Walhalla" had been suggested to Emmerling by a friend from Winnipeg, Consul Taylor (Winifred Working Papers n.d.). The name translates to "home of the gods" and refers to the beauty of the woods in the surrounding hills.

Ernestine Mager reported that her brother, John, arrived in Walhalla in 1872 and almost immediately began construction of a flour mill, financed by his brother-in-law, Mr. Emmerling. The initial, temporary mill used the same machinery as did Father Belcourt's flour mill, erected at the Mission of St. Joseph in the mid-1850's. John and Ernestine Mager's father had purchased the mill after Belcourt's departure from the mission in 1859 and transported it to St. Boniface. The partners Emmerling and Mager had it transported back in 1872 (Winifred Working Papers n.d.).

The Pembina River was dammed and the mill was powered from the water. The dam would not remain in position, however, and in 1876 they reconstructed it, putting it away from the river, adding another run of stones and a saw mill, and put in a new engine of larger capacity (Lee 1898). This new engine became a financial success and proved to be a tremendous boon to the economy of Walhalla and the surrounding area. George Emmerling and John Mager obtained the title of "First and Second Fathers of Walhalla" (Winifred Working Papers n.d.).

The mill burned at least twice between 1876 and 1890 but was always reconstructed, larger and more efficient than its predecessor. The Record (1899) contains an etching of the 1872 mill and a fine photograph of Mager's Flour Mill as it appeared in the late 1890's.

Ernestine Mager relates events which took place in the hills around Walhalla which pertain to this study. She recorded a near-first-hand accounting of a Sioux massacre of a Metis family which took place on 5 July 1874. Ernestine and her brother John arrived on the scene only a short time after Luis Delorme and a Mr. Morin had been killed by five, supposedly friendly Sioux (Winifred Working Papers n.d., Lee 1898). Joseph Delorme, the family patriarch, died of wounds after he had told the story of the attack.

From Miss Mager's account, the Delorme residence was on top of the plateau and left of "Old Baldy." A U.S. Geological Survey map (1972 Vang Quadrangle) indicates an Old Baldy located on the north side of the Pembina River in the E½ of Section 19, T.163N, R.57W. It appears that the Delorme house may have existed in the study area. Miss Mager, however, indicates quite definitely that they were on the south side of the river, in which case a different landmark designated "Old Baldy" must have been referred to.

Lee (1898) in reference to the same massacre feels that it occurred on the north side of the Pembina River and that the land was being farmed by the Vene family in 1897. The location of the Vene farm, however, has not been firmly established.

In a two page paper entitled "The Mill in the Mountain," (Winifred Working Papers n.d.) Miss Mager states that about 10 mi. northwest of Walhalla there is a spot on the Pembina River called the Fish Trap. This appears to be the same Fish Trap that Upham (1896) described, sited by Andrews (W.P.A. 1930) and discussed in a previous section of this report. Upham (1896) gives the location of the weir as the NE¼ of the

NW¼ of Section 30, T.163N, R.57W. Andrews states that is was also the site of the Crosby Flour Mill.

Ernestine Mager relates that an Indian named Carcojoe once lived in a cabin at this spot. She continues that later a bridge was built there and that in 1887 Mr. Gatchell and his two sons built a dam and a flour mill on the east bank of the Pembina River. She states that while the mill was in operation, there was a store nearby owned by Jens G. Bjornstad. The store was reportedly burned and was never rebuilt. In 1892, the mill was evidently sold, demolished, and taken to Bathgate where it was rebuilt (Winifred Working Papers n.d.).

This location sounds similar to a hamlet known as Valmont. Williams (1966) reports that this was a mill town in the Pembina River valley near the Canadian border, Fremont Township. Some 30 cabins housing mill employees surrounded the mill which ground feed and made flour. The Post Office was established on 23 February 1892 with Jens C. Bjornstad as Post Master, but was soon discontinued (on 8 October 1892), the mill closed and Valmont faded into a ghost town.

Additional research along with survey and testing of this area appears advisable. The area tentatively appears to be located along the eastern or northern bank of the Pembina River in the northcentral portion of Section 30 and the SW¼ of Section 19, T.163N, R.57W (Figure 3, p.19). Two archaeological sites (32CV212 and 32CV213) have been recorded in this area (Ames 1975) and this area would be inundated by the Pembilier Dam.

The Homen Post Office, named for the first Post Master--Halvor Homen--was reportedly established on 28 January 1895 (Williams 1966). This rural Post Office was located in the NW¼ of the SW¼ of the SE¼ of Section 7, T.162N, R.58W (Brock 1929, W.W. Hixon and Co. 1912). On what date this Post Office was discontinued is not known. It was apparently still functioning in or about the year 1929 (Brock 1929). Apparently the building has since been dismantled or removed from the site (Midland 1979). A school building, which was established prior to 1912, is situated approximately 3/4 mi. north of the site of the old Post Office in the SE¼ of the SE¼ of Section 7, T.163N, R.58W (W.W. Hixson and Co. 1912). This school building was standing vacant in or about 1979 (Midland 1979). Whether this building still exists on the site is currently unknown. It appears to be located outside of the compensation area and consequently, further research does not seem warranted at this time.

Williams (1966) reports that the Post Office of the Scandinavian settlement of Numedahl was established on 27 June 1898, with Halvor Halvorson serving as first Post Master. The name Numedahl translates to "beautiful valley between hills" (Spokesfield 1929). The townsite was located in the NE¼ of the NE¼ of Section 34, T.164N, R.58W (W.W. Hixson and Co. 1912). The Numedahl Post Office is said to have been discontinued on 31 August 1926 (Williams 1966). In 1929 no trace of the townsite was evident on the Fremont Township map (Brock 1929).

The Nore Numedahl Church and Cemetery are located in the NW¼ of the NW¼ of Section 3, T.163N, R.58W (U.S. Geological Survey Map 1969). The church was apparently abandoned prior to 1979 (Midland 1979). Both the extinct townsite of Numedahl and the Nore Numedahl Church and Cemetery appear to be slightly outside the Pembilier Dam compensation areas.

Possibly the most historically significant site, believed to be present in the study area, is the Mayo Brick Plant. Williams (1966) states that a small community named Brickmine was established around a brickyard in 1905. Babcock (1906) stated that the Mayo Brick Plant had been in operation for two years in 1906. The village, probably located in the NW¼ of Section 34, T.163N, R.57W, is said to have had a maximum population of 80 residents (Figure 3, p. 19). A local informant, Mrs. Fannie Valentine, attests to the fact that some area residents still refer to the remains of the Mayo Brick Plant as Brickmine. For a photograph of the plant in or about 1906 see Babcock (1906).

The Mayo Brick Plant was reportedly the only one in the state to use Cretaceous shale in the manufacture of bricks (Babcock 1906). Clay from Carlyle shale is said to be high in sulfur content and fuses at a low temperature. The resulting black brick contains unburned sulfur that causes bloating of the brick (Arndt 1975). However, Laird (1956) states that the Carlyle shale might be adequate for drain tile, hollow bricks and pressed bricks.

A 1905 article in the Cavalier County Republican states that surveyors from the Great Northern Railroad had arrived in Walhalla and were laying out a route from that community to the Mayo Brick and Tile Company works. The article continues that the brick company would be required to supply the 6 mi. right-of-way land and also pay for grading. Apparently, neither the Great Northern nor any other railroad line ever constructed a route to the brick works (Cavalier County Republican Vol.XVI(51), 24 August; Crawford 1931).

The inaccessibility of the plant to a market and the fact that the clay made unsound bricks were probably the primary factors leading to the abandonment of the works. Maps of Fremont and Olga townships indicate that the Mayo Brick and Tile Company owned a considerable amount of land along both banks of the Pembina River in 1912 (W.W. Hixson and Co. 1912). An atlas with an obscured date, believed to have been published between 1910 and 1920, indicates that the company owned none of this land nor any other in Cavalier County. However, in 1929, the Mayo Brick and Tile Company is reported to have owned 80 acres of land on the south side of the Pembina River in Section 34, T.162N, R.57W (Brock 1929).

Williams (1966) states that Brickmine was founded, promoted and named by Charles Major. No other reference to this person was found in a number of biographical sketch collections (Crawford 1931; Lounsberry 1917; Hennessy 1910; Historical Society of North Dakota Biographical file n.d.). Henry A. Mayo is said to have been Post Master of Walhalla in 1884 (Andreas 1884). In their

acknowledgements, geologists Barry and Melsted (1908), thank Mr. H.A. Mayo of Walhalla for his field assistance.

Mrs. Valentine (personal communication) informed the authors that some indications of the plant structures and rusted machinery were still visible on the site when she last visited the area, two years ago. Little is known about the equipment used at early brick works, such as the Mayo Plant (Kurt Schweigert, personal communication).

It is strongly recommended that the site area be intensively surveyed, mapped, photographed and tested. The area occupied by the Mayo Brick Plant and associated structures will be inundated by the Pembilier Dam.

A plat map of Pembina County for 1893 (Ensign 1893) indicates the existence of a small Indian Reservation known as Tib-Is-Go-Go-Sheg, situated approximately 2 mi. north of Walhalla. This site is located within the entire E½ of Section 7 and the W½ of Section 8, T.163N, R.56W. The reservation is not located within the project area.

On 2 October 1863, a treaty was signed between the U.S. Government and the Red Lake and Pembina bands of the Chippewa Indian Tribes (Kapple 1972). In this treaty, the Chippewa ceded a large tract of land on both sides of the Red River. All but the extreme western portion of the study area was included within the ceded land. Certain of these Indians were granted 160 acres of land within the ceded tract to be chosen at their option under certain provisions. A Pembina band chief, named Red Bear (Mis-co-muk-quah) was granted a 640 acre "reservation" on the north side of the Pembina River. Also, one of the signers of the treaty was a Pembina warrior named "Teb-ish-ke-ke-sheg" (Kapple 1972).

In the mid-1870's many members of the Pembina band who had settled along the Pembina River were removed to the White Earth Reservation in Minnesota (Gilfillan 1908). Whether the Tib-Is-Go-Go-Sheg Indian Reservation represents land occupied by some or all of those Indians who stayed is not known at this time. Although the area will not be affected by the Pembilier Dam, the matter deserves further research.

## RECOMMENDATIONS

Based on the scant amount of time allotted Ken Ames and his crew to conduct an archaeological survey of the proposed area of the Pembilier Dam Project, it is recommended that his survey (Ames 1975) be regarded as a preliminary investigation. Ames, aware of the temporal constraints on his project, has supplied an excellent list of recommendations for further archaeological work that should be undertaken within the Pembilier Dam Project study area. The following is a brief summation of his recommendations for Survey:

1) Those areas not surveyed in 1975 because of the excessively brushy, woody nature of portions of the survey area should be randomly sampled through a system of test pits and auger cores. This would also potentially disclose the presence of deeply buried sites, if such sites do exist.

2) A system of augering and/or test pitting should be established in areas already surveyed. This should be done for the same reasons listed above.

3) A program of controlled surface collection of known sites should be undertaken in a precise fashion. Each site should also be mapped to include this surface collection data.

Excavation:

1) Test excavation of known sites should be extended to supply a better sample of the coulee floor. These excavations should be conducted in undisturbed areas as well as in plowed locations and should be performed in conjunction with extensive surface collection.

2) Based on several models of possible settlement patterns in the coulee, test excavations should be conducted in localities with no surface indications. Ames does not supply the sources for these models, nor are they relevant at present.

Ames' summarization should be regarded as preliminary statements based on a small number of sites and a scanty amount of cultural material. Ames states that:

1) All sites display relatively light surface distribution of lithic debris which primarily consists of decortication flakes, cores and very few tools.

2) No habitation debris was encountered, e.g., hearths, structural remains.

3) Cultural debris is most dense at a distance of 30 to 40 ft. above the river, along terrace edges, but may extend to the coulee rim. Major concentrations are found at the edge of the first terrace above the floodplain.

4) There are no good direct associations between faunal and structural material.

It is apparent from Ames' report that he was not interested in recording historic sites. In one instance he mentions evidence of a "European-type house" located on an archaeological site. If the project area is to be inundated, that area should be resurveyed not only for the presence of archaeological sites, but for evidence of historical occupation as well. All historical sites found to be located therein should be recorded, photographed, mapped, and possibly tested.

The site of the Mayo Brick Plant, located in the SW¼ of the NW¼ of Section 34, T.163N, R.57W, should be extensively surveyed, mapped and possibly tested. Photographs should be taken of the existing machinery as well as what might still remain of the associated structures.

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# APPENDIX 1

Personal Communications

## APPENDIX 1

### Personal Communications

State Historical Society of North Dakota:

Kurt Schweigert - State Historical Archivist
Chris Dill - Associate State Field Archaeologist
Signe Snortland-Coles - Associate State Field Archaeologist
Frank Vyzralick - State Archivist

Chester Fritz Library, University of North Dakota:

Dan Rylance - Curator of Manuscripts
Colleen Oihus - Associate Curator of Manuscripts

Hudson's Bay Company:

Mrs. Shirlee A. Smith - Hudson Bay Archivist

Manitoba Provincial Archives:

Gilbert-Louis Comeault - Assistant Archivist
Barry Hyman - Assistant Archivist

University of North Dakota Archaeological Research:

Dr. Fred Schneider - Archaeologist, Professor

University of North Dakota, Department of Geology:

Dr. F.E. Holland, Jr. - Geologist, Professor

Informants:

Mrs. Fannie Valentine - President, Cavalier County Historical Society

APPENDIX 2

North Dakota Fur Trading Posts Along The Pembina River

## APPENDIX 2

### North Dakota Fur Trading Posts Along The Pembina River

| Approximate Date | | Company or | Approximate | Nearest Present North Dakota |
|---|---|---|---|---|
| Est | Aban | Individual* | Location | Community |
| 1797 | 1798 | HB Co. | S.33, T.164N, R.51W | Pembina |
| 1797 | 1798 | NW Co. | S. 4, T.164N, R.51W | Pembina |
| 1800 | 1801 | NW Co. | S.13, T.162N, R.56W or S.19 or 30, T.162N, R.55W | Walhalla |
| 1801 | 1808 | NW Co. | S. 4, T.164N, R.51W | Pembina |
| 1801 | 1804(?) | NW Co. | S.20 or 29, T.163N, R.56W | Walhalla |
| 1801 | 1802 | XY Co. | S.20 or 29, T.163N, R.56W | Walhalla |
| 1801 | 1802 | HB Co. | S.36, T.164N, R.54W | Neche |
| 1802 | 1805(?) | XY Co. | S. 4, T.164N, R.51W | Pembina |
| 1805 | 1823 | HB Co. | S. 4, T.164N, R.51W | Pembina |
| 1816 | 1816 | NW Co. | S. 4, T.164N, R.51W | Pembina |
| 1824 | 1830 | Amer.Co. | S. 4, T.164N, R.51W | Pembina |
| 1843 | 1850(?) | Amer.Co. | S. 4, T.164N, R.51W | Pembina |
| 1843 | 1850(?) | Amer.Co. | S.29, T.163N, R.56W | Walhalla |
| 1844 | 1870's | Gingras | S.16, T.163N, R.56W | Walhalla |
| 1847 | 1847 | HB Co.(?) | +S.28, T.164N, R.51W | Pembina |
| 1849 | 1851 | HB Co. | +S.28, T.164N, R.51W | Pembina |
| 1852 | ? | HB Co. | +S.28, T.164N, R.51W | Pembina |
| 1850's | ? | Leroy's | S.21 & 22, T.163N, R.55W | LeRoy |
| 1863 | 1860's(?) | Moorhead's | S.20 or 29, T.163N, R.56W | Walhalla |

*HB Co. - Hudson's Bay Company; XY Co. - X.Y. Company; NW C. - North West Company; Amer.Co. - American Fur Company

+May be located in present day Canada

# APPENDIX 3

## Scope of Work

# APPENDIX "A"

## SCOPE OF WORK
## CULTURAL RESOURCES INVESTIGATION OF THE PEMBILIER LAKE AND DAM FLOOD CONTROL PROJECT, NORTH DAKOTA

### 1.00 General

1.01 Cultural resources investigation reports serve several functions. The technical report is a planning tool which aids in the preservation and protection of our cultural heritage. It is also a comprehensive, scholarly document that not only fulfills federally-mandated legal requirements but also serves as a scientific reference for future professional studies. As such, the report's contents should be both descriptive and analytic in nature. The popular report provides the results of the survey in layman's terms. It serves primarily as a means of educating the public about the cultural heritage of an area but also informs them of how the Corps of Engineers is fulfilling its obligations toward cultural resources.

1.02 The survey and reports represent partial fulfillment of the obligations of the Corps of Engineers toward cultural resources as required by the National Environmental Policy Act of 1969 (P.L. 91-190); National Historic Preservation Act of 1966 (P.L. 89-665); Protection and Enhancement of the Cultural Environment (EO 11593); Advisory Council's Procedures for the Protection of Historic and Cultural Properties (36 CFR 800); Preservation of Historic and Archaeological Data 1974 (P.L. 93-291); and Identification and Administration of Cultural Resources (33 CFR 305).

1.03 The cultural resources investigation shall focus on the study area as described in paragraph 4.01 of this Appendix A. The study shall consist of the following tasks: (1) a comprehensive review of existing records and review of published and unpublished literature; (2) an evaluation of recorded cultural resources located within the study area; and (3) the preparation of a detailed technical report and a general, popular report.

1.04 The objectives of the literature search and records review are to identify all the known cultural resources which may be affected by the implementation of the proposed project, identify gaps existing in our knowledge of the cultural resources of the area, identify biases which may be inherent in the data base, and recommend research goals for future investigations.

1.05 The Contractor shall provide specialized skills and knowledge during the course of the study, to include expertise in the disciplines of archeology, history, architectural history, and any other sciences as required. The Contractor shall also provide all materials and equipment necessary to expeditiously perform those services required of the study.

1.06 The Contractor shall designate, in writing, the name of the Principal Investigator; and the Principal Investigator shall sign the draft and final reports.

1.07 The extent and character of the work to be accomplished by the Contractor shall be subject to the general supervision, direction, control, and approval of the Contracting Officer.

2.00 Definitions

2.01 "Cultural resources" are defined to include any building, site, district, structure, object, data, or other material relating to the history, architecture, archeology, or culture of an area.

2.02 "Literature search" is defined as an examination and review of written reports, books, articles, etc., published and unpublished, which are pertinent to the cultural resources investigation to be carried out for a particular project. The purpose of the literature search is to familiarize the Contractor with the cultural history of the study area and past investigations which have been carried out in the area, and to provide this information in a summarized form to the agency requesting the search. While the existing data could be extensive, the literature search should be limited, as much as possible, to providing a usable body of data for the purposes outlined above.

2.03 "Records review" is defined as the examination and review of records, files, etc., which are maintained by various local and State agencies. The purpose of the records review is to document the location of known sites which may exist within the project area, their condition, the extent of past work undertaken at the site, and any other information which may be relevant in assessing the significance of the site.

3.00 Project Description

3.01 The purpose of the proposed Pembilier Lake and Dam Project is to reduce economic damage and social problems associated with floods on the Pembina River. This will be accomplished through the construction of a rolled earth-fill dam and associated structures on the Pembina River southwest of Walhalla, North Dakota, near the Cavalier-Pembina County line (see map 1). The reservoir created by the construction of the dam would be ½ to 3/4 mile wide, 7.0 miles long, and would have a surface area of about 800 acres (see map 2.) Other aspects of the project may include road modifications, recreation facilities, and the purchase of wildlife compensation areas.

4.00 Study Area

4.01 The boundaries of the area to be studied shall include, in their entirety, the floodpool limits, compensation area, and recreation areas. These areas are shown on maps 1 and 2 which are made a part hereof. This study area lies within Pembina and Cavalier Counties, North Dakota. These study limits pertain primarily to the gathering of data to be used in section 6.h. below. In order to present a detailed summary of the regional prehistory and history (section 6.g. below), it will be necessary to discuss significant sites located outside the study limits.

5.00 General Performance Specifications

5.01 Information and data contained in the literature search and records review should be obtained from, but not limited to, the following sources:

a. Published and unpublished reports such as books, journals, theses, dissertations, manuscripts, newspapers, surveyor's notes, and early atlases.

b. Site files maintained by the Office of the State Archeologist, the State Historic Preservation Office, universities, and local historical societies.

c. National Register of Historic Places, including current additions and deletions as published by the Federal Register.

d. Consultation with professionals familiar with the cultural resources of the area.

e. Preliminary contacts with amateur archeologists and individuals concerned with local history in order to locate sites and to identify and define local interests and resources perceived to be locally significant.

6.00 General Report Requirements

6.01 Upon completion of the literature search and records review, the Contractor shall prepare a technical report, detailing the results of the investigation, and a popular report, written in laymen's terms, suitable for release to the public. Normally, the length of the popular report will not exceed ten typewritten pages.

6.02 The technical report shall include, but is not limited to, the following sections:

a. Title Page: The title page should provide the following information: the type of investigation undertaken; the cultural resources which were assessed (archeological, historical, and architectural); the project name and location (county and State); the date of the report; the Contractor's name; the contract number; the name of the author(s) and/or Principal Investigator; the signature of the Principal Investigator; and the agency for which the report is being prepared.

b. Administrative Summary: The summary will be a synopsis of the report defining the project area and the level of the cultural resources investigation. It shall summarize the research objectives and problems; methods, numbers, and types of resources identified; the significant recommendations; and any unusual or innovative findings or techniques developed during the course of the investigation. Because this information will serve both as an administrative summary and as a portion of that information required by the Department of the Interior for its annual report to Congress (pursuant to section 5.c. of the Reservoir Salvage Act as amended), the summary should be as detailed and succinct as possible. Normally the summary will not exceed one typewritten page.

c. Table of Contents.

d. Introduction: This section should include: the purpose of the report; a description of the proposed project; the location of the proposed project including a map of the general area; and a project map (a

list of USGS quadrangle maps which cover the project area should also be included).

e. Environmental Setting: This section should contain a brief description of the environment of the study area, both present and past conditions, and it should be of a length commensurate with other sections of supporting type information.

f. Study Methods: This section should give an explicit statement of the study methods and rationale under which the investigation was completed. It should document the general sources which were sought and the types of data which were expected of these sources. (For example, an archeological journal may provide information on past surveys and excavations which is useful not only for site locations but also for assessing the quality of past work and apparent data gaps which may exist, whereas field notes of General Land Office (GLO) surveys may provide information on the location of prehistoric and early historic sites and early vegetation of an area.)

g. Summary of Regional Prehistory and History: This section should discuss the regional cultural developments in their spatial and chronological position.

h. Study Results: This section should list those sites which were recorded in the literature or records reviewed and their exact location. The section should describe the archeological, architectural, or historical resources encountered, including the size of the site, type of site (i.e., historic dwelling, prehistoric village, mound group, etc.), the cultural component(s) of the site (if discernible), and any available information on the general nature of the site. This section should contain a brief summary of previous archeological and historical work undertaken at the site, including the date, extent, and adequacy of the past work as it reflects on the interpretation of what might be found in the project area. Official site designations should be included for the resources discussed. A means of cross-referencing these sites with bibliographic entries in which they may be located should also be developed.

i. Recommendations: This section should discuss the potential of the area to produce presently unknown cultural resources, and it should point out any biases which may be inherent in the resource base as it exists today. The section should outline any gaps in the present data base and should develop specific research goals which may be used in subsequent investigations.

j. Bibliography: Society for American Archeology format should be used. This section should be a comprehensive bibliography of sources which will provide a basis for future studies.

k. Appendix: This section should contain the scope of work, the resume of the Principal Investigator and other individuals important to the successful completion of the study, and correspondence derived from the gathering of data as outlined in section 5.

6.03 The above items do not necessarily have to be discrete sections; however, they should be readily discernible to the reader.

7.00 Format Specifications

7.01 Text materials will be typed (single-spaced) on good quality bond paper, 8.5 inches by 11.0 inches, with a 1.5-inch binding margin on the left, 1-inch margins on the top and right, and a 1.5-inch margin at the bottom.

7.02 Information will be presented in textual, tabular, and graphic forms, whichever is most appropriate, effective, or advantageous to communicate the necessary information.

7.03 All figures must be readily reproducible by standard xerographic equipment.

8.00 Submittals

8.01 The Contractor shall complete all work and services under this contract and deliver to the Contracting Officer within the following time limitations:

a. Ten copies of the draft report shall be submitted no later than 75 calendar days after contract award.

b. An original and 15 copies of the final report shall be submitted no later than 190 calendar days after contract award.

8.02 The Contractor shall submit the photographic negatives to the Contracting Officer for all black and white photographs which appear in the final report.

8.03 Neither the Contractor nor his representative shall release any sketch, photograph, report, or other material of any nature obtained or prepared under the contract without specific written approval of the Contracting Officer prior to the acceptance of the final report by the Government.

9.00 Method of Payment

9.01 Requests for partial payment under this fixed price contract shall be made monthly on ENG Form 93. A 10 percent retained percentage will be withheld from each partial payment. Upon approval of the final reports by the Contracting Officer, final payment, including previously retained percentage, shall be made.

2 Incl
1. Map 1
2. Map 2

# APPENDIX 4

Vitae

CURRICULUM VITAE

Name: Kent N. Good

Date and Place of Birth: June 29, 1946, Great Falls, Montana

Present Position: Research Archaeologist
HISTORICAL AND ARCHAEOLOGICAL SURVEYS, INC.
2207 Springbrook Court
Grand Forks, ND 58201

Education: University of Montana, 1964-1969, B.A.
University of Montana, 1969-1974, M.A.

Teaching Experience: 1970-1972, Graduate Assistant, University of Montana
1972-1973, Instructor, University of North Dakota

Research Experience: 1972-1979, Associate Research Archaeologist, University of North Dakota

Research: (Conducted for University of North Dakota Archaeological Research)

1970, Archaeological Survey of the Pryor Mountain - Bighorn Canyon Recreation Area, June-September.

1971, Field Supervisor, Archaeological Excavation in the Pryor Mountain - Bighorn Canyon Recreation Area, June-September.

1972, Field Supervisor, National Park Service, Archaeological Salvage of the Pryor Mountain - Bighorn Canyon National Recreation Area Road - Phase II.

1973, Field Supervisor, National Park Service, Crow Tribal Land Archaeological Survey.

1973, Field Supervisor, Corps of Engineers, Archaeological Excavation of the Moe Site (32MN101), Lake Sakakawea, North Dakota.

1973, Field Supervisor, Bureau of Reclamation, Archaeological Survey of the Patterson Lake and Versippi Reservoir, North Dakota.

1974, Field Supervisor, Archaeological Survey of the Turtle River Watershed, Forest River Watershed, North Dakota, Soil Conservation Service.

1974, Field Supervisor, Archaeological Survey of the Route of the Proposed Dome Pipeline, North Dakota State Historical Society.

1974, Field Supervisor, Archaeological Survey of the Shoreline of Lake Homme, North Dakota.

1974, Field Supervisor, Archaeological Excavation at the Pretty Creek Archaeological Site, Pryor Mountains, Montana, National Park Service.

1975, Field Supervisor, Archaeological Survey of the Warwick-McVille Proposed Canal Route, Garrison Diversion and Proposed Recreation Areas, North Dakota. Bureau of Reclamation.

1976, Field Supervisor, Archaeological Investigations in the LaMoure-Oakes and Wild Rice River Project Areas, LaMoure-Oakes Project Area, Garrison Diversion Unit, North Dakota. Bureau of Reclamation.

1977, Principal Investigator, Archaeological Test Excavation of the Highway 8 Site, 32DU2, Garrison Reservoir, North Dakota. U.S. Army Corps of Engineers, Omaha District.

1977, Field Supervisor, Archaeological Survey of Burlington Dam/Lake Darling, North Dakota. U.S. Army Corps of Engineers, St. Paul District.

1978, Principal Investigator, Archaeological Test Excavation of the Anderson Tipi Ring Site (32ML111) for the Falkirk Mining Company, Bismarck, North Dakota.

1978, Principal Investigator, Archaeological Test Excavations of Three Sites within Affected Areas of the Proposed Burlington Dam, Souris River Basin, North Dakota. U.S. Army Corps of Engineers, St. Paul District.

1979, Principal Investigator, An Archaeological Survey of a Coal Mine Development for the Falkirk Mining Company, Bismarck, North Dakota.

(Conducted for HISTORICAL AND ARCHAEOLOGICAL SURVEYS, INC.)

1979, Principal Investigator, Archaeological and Historical Survey, Proposed Haul Road and Watershed Project. Indian Head Mine, North American Coal Company, Bismarck, North Dakota.

1979, Principal Investigator, Archaeological Supplementary - Literature Consolidation Report for North American Coal Company, Bismarck, North Dakota.

1979-1980, Principal Investigator, Archaeological Test Excavation, Survey of Mine Area and Oral History Research, Mercer County, North Dakota. Coteau Properties, North American Coal Company, Bismarck, North Dakota.

1980, Principal Investigator, Literature Search - Cultural Resource Investigation of the Pembilier Lake and Dam Flood Control Project, North Dakota.

Publications:

1973, Preliminary Land Use, Environmental and Socio-Economic Assessment of the Warroad River and Bull Creek Drainage Area, Minnesota. Richard Bares, Paul B. Kannowski, Ralph D. Kingsbury, Phyllis E. Moen, John R. Reid, Nikki R. Seabloom, co-authors. Institute for Ecological Studies, University of North Dakota. Research Report #4.

1973, Environmental Impact Assessment of the Roseau River, Minnesota. John R. Reid, Ronald J. Hall, Richard Bares, Donald L. Rubbelke, Phyllis Moen, Larry J. Dobesh, co-authors. Institute for Ecological Studies, University of North Dakota. Research Report #5.

1974, A Survey and Synthesis of Archaeological Sites Within the Sub-Alpine Ecological Zone, Pryor Mountains, Montana. (M.A. Thesis on file at the University of Montana, not submitted for publication.)

1974, The Results of the Archaeological Survey in the Grapevine Creek Area, Bighorn Canyon National Recreation Area -- 1972 Field Season. On file with the National Park Service. Co-authored with Lawrence L. Loendorf.

1975, The Results of the Archaeological Survey of Crow Tribal Lands, Bighorn Canyon National Recreation Area -- 1972 Field Season. On file with the National Park Service.

1976, Preliminary Report of Cultural Resource Inventory of Portions of the Central North Dakota Section, Garrison Diversion Unit, North Dakota. On file with the National Park Service. Co-authored with Frederick Schneider and Kurt Schweigert.

1976, Archaeology Investigations in the LaMoure-Oakes Project Area, Garrison Diversion, North Dakota. On file with the National Park Service. Co-authored with James Dahlberg, William Tibesar, and Susan Vehik.

1976, The Commissary Ridge Bison Kill (24LB863), Archaeology in Montana, 17(1&2). Co-authored with Lawrence L. Loendorf.

1977, Archaeological Investigations of the Hendrickson III Site - 32SN403, LaMoure-Oakes Project Area, Garrison Diversion Unit, North Dakota. On file with the Bureau of Reclamation. Co-authored with James Dahlberg, Thomas Larson, Bruce Benz, and Frederick Schneider.

1977, Archaeological Investigations in the LaMoure-Oakes and Wild Rice River Project Areas, LaMoure-Oakes Project Area, Garrison Diversion Unit, North Dakota. On file with the Bureau of Reclamation. Co-authored with Willard Kinney, Carmen Greenshields, and Bruce Benz.

1977, Archaeological Test Excavation of the Highway 8 Site, 32DU2, Garrison Reservoir, North Dakota. On file with the U.S. Army Corps of Engineers, Omaha District. Co-authored with Jeffrey L. Hauff.

1977, "Fortification Sites in the Bighorn Canyon Area," in Archaeology in Montana, 18(2&3). Co-authored with Lawrence L. Loendorf.

1978, An Archaeological Survey: Shoreline of Lake Darling and Proposed Burlington Dam, Flood Control Project Area, Upper Souris River, North Dakota. On file with the U.S. Army Corps of Engineers, St. Paul District. Co-authored with Richard A. Fox.

1978, Archaeological Test Excavation at the Anderson Tipi Ring Site (32ML111), McLean County, North Dakota: A Cultural Resource Study in Central North Dakota. On file with the Falkirk Mining Company, Bismarck, North Dakota. Co-authored with Jeffrey L. Hauff.

1979, Archaeological and Historical Survey, Proposed Haul Road and Watershed Project. On file with the North American Coal Company, Bismarck, North Dakota.

1979, Supplementary Report - Archaeological and Historical Survey of the Proposed Coal Mine Development - Indian Head Mine (Section K), Mercer County, North Dakota. On file with the North American Coal Company, Bismarck, North Dakota.

1980, Archaeological Testing and Survey: Testing of Three Archaeological Sites and Survey of a Road Detour within the Project Construction Zone. Burlington Dam Flood Control Project Area, Upper Souris River, North Dakota. On file with the U.S. Army Corps of Engineers, St. Paul District. Co-authored with Jeffrey L. Hauff.

Papers Presented at Professional Meetings:

1975, "The Lisbon Burial - A Possible Middle Missouri Burial." Read at the Plains Anthropological Conference, Lincoln, Nebraska. November.

1978, "Results of the Archaeology Survey of the Proposed Burlington Dam Project." Read at the Association of Manitoba Archaeologists Conference, Winnipeg, Manitoba, Canada. May.

1979, "The Archaeology of the Anderson Tipi Ring Site, North Dakota." Read at the Joint Plains - Midwest Archaeological Conference, Grand Forks, North Dakota. April.

Foreign Language: French

Research Interests: North American Prehistory,
Early Hunters and Their Lithic Technology,
Nomadic Peoples of the Plains

Memberships: Sigma Xi
Plains Anthropological Conference
Plains Anthropologist

# CURRICULUM VITAE

Name: James C. Dahlberg

Place of Birth: Butte, Montana

Present Position: Advanced Research Assistant and Photographer
Historical and Archaeological Surveys, Inc.
Offices in Grand Forks and Garrison, North Dakota

Education: 1968-1973, B.A. University of Montana
1978, M.A. Credits, Iowa State University

Previous Positions: 1973-1977, Research Assistant, Department of Anthropology and Archaeology, University of North Dakota, Grand Forks.
1977-1978, Advanced Research Assistant and Graduate Assistant, Iowa State University, Ames, Iowa.
1979, Advanced Research Assistant and Photographer, Department of Anthropology and Archaeology, University of North Dakota, Grand Forks.
1979, Advanced Research Assistant and Photographer, Department of Anthropology, University of Montana, Missoula.

Research Experience:

Field: 1973, Archaeological Excavation of the Pretty Creek Archaeological Site, Pryor Mountains, Montana.

1974, Archaeological Survey of the Turtle River Watershed, North Dakota.

1974, Archaeological Survey of the Route of the Proposed Dome Pipeline, North Dakota.

1974, Archaeological Survey of the Shoreline of Lake Homme, North Dakota.

1974, Archaeological Excavation of the Pretty Creek Archaeological Site, Pryor Mountains, Montana.

1974, Excavation of the "Fort Smith Burial," Yellow Tail Dam, Montana.

1975, Assistant Supervisor, Archaeological Test Excavation along the James River and Proposed Taayer Reservoir, South Central North Dakota.

1976, Archaeological Survey and Test Excavation of the James River Valley, Garrison Diversion Bank Stabilization Project, North Dakota.

1978, Archaeological Survey and Test Excavation of the Saylorville Reservoir Project, Central Iowa.

1979, Archaeological Survey and Photography of Falkirk Mining Project, Central North Dakota.

1979, Archaeological Excavation and Photography of Spring Creek Mining Project, Southcentral Montana.

Lab: 1973-1977, Research Assistant, Department of Anthropology and Archaeology, University of North Dakota, Grand Forks. Involved in many laboratory duties for a large number of field reports.

1977-1978, Ceramic analysis for the Department of Anthropology, Iowa State University, Ames.

1979, Advanced Research Assistant, Department of Anthropology and Archaeology, University of North Dakota, Grand Forks. Involved in writing field report of the Pretty Creek Archaeological site - 24CB4 & 5, Montana.

1980 -, Advanced Research Assistant and Photographer for Historical and Archaeological Surveys, Inc., North Dakota. Involved in writing and editing field reports from previous field season.

Manuscripts:

1976, Archaeological Investigations in the LaMoure-Oakes Project Area, Garrison Diversion, North Dakota. On file with the National Park Service. Co-authored with Kent N. Good, William Tibesar, and Susan Vehik.

1977, Archaeological Investigations of the Hendrickson III Site - 32SN403. LaMoure-Oakes Project Area, Garrison Diversion Unit, North Dakota. Prepared for the Bureau of Reclamation. Co-authored with Kent N. Good, Thomas Larson, Bruce Benz, and Fred Schneider.

1979, Archaeological Excavations at the Garrison Tipi Ring Site, 32ML117, McLean County, North Dakota: An Archaeological Salvage Project. Co-authored with Kent N. Good.

1979, Archaeological Survey of a Coal Mine Development for the Falkirk Mining Company, McLean County, North Dakota.

Foreign Languages: German and Spanish

Research Interests: Ceramic analysis from eastern North Dakota and the Missouri Trench
North American prehistory and artifact technology
Research photography

# PERSONAL VITAE

Name: Larry J. Sprunk

Date and Place of Birth: February 22, 1940
Chaffee, North Dakota

Military Service: U.S. Army 1962-1965
82nd Airborne Division
Honorable Discharge

Education: B.A., Westmar College, LeMars, Iowa

M.A., North Dakota State University, Fargo, North Dakota

Ph. D. Credits, Emporia State College, Emporia, Kansas
Washington State University, Pullman, Washington

Teaching Experience: 1966-1968, Graduate Assistant, North Dakota State University, Fargo, North Dakota
1968-1970, College of Emporia, Emporia, Kansas
1970-1971, Graduate Assistant, Washington State University, Pullman, Washington
1971-1973, Hibbing State Junior College, Hibbing, Minnesota

Job Experience: News Reporter, Mandan Pioneer, Mandan, North Dakota, 1973.
Director, North Dakota Oral History Project, 1973-1977.
President, Historical Surveys, Inc. (now Historical and Archaeological Surveys, Inc.), 1977-1980.

Memberships: Western Writers of America, Inc.
The North Dakota Society of Germans from Russia
The North Dakota Historical Society, Inc.
Oral History Association

Publications and Productions:

1976, Co-authored, directed and played "Skinner" in "The Hand-carved Prairie Rose," a live stage production presented 14 times in 13 North Dakota Communities and aired on the state's Prairie Public Television.

1978, Co-authored A History of the North Dakota State Highway Department (published in 1979).

1979, Authored We Remember the Rivers: An Oral History Survey of the River Valleys in the Harry S. Truman Dam and Reservoir Project including a study of Joseph A. Dice, Bridge Builder. Contract with the Kansas City District, U.S. Corps of Engineers.

1979-1980, Oral History of Sites within Proposed Mine Area - Coteau Properties. In conjunction with Cultural Resource Inventory conducted by Historical and Archaeological Surveys, Inc.

1980, Literature Search (History), Cultural Resource Investigation of the Pembilier Lake and Dam Flood Control Project. Conducted for the U.S. Army Corps of Engineers, St. Paul District.

Guest Lectures and Workshops:

1976 (March), "The Techniques and Equipment of Oral History" University of North Dakota - A Symposium for Highschool History Instructors.

1977 (April), "The Value and Methodology of Oral History" University of Missouri guest lecture for Historic Preservation Class.

1978 (June), "Conducting Oral History Surveys" A workshop conducted for the National Park Service at their Stanton, North Dakota office.

1979 (April), "Oral History: Samples and Suggestions" Guest lecture for Historic Preservation and Anthropology Classes, University of Missouri.

1980 (in process), Authoring The History of Garrison for the Garrison North Dakota Civic Club. This city history is to be published in 1980 for the 75th anniversary of Garrison.

Presenting the "The Turkey Track Bill Show" to state, national and international audiences. The show was written in 1978 and presented as a one hour "Evening with Turkey Track Bill" under the sponsorship of the North Dakota Committee for the Humanities and Public Issues, a state non-profit organization affiliated with the National Endowment for the Humanities. Under this title, the one-man performance was given in 11 North Dakota communities as part of the NDCHPI's Chautauqua series. In 1979 the title was changed, content extended to a full-length dramatic format, and the show independently booked by Historical and Archaeological Surveys, Inc.

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