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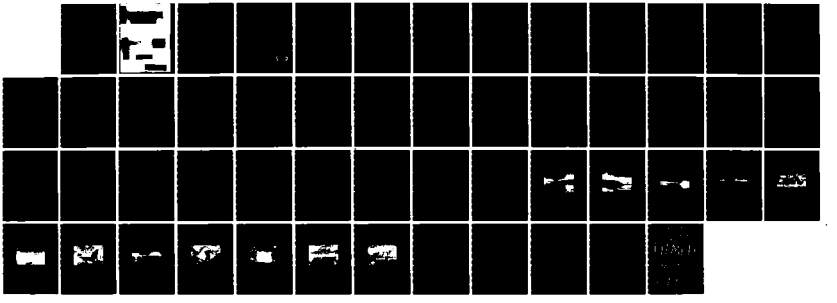

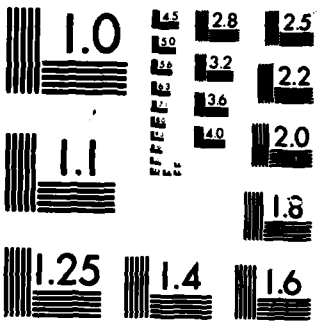

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AN ARCHEOLOGICAL SURVEY OF THE MISSISSIPPI RIVER 9' CHANNEL 1975 DREDGE DISPOSAL SITES, POOLS 5A, 6, 7, AND 8

BY

RICHARD B. LAHR

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This report is the result of an archeological survey and testing program of 145 primary and alternative dredge disposal sites located in pools 5A, 6, 7, and 8 of the Mississippi River. These sites were examined for historic and prehistoric human activity. The results of the survey are negative.

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AN ARCHEOLOGICAL SURVEY OF THE MISSISSIPPI RIVER 9' CHANNEL

1975 DREDGE DISPOSAL SITES, POOLS 5A, 6, 7, AND 8

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AN ARCHEOLOGICAL SURVEY OF THE MISSISSIPPI RIVER 9' CHANNEL 1975 DREDGE DISPOSAL SITES, POOLS 5A, 6, 7, AND 8

PREFACE

by: Dr. Joan E. Freeman
State Archeologist
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Madison, Wisconsin

The following report is the result of an archeological survey and testing program involving the examination of 145 primary and alternative dredge disposal site areas located in pools 5A, 6, 7, and 8 of the Mississippi River. These sites were examined for evidence of past human activity, either historic or prehistoric, or both in order to help determine their suitability as possible dredge disposal sites in the Corps of Engineers' continuing maintenance of the Mississippi River 9' navigation channel.

The survey and testing operations were funded by the U.S. Army Corps of Engineers through a contract (DACW37-75-C-0163) with my institution, The State Historical Society of Wisconsin. Field work was carried out between the 1st of June and the 31st of July, 1975.

by Mr. Richard B. Lane of Saint Cloud State University and a crew of three assistants (see appendix B of this report for the personnel involved with this project and their qualifications). A total of 44 days was spent in field work during this two month period, while the laboratory analysis, photographic processing, and subsequent writing of the report was accomplished between the 1st of August and the 15th of November 1975.

As will be seen in Mr. Lane's report, the results of the survey, in terms of recovering archeological or historical evidence from the sites examined, were negative. Rather than being an exercise in futility, however, this project must be considered of value, both in terms of helping to set precedents -- surveys and testing programs of this sort must be undertaken, else there is the constant chance that an otherwise unknown historic or archeological site might be irretrievably lost -- and in terms of developing methods and techniques for conducting large-scale river bank, shore, and island surveys. Although the 145 areas tested this time were unproductive as regards evidence of mans' past activities, a survey method was developed which would, I am sure, locate such evidence if it were there to be found.

There are a number of reasons why this project should be considered neither a waste of money spent for negative data, nor a waste of time spent in random digging. A water borne survey method which, candidly, began with some confusion was developed into a useful mechanism for both rapidly and efficiently checking widely separated areas for the presence or absence of endangered cultural materials. This method, described in the following report, seems to be the primary archeological value of the project. The negative data is also of

value, both archeologically and in practical terms, in that the areas demonstrated nonproductive archeologically are therefore safe areas for the deposition of dredge spoil -- safe as far as the destruction of human cultural materials goes.

Mr. Lane's report is in fairly standard format. The introductory section describes the goals of the project and the methods and techniques employed by him to achieve those goals. The main body of the report, the data presentation, offers brief descriptions of the individual dredge disposal sites, both primary and alternative, and the results of the archeological testing conducted on each of them. The final section, containing a short summary and conclusion, also offers his suggestions as to the disposition of all the areas tested (they may be used as disposal sites) as well as a method of conducting future surveys of this type.

I wish to take advantage of this opportunity to express my thanks to the United States Army Corps of Engineers for their recognition of the importance and nonrenewability of the human past as evidenced by their funding of this survey project. I am especially grateful to Ms. Jan E. Streiff, Archeologist with the Environmental Resources Branch of the Corps of Engineers for her consistent help in all phases of the project. I would also like to thank Richard B. Lane, my Field Director, and his crew -- Messrs. Fuhrman, Radzak, and Waitkus -- for a job well done, despite the unpleasant conditions and the lack of "treasures," may all their beer cans become projectile points.

AN ARCHEOLOGICAL SURVEY OF THE MISSISSIPPI RIVER 9' CHANNEL 1975 DREDGE DISPOSAL SITES, POOLS 5A, 6, 7, AND 8

a report by: Richard B. Lane
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ACKNOWLEDGMENTS

I should like to thank Dr. Joan E. Freeman, State Archeologist of Wisconsin, and her institution, the State Historical Society of Wisconsin, for handling the many problems of fund disbursement, for taking care of paper work, and especially for being so understanding of and sympathetic for a field party producing only negative evidence. I acknowledge a great debt to Dr. Freeman for the many hours of consultation, and consolation, she so kindly gave me.

Like Dr. Freeman, I would like to thank the U.S. Army Corps of Engineers for funding the project. I too am indebted to Ms. Jan E. Streiff, Archeologist with the Environmental Resources Branch for her many good works on our behalf both in St. Paul and in her visits to us in the field. Mr. Dennis Cin of the Operations Division, Mississippi River Section was of great help to us in the field as were the members, both Corps and non-Corps, of the Great River Environmental Action Team.

To my field crew -- Mr. Brian R. Waitkus, Mr. Kent W. Fuhrman, and Mr. Lee S. Radzak -- I am especially grateful, for their perserverance, their many talents, and their specialized abilities, all of which I exploited to the fullest. They faced mosquitoes, barge wakes, and the largest poison ivy I have ever seen with equanimity and did a con-

sistently good job of work throughout the survey and testing operation.

I would also like to express my appreciation to all the "visiting firemen" -- Dr. Elden Johnson, State Archeologist of Minnesota, G. Joseph Hudak, Archeologist for the Science Museum of Minnesota, and his crew, and Leslie D. Peterson, Highway Archeologist with the Minnesota Historical Society, all of whom answered my many questions, ran Xerox copies of obscure references for me, and who kindly offered me advice from their experience and expertise in the area -- some of which I may even have taken, and if so, acknowledge it here.

Any errors of fact, judgment, or interpretation contained in this report are, however, completely my own responsibility.

INTRODUCTION

The research plan for this project was, basically the same as that for any archeological survey and testing program. That is, firstly, to discover the presence or absence of areas within the survey boundaries which contain evidence of past historic and/or prehistoric human activity. Secondly, then, if evidence is present, to determine the dimensions of the site both spatially, through areal test excavation, and chronologically, through vertical test excavation and sampling.

The sorts of evidence expected in a survey of this sort, involving both surface survey and subsurface testing, would include artifacts, man-made objects giving evidence of the possible range of variation of human activities present, features, such as house depressions, burial mounds, or other non-portable human constructions, ecofacts, or evidence in the form of biological debris of mans' utilization or exploitation of an area and its resources, and manuports, objects which, though neither

modified nor manufactured, give evidence by such means as being exotic or having been imported to the area by some human agency. The spatial distribution of these forms of evidence within a given area will allow further inferences to be drawn as to the human use of the area.

Once evidence has been discovered, described, and analyzed at least comparatively (in comparison with evidence from known sites within or adjacent to the survey area), it should be possible to develop and test hypotheses which would increase the potential effectiveness of the ongoing or subsequent survey program. Using the logico-deductive methods common to archeology, it would be expected, for example, that both the general floodplain area, and the lower elevation islands in the river, would contain evidence of seasonal activities only -- most probably from the summer and fall months, or roughly the periods after high water or flooding and before the winter freeze-up. It would be unlikely to find either permanent habitation sites or monuments in these low lying areas, subjected as they are to periodic, if not annual, flooding. This probable pattern of seasonal usage was found to be still generally the case for modern human activities in the area.

In sum, the research plan chosen for this project was to determine, through the procedures described below, the presence or absence of past human cultural materials within the survey area, to delimit, both spatially and temporally this cultural evidence, and from it develop both historical and processual hypotheses regarding the human utilization of the area in the past for possible further testing by full scale excavation of the sites located.

Ideally, a research plan of this sort should include a survey of all the ecozones present in the area, not only the lower floodplain and

islands, but the higher terraces, bluffs, and uplands as well. Due, however, to the imposed areal limitations -- restriction to primary and alternative dredge spoil disposal sites (see maps #1 through #4, appended to this report) -- it was impossible to realize the ideal condition. It was thought possible however, to retain a primary research orientation by compensating somewhat for the lack of a complete survey by means of an extensive literature search covering not only the survey area but adjacent areas as well. This would provide the comparative base for the data we expected to recover from the present survey.

Survey Procedures. A literature search of both the survey area and adjacent areas was run prior to our entry into the field (Anonymous 1975; Freeman 1975; Nystuen 1972; Streiff 1972; Winchell 1911). A large number of sites, both excavated and unexcavated, are known from both the Minnesota and Wisconsin sides of the river in Pools 5A, 6, 7, and 8. These sites are, however, generally spatially restricted to the higher terraces, bluffs, and uplands. The range of human occupation for these areas, adjacent to the present survey area, extended from as early as 3000 B.C. to the present. There was, unfortunately, no reference to known sites or cultural materials having been in those primary and alternative dredge disposal site areas included in the present survey.

In conjunction with the archeological literature search a comparative paleogeographical study was made which included an examination of aerial photographs, U.S.G.S. topographic maps, Mississippi River navigation charts, historical land survey maps, plats, and other available historical descriptions of the area. The primary purpose of this study was to try and determine what effects on the available land surface the modifications of the river have had since the construction of

the locks and dams. There seems to be significant modification, more properly reported elsewhere (see for example, U.S. Army Corps of Engineers 1974), which is applicable to this present survey in that areas which would be worth intensive study are currently under water or else have been washed out and redeposited elsewhere. Some areas, however, in the lower floodplain and on some of the modern islands and peninsulas, seemed to have been relatively unmodified and were thus deemed necessary for intensive survey and testing.

A visual inspection of the area was made by the field director, myself, prior to the beginning of field research in order to try and eliminate any last minute problems which might delay field work. The only major problem encountered, and one which was continually with us throughout the period of field work, was the relatively high water level of the river. An extremely wet spring had resulted in the river being higher than normal at the beginning of June, and the heavy rains in both June and July meant that this high water level was fairly well maintained throughout the field season. I feel, however, that no sites or potential sites were missed in the course of the survey because of the high water, and further suspect that people in the past would have experienced similar periodic high water levels and would not have utilized areas which might be under water in the normal course of events.

By virtue of being sites for dredge disposal, all the areas surveyed were, by necessity, in close proximity to the 9' navigation channel. This factor meant that access to the site survey areas could best be obtained by boat and, in many instances, could only be obtained by boat. We found that a 14 foot, flat bottomed "duck boat," powered by a 20 horsepower outboard engine was more than adequate to carry crew

and equipment to and from the test areas. As well as transport, we found the boat to be of great aid in the survey itself. It served as a photographic platform, and allowed us to examine, at varying distances, the site areas and their ecological settings.

The pattern of survey involved making at least one pass of the site area prior to landing, in order to photograph the "as found" conditions, and, if the sites to be tested were on islands or peninsulas, a complete circuit of the area was made in order to examine the area itself as well as adjacent areas.

Upon landing, the area to be surveyed was subjected firstly to a walkover surface analysis to check for the presence of cultural material (see Plate VIII). Whether or not surface indications were present in the area, at least one large test pit, 1 meter (39.36 inch) square, was excavated. The placement of the large test pit would normally be based on the presence of surface indications or cultural material, but if none were found, the large test pit would be placed in the central portion of the area under examination (see Plate IX for an example of large test pitting). The large test pits were excavated to sterile zones or water level (see Plate X) and averaged approximately 2 meters (78.72 inches) in depth. Smaller test pits, 50 centimeters (19.68 inches) square, were excavated at intervals of approximately 20 meters (64 feet) along north/south (magnetic) lines and east/west lines to the edges of the survey area (see Plates XI and XII). These too were excavated to a sterile level or to the water level. All soil excavated in these test pits, large or small, was screened through 0.64 centimeter (one-quarter inch) wire mesh to insure recovery of small items which might have been missed during the process of excavation. All

pits were backfilled prior to our departure from the area.

Although chemical testing, especially Phosphate, Carbonate, and pH, had been planned as a technique for this survey, we were informed that the natural phosphate level of the sediments in the area in conjunction with the chemicals present in the water was such that testing would not produce the evidence of human past activity we desired (Hudak 1975; Cin 1975). We did not employ any of these chemical testing methods.

After developing our confidence in the area and in our techniques, we were able to survey fairly rapidly by splitting the four man crew into two crews of two men each. The "boat crew" would drop the other crew in an area where two test sites were nearly adjacent to each other (as was often the case on small islands) taking "as found" photographs in the process. The boat crew would then depart to another site area, take photographs, test the area, and return to the crew dropped off earlier which had, by this time, finished testing and photographing two site areas. The same process would then be repeated, usually exchanging the "boat crew" in order to insure general equality in the amount of work done. (This does require that at least two people be capable of running the boat.) By the end of the field season, we had reached the point of being able to test between eight and ten site areas per day (although, as will be noted below, the areas we checked were sterile of cultural material -- as were most such areas checked during the summer, not only in our own project area but upstream and downstream from us as well).

RESULTS OF THE SURVEY

A total of 145 primary and alternative dredge disposal sites were checked for evidence of historic or prehistoric human activity. In only 4 areas was any such evidence recovered and, as will be noted below, in these 4 areas the evidence is such that it will probably not preclude the areas being utilized as spoil dumps.

The site areas checked can roughly be categorized as follows: areas of prior dredge spoil dumping (Plates I and II illustrate a high dredge spoil dump deposit, while Plates III and IV show somewhat lower elevation dredge spoil deposits), areas with prior bank protection/modification (Plate V illustrates one such area), very low areas, under water at the time of the survey (Plate VI), and a few low-lying undisturbed areas (Plate VII).

Each site area will be discussed according to its pool location, geographic name, and site number (e.g., Pool 5A, Island 58, Number 1). The locations of the sites are found on Maps #1 through #4 which are appended to this report. Although it was thought at the beginning of the survey that the number of areas to be tested would be cut down somewhat, according to dredging needs, this did not occur before the completion of our field work. Because of this, the following list may well contain site areas that did not need to be checked, or that may need to be checked at some later date.

POOL 5A [see Map #1] - 25 areas tested

Island 58, site number 1: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Island 58, site number 2: This is an alternative dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Island 58, site number 3: This is an alternative dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Island 58, site number 4: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Island 58, site number 5: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Island 58, site number 6: This is an alternative dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Island 58, site number 7: This is an undisturbed, low-lying area with recent flood deposits on the surface. It has not yet been used for dredge spoil. Testing of the area proved negative; the area is considered sterile. It is a primary dredge disposal site.

Island 58, site number 8: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Fountain City, site number 1: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Fountain City, site number 2: This is an undisturbed, low-lying area with recent flood deposits on the surface. Testing of the area

proved negative; the area is considered sterile. It is a primary dredge disposal site.

Fountain City, site number 3: This is an undisturbed, low-lying area with recent flood deposits on the surface. Testing of the area proved negative; the area is considered sterile. It is a primary dredge disposal site.

Fountain City, site number 4: This is an alternative dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

HD. Betsy Slough, site number 1: This is an alternative dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

HD. Betsy Slough, site number 2: This is an alternative dredge disposal site, but is an area of prior heavy fill between a two lane highway and some railroad tracks. Testing of the area proved negative; the area is considered sterile.

HD. Betsy Slough, site number 3: This is an alternative dredge disposal site, but has already been used as a clean fill dump area. Testing of the area proved negative; the area is considered sterile.

HD. Betsy Slough, site number 4: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

HD. Betsy Slough, site number 5: This is an alternative dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

HD. Betsy Slough, site number 6: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

HD. Betsy Slough, site number 7: This is an alternative dredge disposal site. It is an undisturbed, low-lying area of banded silts to a depth of 75 centimeters (30 inches) below the surface, at which depth water level occurs, Testing of the area proved negative; the area is considered sterile.

HD. Betsy Slough, site number 8: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

HD. Betsy Slough, site number 9: This is an alternative dredge disposal site. It is an undisturbed, low-lying area with banded silts and sands to a depth of 80 centimeters (32 inches) below the surface, at which depth the water level occurs. Testing of the area proved negative; the area is considered sterile.

HD. Betsy Slough, site number 10: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Wilds Bend, site number 1: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Wilds Bend, site number 2: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Wilds Bend, site number 3: This is an alternative dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

POOL 6 [see Map #2] - 31 areas tested

Lower Approach Lock & Dam 5A, site number 1: This is a probable dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Lower Approach Lock & Dam 5A, site number 2: This is a probable dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Island 71, site number 1: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Island 71, site number 2: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Island 71, site number 3: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Island 71, site number 4: This is an alternative dredge disposal site. It is an undisturbed, relatively low-lying area with banded silts and sand layers extending to some 2 meters (6 1/2 feet) at which point the water level occurs. Testing of the area proved negative; the area is considered sterile. The private land owner, when interviewed, said that he was not aware of any cultural materials ever having been found in the area.

Island 71, site number 5: This is an alternative dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Below Lower Winona R.R. Bridge, site number 1: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing proved negative; the area is considered sterile.

Below Lower Winona R.R. Bridge, site number 2: This is a primary dredge disposal site, but has already been used as a dredge spoil dump.

Testing of the area proved negative; the area is considered sterile.

Below Lower Winona R.R. Bridge, site number 3: This is a primary dredge disposal site. The area, at present, is a clean fill dump and has, in the recent past, been used as an industrial and public dump. Testing of the area produced glass and ceramic materials dating from the early to mid-20th Century (Freeman 1975). The area has been and continues to be disturbed, in its function as both a fill source and dump. It has also been tested and reported on by G. Joseph Hudak (1975) in association with an environmental impact study done by him for the city of Winona, Minnesota. This area, directly associated with site number 5 and immediately adjacent to it, due to the disturbance and the recentness of the materials is not considered for scientific excavation.

Below Lower Winona R.R. Bridge, site number 4: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Below Lower Winona R.R. Bridge, site number 5: This is an alternative dredge disposal site. It is adjacent to and adjoining site number 3, noted above, and is part of the same disturbed dump and land fill area. Like site number 3 above, the area has been reported on by G. J. Hudak (1975). Like site number 3, site number 5 is not considered to be worthy of scientific excavation.

Below Lower Winona R.R. Bridge, site number 6: This is an alternative dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Below Lower Winona R.R. Bridge, site number 7: This is an

alternative dredge disposal site. It is an undisturbed area of relatively low-lying floodplain with a soil development 16 centimeters (6 1/4 inches) thick overlying 80 centimeters (32 inches) of banded silts and sands. Testing of the area proved negative; the area is considered sterile.

Gravel Point, site number 1: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Gravel Point, site number 2: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Gravel Point, site number 3: This is an alternative dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Gravel Point, site number 4: This is an alternative dredge disposal site. It is located on what appears to be a modern sand bar build-up. Testing of the area proved negative; the area must be considered of recent origin and completely sterile.

Homer, Minn., site number 1: This is an alternative dredge disposal site. The area is currently composed of rock fill as bank protection (this site is illustrated in Plate V). Testing of the area proved negative; the area is considered sterile.

Homer, Minn., site number 2: This is a primary dredge disposal site which is currently composed of rock fill as a bank protection. Testing of the area proved negative; the area is considered sterile.

Homer, Minn., site number 3: This is a primary dredge disposal site which consists of a rock fill and bracing for a railroad bridge.

The area was tested and some surface debris (white ironstoneware, early 20th Century) was recovered. There seems to have been some dumping of more recent materials as well in the area. Subsurface testing was negative; the area, except for the recent dumping, is considered sterile.

Homer, Minn., site number 4: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Homer, Minn., site number 5: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Homer, Minn., site number 6: This is an alternative dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Homer, Minn., site number 7: This is an alternative dredge disposal site. It is located on a low, partially flooded island with test pits showing 35 centimeters of bedded silts and clays to the water level. Testing of the area proved negative; the area is considered sterile.

Homer, Minn., site number 8: This is an alternative dredge disposal site which is currently being used as a garbage dumping area. Some recent materials (a medicinal bottle, some light bulbs, and metal cans) were located on the surface. Subsurface testing was negative; except for modern debris, the area is considered sterile.

Homer, Minn., site number 9: This is a primary dredge disposal site, but has already been used as a spoil dump. Testing of the area proved negative; the area is considered sterile.

Homer Minn., site number 10: This is a primary dredge disposal

site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Homer, Minn., site number 11: This is an alternative dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Homer, Minn., site number 12: This is an alternative dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Homer, Minn., site number 13: This is an alternative dredge disposal site. It is located on a low, partially flooded island, with test pits showing 34 centimeters (14 inches) of bedded silts and clays to the water level. Testing of the area proved negative; the area is considered sterile.

POOL 7 [see Map #3] - 33 areas tested

Richmond Island, site number 1: This is an alternative dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area was negative; the area is considered sterile.

Richmond Island, site number 2: This is an alternative dredge disposal site. It is located on a low island which remained underwater during the survey and is presumed to be sterile.

Richmond Island, site number 3: This is an alternative dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Richmond Island, site number 4: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Richmond Island, site number 5: This is an alternative dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Richmond Island, site number 6: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Richmond Island, site number 7: This is an alternative dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Richmond Island, site number 8: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Richmond Island, site number 9: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Richmond Island, site number 10: This is a primary dredge disposal site (Plate III shows "as found" conditions), but has already been used as a dredge spoil dump. Testing of the area (see Plate XI) proved negative; the area is considered sterile.

Above Winters Landing, site number 1: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Above Winters Landing, site number 2: This is an alternative dredge disposal site, but has already been used as a dredge spoil dump, in conjunction with the placement of rock bank protection. Testing of the area proved negative; the area is considered sterile.

Above Winters Landing, site number 3: This is a primary dredge

disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Above Winters Landing, site number 4: This is an alternative dredge disposal site which at present consists of a large mass of rock bank protection material. What testing could be accomplished proved negative; the area is considered sterile.

Winters Landing, site number 1: This is an alternative dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Winters Landing, site number 2: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Winters Landing, site number 3: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Winters Landing, site number 4: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Winters Landing, site number 5: This is an alternative dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Dakota, Minn., site number 1: This is a primary dredge disposal site (area is shown in Plate IV), but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Dakota, Minn., site number 2: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the

area was negative; the area is considered sterile;

Dakota, Minn., site number 3: This is an alternative dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Head of Dresbach Cut, site number 1: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area was negative; the area is considered sterile,

Head of Dresbach Cut, site number 2: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile,

Head of Dresbach Cut, site number 3: This is an alternative dredge disposal site, but has already been used as a dredge spoil dump, Testing of the area was negative; the area is considered sterile,

Head of Dresbach Cut, site number 4: This is a primary dredge disposal site and, at present, is part of the town of Dresbach, Minnesota's public beach and city park. The majority, if not all of the beach is formed from already deposited dredge spoil which has been levelled and graded for use as a beach and boat ramp area. Testing of the area proved negative; the area is considered sterile.

Head of Dresbach Cut, site number 5: This is an alternative dredge disposal site, but has already been used as a spoil dump. Testing of the area proved negative; the area is considered sterile.

Head of Dresbach Cut, site number 6: This is a primary dredge disposal site, but has already been used as a spoil dump. Testing of the area proved negative; the area is considered sterile.

Head of Dresbach Cut, site number 7: This is an alternative dredge disposal site, but has already been used as a dredge spoil dump. Testing

of the area proved negative; the area is considered sterile.

Head of Dresbach Cut, site number 8: This is a primary dredge disposal site, but has already been used as a dredge spoil dumping area for private beach enrichment. Testing of the area proved negative; the area is considered sterile.

Head of Dresbach Cut, site number 9: This is a primary dredge disposal site. It consists of a shallow indentation (almost a small rock shelter) in the vertical face of a limestone outcrop. The area was thoroughly tested, but no cultural materials were present. Some of the interbedded sandstones weathering out at the base of the shelter produced fossil "wave" impressions. The area is considered to be sterile of human cultural remains.

Head of Dresbach Cut, site number 10: This is a primary dredge disposal site, and, at present, consists of large piles of rock which are serving as bank protection. There is some evidence that some dredge spoil has been dumped in the area prior to this survey. From what little testing could be accomplished, the area was found to have no evidence of past human activity and so is considered as sterile.

Head of Dresbach Cut, site number 11: This is an alternative dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

POOL 8 [see Map #4] - 56 areas tested

Above La Crosse R.R. Bridge, site number 1: This is an alternative dredge disposal site. It is located on a low island which remained below the river water level during the survey and is presumed to be sterile.

Above La Crosse R.R. Bridge, site number 2: This is a primary dredge disposal site, but has already been used as a dredge spoil dump.

Testing of the area proved negative; the area is considered sterile.

Above La Crosse R.R. Bridge, site number 3: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Above La Crosse R.R. Bridge, site number 4: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Above La Crosse, R.R. Bridge, site number 5: This is an alternative dredge disposal site located in a low-lying area somewhat disturbed by recent flooding (area is shown in Plate VII). Testing of the area proved negative; the area is considered sterile.

Above La Crosse R.R. Bridge, site number 6: This is an alternative dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Sand Slough (Mormon Slough), site number 1: This is an alternative dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Sand Slough (Mormon Slough), site number 2: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Sand Slough (Mormon Slough), site number 3: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Sand Slough (Mormon Slough), site number 4: This is an alternative dredge disposal site which appears to be in a by-pass channel and was underwater during the survey. The area is considered to be sterile.

Sand Slough (Mormon Slough), site number 5: This is an alternative dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Sand Slough (Mormon Slough), site number 6: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative, at least of significant cultural materials (some 34 unopened containers of beer, Blatz and Kingsbury, were located some 35 centimeters, or 14 inches, below the surface in one of the test pits excavated at the northern edge of the site area -- it is presumed, due to their unopened and unbroken condition, that they were buried since the last freeze of the spring and then, unfortunately for the buriers, lost); the area is (now at least) considered sterile.

Root River, site number 1: This is a primary dredge disposal site, located in a low undisturbed area. Test pits showed 45 centimeters (18 inches) of mulch, clays, and silts to the water level. Testing of the area was negative; the area is considered sterile.

Root River, site number 2: This is a primary dredge disposal site, located in a low undisturbed area. Test pits showed 90 centimeters (36 inches) of banded silts and clays to the water level. Testing of the area proved negative; the area is considered sterile.

Root River, site number 3: This is an alternative dredge disposal site, located in a low, relatively undisturbed area. Test pits showed 85 centimeters (34 inches) of banded silts and sands to the water level. Testing of the area proved negative; the area is considered sterile.

Root River, site number 4: This is a primary dredge disposal site, located in a low, undisturbed area. Test pits showed 35 centimeters (14 inches) of banded silts and sands to the water level. Testing of

the area proved negative; the area is considered sterile.

Root River, site number 5: This is a primary dredge disposal site, located in a low, undisturbed area. Test pits showed a fresh silt deposit over layers of banded silts and sands to water level at a depth of 65 centimeters (26 inches) below the surface. Testing of the area proved negative; the area is considered sterile.

Root River, site number 6: This is a primary dredge disposal site located in a low, undisturbed area. Test pits showed a fresh silt deposit overlaying banded silts and sands to water level at 70 centimeters (28 inches) below the surface. Testing of the area proved negative; the area is considered sterile.

Above Brownsville, site number 1: This is an alternative dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Above Brownsville, site number 2: This is an alternative dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Above Brownsville, site number 3: This is a primary dredge disposal site, located in a back channel and underwater. It is presumed sterile.

Above Brownsville, site number 4: This is a primary dredge disposal site, located in a back channel and underwater. It is presumed sterile.

Above Brownsville, site number 5: This is an alternative dredge disposal site, but as can be seen in Plates I and II (which show this area) it has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Above Brownsville, site number 6: This is an alternative dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Above Brownsville, site number 7: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Above Brownsville, site number 8: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Brownsville, Minn., site number 1: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Brownsville, Minn., site number 2: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Brownsville, Minn., site number 3: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Brownsville, Minn., site number 4: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Brownsville, Minn., site number 5: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Brownsville, Minn., site number 6: This is an alternative dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Brownsville, Minn., site number 7: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative (a peripheral small test pit being excavated in this area is shown in Plate XII); the area is considered sterile.

Brownsville, Minn., site number 8: This is a primary dredge disposal area, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Head of Raft Channel, site number 1: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Head of Raft Channel, site number 2: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Head of Raft Channel, site number 3: This is an alternative dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Head of Raft Channel, site number 4: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Head of Raft Channel, site number 5: This is an alternative dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Head of Raft Channel, site number 6: This is an alternative dredge disposal site, located in a low, swampy area which was underwater during the time of the survey. It is an area presumed to be sterile.

Head of Raft Channel, site number 7: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing

of the area proved negative; the area is considered sterile.

Below Head of Raft Channel, site number 1: This is an alternative dredge disposal site, located in a low, swampy area which was underwater during the time of the survey (see Plate VI which shows this area, and is similar to the other areas described below). It is an area presumed to be sterile.

Below Head of Raft Channel, site number 2: This is a primary dredge disposal site, located in a low, swampy area which was underwater during the time of the survey. It is an area presumed to be sterile.

Below Head of Raft Channel, site number 3: This is a primary dredge disposal site, located in a low, swampy area which was underwater during the time of the survey. It is an area presumed to be sterile.

Below Head of Raft Channel, site number 4: This is an alternative dredge disposal site, located in a low, swampy area which was underwater during the time of the survey. It is an area presumed to be sterile.

Below Head of Raft Channel, site number 5: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile. (A test pit at the eastern margin of this area is shown in Plate X)

Below Head of Raft Channel, site number 6: This is an alternative dredge disposal site, located in a low, swampy area which was underwater during the time of the survey. It is an area presumed to be sterile.

Below Head of Raft Channel, site number 7: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Below Head of Raft Channel, site number 8: This is an alternative dredge disposal site, located in a low, swampy area which was underwater

during the time of the survey. It is an area presumed to be sterile.

Below Head of Raft Channel, site number 9: This is a primary dredge disposal site, but has already been used as a dredge spoil dump. Testing of the area proved negative; the area is considered sterile.

Below Head of Raft Channel, site number 10: This is an alternative dredge disposal site, located in a low, swampy area which was underwater during the time of the survey. It is an area presumed to be sterile.

Deadmans Slough, site number 1: This is an alternative dredge disposal site, located in a low, swampy area which was underwater during the time of the survey. It is an area presumed to be sterile.

Deadmans Slough, site number 2: This is a primary dredge disposal site, located in a low, swampy area which was underwater during the time of the survey. It is an area presumed to be sterile.

Deadmans Slough, site number 3: This is an alternative dredge disposal site, located in a low, swampy area which was underwater during the time of the survey. It is an area presumed to be sterile.

Deadmans Slough, site number 4: This is a primary dredge disposal site, located in a low, swampy area which was underwater during the time of the survey. It is an area presumed to be sterile.

Deadmans Slough, site number 5: This is a primary dredge disposal site, located in a low, swampy area which was underwater during the time of the survey. It is an area presumed to be sterile.

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

A total of 145 primary and/or alternative dredge disposal sites were examined during the course of this survey for evidence relating

to past human activity. The purpose of the examination was to determine whether or not the disposal sites could be actively used as spoil dumping areas by the U.S. Army Corps of Engineers in their maintenance of the 9' navigation channel of the Mississippi River.

104 of the 145 areas tested were found to be areas in which dredge spoil had already been dumped. As dredging has been an ongoing activity for more than 50 years, this was not a particularly surprising discovery. No dredge spoil had been dumped on the proposed sites within the time immediately prior to or during the survey.

Of the 41 areas which had not been used as dump sites, 18 were located in areas with very little elevation above the river. These 18 low areas were surface surveyed and subsurface tested, and were all found to be sterile in terms of human cultural materials. Another 18 areas surveyed were under water at the time of the survey and could not be subjected to subsurface testing. The weight of evidence, from the sterile low areas which were tested and from the archeological literature searches, would tend to lead to the presumption that even if the low underwater areas were above the river level by any appreciable amount they would still be undesireable for human utilization and would probably be sterile of human cultural remains.

Only in 5 of the 145 sites tested were any human cultural materials discovered -- 4 of these areas were modern dump sites (Pool 6, Below Lower Winona R.R. Bridge, site numbers 3 and 5; Pool 6, Homer, Minn., site numbers 3 and 6 [see Map #2]), while the fifth (Pool 8, Sand Slough/Mormon Slough, site number 6 [see Map #4]) was a cache of a case and a half of recent vintage beer. None of these 5 areas contained materials of a significant enough nature to deserve scientific excavation.

In sum, it is my opinion as a professional archeologist that none of the 145 areas tested during this survey contain historical or archeological resources which would be harmed if they were used as dredge spoil dumping areas.

I do, however, believe that archeological survey, like the dredging operations themselves, should be an ongoing project in the river areas where such dredging takes place. New areas will be required as dredge disposal sites as those currently used fill up, and these new site areas must be checked for human cultural resources. I would offer a suggestion, though, that the most efficient and economical way for this to be accomplished, both for the funding agency and the archeologist, might be through the use of a purchase order system. As dredging, or any modification, becomes necessary, the funding agency could, through a purchase order, contact a qualified archeologist to test the areas involved using such relatively rapid survey techniques as I have described earlier in this report.

PLATE I

General view of the site number 5 area, Above Brownsville, Pool 8. This is illustrative of the more recent, high elevation, dredge spoil dumping area.

PLATE II

General view of the site numbers 7 and 8 area, Above Brownsville, Pool 8. This also is illustrative of the higher elevations which result from dredge spoil dumping.

PLATE III

General view of the site number 10 area, Richmond Island, Pool 7. This illustrates the outward spread of the dredge spoil dumps.

PLATE IV

General view of the site number 1 area, Dakota, Minn., Pool 7.

This illustrates the down river extension of the dredge spoil dumping.

PLATE V

General view of the site number 1 area, Upper Homer, Minn., Pool 6. This illustrates the use of large rocks and cement fragments as bank protection.

PLATE VI

General view of site number 1 and environs, Below Head of Raft Channel, Pool 8. This is a fairly representative example of the site areas under water.

PLATE VII

General view of the site number 5 area, Above La Crosse R.R. Bridge, Pool 8. This is more or less typical of the low-lying, recently flooded site areas.

PLATE VIII

An example of the walk-over phase of surface analysis on site number 6, Island 58, Pool 5A. The dredge spoil shown is relatively recent, less than 2 years old.

PLATE IX

Example of central, 1 meter square, test pit, in process of excavation, located in site number 4, Richmond Island, Pool 5A.

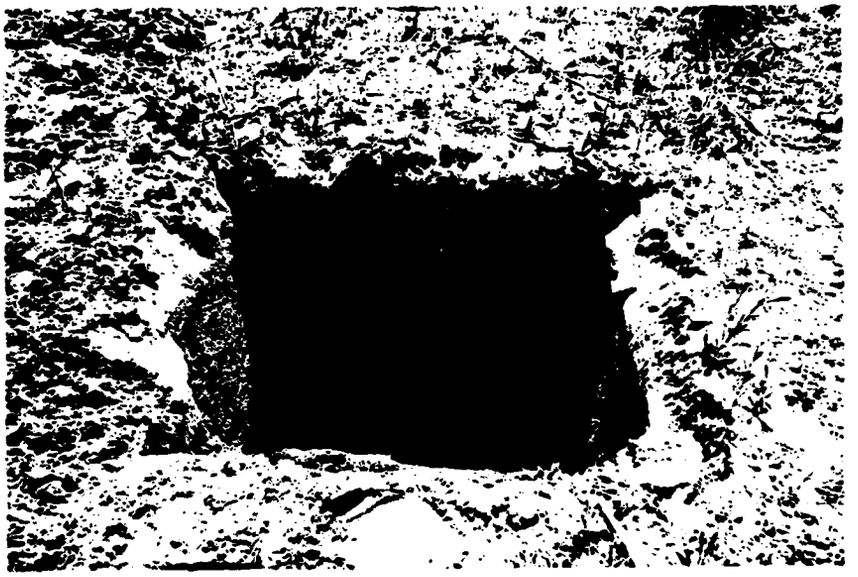

PLATE X

General view of a completed test pit, to water level (note base of pit), in site number 5, Below Head of Raft Channel, Pool 8.

PLATE XI

General view of test pitting procedures at the periphery of site number 10, Richmond Island, Pool 7. Note the beginning of the pioneer vegetation on the edge of the dredge spoil in the foreground,

PLATE XII

General view of test pitting operations at the periphery of site number 7, Brownsville, Minn., Pool 8. Note the development of vegetation on the old dredge spoil in the foreground (older than that shown in Plate XI).

APPENDIX A: References

Anonymous

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APPENDIX B: Personnel Qualifications

Project Director: Joan E. Freeman

B.A. History/Anthropology, Lawrence University, 1953
M.A. Anthropology/Archeology, University of Wisconsin-Madison, 1957
Ph.D. Anthropology/Archeology, University of Wisconsin-Madison, 1959

Archeological Field Work in Wisconsin:

Since 1960 Project Director/Principal Investigator for survey for and excavation of sites throughout Wisconsin under the following programs: Wisconsin Highway Salvage Program, Reservoir Salvage - National Park Service, Archeology of state parks - Wisconsin Department of Natural Resources, National Science Foundation grants.

Currently Curator of Anthropology and State Archeologist, Museum Division, State Historical Society of Wisconsin, Madison, Wisconsin.

Field Director: RICHARD BERT LANE

B.A., Anthropology/Archeology, University of New Mexico, 1963

M.A., Anthropology/Archeology, University of California, Santa Barbara, 1967

Ph.D., Anthropology/Archeology, University of California, Santa Barbara, (expected in April) 1976

Fifteen seasons of archeological field work, the most recent five years of which have been as Project Director/Principal Investigator in St. Cloud State University, Minnesota based archeological projects.

Currently Assistant Professor of Anthropology (tenured) at St. Cloud State University, and Head Curator (and Curator of Archeology) of the St. Cloud Museum of Man.

Field Assistant: BRIAN RAYMOND WAITKUS

B.A., Anthropology/Archeology, St. Cloud State University, 1974.

Three seasons of supervised archeological field work, including one season of paid work involving site survey prior to this project.

Student Assistants: KENT WILLIAM FUHRMAN & LEE STANLEY RADZAK

Both Seniors, Anthropology/Archeology, St. Cloud State University.

Each have had two seasons of supervised archeological field work and one academic quarter of directed research in archeological methods and techniques.

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