APPENDIX E:

ARCHAEOLOGICAL ASSESSMENT

Jacques Whitford

REPORT

STAGE 1 ARCHAEOLOGICAL ASSESSMENT
RIPLEY WIND GENERATING FACILITY
HURON-KINLOSS TOWNSHIP, ONTARIO

Suncor Limited

Project No. ONT 50488
CIF# P002-040

Jacques Whitford

PROJECT NO. ONT 50488

REPORT TO Suncor Limited

ON Stage 1 Archaeological Assessment, Ripley Wind Generating Facility, Huron-Kinloss Township, Ontario

September 16, 2005

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1.0 INTRODUCTION

Suncor Inc. has proposed to develop a wind power generation facility (wind farm) at Ripley, near Kincardine, Ontario (Figure 1-1). At present the wind farm is proposed to include a total of 38 turbines and one substation, as well as a series of access roads and underground and aboveground cable connections, and preliminary turbine locations and cabling/road access layouts have been prepared (Figures 1-2). As part of an Environmental Assessment for the project, Jacques Whitford Limited (Jacques Whitford) conducted a Stage 1 Archaeological Assessment of the proposed project area. The study was completed by Colin Varley, M.A., Archaeologist and Heritage Planning Consultant with Jacques Whitford.

1.1 Study Area

Due to the early planning stage of the project a large study area was examined for the project. The study area consists of a square area covering approximately 6475 ha (16000 acres) in Huron Township, Bruce County. The study area encompasses all of: Lots 31 through 70 (inclusive), Concession 1 and Lots 16 to 35, Concessions 2-7 (inclusive), in Huron Township.

The study area is located within the Huron Slope physiographic region, an area of clay till soils (Chapman and Putnam, 1984). The study area in particular is situated between two ancient beach ridges, one from glacial Lake Warren and the other from glacial Lake Algonquin. A number of streams, including the South Branch of the Pine River, Clark Creek, and Boyd Creek, run from the Wyoming Moraine east of the study area to Lake Huron. The area slopes gently from the bluff above Lake Huron (c. 600 feet a.s.l) eastwards towards the moraine (at c. 850 feet a.s.l.). The soils in the region lend themselves best towards the pasturing of livestock or the cultivation of grass crops such as corn, hay, barley, oats and wheat (Chapman and Putnam, 1984).

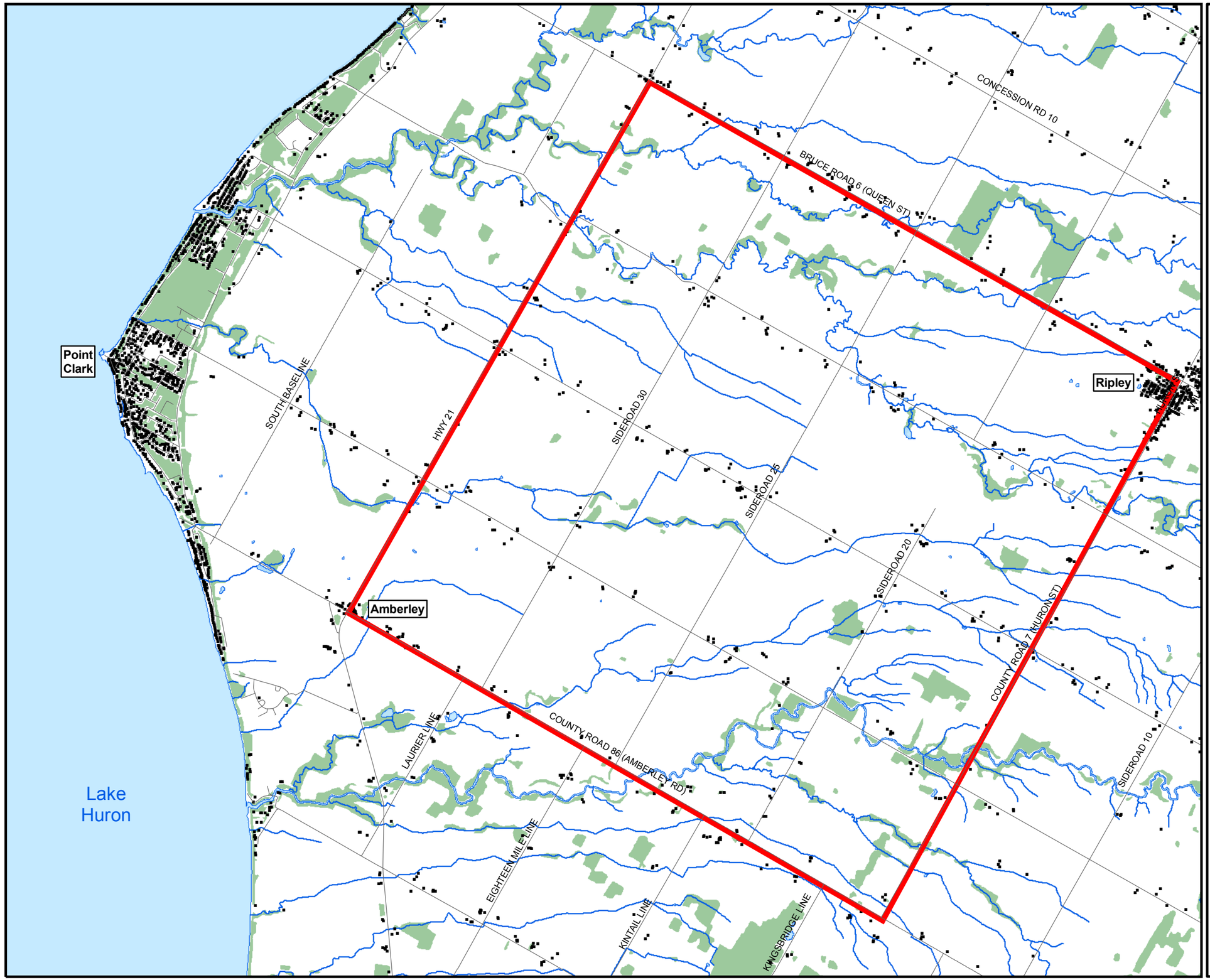

Figure 1-1
Primary Study Area of the Ripley Wind Power Project

Legend

- Buildings
- Roads
- Watercourse
- Waterbody
- Wooded Area
- Primary Study Area

N

0 400 800 1,600 2,400 3,200

Metres

1:50,000

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Map Parameters
Projection: UTM
Datum: NAD 83
Zone: 17

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Lake
Huron

Figure 1-2
Layout of Ripley
Wind Power Project

Legend

- Substation
- Wind Turbine
- Roads
- Watercourse
- Waterbody
- Wooded Area
- Primary Study Area

Infrastructure

- 34.5 kV Overhead Line
- 69 kW Distribution Line
- Access Driveway
- Underground Cable

N

0 375 750 1,500 2,250 3,000
Metres

1:50,000

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Map Parameters
Projection: UTM
Datum: NAD 83
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2.0 EXISTING CONDITIONS

The assessment of archaeological potential for the site considered both prehistoric and historic period resources. Archaeological potential modeling for prehistoric era sites is based largely on the identification of landscape features which are either known to have attracted past habitation or land use, or which appear to have potential for attracting human use. These features include: navigable rivers and lakes; confluences of watercourses; smaller sources of potable water; ridges or knolls that overlook areas of resource potential; outcrops of high-quality stone for tool making; and, most importantly, combinations of these features. In general it has been demonstrated that areas within 200-300 m of watercourses, or other significant bodies of water, are considered to be of elevated archaeological potential (ASI, 1990; Cox, 1989; Young et al., 1995).

Patterns of land use by historic Euro-Canadians to some extent mirror those of the prehistoric period. This is not surprising, since the same general needs must be met, i.e., proximity to potable water, access to natural resources, and a level, well drained habitation site. On the other hand, the Euro-Canadian conversion of both fertile and more marginal land for agricultural purposes, the development of non-water travel routes, the exploitation of different resources such as subsurface mineral deposits, and other differences in land use patterns make potential modeling of Euro-Canadian and other non-Aboriginal historic sites somewhat less reliable. Fortunately, these sites are more visible than their prehistoric counterparts, which helps offset this lower level of predictive reliability.

2.1 PREHISTORIC RESOURCES

At present there are five registered prehistoric archaeological sites located near the study area (Figure 2-1 and Table 2-1) (MOC, 2004). Two sites date to the Middle Woodland (Saugeen) period (BaHj 1, Blue Jay Knoll and BaHk 3, Blake site) , and the others are undated findspots. The Middle Woodland period (c. 300 BC-A.D. 700) of Ontario is characterised by the development of pottery with impressed decorations of either toothed stamping (dentates) or wavy edges, referred to as pseudo-scallop shell (Spence et al, 1990). The Saugeen complex of the Middle Woodland is characterised by the production of a wide variety of stone tool types, suggesting the use of a wide range of plant and animal resources. Settlement was not permanent, but appears to have been a cycle which saw microbands of small populations (a few families) spending the winters in small camps away from the edge of Lake Huron. In the spring a number of microbands would gather together to exploit spring fish spawns. In the summer the microbands would again go their separate ways and settle along the shores of the lake. In the fall the migration back form the lake margins would occur (Spence et al, 1990).

Although there are no known sites of the earliest inhabitants, the Palaeo-Indians (c. 9000-8200 BC), of what is now Ontario, it has long been recognised that these sites are often located along the strandlines (old beach ridges) of glacial Lake Algonquin (Deller, 1976; Storck, 1982). Given the proximity of the study area to the ancient shoreline, there may be the possibility for Palaeo-Indian sites within the limits of the project area.

Table 2-1 Registered Archaeological Sites Near the Primary Study Area.

Code	Name	Features
BaHj 1	Blue Jay Knoll	Middle Woodland campsite
BaHj 2	Sandy Knoll	Prehistoric findspot
BaHj 5	No name given	Euro-Canadian midden
BaHj 6	Farrell	Euro-Canadian homestead
BaHj 7	Bridge	Euro-Canadian homestead and well
BaHj 8	Smid-Parker	Euro-Canadian midden
BaHj 9	Thumper	Euro-Canadian artifact scatter
BaHj 10	No name given	Euro-Canadian homestead
BaHk 1	No name given	Undetermined prehistoric
BaHk 2	No name given	Undetermined prehistoric
BaHk 3	Blake	Middle Woodland campsite

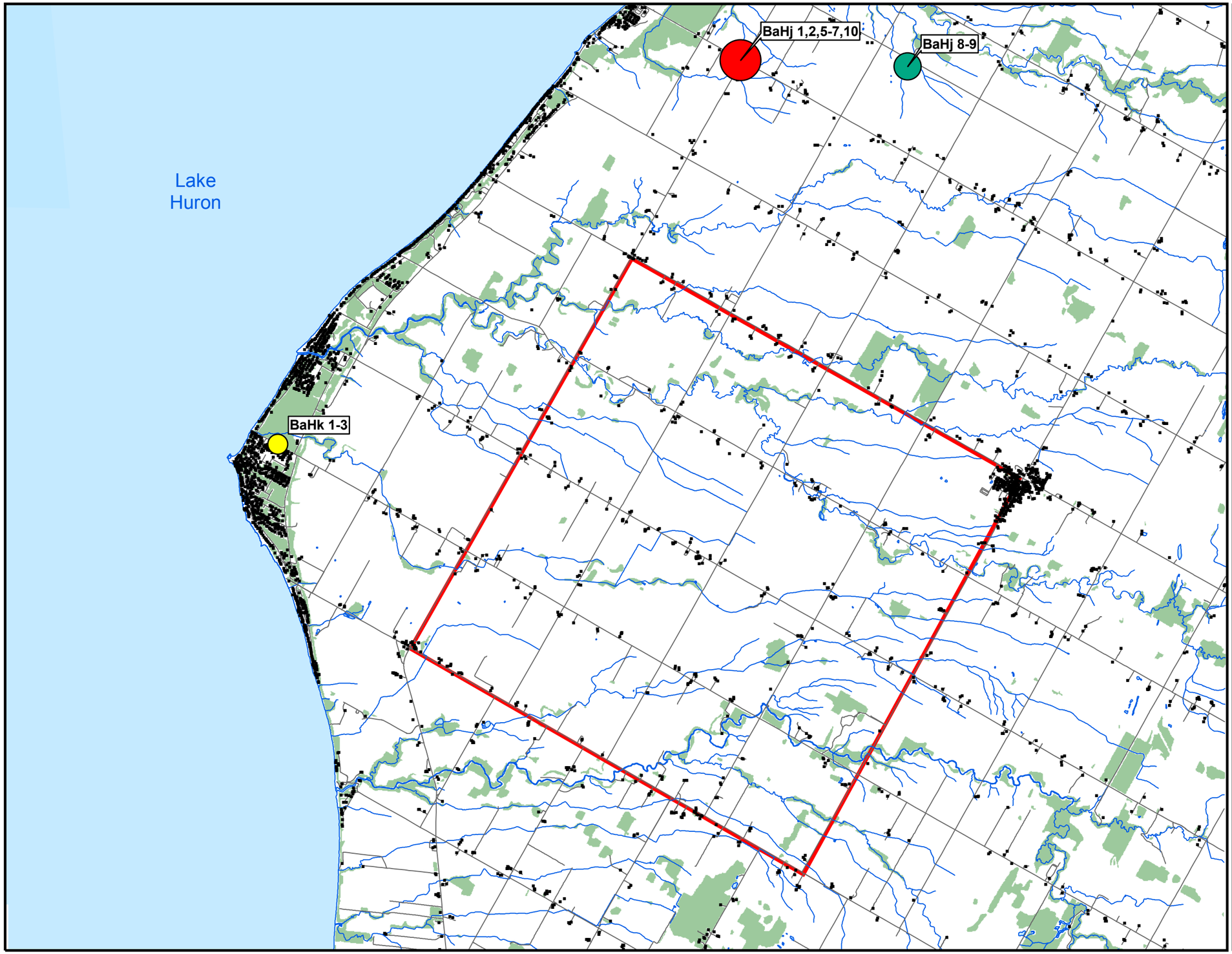

Figure 2-1
General Locations of
Registered Archaeological Sites
Near the Primary Study Area

Legend

- Buildings
- Roads
- Waterbody
- Wooded Area
- Primary Study Area

Archaeological Sites

- BaHj 1,2,5-7,10
- BaHj 8-9
- BaHk 1-3

N

0 550 1,100 2,200 3,300 4,400

Metres

1:70,000

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Map Parameters
Projection: UTM
Datum: NAD 83
Zone: 17

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2.2 HISTORIC RESOURCES

There are currently six registered archaeological sites dating to the historic Euro-Canadian period near the study area (Figure 2-1 and Table 2-1) (MOC, 2003). These sites represent a variety of features, including old homestead cellars and foundations, middens (garbage dumps) and general artifact scatters through old fields.

Overall, there is very little good documentation of the early historical occupation of the study area. Although there are a number of maps of Bruce County and/or the Huron/Kinloss Townships area (e.g. NMC 1834; 1846; 1857; 1858), none of them give any details regarding individual lot ownership (after the township was surveyed), or the locations of any identifiable buildings. The Bruce County supplement to the Dominion Atlas of 1880 (Belden, 1880) indicates fifteen identified homesteads within the limits of the project area (Figure 2-2). It is certain, however, that there were many more 19th century homesteads in the area which do not show up in the atlas. The lack of other buildings on the map is due to a change in the way that the atlas was produced at this time. Only those households which subscribed to the Dominion Atlas were identified on the map, along with public buildings such as schools, churches and post offices, and industrial buildings. Thus, the later County atlases are not reliable sources of information for showing the true extent of historic occupation. Along with the town area of Ripley, the atlas also identifies: a tavern at Pine River; one water powered saw mill; a blacksmith shop; five school houses; three churches; the Amberly post office; and an Orange Lodge Hall.

Despite the limited utility of the atlas for identifying the full extent of historic households, the identification of at least thirteen subscribing households suggests that the project area may have the potential for a number of historic period features and/or artifacts.

Historic air photos of the project area are also of little value in identifying historic homesteads. The earliest series of photographs of the area date to 1930 and 1938/39 (NAPL, 2004). However, these photos were taken at such a large scale (1:20000) that identification of attributes of individual buildings is not possible.

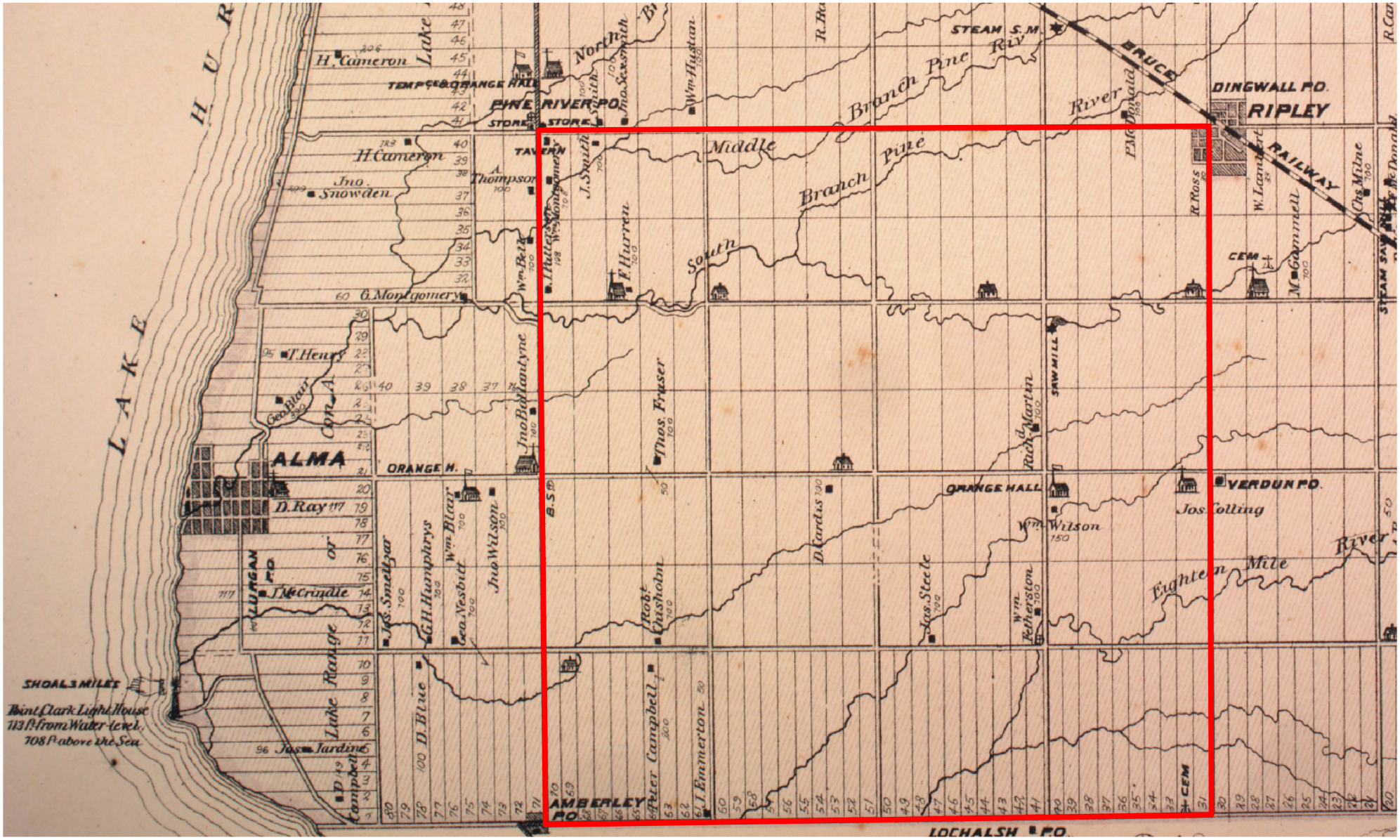

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Figure 2-2
Primary Study Area on
1880 Belden Atlas

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3.0 STUDY RESULTS

At present there is limited information regarding the archaeological record of the study area. Archaeological potential modeling suggests that the combination of the well drained soils, potable water sources, and wide range of resource types available from the surrounding natural areas would have made the study area an attractive location for longer term habitation throughout the entire pre-contact period. The cluster of historic period sites north-east of the study area suggests that there are likely similar sites located within the limits of the present proposed project.

4.0 RECOMMENDATIONS

In general the project area demonstrates elevated potential for the existence of significant prehistoric and historic period archaeological resources and should be subject to further Stage 2 Archaeological Assessment. Although the turbines associated with the wind farm will require only a limited amount of land for construction, access roads for construction and maintenance vehicles, as well as temporary work areas, may have the potential to cause wide soil disturbance. Once final locations for the turbines and substation, as well as all other related facilities, have been determined Stage 2 archaeological assessment of all locations of any project related structures, infrastructure, or other areas which may be disturbed by project related activities, should be completed prior to any ground breaking. Stage 2 assessment should also include an inventory of historic period buildings. Where possible, pedestrian survey of currently cultivated areas could be completed relatively quickly, depending upon the amount of area which will be required for the project. Once a final plan of proposed project activities is completed it will be possible to determine which areas will require pedestrian survey and which will require assessment using test pit excavation.

5.0 CLOSURE

We trust this report meets your current requirements. Please do not hesitate to contact us should you require further information or have additional questions about any facet of this project.

Yours truly,

JACQUES WHITFORD LIMITED

Colin Varley, M.A.

Archaeologist and Heritage
Planning Consultant

6.0 REFERENCES

ASI (Archaeological Services Inc), 1990. **A Guide to Prehistoric Archaeological Resources: Approaches to Site Potential Modeling for Environmental Assessment.** Report on file, Land Use and Environmental Planning Department, Ontario Hydro, Toronto.

Belden and Co., 1880**. Bruce supplement in Illustrated atlas of the Dominion of Canada.** Toronto : H. Belden & Co.

Chapman, L.J., and D.F. Putnam, 1984. **The Physiography of Southern Ontario, 3rd Edition.** Ontario Geological Society, Special Volume 2. Toronto: Ministry of Natural Resources.

Cox, Steven L., 1989. **Report on the Phase 1 Archaeological Survey of the Bangor Hydro-Electric Second 345 KV Tie Line Project Route.** Report on file, Maine State Museum, Bangor, Maine.

Deller, Brian, 1976. Paleo-Indian Locations on Late Pleistocene Shorelines, Middlesex County, Ontario. **Ontario Archaeology**, 26:3-19.

MOC (Ministry of Culture), 2004. Archaeological Sites Database. Records on file at the Heritage Unit, Toronto, Ontario.

NAPL (National Air Photo Library), 2004. Air photo database, http://airphotos.nrcan.gc.ca/new_photos_e.php.

NMC (National Map Collection, National Archives of Canada)

NMC 0003272.	**Canada Company's Huron Tract.**
NMC 0021849.	Untitled.
NMC 0021869.	**Map of the County of Bruce, Shewing the Lately Surveyed Townships in the Saugeen Indian Peninsula, Canada West.** Hamilton: H. Gregory.
NMC 0003274.	**Map of the Present Settled Part of the County of Bruce.**

Spence, Michael W., Robert H. Pihl, and Carl Murphy, 1990. Cultural Complexes of the Early and Middle Woodland Periods. In **The Archaeology of Southern Ontario to A.D. 1650**, C.J. Ellis and N. Ferris (eds). Occassional Publication of the London Chapter OAS, Number 5. London, ON: London Chapter, Ontario Archaeological Society.

Storck, Peter, 1982. Paleo-Indian Settlement Patterns Associated with the Strandline of Glacial Lake Algonguin in Southcentral Ontario. **Canadian Journal of Archaeology**, 6:1-31.

Young, P.M., M.R. Horne, C.D. Varley, P.J. Racher, and A.J. Clish, 1995. **A Biophysical Model for Prehistoric Archaeological Sites in Southern Ontario.** Research and Development Branch, Ministry of Transportation, Toronto, Ontario.