# Stage 1 Archaeological Assessment Silver Creek Solar Park Geographic Township of Malahide Elgin County, Ontario

Submitted to

# **Ortech Power**

804 Southdown Road, Mississauga, On, L5J 2Y4

and

# The Ontario Ministry of Culture

Prepared by



584 Oxford Street East, London, ON N5Y 3J1 Phone: (519) 641-7222 Fax: (519) 641-7220

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#### **TMHC Personnel**

TMHC would like to thank the following staff members who contributed to this project:

**Project Coordinators**: Peter Timmins, Ph.D (P118)

Holly Martelle, Ph.D. (P064)

**Field Reconnaissance:** Peter Timmins, Ph.D.

Johnathan Freeman (R274)

**Report Contributors:** Peter Timmins, Ph.D.

**GIS Technician:** Noel Grasso

# Acknowledgements

TMHC would like to acknowledge the assistance of the following individuals:

**Leah Deveaux** EA Specialist

Ortech Power, Mississauga, Ontario

**Robert von Bitter** Archaeological Database Coordinator

Ministry of Culture, Toronto, Ontario



# **Project Summary**

A Stage 1 archaeological assessment was conducted for a proposed new solar park located in Malahide Township, southeast of the hamlet of Candyville, Ontario. The Stage 1 assessment forms part of an environmental review for the project under the Environmental Protection Act, Renewable Energy Approvals process (Ontario Reg. 359.09). The purpose of our work is to evaluate possible construction impacts to known or potential archaeological resources within the proposed solar park lands.

A review of the topography, hydrology, soils and both current and past land uses for the property indicated that most of the proposed solar park lands have potential for either First Peoples and/or historic era archaeological sites according to Ministry of Culture criteria.

Any proposed construction on the subject property must be preceded by a Stage 2 archaeological assessment. The lands are predominantly agricultural and will require pedestrian survey conducted at a five metre interval once the fields are ploughed to permit acceptable survey conditions according to Ministry of Culture standards and guidelines. Any residential grassed areas that are to be affected by construction must be assessed by shovel testing. All areas to be impacted during construction must be assessed including areas designated for solar panel and utility installation, machine travel and material storage.

The Ministry of Culture is asked to review the information presented in this report and issue a letter concurring with its recommendations. This correspondence should be directed to Leah Deveaux of Ortech Power and copied to Holly Martelle of Timmins Martelle Heritage Consultants Inc.



# Stage 1 Archaeological Assessment Silver Creek Solar Park Geographic Township of Malahide Elgin County, Ontario

#### 1.0 INTRODUCTION

A Stage 1 archaeological assessment was conducted for a proposed new solar park located in Malahide Township, southeast of the hamlet of Candyville, Ontario (Figure 1). The subject lands are currently used for agricultural purposes and will see the installation of ground-mounted solar panels. The Stage 1 assessment forms part of an environmental review for the project under the Environmental Protection Act, Renewable Energy Approvals process (Ontario Reg. 359.09). The purpose of our work is to evaluate possible construction impacts to known or potential archaeological resources within the proposed solar park lands.

A field reconnaissance of the property was carried out on November 26th, 2009, under cool, overcast conditions. All archaeological consulting activities were performed under the Professional Archaeological License of Dr. Holly Martelle (P064) and in accordance with the "Archaeological Assessment Technical Guidelines" of the Ministry of Culture (MCTR 1993). Permission to enter the property to carry out our study was given by Leah Deveaux of Ortech Power on behalf of the landowner.

#### 2.0 PURPOSE

The *Ontario Heritage Act* makes provisions for the protection and conservation of heritage resources in the Province of Ontario. Heritage concerns are recognized as a matter of provincial interest in Section 2.6.2 of the *Provincial Policy Statement* which states:

"development and site alteration shall only be permitted on lands containing archaeological resources or areas of archaeological potential if the significant archaeological resources have been conserved by removal and documentation, or by preservation on site. Where significant archaeological resources must be preserved on site, only development and site alteration which maintain the heritage integrity of the site may be permitted." (emphasis in the original)

The *Environmental Protection Act* provides for the protection and conservation of the natural environment. Ontario Reg. 359.09 requires proponents of renewable energy projects to consider whether the project will have an impact to an archaeological resource at the project location through completing an archaeological assessment of the affected lands. The purpose of a Stage 1 archaeological assessment is to determine if there are

Key: Subject Property Dunboy Calton Line Candyville Vienna Line Nova Scotia Line Copenhagen Timmins Martelle Heritage Consultants Inc. Source: NRC 1:50,000 Topographic Map Tile: 401/10, 401/11 Metres 500 1,000 2,000 Date: 21/12/2009 Prepared By: NG

**Figure 1: Location of the Subject Property** 



known cultural resources within the proposed areas of impact or potential for such resources to exist. Subsequently, it can act as a planning tool by identifying areas of concern that, where possible, could be avoided to minimize environmental impact. It is also used to determine the need for a Stage 2 field assessment involving the search for archaeological sites. If significant sites are found, a strategy (usually avoidance, preservation or excavation) must be put forth for their mitigation.

#### 3.0 METHODS AND SOURCES OF INFORMATION

A Stage 1 overview and background study was conducted to gather information about known and potential cultural heritage resources within the study area. Landscape and environmental conditions were reviewed using physiographic, topographic and soils mapping for the area. Early historic maps and historical summaries were consulted and a review of the Provincial registered archaeological sites database was carried out. A review of background documents was supplemented by a preliminary field reconnaissance of the subject property to photo-document existing conditions and highlight significant features within and around the study area that indicate archaeological potential.

When compiled, this information was used to create a summary of the characteristics of the study area to evaluate its archaeological potential. For the Province of Ontario, the Ministry of Culture has identified a number of criteria that can be used to determine if an area has archaeological potential. These criteria primarily relate to geographic and cultural-historic features which would have influenced past land and resource use, as well as encouraged settlement (MCCR 1997:11). The presence or absence of such features allows an archaeologist to estimate the likelihood of ancient land use and thus the presence of archaeological sites.

Typically, a Stage 1 assessment will determine potential for precontact First Peoples and historic Euro-Canadian sites independently. This is due to the fact that lifeways varied considerably between the precontact and historic eras so that the criteria used to evaluate potential for each type of site differs.

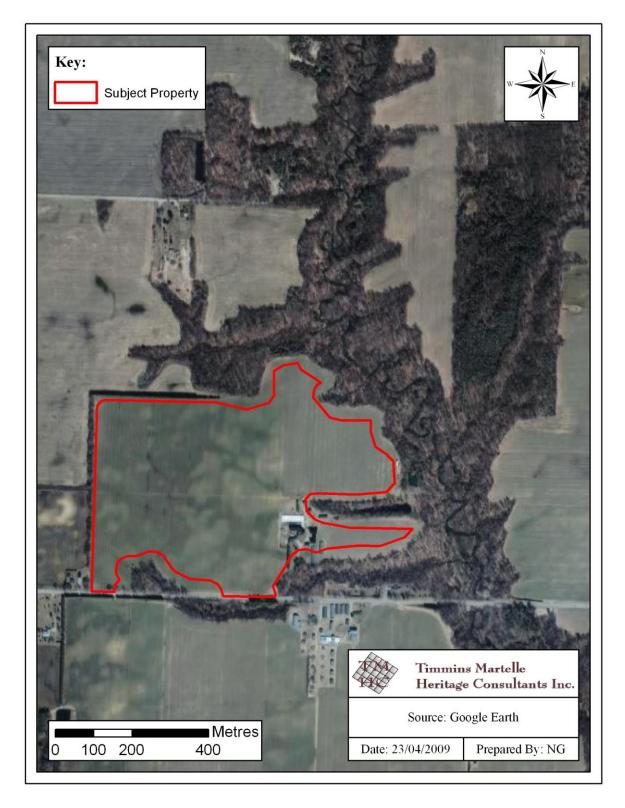
#### 4.0 STAGE 1 ASSESSMENT

#### 4.1 Project Description and Study Area

The proponent wishes to construct a solar farm southeast of the hamlet of Candyville on part of Lots 12 and 13, Concession 3, Malahide Township in Elgin County (Figure 1). The project will see the construction of solar panels across the property, which is currently used for agricultural purposes. The subject property (Figures 1 and 2) is located north of Vienna Line and east of Imperial Road (Highway 73).



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**Figure 2: Aerial Photo of the Subject Property** 



The following sections provide an overview of the study area and its archaeological potential. A detailed review of the property is also included in Section 4.5.

# 4.2 Physiography, Drainage and Soils

The study area falls within the Norfolk Sand Plain physiographic region (Chapman and Putnam 1984:153), a broad wedge-shaped sand plain along the north shore of Lake Erie that was formed as a delta in glacial Lakes Whittlesey and Warren (Chapman and Putnam 1984:1554).

The dominant soil types in the study area are Plainfield Sand and Walsingham Sand, while Waterin Sand occurs in two small areas (DBH Soil Services Inc. 2009) (Figure 4). Plainfield soils are eolian modified lacustrine sand deposits that are rapidly drained and have low water holding capabilities (DBH Soil Services Inc. 2009:6)). They occur on the upper slope areas in the landscape, with gently undulating topography, such as that exhibited by much of the subject property. Walsingham Sands are imperfectly drained and occur on the lower and midslope areas of the landscape (DBH Soil Services Inc. 2009:6-7). Finally, Waterin Sand soils are poorly drained and are found in lower slope and swale parts of the landscape (DBH Soil Services Inc. 2009:7).

The study area is drained by Silver Creek and its small tributaries (Figure 5). Silver Creek flows along the eastern edge of the property and enters Lake Erie about 4 kilometres to the south. While the subject property itself is characterized by level to gently undulating terrain, the creek and its tributaries have cut substantial ravines and created a steep sided valley with a small floodplain. Although the creeks are not located on the subject property, their presence contributes to the archaeological potential of the area.

# 4.3 Evaluation of Archaeological Potential: First Peoples Sites

Although there are few recorded sites in the immediate vicinity, this is attributed to the lack of research-related and cultural resource management projects in the area. In cases where archaeological survey has been conducted near watercourses draining into Lake Erie, relatively high densities of archaeological sites have been reported (Poulton 1980, TMHC 2006, 2007, 2008).

According to the Provincial database there is only one registered site within one kilometre of the study area. It is the Boehm site (AeHf-33), an undated lithic scatter covering an area measuring 20 metres in diameter located in a sandy field just south of a small gully that runs into Silver Creek (Ministry of Culture n.d.). The site was discovered during an archaeological survey conducted in 1980 (Poulton 19080). Poulton collected eight chert flakes from the surface of the site.



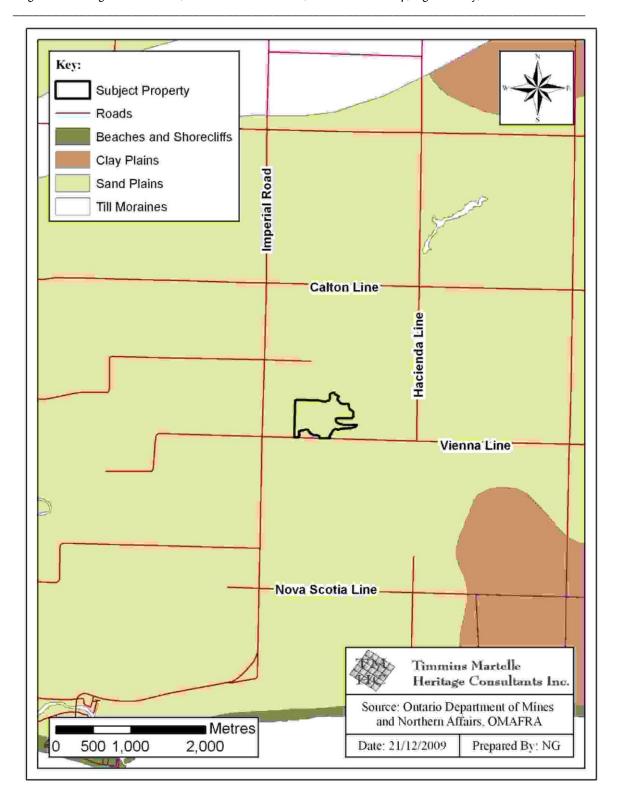


Figure 3: Physiography in the Vicinity of the Subject Property



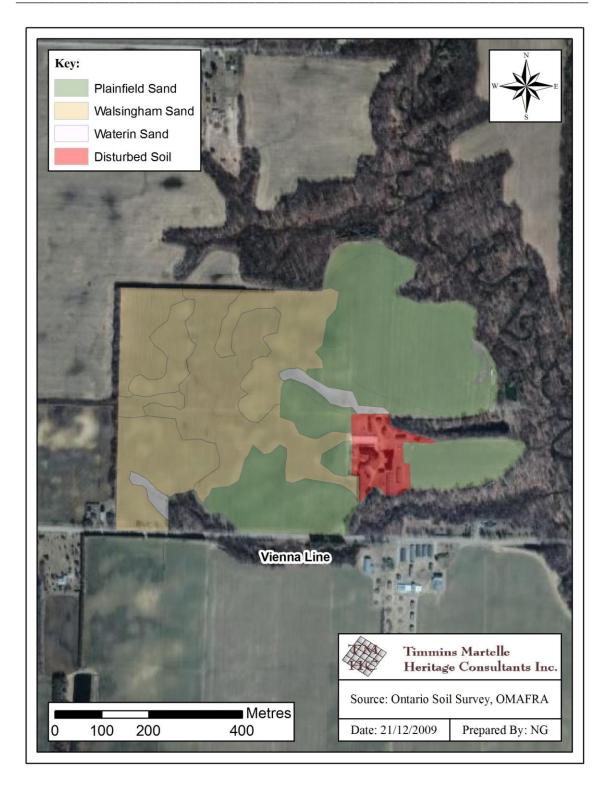


Figure 4: Soils on the Subject Property



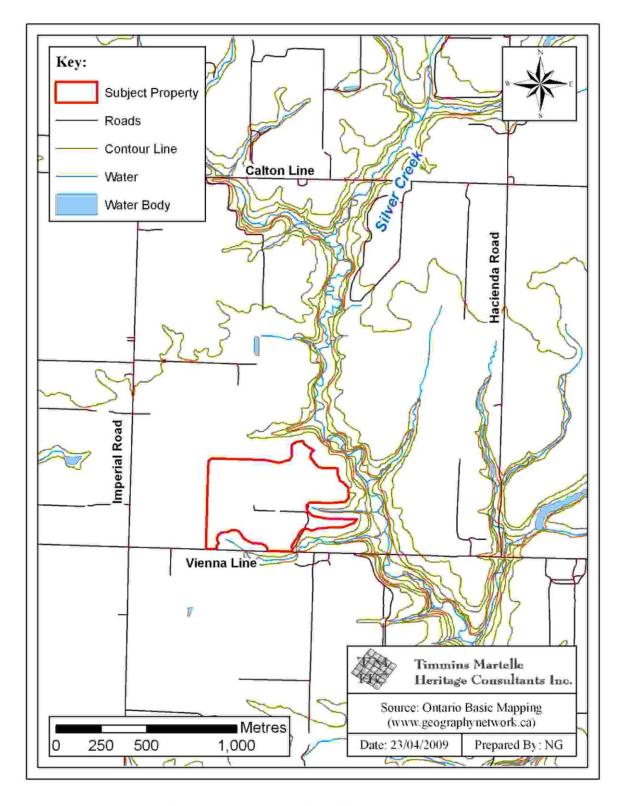


Figure 5: Drainage of the Subject Property



As noted, the paucity of archaeological sites in the immediate area is mainly due to the fact that there have been few archaeological investigations carried out. However, based on region-specific and province-wide archaeological data, a generalized chronology of native settlement in Elgin County has been developed (Table 1).

Period			Time Range (circa)	Diagnostic Features	Complexes
Paleoindian	Early		9000 - 8400 B.C.	fluted projectile points	Gainey, Barnes, Crowfield
	Late		8400 - 8000 B.C.	non-fluted and lanceolate points	Holcombe, Hi-Lo, Lanceolate
Archaic	Early		8000 - 6000 B.C.	serrated, notched, bifurcate base points	Nettling, Bifurcate Base Horizon
	Middle		6000 - 2500 B.C.	stemmed, side & corner notched points	Brewerton, Otter Creek, Stanly/Neville
	Late		2000 - 1800 B.C.	narrow points	Lamoka
			1800 - 1500 B.C.	broad points	Genesee, Adder Orchard, Perkiomen
			1500 - 1100 B.C.	small points	Crawford Knoll
	Terminal		1100 - 950 B.C.	first true cemeteries	Hind
Woodland	Early		950 - 400 B.C.	expanding stemmed points, Vinette pottery	Meadowood
	Middle		400 B.C A.D. 500	dentate, pseudo-scallop pottery	Saugeen/Couture
	Transitional		A.D. 500 - 900	first corn, cord-wrapped stick pottery	Princess Point/Riviere au Vase
	Late	Early Iroquoian	A.D. 900 - 1300	first villages, corn horticulture, longhouses	Glen Meyer/Younge
		Middle Iroquoian	A.D. 1300 - 1400	large villages and houses	Uren, Middleport/Springwells
		Late Iroquoian	A.D. 1400 - 1650	tribal emergence, territoriality	Neutral Iroquois/Wolf
Contact		Aboriginal	A.D. 1700 - 1875	treaties, mixture of Native & European items	Ojibwa
		Euro-Canadian	A.D. 1796 - present	English goods, homesteads	European settlment, pioneer life

**Table 1: Cultural Chronology for Native Settlement in Elgin County** 

Several factors can be used to assess an area's potential for having First Peoples sites. These include the presence of well-drained sandy soils, rolling topography, elevated landscape features and proximity (within 300 metres) to either potable water and known archaeological sites. When these are taken into consideration, virtually all of the land within the subject property has high potential for the recovery of precontact aboriginal sites. This is due primarily to the presence and proximity of Silver Creek and its tributaries along the eastern, southern and northern edges of the study area. Proximity to watercourses is the primary determinant of native archaeological site locations in southwestern Ontario.

# 4.4 Evaluation of Archaeological Potential: Historic Era Sites

The potential of an area to contain historic era or EuroCanadian sites can be considered through an overview of the historical development of a region, a review of land records and a consideration of landscape features and early roadways that might have been attractive for settlement during the period. The subject property falls within the Geographic Township of Malahide in Elgin County. A brief discussion of early pioneer settlement in the area is provided below.

Colonel Thomas Talbot played a major role in the early settlement of Elgin County, however, the focal point of the Talbot settlement, which started in 1803, was Port Talbot in Dunwich Township, west of the study area (H.R. Page & Co. 1877:III). The first settlers in Malahide Township were William, Andrus, Daniel, Simeon and Joseph Davis, five brothers who emigrated from New York State in 1810. In 1812 one

Colonel Backhouse purchased a lot at the mouth of Silver Creek, where he established a sawmill by 1814 and a grist mill by 1816 (H.R. Page & Co. 1877:VIII). By 1855 the hamlet of Dunboyne had been established just northwest of the subject property. Most of the services required by pioneering families developed there, including a blacksmith's shop, church, school, post office, shoemaker and cheese-maker (Grainger 2008:92-93).

The subject property is located in close proximity to historic transportation routes. The Port Bruce and Aylmer gravel road (now Imperial Road/Highway 73) was a major north-south route in Malahide Township between 1850 and 1880 (Hall 1972:77). Most of the Concession Roads in Malahide Township, including Vienna Line, were opened by 1850 (Hall 1972:75).

The 1864 Tremaine Map of Elgin County shows multiple owners for different parts of the subject property: A. McTaggart, J. Esetine, and two others listed only as Street and Fuller (Figure 6). By 1877 there were three property owners: T. McTaggert, C. Stafford and C. Kuntsie (Figure 7). Houses and farmsteads are shown for all three property owners, although the Kuntsie farmstead is located north of the subject property and the house related to the Stafford property is located just outside the southern property boundary (Figure 7) (H.R. Page & Co., 1877: 14). While the McTaggert house is shown on the subject property, it is in the same general area of the existing house, which is a newer structure (Figure 8).

Several factors can be used to assess a property's potential for containing EuroCanadian pioneer sites. These include the proximity to water and transportation routes, the presence of well drained soils and known historic structures and proximity to areas of early European settlement. When these are taken into consideration, the subject property has high potential for the discovery of historic sites. This is due primarily to the proximity of potable water to each property, the presence of known 19<sup>th</sup> century structures and the proximity of the subject lands to mid-19<sup>th</sup> century roads (Imperial Road and Vienna Line).



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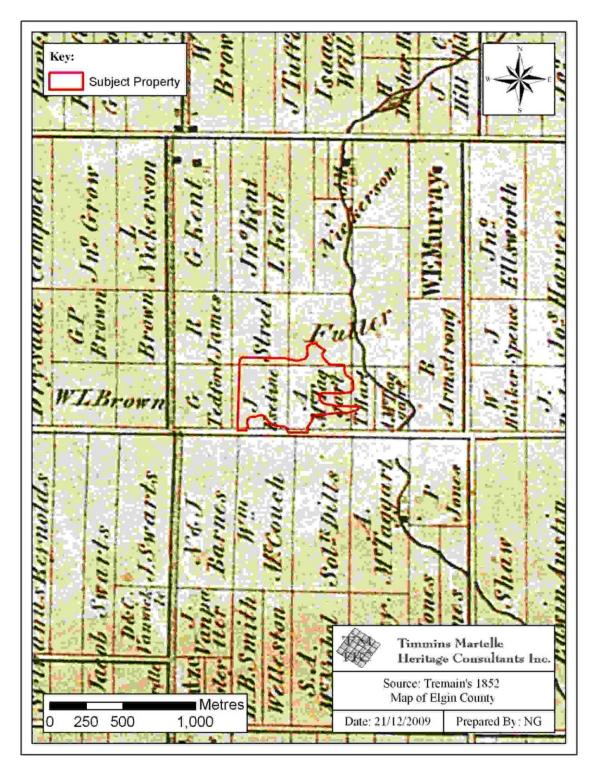


Figure 6: Location of the Subject Property on the 1864 Tremaine Map



Key: Subject Property Elsworth F.0.2 W.Smithton G Brown W. Brown N 0 A, C. Brown W. Mr. Geoch P. Dilts A O A Roberts H Timmins Martelle Heritage Consultants Inc. Source: Illustrated Historical Atlas of Elgin County. 1877 Metres M 250 500 Date: 21/12/2009 1,000 Prepared By: NG 164

Figure 7: Location of the Subject Property on the 1877 Map of Malahide Township



# 4.5 Property Review

TMHC staff visited the subject property on November 26<sup>th</sup>, 2009, and completed a Stage 1 reconnaissance. With the exception of a highly disturbed area occupied by the existing house, drive, and associated outbuildings (Figure 8), the field portion of the property is moderately disturbed. It was cleared of trees over time and cultivated for agricultural purposes until the present day. An underground irrigation system and agricultural drain tiles spaced at 30 foot intervals have been installed in the field portion of the property. Figures 8 through 13 show features of interest on the subject property.

The northern and eastern edges of the property are bounded by valley lands associated with Silver Creek and its tributaries. In particular, the northeast and southeast fields are bounded by steep slopes that descend to the creek on two or three sides (Figures 9 and 11). Since water is the single most important determinant of potential for precontact archaeological sites, these areas are considered to have high archaeological potential.

If a 300 metre buffer is applied to Silver Creek and 200 metre buffers are applied to its tributaries to demarcate areas of archaeological potential based on proximity to water (Ministry of Citizenship, Culture and Recreation 1997), there is a small "island" of land in the central and west fields that has less potential. However, during the Stage 1 walkover a fragmentary chert biface was found of the study area, in the central field. It was not collected, however, it was flagged and GPS coordinates were taken on the location (Figure 14). The discovery of archaeological material in this area indicates that the central portion of the property also has potential for the discovery of precontact sites.

The area of highest potential for the discovery of historic archaeological sites is adjacent to Vienna Road. Of the two 19<sup>th</sup> century farmsteads shown on historic maps, the most easterly (T. McTaggert) was likely in the location of the current house and outbuildings and is probably highly disturbed. Remnants of the second farmstead (C. Stafford) may be extant in the southwest part of the subject property (Figure 7), although the structure itself is likely located just south of the property boundary. It should also be noted that historic maps do not show all structures, and may not show accurate structure locations. Judging by the number of landowners indicated on historic maps, it is possible that there are earlier Euro-Canadian historic sites on the subject property as well.





Figure 8: House and outbuildings looking southeast



Figure 9: Northeast field looking east



Figure 10: Central field, north end, looking west





Figure 11: Southeast field, looking east



Figure 12: Tributary of Silver Creek at southeast corner of property, looking east



Figure 13: West field looking northwest from Vienna Line



Map Removed for Public Circulation

Figure 14: Areas of Archaeological Potential on the Subject Property



#### 5.0 SUMMARY AND RECOMMENDATIONS

A Stage 1 archaeological assessment was conducted for a proposed new solar park located on Lots 12 and 13, Concession 3, Malahide Township in Elgin County. According to Ministry of Culture criteria, with the exception of highly disturbed areas occupied by a residence and outbuildings, most of the field portion of the property has archaeological potential. The potential arises from the proximity to a watercourse (Silver Creek), the well drained sandy soils common in this region and the agricultural settlement history of Malahide Township. The property has been moderately disturbed by installation of an agricultural drain tile system, tree clearing during original settlement and ongoing agricultural cultivation.

Any proposed surface or subsurface impacts that will result from construction, utility installation, material storage and machine travel may affect previously unrecorded archaeological resources within the subject property. As such, Stage 2 will be required prior to construction to determine if archaeological sites are present.

Since typical archaeological assessment methods cannot always detect deeply buried archaeological deposits, if these are found at any point during construction, the Ministry of Culture should be notified immediately at (519) 675-6898. Upon the discovery of human remains during construction, the proponent should immediately contact a representative of Timmins Martelle Heritage Consultants, the Ministry of Culture as well as the Registrar of Cemeteries, Michael D'Mello, in the Cemeteries Regulation Unit of the Ministry of Consumer and Commercial Relations (416) 326-8392.

The Ministry of Culture is asked to review the information presented in this report and issue a letter concurring with its recommendations.



#### References

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# Timmins Martelle Heritage Consultants Inc.

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- 2007 Stage 2 Archaeological Assessment, Proposed Sand Pit, Part of Lot 6, Concession 3, Geographic Township of Malahide, Elgin County, Ontario. Report on file at the Ministry of Culture, Toronto.
- 2008 Stage 3 Archaeological Assessment, Proposed Sand Pit, Part of Lot 6, Concession 3, Geographic Township of Malahide, Elgin County, Ontario. Report on file at the Ministry of Culture, Toronto.

# Tremaine, George

1864 Tremaine's Map of the County of Elgin, Canada West, Compiled and drawn by George R. Tremaine. Toronto. Commemorative edition (2002) published by the Elgin County Library, St. Thomas.



#### **Ministry of Tourism and Culture**

Culture Programs Unit Programs & Services Br. 900 Highbury Avenue London, ON N5Y 1A4 Tel: 519-675-6898

Fax: 519-675-7777

e-mail: shari.prowse@ontario.ca

Ministre du Tourisme et de la Culture

Unité des programmes culturels Direction des programmes et des services

900, av. Highbury London, ON N5Y 1A4 Tél: 519-675-6898 Téléc: 519-675-7777 e-mail: shari.prowse@ontario.ca



February 24, 2010

Dr. Holly Martelle Timmins Martelle Heritage Consultants Inc. 584 Oxford Street East London, Ontario N5Y 3J1

Review and Acceptance into the Provincial Register of Reports: Archaeological Assessment Report Entitled, "Stage 1 Archaeological Assessment, Silver Creek Solar Park, Geographic Township of Malahide, Elgin County, Ontario", January 2010, Received February 11, 2010, Licence/PIF # P064-324-2009, MCL File 34EA004

Dear Dr. Martelle:

This office has reviewed the above-mentioned report which has been submitted to this Ministry as a condition of licensing in accordance with Part VI of the Ontario Heritage Act, R.S.O. 1990, c 0.18. This review is to ensure that the licensed professional consultant archaeologist has met the terms and conditions of their archaeological licence, that archaeological sites have been identified and documented according to the 1993 technical guidelines set by the Ministry and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario.

As the result of our review, this Ministry accepts the above titled report into the Provincial register of archaeological reports. The report indicates that portions of the subject property have archaeological potential and should be subject to an archaeological assessment if being impacted by this project. This Ministry concurs with this recommendation.

I trust this information is of assistance. Should you require any further information regarding this matter, please feel free to contact me.

Sincerely,

Shari Prowse

Archaeology Review Officer

Archaeology Licence Office cc. Mr. Leah Deveaux, Ortech Power