ORIGINAL REPORT

May 8, 2012

STAGE 2 ARCHAEOLOGICAL ASSESSMENT

Kingston Solar LP
Sol-luce Kingston Solar PV Energy Project
Various Lots and Concessions
Geographic Townships of Kingston and Ernestown
Now City of Kingston, Frontenac County and Township of Loyalist, Lennox and Addington County, Ontario

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Executive Summary

This Stage 2 archaeological assessment was undertaken in order to meet the requirements for an application for a Renewable Energy Approval (REA), as outlined in Ontario Regulation 359/09 section 22(3) of the *Environmental Protection Act*. It was conducted on behalf of Kingston Solar LP for the Sol-luce Kingston Solar PV Energy Project by Golder Associates Ltd. for an approximately 20.99 hectare study area located in the Geographic Townships of Kingston and Ernestown, respectively now City of Kingston, Frontenac County and Loyalist Township, Lennox and Addington County, Ontario. The majority of the solar farm has already been subject to archaeological assessment by AMEC Environment & Infrastructure (AMEC). The study area includes Parcels 3, 7, 14A, 14C, and 21; the access road between Parcels 2 and 3; and lands to be used by Hydro One Networks Inc. The study area is located in various lots and concessions in Frontenac and Lennox and Addington Counties, Ontario.

The Sol-luce Kingston Solar PV Energy Project involves the design and construction of a 100MWac solar power development. The output of the solar project will be collected and connected to an electrical substation that transforms the power from distribution voltage to a transmission voltage of 230kV (AMEC 2012a, 2012b). For the purposes of this Stage 2 assessment, the Ministry of Tourism, Culture and Sport's (MTCS) 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011) were followed. The objectives of the Stage 2 assessment were to document archaeological resources present within the study area, to determine whether any of the resources might be artifacts or archaeological sites with cultural heritage value or interest requiring further assessment, and to provide specific Stage 3 direction for the protection, management and/or recovery of the identified archaeological resources (Government of Ontario 2011).

Approximately 16.51% of the 20.99 hectares which was surveyed by Golder and to be impacted by the Sol-luce Kingston Solar PV Energy Project was subject to test pit survey, while another 69.06% was subject to pedestrian survey. Approximately 6.67% of the designated parcels were not assessed due to presence of extremely wet and poorly drained conditions and approximately 7.76% due to the presence of exposed bedrock with no topsoil overburden.

The Stage 2 assessment of the additional properties selected for the Sol-luce Kingston Solar PV Energy Project did not result in the identification of any archaeological resources. Given that the cultural heritage value or interest of these properties has been sufficiently documented, **no further archaeological assessment is recommended within the parcels studied.** The MTCS is asked to accept this report into the Ontario Public Register of Archaeological Reports.

The Executive Summary highlights key points from the report only; for complete information and findings, as well as the limitations, the reader should examine the complete report.

Table of Contents

TABLES

FIGURES

PLATES

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1.0 PROJECT CONTEXT

1.1 Development Context

This Stage 2 archaeological assessment was undertaken in order to meet the requirements for an application for a Renewable Energy Approval (REA), as outlined in Ontario Regulation 359/09 section 22(3) of the *Environmental Protection Act*. It was conducted on behalf of Kingston Solar LP for the Sol-luce Kingston Solar PV Energy Project by Golder Associates Ltd. (Golder) for an approximately 20.99 hectare study area located in the Geographic Townships of Kingston and Ernestown, respectively now City of Kingston, Frontenac County and Loyalist Township, Lennox and Addington County, Ontario (Figure 1). The majority of the solar farm (also referred to as the Project Location) has already been subject to archaeological assessment by AMEC Environment & Infrastructure (AMEC). The study area includes Parcels 3, 7, 14A, 14C, and 21; the access road between Parcels 2 and 3; and lands to be used by Hydro One Networks Inc. (HONI). The study area is located in various lots and concessions in Frontenac and Lennox and Addington Counties, Ontario. Table 1 lists the parcels located within the study area.

Table 1: Parcels Studied within the Kingston Solar LP Project

County	Geographic Township	Concession	Lot	Parcel Being Studied
Frontenac	Kingston	6 Western Division	Part of 3	Access Road Between 2 and 3
			Part of 3	3
			Part of 11	7
			Part of 4	HONI Lands
		5 Western Division	Part of 7 and 8	14A
			Part of 9 and 10	14C
Lennox and Addington	Ernestown	4	Part of 39	21

The Green Energy Act (2009) enabled legislation governing project assessments and approvals to be altered to allow for a more streamlined Renewable Energy Approval (REA) process. Under Section 22(1) of the REA, an archaeological assessment must be conducted if the proponent concludes that engaging in the project may have an impact on archaeological resources. AMEC (2012a, 2012b) previously determined the potential for the recovery of pre-contact Aboriginal and historic Euro-Canadian archaeological resources within the study area. Currently, Ontario Regulation 359/09 of the *Environmental Protection Act* governs the REA process for renewable energy projects such as wind, anaerobic digestions, solar and thermal treatment facilities.

The Sol-luce Kingston Solar PV Energy Project involves the design and construction of a 100MWac solar power development. The output of the solar project will be collected and connected to an electrical substation that transforms the power from distribution voltage to a transmission voltage of 230kV (AMEC 2012a, 2012b). Permission to enter the optioned lots within the study area and to remove archaeological resources was given by Mr. A. José De Armas of Kingston Solar LP. For the purposes of this Stage 2 assessment, the Ministry of Tourism, Culture and Sport's (MTCS) 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011) were followed. The objectives of the Stage 2 assessment were to document archaeological resources present within the study area, to determine whether any of the resources might be

artifacts or archaeological sites with cultural heritage value or interest requiring further assessment, and to provide specific Stage 3 direction for the protection, management and/or recovery of the identified archaeological resources (Government of Ontario 2011).

1.2 Historical Context

1.2.1 Post-contact Aboriginal Documentation

The post-contact Aboriginal occupation of Southern Ontario was heavily influenced by the dispersal of various Iroquoian-speaking peoples by the New York State Iroquois and the subsequent arrival of Algonkian-speaking groups from northern Ontario at the end of the 17th century and beginning of the 18th century (Schmalz 1991).

The nature of their settlement size, population distribution, and material culture shifted as European settlers encroached upon their territory. However, despite this shift, "written accounts of material life and livelihood, the correlation of historically recorded villages to their archaeological manifestations, and the similarities of those sites to more ancient sites have revealed an antiquity to documented cultural expressions that confirms a deep historical continuity to Iroquoian systems of ideology and thought" (Ferris 2009:114). As a result, First Nation peoples of southern Ontario have left behind archaeologically significant resources throughout southern Ontario which show continuity with past peoples, even if they have not been recorded in historical Euro-Canadian documentation.

The study area is situated within the Geographic Townships of South Frontenac and Loyalist. It falls within the treaty area designated Crawford's Purchase (Morris 1943). On October 9, 1783, Captain Crawford purchased the lands from Toniata or Onagara River (now Jones Creek near Brockville) to the Trent River along the north shore of Lake Ontario. In a letter to Sir John Johnson, he writes:

> *According to your directions I have purchased from the Mississa[u]gas all the lands from Toniata or Onagara River to the River in the Bay of Quinte within eight leagues of the bottom of the said Bay, including all the Islands, extending from the Lake back as far as a man can travel in a day. ... The Chiefs claiming the land at the bottom of the Bay could not be got together at the present. I believe their lands can be got nearly on the same terms, though this when I see them.*
>
> (Morris 1943:9-10)

While it is difficult to delineate treaty boundaries today, Figure 2 provides an approximate outline of the limits of Crawford's Purchase.

1.2.2 Historic Euro-Canadian Documentation

The study area is situated within the Geographic Township of Kingston, now City of Kingston, Frontenac County, Ontario and Ernestown, now Township of Loyalist, Lennox and Addington County, Ontario (Figure 3). Although Kingston itself was first settled in 1673 with the establishment of the Fort Frontenac trading post (Archaeological Services Inc. [ASI] 2010a), settlement of the study area did not occur until the late 1700s (AMEC 2012a:8). Kingston Township was settled between 1783 and 1814 (Nuttall 1982:42) and Ernestown Township in 1784 by

United Empire Loyalist refugees from the American Revolutionary War (Turner 1993:11). Following the War of 1812, another wave of immigration, this time of people from England, Scotland, and Ireland, occurred (Turner 1993:19).

Early settlement within the study area was characterized by dispersed family farms (Nuttall 1982:48), with the majority of the homesteads located near concession roads (Turner 1993:21). The typical 1880s farming family worked 100 to 200 acres of land, planting crops including wheat, rye, oats, barely, potato, Indian corn, peas, and flax, as well as raising livestock such as cattle, sheep, pigs, and poultry (Turner 1993:116). The soils were also capable of supporting fruit trees, including apples, pears, plums, and cherries (Meacham & Co. 1878).

The first school in the area was in Kingston and was established in 1807 (Turner 1993:54). An academy was also opened in Bath, northwest of Kingston, in 1811, and this community was also the location of the nearest church, which was constructed between 1792 and 1793 (Turner 1993:55, 57).

AMEC (2012a:9) also noted the closest mill in the entire solar farm's Project Location on Mill Creek, a community which was named Odessa in 1856. By the late 1800s, this village had grown to include a number of factories, mills, carriage works, shops, hotels, a drill shed, three churches, and a town hall (Meacham & Co. 1878:5).

In addition, the hamlet of Ballynahinch, re-named Glenvale in 1863, was well established by the mid-1800s with five schools and four churches (MacRow 1982:480). Another smaller settlement, Sharpton, which housed a school and a post office, was also established in Kingston Township around this time (MacRow 1982: 480).

1.2.3 Recent Reports

As was noted above, previous Stage 1 and 2 archaeological assessment for the Sol-luce Kingston Solar PV Energy Project was conducted by AMEC. The first report, recorded under PIF numbers P348-001-2011 and P141-160-2011, was entitled *Stage 1 Archaeological Background Study and Stage 2 Property Assessment, Sol-luce Kingston Solar PV Energy Project, Ernestown and Kingston Townships, Frontenac, Lennox and Addington Counties, Ontario,* was submitted to the MTCS and to the client on December 23, 2011 by AMEC (2011). A revised version of this report was subsequently submitted on February 10, 2012 (AMEC 2012a). The second report, recorded under PIF number P141-166-2011, was entitled *Final Report, Stage 2 Property Assessment, Parcel 14A, 21, 22, 23 &24, Sol-luce Kingston Solar PV Energy Project, Ernestown and Kingston Townships, Frontenac, Lennox and Addington Counties, Ontario*, was submitted to the MTCS and to the client on February 3, 2012 by AMEC (2012b).

In addition, ASI recently researched and wrote two master plan reports for the archaeological resources of the City of Kingston. The first was entitled *Master Plan of Archaeological Resources, City of Kingston, Technical Report* (ASI 2010a), and was submitted in March 2010 to the Planning and Development Department of the City of Kingston. The second report was entitled *Planning for the Conservation of Archaeological Resources in the City of Kingston* (ASI 2010b), and was also submitted in March 2010 to the Planning and Development Department of the City of Kingston.

1.3 Archaeological Context

1.3.1 The Natural Environment

The study area is located within the Napanee Plain which is described as (Chapman and Putnam 1984:186):

> *... a flat-to-undulating plain of limestone from which the glacier stripped most of the overburden. Based mainly on limestone of the Gull River and Bobcaygeon Formations, it is a counterpart of the smaller Carden plain, and the large Smiths Falls plain which is underlain chiefly by sandstones and dolostones of the Beekmantown Group. Centring on the Town of Napanee it covers approximately 700 square miles.*

The soil is only a few inches deep over much of the region. However, it is deeper in stream and river valleys and towards the north where the Dummer Moraines are located (Chapman and Putnam 1984:186). The original environment was predominantly sugar maple forest with some white elm, silver and red maple, white cedar, basswood, beech, burr oak, white pine, hemlock, balsam fir, and white spruce. Pastures and roadsides are dominated by Canada blue grass, mullein, blueweed, and ground juniper (Chapman and Putnam 1984:187).

The soils within the Napanee Plain are clays and clay loams and include Farmington Loam, Lindsay Clay Loam, Lyons Loam-Shallow Phase, Guerin Loam, Guerin Loam-Shallow Phase, and Bondhead Loam (Chapman and Putnam 1984). Considering water sources, Glenvale Creek transects the eastern portion of the primary study area, and Odessa Lake is located immediately to the west (AMEC 2012a:4).

1.3.2 Existing Conditions

The Stage 2 archaeological assessment of the additional land parcels selected for the Sol-luce Kingston Solar PV Energy Project was conducted between April 18 and May 2, 2012, under the PIF P218-226-2012, issued to Scott Martin, Ph.D. by the MTCS. During the Stage 2 fieldwork, the weather ranged from sunny and mild to cloudy and cool. At no time were the field or weather conditions detrimental to the recovery of archaeological material and visibility was excellent. The study area encompasses approximately 20.99 hectares and consists of ploughed, well-weathered fields, scrub brush, woodlots, some wet areas, and some areas of exposed bedrock.

1.3.3 Previously Known Archaeological Resources and Surveys

In order to compile an inventory of archaeological resources within the study area, the registered archaeological site records kept by the MTCS were consulted. In Ontario, information concerning archaeological sites is stored in the Archaeological Sites Database (ASDB) using the Borden system. Under the Borden system, Canada is divided into grid blocks based on latitude and longitude. A Borden Block is approximately 13 kilometres east to west by approximately 18.5 kilometres north to south. Each Borden block is referenced by a four-letter designator and sites within a block are numbered sequentially as they are found. The study area under review is within Borden Blocks *BbGe* and *BbGd*.

The ASDB was consulted in order to determine if previous archaeological fieldwork had been conducted within a 50 metre radius around the study area. The same database was also examined to identify registered archaeological sites within a one kilometre radius of the identified properties. AMEC's (2012a) request of the ASDB indicated that no previous archaeological field work had been conducted within a 50 metre radius of the

study area. In fact, AMEC's (2012a and 2012b) Stage 1 and Stage 2 archaeological assessments were the first recorded within the study area and was conducted on behalf of Kingston Solar LP for the Sol-luce Kingston Solar PV Energy Project. So, AMEC's 2011 field work was conducted within 50 metres of the current parcels being studied.

Information concerning specific site locations is protected by provincial policy, and is not fully subject to the Freedom of Information Act. The release of such information in the past has led to looting or various forms of illegally conducted site destruction. Confidentiality extends to all media capable of conveying location, including maps, drawings, or textual descriptions of a site location. The MTCS will provide information concerning site location to the party or an agent of the party holding title to a property, or to a licensed archaeologist with relevant cultural resource management interests.

1.3.4 Pre-contact Aboriginal Resources and Surveys

Table 1 provides a general outline of the culture history of the Kingston area based on chapters in Ellis and Ferris (1990).

Table 2: Cultural Chronology for Kingston Area (Ellis and Ferris 1990)

Period	Characteristics	Time	Comments
Early Paleo-Indian	Fluted Projectiles	9000 - 8400 B.C.	spruce parkland/caribou hunters
Late Paleo-Indian	Hi-Lo Projectiles	8400 - 8000B.C.	smaller but more numerous sites
Early Archaic	Kirk and Bifurcate Base Points	8000 - 6000 B.C.	slow population growth
Middle Archaic	Brewerton-like points	6000 - 2500 B.C.	environment similar to present
Late Archaic	Lamoka (narrow points)	2000 - 1800 B.C.	increasing site size
	Broadpoints	1800 - 1500 B.C.	large chipped lithic tools
	Small Points	1500 - 1100B.C.	introduction of bow hunting
Terminal Archaic	Hind Points	1100 - 950 B.C.	emergence of true cemeteries
Early Woodland	Meadowood Points	950 - 400 B.C.	introduction of pottery
Middle Woodland	Dentate/Pseudo-Scallop Pottery	400 B.C. - A.D.500	increased sedentism
	Princess Point	A.D. 550 – 900	introduction of corn
Late Woodland	Early Ontario Iroquoian	A.D. 900 – 1300	emergence of agricultural villages
	Middle Ontario Iroquoian	A.D. 1300 – 1400	long longhouses (100m +)
	Late Ontario Iroquoian	A.D. 1400 – 1650	tribal warfare and displacement
Contact Aboriginal	Various Iroquoian Groups	A.D. 1700 – 1875	early written records and treaties
Historic	Euro-Canadian	A.D. 1796 – present	European settlement

According to the ASDB (AMEC 2012a), there were no pre-contact Aboriginal sites registered within a one kilometre radius of the study area prior to AMEC's 2011 assessment. During their Stage 2 fieldwork, AMEC (2012a) identified one isolated pre-contact Aboriginal findspot, registered as BbGd-53. A single Early Woodland (*circa* 950-400 B.C.) Meadowood projectile point manufactured from Onondaga chert was recovered. It was not recommended for further archaeological assessment. A second findspot, A1, was recorded during additional Stage 2 assessment in 2011 (AMEC 2012b). The medial section of a refined biface manufactured from Onondaga chert was all that was recovered. It was not registered or recommended for further archaeological assessment. None of the sites documented are within 50 metres of the parcels studied in this report.

It should also be noted that in their Master Plan of Archaeological resources for the City of Kingston, ASI (2010a) described three pre-contact archaeological sites located over a kilometre to the southeast of the study area.

1.3.5 Post-contact Aboriginal Resources and Surveys

According to the ASDB (AMEC 2012a) there were no post-contact Aboriginal archaeological sites registered within a one kilometre radius of the study area prior to AMEC's 2011 assessment. Following this assessment, there are still no post-contact Aboriginal sites known within the study area.

1.3.6 Historic Euro-Canadian Archaeological Resources and Surveys

According to the ASDB (AMEC 2012a), there were no historic Euro-Canadian sites registered within a one kilometre radius of the study area prior to AMEC's 2011 assessment. During their Stage 2 fieldwork, however, AMEC (2012a) identified and registered five historic Euro-Canadian sites, whose characteristics are summarized in Table 3.

Table 3: Historic Euro-Canadian Sites Identified by AMEC

Borden Number	Site Type	Time Period/Cultural Affiliation
BbGd-48	mid-19th to early/mid-20th century homestead	historic Euro-Canadian
BbGd-49	mid-19th to early/mid-20th century homestead	historic Euro-Canadian
BbGd-50	mid-19th to early/mid-20th century homestead and blacksmith shop	historic Euro-Canadian
BbGd-51	mid-19th to early/mid-20th century domestic scatter	historic Euro-Canadian
BbGd-52	mid-19th to early/mid-20th century homestead	historic Euro-Canadian

All five of these sites were recommended for Stage 3 archaeological assessment in order to further evaluate their cultural heritage value or interest (AMEC 2012a, 2012b). In addition, AMEC (2012a) recorded two additional isolated historic Euro-Canadian artifacts. Findspot H1 consisted of an undateable smoking pipe bowl fragment, while Findspot H2 was a Thomas Davidson "Glasgow" smoking pipe stem fragment that was manufactured between 1861 and 1891. They were not registered or recommended for further archaeological assessment. None of the sites documented are within 50 metres of the parcels studied in this report.

1.3.7 Determination of Archaeological Potential

Archaeological potential is established by determining the likelihood that archaeological resources may be present on a subject property. In accordance with the Ministry of Tourism, Culture and Sport's *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011) the following are features or characteristics that indicate archaeological potential:

- Previously identified archaeological sites;
- Water sources:
  - Primary water sources (lakes, rivers, streams, creeks);
  - Secondary water sources (intermittent streams and creeks; springs; marshes; swamps);
  - Features indicating past water sources (e.g. glacial lake shorelines indicated by the presence of raised gravel, sand, or beach ridges; relic river or stream channels indicated by clear dip or swale in the topography; shorelines of drained lakes or marshes; and cobble beaches);
  - Accessible or inaccessible shoreline (e.g. high bluffs, swamps or marsh fields by the edge of a lake; sandbars stretching into marsh);
- Elevated topography (eskers, drumlins, large knolls, plateaux);
- Pockets of well drained sandy soil, especially near areas of heavy soil or rocky ground;
- Distinctive land formations that might have been special or spiritual places, such as waterfalls, rock outcrops, caverns, mounds, and promontories and their bases (there may be physical indicators of their use, such as burials, structures, offerings, rock paintings or carvings);
- Resource areas including:
  - Food or medicinal plants;
  - Scarce raw minerals (e.g. quartz, copper, ochre or outcrops of chert);
  - Early Euro-Canadian industry (fur trade, mining, logging);
- Areas of Euro-Canadian settlement; and
- Early historical transportation routes.

Distance to modern or ancient water sources is generally accepted as the most important determinant of past human settlement patterns and, considered alone, may result in a determination of archaeological potential. However, any combination of two or more other criteria, such as well-drained soils or topographic variability, may also indicate archaeological potential. Finally, extensive land disturbance can eradicate archaeological potential (Wilson and Horne 1995).

In archaeological potential modeling a distance to water criterion of 300 metres is generally employed for primary water courses, including lakeshores, rivers and large creeks, while a criterion of 200 metres is applied to secondary water sources, including swamps and small creeks. The closest potable water sources are Glenvale

Creek, which transects the eastern portion of the primary study area, and Odessa Lake, which is located immediately to the west of the study area. These would have been reliable water and food sources.

Soil texture can be an important determinant of past settlement, usually in combination with other factors such as topography. The soils of the study area have high clay content and immediately overlie bedrock. They are rather thin and unproductive, requiring extensive drainage infrastructure. Not surprisingly, farming is not extensive within the study area.

The MTCS also views the presence of previously registered archaeological sites as a prime indicator of archaeological potential.

1.3.8 Archaeological Integrity

A negative indicator of archaeological potential is extensive land disturbance. This includes widespread earth movement activities that would have eradicated or relocated any cultural material to such a degree that the information potential and cultural heritage value or interest has been lost.

Section 1.3.2 of the MTCS's 2011 *Standards and Guidelines for Consultant Archaeologists* states that:

> *Archaeological potential can be determined not to be present for either the entire property or a part(s) of it when the area under consideration has been subject to extensive and deep land alterations that have severely damaged the integrity of any archaeological resources.*
>
> (Government of Ontario 2011:18)

The types of disturbance referred to above include, but are not restricted to, quarrying, sewage and infrastructure development, building footprints and major landscaping involving grading below topsoil.

No major areas of disturbance are evident on the subject properties and archaeological integrity is considered sound.

1.3.9 Potential for Pre-contact Aboriginal Archaeological Sites

AMEC (2012a:35) indicated that all portions of the study area that have not been thoroughly disturbed and that are not low lying and wet have pre-contact Aboriginal archaeological potential. This conclusion was based on the proximity of the study area to water and previously identified archaeological sites.

1.3.10 Potential for Post-contact Aboriginal Archaeological Sites

AMEC (2012a:35) indicated that all portions of the study area that have not been thoroughly disturbed and that are not low lying and wet have post-contact Aboriginal archaeological potential. This conclusion was based on the proximity of the study area to water, historic settlement, and previously identified archaeological sites.

1.3.11 Potential for Historic Euro-Canadian Archaeological Sites

AMEC (2012a:35) indicated that all portions of the study area that have not been thoroughly disturbed and that are not low lying and wet have historic Euro-Canadian archaeological potential. This conclusion was based on the proximity of the study area to water, historic settlement, and previously identified archaeological sites.

1.3.12 Summary

AMEC (2012a:35) indicated that all portions of the study area that have not been thoroughly disturbed and that are not low lying and wet have pre-contact Aboriginal, post-contact Aboriginal, and historic Euro-Canadian archaeological potential. No sites have been documented within 50 metres of the parcels being studied in this report.

2.0 FIELD METHODS

Approximately 16.51% of the 20.99 hectares which was surveyed by Golder and to be impacted by the Sol-luce Kingston Solar PV Energy Project was subject to test pit survey, while another 69.06% was subject to pedestrian survey. Approximately 6.67% of the designated properties was not assessed due to presence of extremely wet and poorly drained conditions (Plates 4, 9, 12, 14 and 24) and approximately 7.76% due to the presence of exposed bedrock with no topsoil overburden (Plates 3 and 23). As per the *Standards and Guidelines for Consultant Archaeologists* (Section 7.8.6, Standard 1a, Government of Ontario 2011), Plates 1 to 28 illustrate a representative sample of parts of the study area that confirm conditions met the requirements for test pit and pedestrian survey. Plate locations and photograph directions are provided in Figures 4-01 to 4-04. During the Stage 2 fieldwork, the weather ranged from sunny and mild to cloudy and cool. At no time were the field or weather conditions detrimental to the recovery of archaeological material and visibility was excellent.

Test pit survey was conducted at an interval of five metres in areas that were in woodlot or brush and not ploughable (Plates 1, 2, 10, 11, 13, 15, 20, 21, 22, 25 and 26). Each test pit was at least 30 centimetres in diameter and was dug five centimetres into subsoil, examining the pit for stratigraphy, cultural features or evidence of fill. All soil was screened through six millimetre hardware cloth to facilitate the recovery of any cultural material. Each test pit was back filled and topped up with additional soil when necessary (Section 2.1.2, Government of Ontario 2011).

In the event that an artifact was encountered in a test pit, eight additional test pits were dug at a maximum of 2.5 metre intervals within a radius of five metres around the initial positive test pit. In addition, a one-by-one metre test unit was placed over the initial positive test pit (Section 2.1.3, Government of Ontario 2011).

Pedestrian survey was conducted at an interval of five metres in areas that could be ploughed (Plates 5, 6, 7, 8, 16, 17, 18, 19, 27 and 28). When archaeological resources were identified, the survey transect was decreased to a one metre interval and spanned a minimal 20 metre radius around the identified artifact. This approach established if the artifact was an isolated find or rather if it was part of a larger artifact scatter. If the artifact was part of a larger scatter, the one metre interval was continued until the full extent of the scatter was defined (Section 2.1.1, Government of Ontario 2011).

All formal and diagnostic artifact types were collected and a UTM reading was taken using a Trimble Recon handheld GPS unit with a Holux GR-271 CF GPS Receiver, using the North American Datum (NAD) 83, with a minimal accuracy of two metres.

Figures 4-A and 4-01 to 4-04 illustrate the Stage 2 field assessment methods across the study area.

First Nations engagement for this project is summarized in Supplement A.

3.0 RECORD OF FINDS

The Stage 2 archaeological assessment was conducted employing the methods described in Section 2.0. An inventory of the documentary record generated by field work is provided in Table 4 below. Figures 4-A and 4-01 to 4-04 illustrate the areas assessed and the techniques employed.

Table 4: Inventory of Documentary Record

Document Type	Current Location of Document Type	Additional Comments
Field Notes	Golder office in Mississauga	In original field book and photocopied in project file
Hand Drawn Maps	Golder office in Mississauga	In original field book and photocopied in project file
Maps Provided by Client	Golder office in Mississauga	Stored in project file
Digital Photographs	Golder office in Mississauga	Stored digitally in project file

Golder's Stage 2 survey of the additional properties for the proposed Sol-luce Kingston Solar PV Energy Project did not result in the identification of any archaeological resources.

4.0 ANALYSIS AND CONCLUSIONS

While archaeological potential was noted by AMEC (2012a) for pre-contact Aboriginal, post-contact Aboriginal, and historic Euro-Canadian occupation, the Stage 2 archaeological assessment did not result in the identification of any archaeological resources. Given the lack of finds, the cultural heritage value or interest of the parcels studied is considered to be sufficiently documented. Also, since no archaeological resources were recovered, none of the criteria in Section 2.2 of the *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011) were met.

5.0 RECOMMENDATIONS

The Stage 2 assessment of the additional properties selected for the Sol-luce Kingston Solar PV Energy Project did not result in the identification of any archaeological resources. Given that the cultural heritage value or interest of these properties has been sufficiently documented, **no further archaeological assessment is recommended within the parcels studied.** The MTCS is asked to accept this report into the Ontario Public Register of Archaeological Reports.

6.0 ADVICE ON COMPLIANCE WITH LEGISLATION

This report is submitted to the Minister of Tourism, Culture and Sport as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c. O.18. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ministry of Tourism, Culture and Sport, a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.

It is an offence under Sections 48 and 69 of the *Ontario Heritage Act* for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed fieldwork on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the Ontario Public Register of Archaeology Reports referred to in Section 65.1 of the *Ontario Heritage Act*.

Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48(1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48(1) of the *Ontario Heritage Act*.

The *Cemeteries Act*, R.S.O. 1990 c.C.4 and the *Funeral, Burial and Cremation Services Act*, 2002, R.S.O. 2002, c.33 (when proclaimed in force) require that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the Ministry of Consumer Services.

7.0 BIBLIOGRAPHY AND SOURCES

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8.0 IMAGES

Plate 1: Stage 2 test pitting of Parcel 3 at 5 metre intervals, facing southwest, April 18, 2012

Plate 2: Stage 2 test pitting at 5 metre intervals in scrub brush of Parcel 3, facing southeast, April 18, 2012

Plate 3: Stage 2, exposed bedrock in Parcel 3, not assessed, facing south, April 18, 2012

Plate 4: Stage 2, wet area in Parcel 3, not assessed, facing east, April 18, 2012

Plate 5: Stage 2, ploughed field conditions in Parcel 3, subject to pedestrian survey at 5 metre intervals, facing northwest, May 2, 2012

Plate 6: Stage 2 pedestrian survey of Parcel 3 at 5 metre intervals, facing southwest, May 2, 2012

Plate 7: Stage 2, ploughed field conditions in Parcel 7, subject to pedestrian survey at 5 metre intervals, facing northeast, April 19, 2012

Plate 8: Stage 2 pedestrian survey of Parcel 7 at 5 metre intervals, facing southwest, April 19, 2012

Plate 9: Stage 2, wet area in Parcel 7, not assessed, facing northwest, April 19, 2012

Plate 10: Stage 2 test pitting of Parcel 14A at 5 metre intervals, facing southwest, April 19, 2012

Plate 11: Stage 2, scrub brush in Parcel 14A, subject to test pit survey at 5 metre intervals, facing east, April 19, 2012

Plate 12: Stage 2, wet area in Parch 14A, not assessed, facing south, April 19, 2012

Plate 13: Stage 2 test pitting of Parcel 14C at 5 metre intervals, facing west, April 18, 2012

Plate 14: Stage 2, wet area in Parcel 14C, not assessed, facing east, April 18, 2012

Plate 15: Stage 2, wood lot in Parcel 14C, subject to test pit survey at 5 metre intervals, facing east, April 18, 2012

Plate 16: Stage 2, ploughed field conditions in Parcel 21, subject to pedestrian survey at 5 metre intervals, facing west, April 25, 2012

Plate 17: Stage 2 pedestrian survey of Parcel 21 at 5 metre intervals, facing west, April 25, 2012

Plate 18: Stage 2, ploughed field conditions of Access Road between Parcels 2 and 3, subject to pedestrian survey at 5 metre intervals, facing northeast, April 19, 2012

Plate 19: Stage 2 pedestrian survey of Access Road between Parcels 2 and 3 at 5 metre intervals, facing southeast, April 19, 2012

Plate 20: Stage 2 test pitting of Access Road between Parcels 2 and 3 at 5 metre intervals, facing northeast, April 19, 2012

Plate 21: Stage 2 test pit along Access Road between Parcels 2 and 3, facing north, April 19, 2012

Plate 22: Stage 2, scrub brush along Access Road between Parcels 2 and 3, subject to test pit survey at 5 metre intervals, facing north, April 19, 2012

Plate 23: Stage 2, exposed bedrock along Access Road between Parcels 2 and 3, not assessed, facing east, April 19, 2012

Plate 24: Stage 2, wet area along Access Road between Parcels 2 and 3, not assessed, facing east, April 18, 2012

Plate 25: Stage 2 test pitting of HONI lands at 5 metre intervals, facing northwest, April 18, 2012

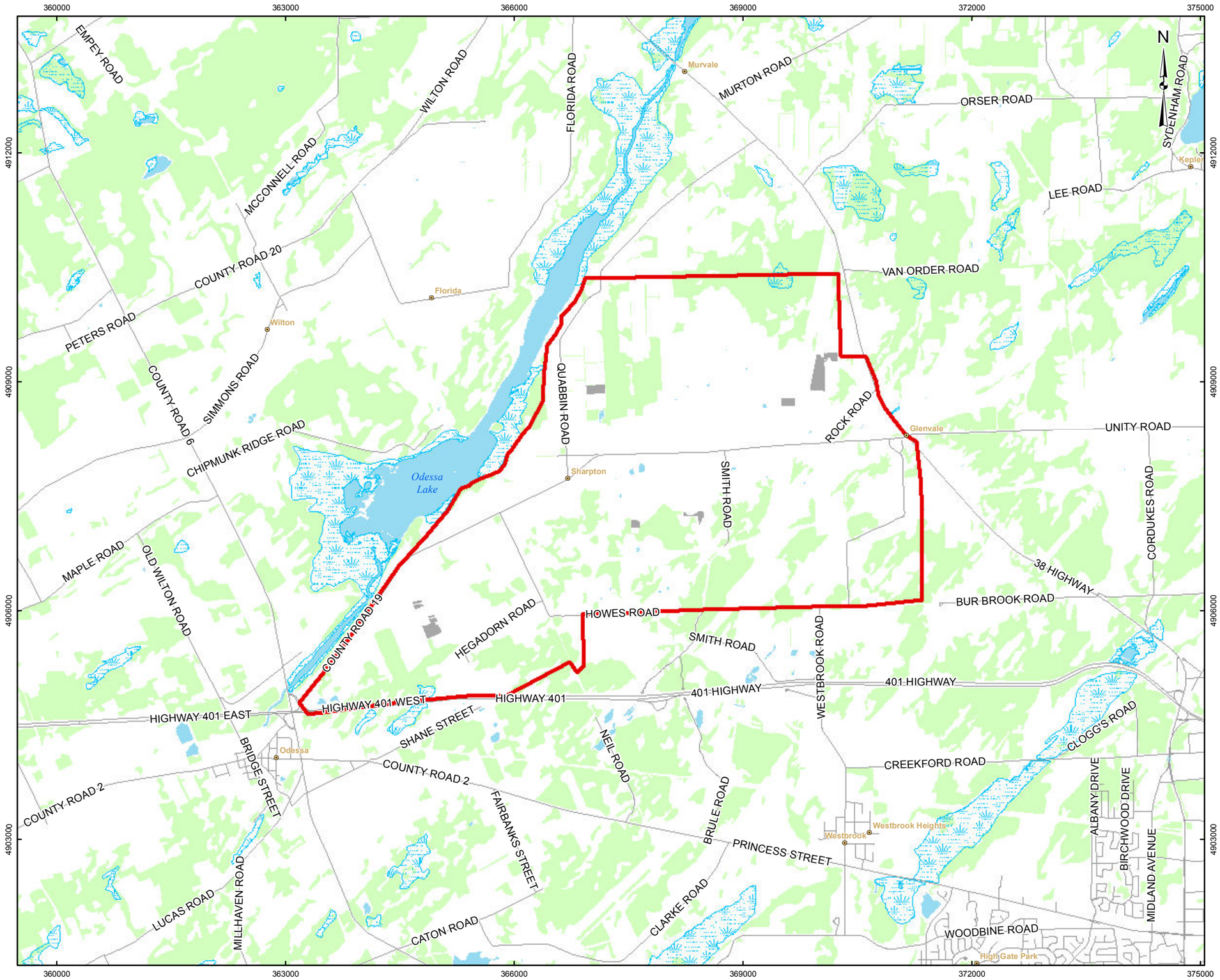
Plate 26: Stage 2, scrub brush on HONI lands, subject to test pit survey at 5 metre intervals, facing south, April 18, 2012

Plate 27: Stage 2, ploughed field conditions of HONI lands, subject to pedestrian survey at 5 metre intervals, facing south, May 2, 2012

Plate 28: Stage 2 pedestrian survey of HONI lands at 5 metre intervals, facing southwest, May 2, 2012

9.0 MAPS

All maps will follow on succeeding pages.



LEGEND

- Roads
- Watercourse, Permanent
- Watercourse, Intermittent
- Water Area, Permanent
- Wetland, Permanent
- Project Location
- Parcels Being Studied

REFERENCE

Base Data - MNR NRVIS, obtained 2004, CANMAP v2006.4
Produced by Golder Associates Ltd under licence from
Ontario Ministry of Natural Resources, © Queens Printer 2008
Projection: Transverse Mercator Datum: NAD 83 Coordinate System: UTM Zone 18N

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PROJECT
KINGSTON SOLAR LP
SOL-LUCE KINGSTON
STAGE 2 ARCHAEOLOGICAL ASSESSMENT

TITLE
STUDY AREA

Golder Associates
Mississauga, Ontario

PROJECT NO. 12-1154-0014			SCALE AS SHOWN	REV. 0.0
DESIGN	JMC	3 May. 2012	**FIGURE: 1**	
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CHECK	JM	3 May. 2012		
REVIEW	JM	3 May. 2012		

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LEGEND

Treaty Boundary

Approximate Location of Study Area

Treaty No. 381, Volume 3 (May 9th, 1781): Mississauga and Chippewa
Crawford's Purchase (Oct. 9th, 1783): Algonquin and Iroquois
Crawford's Purchase (Oct. 9th, 1783): Mississauga
Crawford's Purchases (1784, 1787, 1788): Mississauga
John Collins' Purchase (1785): Chippewa
Treaty No. 2 (May 19th, 1790): Odawa, Chippewa, Pottawatomi, and Huron
Treaty No. 3 (Dec. 2nd, 1792): Mississauga
Haldimand Tract: from the Crown to the Mohawk (1793)
Tyendinaga: from the Crown to the Mohawk (1793)
Treaty No. 3¾ (Oct. 24th, 1795): from the Crown to Joseph Brant
Treaty No. 5 (May 22nd, 1798): Chippewa
Treaty No. 6 (Sep. 7th, 1796): Chippewa
Treaty No. 7 (Sep. 7th, 1796): Chippewa
Treaty No. 13 (Aug. 1st, 1805): Mississauga
Treaty No. 13A (Aug. 2nd, 1805): Mississauga
Treaty No. 16 (Nov. 18th, 1815): Chippewa
Treaty No. 18 (Oct. 17th, 1818): Chippewa
Treaty No. 19 (Oct. 28th, 1818): Chippewa
Treaty No. 20 (Nov. 5th, 1818): Chippewa
Treaty No. 21 (Mar. 9th, 1819): Chippewa
Treaty No. 27 (May 31st, 1819): Mississauga
Treaty No. 27½ (Apr. 25th, 1825): Ojibwa and Chippewa
Treaty No. 35 (Aug. 13th, 1833): Wyandot or Huron
Treaty No. 45 (Aug. 9th, 1836): Chippewa and Odawa
Treaty No. 45½ (Aug. 9th, 1836): Saugeen
Treaty No. 57 (Jun. 1st, 1847): Iroquois of St. Regis
Treaty No. 61, Robinson Treaty (Sep. 9th, 1850): Ojibwa
Treaty No. 72 (Oct. 30th, 1854): Chippewa
Treaty No. 82 (Feb. 9th, 1857): Chippewa
Williams Treaty (Oct. 31st and Nov. 15th, 1923): Chippewa and Mississauga
Williams Treaty (Oct. 31st, 1923): Chippewa

NOTES

THIS DRAWING IS SCHEMATIC ONLY AND IS TO BE READ IN CONJUNCTION WITH ACCOMPANYING TEXT.
ALL LOCATIONS ARE APPROXIMATE.

REFERENCE

1. Base Data - MNR NRVIS, obtained 2004, CANMAP v2006.4
2. Treaty Boundary - Approximate Treaty Boundary was created by Golder Associates Ltd. Jan. 2009.
MORRIS, J.L. 1943. Indians Of Ontario. Reprinted 1964. Department Of Lands And Forests, Toronto.

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PROJECT
KINGSTON SOLAR LP
SOL-LUCE KINGSTON
STAGE 2 ARCHAEOLOGICAL ASSESSMENT

TITLE
TREATY BOUNDARIES BASED ON MORRIS 1943

Golder Associates
Mississauga, Ontario

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GIS	JMC	23 Jan. 2009		
CHECK	JM	23 Jul. 2009		
REVIEW				

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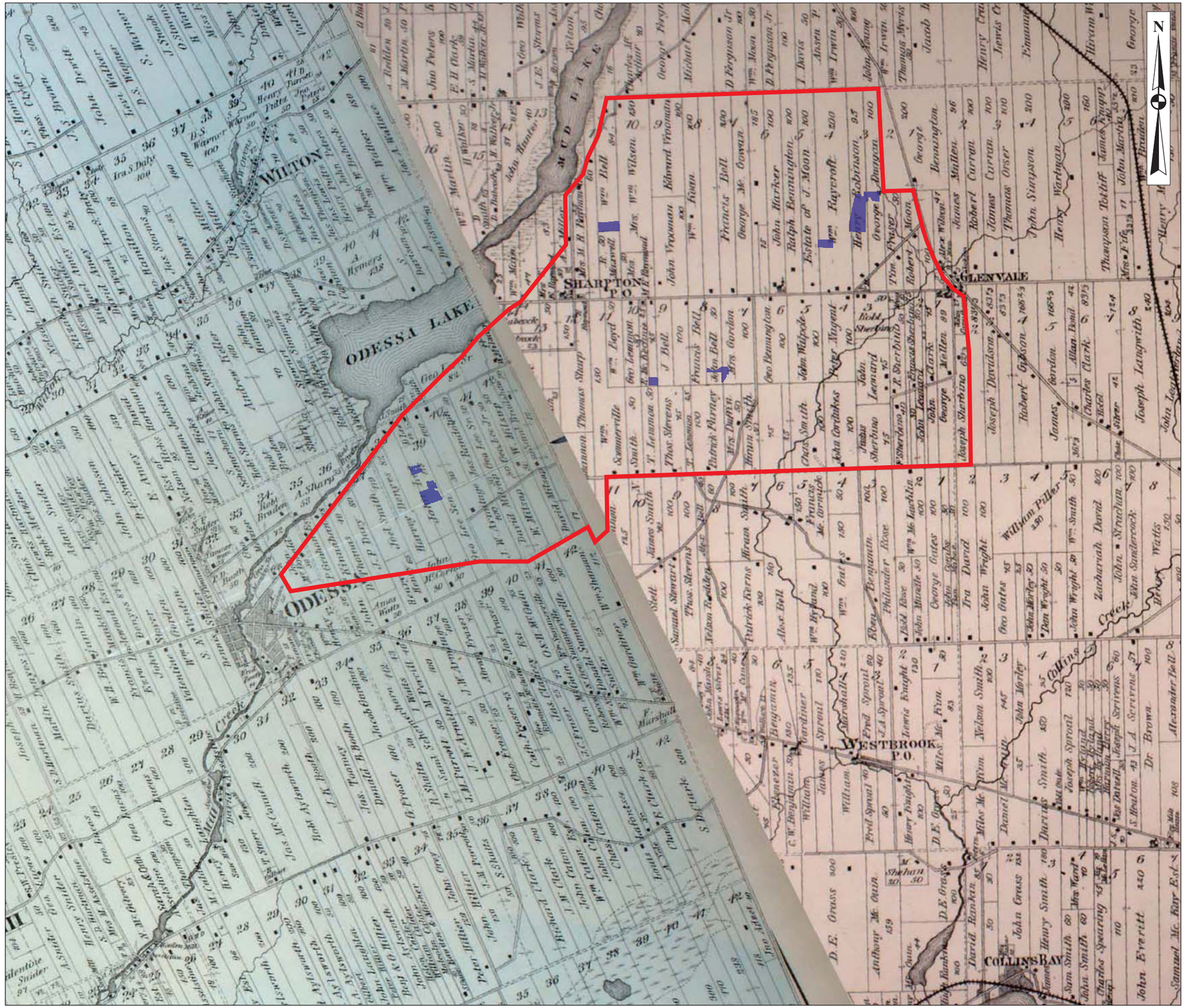

LEGEND

- Project Location
- Parcel Subject to Stage 2 Archaeological Assessment

REFERENCE

DRAWING BASED ON
Meacham, J.H. & Co.
1878 *Illustrated Historical Atlas of the Counties of Frontenac, Lennox and Addington, Ontario*. 1997 reprint. Fifth Line Press, Stirling.

NOTES

THIS DRAWING IS SCHEMATIC ONLY AND IS TO BE READ IN CONJUNCTION WITH ACCOMPANYING TEXT.

ALL LOCATIONS ARE APPROXIMATE.

PROJECT
KINGSTON SOLAR LP
SOL-LUCE KINGSTON
STAGE 2 ARCHAEOLOGICAL ASSESSMENT

TITLE
A PORTION OF THE GEOGRAPHIC TOWNSHIPS OF ERNESTOWN AND KINGSTON

Golder Associates

PROJECT No.			12-1154-0014
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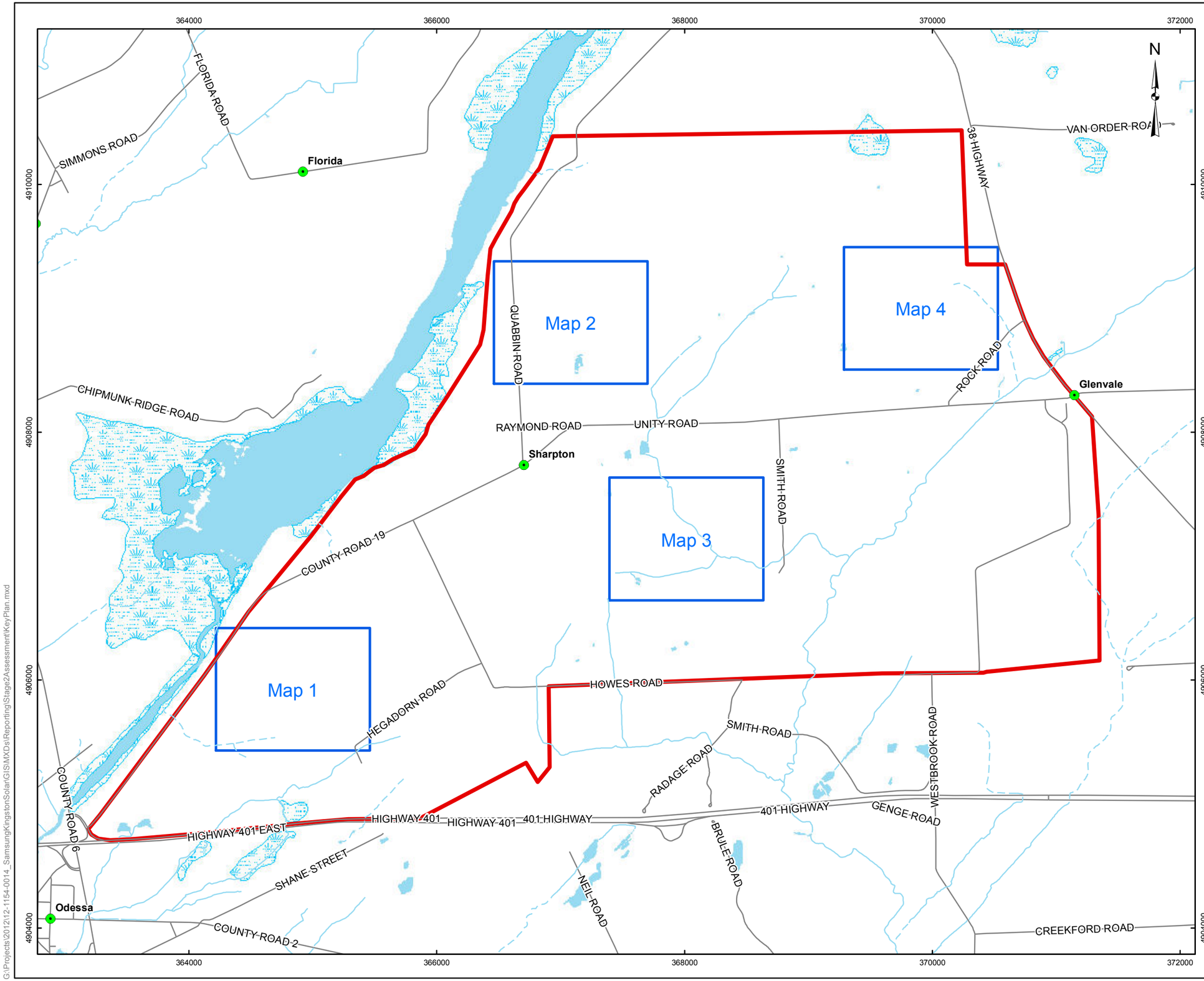
FIGURE 3



LEGEND

- Roads
- Watercourse, Permanent
- Watercourse, Intermittent
- Water Area, Permanent
- Wetland, Permanent
- Map Extent
- Study Area

REFERENCE

Base Data - MNR NRVIS, obtained 2004, CANMAP v2006.4
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Projection: Transverse Mercator Datum: NAD 83 Coordinate System: UTM Zone 18N

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PROJECT
KINGSTON SOLAR LP
SOL-LUCE KINGSTON
STAGE 2 ARCHAEOLOGICAL ASSESSMENT

TITLE
KEY PLAN

Golder Associates
Mississauga, Ontario

PROJECT NO. 12-1154-0014			SCALE AS SHOWN	REV. 0.0
DESIGN	JMC	3 May. 2012	**FIGURE: 4-A**	
GIS	BC	3 May. 2012		
CHECK	JM	3 May. 2012		
REVIEW	JM	3 May. 2012		

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LEGEND

- Photographic Location and Direction
- Roads
- Railways
- Watercourse, Permanent
- Watercourse, Intermittent
- Water Area, Permanent
- Wetland, Permanent
- Stage 2 Pedestrian Survey at 5m Intervals
- Stage 2 Test Pit Survey at 5m Intervals
- Wet Area - Not Assessed
- Exposed Bedrock - Not Assessed

REFERENCE

Base Data - MNR NRVIS, obtained 2004, CANMAP v2006.4
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PROJECT
KINGSTON SOLAR LP
SOL-LUCE KINGSTON
STAGE 2 ARCHAEOLOGICAL ASSESSMENT

TITLE
STAGE 2 SURVEY METHODS AND RESULTS

Golder Associates
Mississauga, Ontario

PROJECT NO. 12-1154-0014			SCALE AS SHOWN	REV. 0.0
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GIS	JMC	3 May. 2012		
CHECK	JM	3 May. 2012		
REVIEW	JM	3 May. 2012		

FIGURE: 4-01

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LEGEND

- Photographic Location and Direction
- Roads
- Railways
- Watercourse, Permanent
- Watercourse, Intermittent
- Water Area, Permanent
- Wetland, Permanent
- Stage 2 Pedestrian Survey at 5m Intervals
- Stage 2 Test Pit Survey at 5m Intervals
- Wet Area - Not Assessed
- Exposed Bedrock - Not Assessed

REFERENCE

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PROJECT
KINGSTON SOLAR LP
SOL-LUCE KINGSTON
STAGE 2 ARCHAEOLOGICAL ASSESSMENT

TITLE
STAGE 2 SURVEY METHODS AND RESULTS

Golder Associates
Mississauga, Ontario

PROJECT NO. 12-1154-0014			SCALE AS SHOWN	REV. 0.0
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GIS	JMC	3 May. 2012		
CHECK	JM	3 May. 2012		
REVIEW	JM	3 May. 2012		

FIGURE: 4-02

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LEGEND

- Photographic Location and Direction
- Roads
- Railways
- Watercourse, Permanent
- Watercourse, Intermittent
- Water Area, Permanent
- Wetland, Permanent
- Stage 2 Pedestrian Survey at 5m Intervals
- Stage 2 Test Pit Survey at 5m Intervals
- Wet Area - Not Assessed
- Exposed Bedrock - Not Assessed

REFERENCE

Base Data - MNR NRVIS, obtained 2004, CANMAP v2006.4
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Projection: Transverse Mercator Datum: NAD 83 Coordinate System: UTM Zone 18N

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PROJECT
KINGSTON SOLAR LP
SOL-LUCE KINGSTON
STAGE 2 ARCHAEOLOGICAL ASSESSMENT

TITLE
STAGE 2 SURVEY METHODS AND RESULTS

Golder Associates
Mississauga, Ontario

PROJECT NO. 12-1154-0014			SCALE AS SHOWN	REV. 0.0
DESIGN	JMC	3 May. 2012		
GIS	JMC	3 May. 2012		
CHECK	JM	3 May. 2012		
REVIEW	JM	3 May. 2012		

FIGURE: 4-03

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LEGEND

- Photographic Location and Direction
- Roads
- Railways
- Watercourse, Permanent
- Watercourse, Intermittent
- Water Area, Permanent
- Wetland, Permanent
- Stage 2 Pedestrian Survey at 5m Intervals
- Stage 2 Test Pit Survey at 5m Intervals
- Wet Area - Not Assessed
- Exposed Bedrock - Not Assessed

REFERENCE

Base Data - MNR NRVIS, obtained 2004, CANMAP v2006.4
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Scale: 1:4,000 Meters

PROJECT
KINGSTON SOLAR LP
SOL-LUCE KINGSTON
STAGE 2 ARCHAEOLOGICAL ASSESSMENT

TITLE
STAGE 2 SURVEY METHODS AND RESULTS

Golder Associates
Mississauga, Ontario

PROJECT NO. 12-1154-0014			SCALE AS SHOWN	REV. 0.0
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REVIEW	JM	3 May. 2012			

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10.0 IMPORTANT INFORMATION AND LIMITATIONS OF THIS REPORT

Golder Associates Ltd. (Golder) has prepared this report in a manner consistent with that level of care and skill ordinarily exercised by members of the archaeological profession currently practicing under similar conditions in the jurisdiction in which the services are provided, subject to the time limits and physical constraints applicable to this report. No other warranty, expressed or implied is made.

This report has been prepared for the specific site, design objective, developments and purpose described to Golder by Kingston Solar LP (the Client). The factual data, interpretations and recommendations pertain to a specific project as described in this report and are not applicable to any other project or site location.

The information, recommendations and opinions expressed in this report are for the sole benefit of the Client. No other party may use or rely on this report or any portion thereof without Golder's express written consent. If the report was prepared to be included for a specific permit application process, then upon the reasonable request of the Client, Golder may authorize in writing the use of this report by the regulatory agency as an Approved User for the specific and identified purpose of the applicable permit review process. Any other use of this report by others is prohibited and is without responsibility to Golder. The report, all plans, data, drawings and other documents as well as electronic media prepared by Golder are considered its professional work product and shall remain the copyright property of Golder, who authorizes only the Client and Approved Users to make copies of the report, but only in such quantities as are reasonably necessary for the use of the report by those parties. The Client and Approved users may not give, lend, sell, or otherwise make available the report or any portion thereof to any other party without the express written permission of Golder. The Client acknowledges the electronic media is susceptible to unauthorized modification, deterioration and incompatibility and therefore the client cannot rely upon the electronic media versions of Golder's report or other work products.

Unless otherwise stated, the suggestions, recommendations and opinions given in this report are intended only for the guidance of the Client in the design of the specific project.

Special risks occur whenever archaeological investigations are applied to identify subsurface conditions and even a comprehensive investigation, sampling and testing program may fail to detect all or certain archaeological resources. The sampling strategies incorporated in this study comply with those identified in the Ministry of Tourism, Culture and Sport's Standards and Guidelines for Consultant Archaeologists (Government of Ontario 2011).

Report Signature Page

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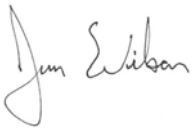

Jeffrey Muir, B.A.
Project Archaeologist

Jim Wilson, M.A.
Principal, Senior Archaeologist

LF/JM/JAW/gf

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