Confirmation from Ministry of Tourism, Culture and Sport

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Nov 15, 2016

Patrick Hoskins (P415)
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RE: Entry into the Ontario Public Register of Archaeological Reports: Archaeological Assessment Report Entitled, "Stage 1 and 2 Archaeological Assessment: Pendleton Solar Energy Centre Part of Lots 19 and 20, Concession 8, Geographic Township of Plantagenet, Township of Alfred and Plantagenet, United Counties of Prescott and Russell, Ontario ", Dated Oct 30, 2016, Filed with MTCS Toronto Office on Nov 14, 2016, MTCS Project Information Form Number P415-0091-2016

Dear Mr. Hoskins:

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, has been entered into the Ontario Public Register of Archaeological Reports without technical review.[1]

Please note that the ministry makes no representation or warranty as to the completeness, accuracy or quality of reports in the register.

Should you require further information, please do not hesitate to send your inquiry to Archaeology@Ontario.ca

cc. Archaeology Licensing Officer
Kevin Campbell,EDF EN Canada Inc.
TBD TBD,TBD

1In no way will the ministry be liable for any harm, damages, costs, expenses, losses, claims or actions that may result: (a) if the Report(s) or its recommendations are discovered to be inaccurate, incomplete, misleading or fraudulent; or (b) from the issuance of this letter. Further measures may need to be taken in the event that additional artifacts or archaeological sites are identified or the Report(s) is otherwise found to be inaccurate, incomplete, misleading or fraudulent.

Stage 1 and 2 Archaeological Assessment: Pendleton Solar Energy Centre

Stage 1 and 2 Archaeological Assessment: Pendleton Solar Energy Centre

Part of Lots 19 and 20, Concession 8, Geographic Township of Plantagenet, Township of Alfred and Plantagenet, United Counties of Prescott and Russell, Ontario

Prepared for:
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Licence Number: P415
PIF Number: P415-0091-2016
Project Number: 160950879

ORIGINAL REPORT

October 30, 2016

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Acknowledgments

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Executive Summary

Stantec Consulting Ltd. (Stantec) was retained by Pendleton Energy Centre Limited Partnership (PEC)to complete a Stage 1 and 2 archaeological assessment of their proposed solar energy centre located on part Lots 19 and 20, Concession 8, Geographic Township of Plantagenet, Township of Alfred and Plantagenet, United Counties of Prescott and Russell, Ontario. The proposed project will consist of photovoltaic panels with a maximum nameplate capacity of 10 megawatts alternative current (MWac). The project will connect to the existing distribution lines adjacent to the property on the west side of County Road 19. The project area is approximately 140 acres in size.

This assessment was undertaken by Stantec on behalf of PEC as part of PEC's Renewable Energy Approval under the Renewable Energy Approval regulation (Government of Ontario 2011a), as related to Ontario Regulation 359/09 sections 21 and 22 under Part V.0.1 of the *Environmental Protection Act* (Government of Ontario 1990a) and informed by the *Green Energy Act* (Government of Ontario 2009). This archaeological assessment is also subject to the *Ontario Heritage Act* (Government of Ontario 1990b) and the 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011b).

The Stage 1 archaeological assessment of the study area determined that archaeological potential was still present. A Stage 2 assessment using pedestrian and test pit survey methods was undertaken. No archaeological resources were identified.

The Stage 1-2 archaeological assessment of the proposed Pendleton Solar Energy Centre did not identify any archaeological sites, and therefore **no further archaeological assessment is required**.

The Ministry of Tourism, Culture and Sport is asked to review and accept this report into the Ontario Public Register of Archaeological Reports.

1.0 PROJECT CONTEXT

1.1 DEVELOPMENT CONTEXT

Stantec Consulting Ltd. (Stantec) was retained by Pendleton Energy Centre Limited Partnership (PEC)to complete a Stage 1 and 2 archaeological assessment of their proposed solar energy centre located on part Lots 19 and 20, Concession 8, Geographic Township of Plantagenet, Township of Alfred and Plantagenet, United Counties of Prescott and Russell, Ontario (Figure 1). The proposed project will consist of photovoltaic panels with a maximum nameplate capacity of 10 megawatts alternative current (MWac). The project will connect to the existing distribution lines adjacent to the property on the west side of County Road 19. The project area is approximately 140 acres in size.

This assessment was undertaken by Stantec on behalf of Pendleton Energy Centre Limited Partnership (PEC) as part of PEC's Renewable Energy Approval under the Renewable Energy Approval regulation (Government of Ontario 2011a), as related to Ontario Regulation 359/09 sections 21 and 22 under Part V.0.1 of the *Environmental Protection Act* (Government of Ontario 1990a) and informed by the *Green Energy Act* (Government of Ontario 2009). This archaeological assessment is also subject to the *Ontario Heritage Act* (Government of Ontario 1990b) and the 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011b).

1.1.1 Objectives

The objectives of the Stage 1 and 2 assessment were to compile available information about the known and potential archaeological heritage resources within the study area and to provide specific direction for the protection, management and/or recovery of these resources. In compliance with the provincial standards and guidelines set out in the *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011b), the objectives of the Stage 1 Archaeological Overview/Background Study are as follows:

- To provide information about the study area's geography, history, previous archaeological fieldwork and current land conditions;
- To evaluate in detail the study area's archaeological potential which will support recommendations for Stage 2 survey for all or parts of the property; and
- To recommend appropriate strategies for Stage 2 survey.

To meet these objectives Stantec archaeologists employed the following research strategies:

- A review of relevant archaeological, historic and environmental literature pertaining to the study area;

- A review of the land use history, including pertinent historic maps;
- An examination of the Ontario Archaeological Sites Database (ASDB) to determine the presence of known archaeological sites in and around the study area; and
- A site visit to document existing ground conditions and confirm the presence or absence of features of archaeological interest.

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 2011b).

Permission for Stantec staff to enter the property to conduct archaeological field work was provided by Pendleton Energy Centre Limited Partnership.

1.2 HISTORICAL CONTEXT

1.2.1 Post-Contact Aboriginal Resources

"Contact" is typically used as a chronological benchmark is discussing Aboriginal archaeology in Canada and describes the contact between Aboriginal and European cultures. The precise moment of *contact* is a constant matter of discussion. Contact in what is now the province of Ontario is broadly assigned to the 16th century (Loewen and Chapdelaine 2016).

The nature of Aboriginal settlement size, population distribution, and material culture shifted as European settlers encroached upon Aboriginal 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…systems of ideology and thought" (Ferris 2009:114). As a result, First Nations peoples have left behind archaeologically significant resources throughout Ontario which show continuity with past peoples, even if they have not been recorded in Euro-Canadian documentation.

The post-contact Aboriginal occupation of Eastern Ontario was heavily influenced by the Aboriginal involvement and contributions to the fur trade. The growing fur trade and the designation of animal skins as money led to changes in economic and social organization patterns. After the initial excursion of Samuel de Champlain into the Algonquin territory in 1613 until 1615 the Algonquin played a major role as middlemen in the trade between the Huron and the French, and actively worked against Champlain making a trip to the Huron territory (Day and Trigger 1978). Increased trade along the Ottawa River also brought attention from other Iroquois groups from south of the St. Lawrence River. However, the alliance of Algonquin, Huron and French minimized Iroquois raiding, and various treaties were enacted between the

Algonquin and the Mohawk during the 1620s and 1630s (Day and Trigger 1978). In the latter part of the 1630s, however, the Algonquin attempted to trade directly with the Dutch, who had been trading partners with the Mohawk, and this led to a new outbreak of hostilities between Mohawk and Algonquin (Day and Trigger 1978). After 1639 the Mohawk began accumulating English, and then Dutch, firearms that gave them considerable advantage over the Algonquin, whose French trade partners, who had initially determined to trade no firearms, would only provide firearms to those who had been baptized (Trigger 1985). Conflict continued to greater and lesser degrees throughout the 1640s, but by the early 1650s most of the Ottawa River Valley Algonquin had either sought refuge in Quebec, such as at Trois Rivieres, or had removed themselves to the upper parts of their territory, in present day Algonquin Park (Hessel 1987). The most historically significant post-contact change to eastern Ontario was the disappearance of the St. Lawrence Iroquois. Jacques Cartier recorded interactions with the St. Lawrence Iroquois during his explorations in the early and mid-16th century, when Champlain returned in the early 17th century there was no trace of them and the St. Lawrence area was a sparsely populated warzone. Popular theories of the disappearance blame the invasion of the Five Nations Iroquois or Huron and Algonkian aggression (Trigger 1985). Smallpox epidemics and the depletion of the beaver populations led to the dispersal of various Iroquoian-speaking communities from Southwestern Ontario 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 the beginning of the 18th century (Konrad 1981; Schmalz 1991). In 1649 The Huron-French fur trade collapsed and the Five Nations Iroquois raided and destroyed the French Mission at Ste. Marie and several Huron villages. Huronia was abandoned, with the surviving Huron destroying their own remaining villages and moved further inland, now within the province of Quebec. The Algonkian-speaking communities were briefly dispersed from the Ottawa Valley from 1650 to 1675, and were replaced as middlemen by the Odawa people, who were later in turn replaced by the French *coureur de bois*. Further colonization of Eastern Ontario and Quebec led to more changes in the fur trade. However, after the merger of the Northwest Company and Hudson's Bay Company in 1821, the fur trade routes were diverted north to Hudson's Bay (Kennedy 1961).

The land within the current study area is governed by The Crawford Purchase, which was enacted on October 9th, 1783 (marked B and B1 on Figure 2). In October 1783, at Carleton Island, Captain William Redford Crawford of the King's Royal Regiment of New York met with the local Mississauga Indians led by the elderly Mynass. Crawford, acting for the British government, purchased from the Mississaugas a large tract of land east of the Bay of Quinte. The land was subsequently settled by United Empire Loyalists and Britain's Aboriginal allies who had been forced to leave their homes in the new United States. According to Morris, the Crawford Purchase is described as "…reaching from Point Baudet on the north side of Lake St. Francis, up to the north of the Gananoque River" (Morris 1943:16-17).

1.2.2 Historic Euro-Canadian Resources

In 1791, the Provinces of Upper Canada and Lower Canada were created from the former Province of Quebec by an act of British Parliament. At this time, Colonel John Graves Simcoe was appointed as the Lieutenant Governor of Upper Canada and was tasked with governing

the new province, directing its settlement and establishing a constitutional government modelled after that of Britain's (Coyne 1895). In 1792, Simcoe divided Upper Canada into 19 counties consisting of previously-settled lands, new lands opened for settlement, and lands not yet acquired by Crown. These new counties stretched from Essex in the west to Glengarry in the east. By 1798, population levels in Upper Canada had increased to a point where it was desirable to create smaller administrative regions and thus, the Johnston District comprising the counties of Leeds, Grenville, Stormont, Dundas, and Glengarry, as well as many new counties and townships were created. The county of Prescott was a part of Glengarry until 1800. It was named after Major General Robert Prescott. The counties of Prescott and Russell were joined in 1820.

The township of South Plantagenet was first settled in 1811 by Abner Hagar. He constructed a mill along the Nation River. The village of Plantagenet Mills was built up around the mill. The hamlet of Pendleton, located to the south of the study area, was established when a post office was erected there in 1859. The first Postmaster was J.M.C. Deles Derniers. In addition to the post office, Pendleton also consisted of a church, hotel, a cheese factory, and various shops (Cyrus 1896).

The 1862 Walling *Map of the Counties of Stormont, Dundas, Glengarry, Prescott and Russell, Canada West* (Figure 3) shows that Lot 20, Concession 8 was occupied by J. Stewart, A. McPhee and A. McCallister. Both Stewart and McPhee had houses fronting County Road 19 and McCallister had a house fronting County Road 8. The McAllister house appears to have been located at roughly the middle of the west edge of the Project study area. However, the location of structures was not always accurately reflected on the maps. No occupants were listed for Lot 19.

The 1881 Belden *Prescott and Russell Supplement* shows no occupants on Lots 19 and 20 (Figure 4). These post-1880 atlas maps give few details regarding the project property, or most of the area within the township. These later maps largely document the locations of public buildings (post offices, churches, school houses, town halls, lodges) and important commercial enterprises, such as mills. This map shows very few settlers and structures in relation to the 1862 map. This is due to the fact that after 1880 these maps were produced as supplements to the Dominion Atlas. Those historical county atlases were produced after 1880 primarily to identify factories, offices, residences and landholdings of subscribers and only subscribers to the atlas were shown on the map. Associated structures were not necessarily depicted or placed accurately (Gentilcore and Head 1984).

1.3 ARCHAEOLOGICAL CONTEXT

1.3.1 The Natural Environment

The study area is located in the Russell and Prescott Sand Plains physiographic region. The Prescott and Russell Sand Plains is a group of sand plains separated by the Ottawa Valley Clay Plains. The sand plains consist of one continuous plain from Ottawa to Hawkesbury and three

large areas to the north of it. The sand plain was originally one continuous delta built by the Ottawa River and was separated when the Ottawa River rose above sea level (Chapman and Putnam 1984). Soils within the study area consist of Uplands fine sand, which are well drained and characterized by undulating topography (Wicklund and Richards 1962).

The closest potable water source to the study area is Harris Creek, approximately 900 metres to the north of the study area. The South Nation River is approximately 3 kilometres to the south.

1.3.2 Pre-contact Aboriginal Resources

Overall, archaeological research in many parts of eastern Ontario has been fairly limited, at least compared to adjoining areas in Southern Ontario and northern New York State, resulting in only a limited understanding of the cultural processes that occurred in this part of the province. The following summary of the prehistoric occupation of Eastern Ontario (see Table 3 for chronological chart) is based on syntheses in Archaeologix (2008), Ellis and Ferris (1990), Jacques Whitford (2008), Pilon (1999), St-Pierre (2009) and Wright (1995).

Identifiable human occupation of Ontario begins just after the end of the Wisconsin Glacial period. The first human settlement can be traced back 11,000 years, when this area was settled by Native groups that had been living to the south of the emerging Great Lakes. This initial occupation is referred to as the "Palaeo-Indian" archaeological culture.

Table 1: Eastern Ontario Prehistoric Cultural Chronology, Years Before Present (BP)

ARCHAEOLOGICAL PERIOD	TIME	CHARACTERISTICS
Early Paleo-Indian	11,000–10,400 BP	caribou and extinct Pleistocene mammal hunters, small camps
Late Paleo-Indian	10,400–10,000 BP	smaller but more numerous sites
Early Archaic	10,000-8,000 BP	slow population growth, emergence of woodworking industry, development of specialized tools
Middle Archaic	8,000–4,500 BP	environment similar to present, fishing becomes important component of subsistence, wide trade networks for exotic goods
Late Archaic	4,500-3,100 BP	increasing site size, large chipped lithic tools, introduction of bow hunting
Terminal Archaic	3,100-2,950 BP	emergence of true cemeteries with inclusion of exotic trade goods
Early Woodland	2,950-2,400 BP	introduction of pottery, continuation of Terminal Archaic settlement and subsistence patterns
Middle Woodland	2,400-1,400 BP	increased sedentism, larger settlements in spring and summer, dispersed smaller settlement in fall and winter, some elaborate mortuary ceremonialism
Transitional Woodland	1,400-1,100 BP	incipient agriculture in some locations, seasonal hunting & gathering
Late Woodland (Early Iroquoian)	1,100-700 BP	limited agriculture, development of small village settlement, small communal longhouses

Late Woodland (Middle Iroquoian)	700-600 BP	shift to agriculture as major component of subsistence, larger villages with large longhouses, increasing political complexity
Late Woodland (Late Iroquoian)	600- 350 BP	very large villages with smaller houses, politically allied regional populations, increasing trading network

Early Palaeo-Indian (EPI) (11,000-10,400 before present BP) settlement patterns suggest that small groups, or "bands", followed a pattern of seasonal mobility extending over large territories. Many (although by no means all) of the EPI sites were located on former beach ridges associated with Lake Algonquin, the post-glacial lake occupying the Lake Huron/Georgian Bay basin, and research/evidence indicates that the vegetative cover of these areas would have consisted of open spruce parkland, given the cool climatic conditions. Sites tend to be located on well-drained loamy soils, and on elevations in the landscape, such as knolls. The fact that assemblages of artifacts recovered from EPI sites are composed exclusively of stone skews our understanding of the general patterns of resource extraction and use. However, the taking of large game, such as caribou, mastodon and mammoth, appears to be of central importance to the sustenance of these early inhabitants. Moreover, EPI site location often appears to be located in areas which would have intersected with migratory caribou herds. In the Ottawa Valley it appears that the palaeo environment had not recovered sufficiently from the former glaciations to have allowed an EPI occupation. There is, however, some evidence of EPI incursion to the Rideau Lakes area.

The Late Palaeo-Indian (LPI) period (10,400-10,000 BP) is poorly understood compared to the EPI, the result of less research focus than the EPI. As the climate warmed the spruce parkland was gradually replaced and the vegetation of Southern Ontario began to be dominated by closed coniferous forests. As a result many of the large game species that had been hunted in the EPI period either moved north with the more open vegetation, or became locally extinct. Like the EPI, LPI peoples covered large territories as they moved around to exploit different resources. Environmental conditions in Eastern Ontario and the Ottawa Valley were sufficient to allow for a Late Palaeo-Indian occupation, although the evidence of such is still very limited. There is some evidence of LPI occupation on Thompson Island, in the St. Lawrence River near the junction of Ontario, Québec and New York State.

The transition from the Palaeo-Indian period to the Archaic archaeological culture of Ontario prehistory is evidenced in the archaeological record by the development of new tool technologies, the result of utilising an increasing number of resources as compared to peoples from earlier archaeological cultures, and developing a broader based series of tools to more intensively exploit those resources. During the Early Archaic period (10,000-8,000 BP), the jack and red pine forests that characterized the LPI environment were replaced by forests dominated by white pine with some associated deciduous elements. Early Archaic projectile points differ from Palaeo-Indian forms most notably by the presence of side and corner notching on their bases. A ground stone tool industry, including celts and axes, also emerges, indicating that woodworking was an important component of the technological development of Archaic

peoples. Although there may have been some reduction in the degree of seasonal mobility, it is still likely that population density during the Early Archaic was low, and band territories large.

The development of more diversified tool technology continued into the Middle Archaic period (8,000-4,500 BP). The presence of grooved stone net-sinkers suggests an increase in the importance of fishing in subsistence activities. Another new tool, the bannerstone, also made its first appearance during this period. Bannerstones are ground stone weights that served as counterbalance for "atlatls" or spear-throwers, again indicating the emergence of a new technology. The increased reliance on local, often poor quality chert resources for chipped stone tools suggests that in the Middle Archaic groups inhabited smaller territories lacking high quality raw materials. In these instances lower quality materials which had been glacially deposited in local tills and river gravels were used.

This reduction in territory size appears to have been the result of gradual region-wide population growth, which forced a reorganization of subsistence patterns, as a larger population had to be supported from the resources of a smaller area. Stone tools designed specifically for the preparation of wild plant foods suggest that subsistence catchment was being widened and new resources being more intensively exploited. A major development of the later part of the Middle Archaic period was the initiation of long distance trade. In particular, native copper tools manufactured from sources near Lake Superior were being widely traded.

During the late part of the Middle Archaic (5,500-4,500 BP) a distinctive occupation, or tradition, known as the Laurentian Archaic, appears in south-eastern Ontario, western Quebec, northern New York and Vermont. Laurentian Archaic sites are found only within the transitional zone between the deciduous forests to the south and coniferous forests to the north known as the Canadian Biotic Province and are identifiable through the association of certain diagnostic tool types, including ground slate semi-lunar knives (or "ulus"), plummets for use in fishing, ground slate points and knives, and ground stone gouges, adzes and grooved axes. It is thought that there was less reliance on plant foods and a greater reliance on hunting and fishing in this region than for Archaic peoples in southern and south-western Ontario. Laurentian Archaic sites have been found in the middle Ottawa River valley, along the Petawawa River and Trent River watersheds and at Brockville.

The trend towards decreased territory size and a broadening subsistence base continued during the Late Archaic (4,500-2,900 BP). Late Archaic sites are far more numerous than either Early or Middle Archaic sites. It appears that the increase in numbers of sites at least partly represents an increase in population. However, around 4,500 BP water levels in the Great Lakes began to rise, taking their modern form. It is likely that the relative paucity of earlier Archaic sites is due to their being inundated under the rising lake levels.

The appearance of the first true cemeteries occurs during the Late Archaic. Prior to this period, individuals were interred close to the location where they died. However, with the advent of the Late Archaic and local cemeteries individuals who died at a distance from the cemetery would be returned for final burial at the group cemetery often resulting in disarticulated skeletons,

occasionally missing minor bone elements (e.g. finger bones). The emergence of local group cemeteries has been interpreted as being a response to both increased population densities and competition between local groups for access to resources, in that cemeteries would have provided symbolic claims over a local territory and its resources.

Increased territoriality and more limited movement are also consistent with the development of distinct local styles of projectile points. The trade networks which began in the Middle Archaic expand during this period, and begin to include marine shell artifacts (such as beads and gorgets) from as far away as the Mid-Atlantic coast. These marine shell artifacts and native copper implements show up as grave goods, indicating the value of the items. Other artifacts such as polished stone pipes and slate gorgets also appear on Late Archaic sites. One of the more unusual of the Late Archaic artifacts is the "birdstone", small, bird-like effigies usually manufactured from green banded slate.

The Early Woodland period (2,900-2,200 BP) is distinguished from the Late Archaic period primarily by the addition of ceramic technology. While the introduction of pottery provides a useful demarcation point for archaeologists, it may have made less difference in the lives of the Early Woodland peoples. The first pots were very crudely constructed, thick walled, and friable. It has been suggested that they were used in the processing of nut oils by boiling crushed nut fragments in water and skimming off the oil. These vessels were not easily portable, and individual pots must not have enjoyed a long use life. There have also been numerous Early Woodland sites located at which no pottery was found, suggesting that these poorly constructed, undecorated vessels had yet to assume a central position in the day-to-day lives of Early Woodland peoples.

Other than the introduction of this rather limited ceramic technology, the life-ways of Early Woodland peoples show a great deal of continuity with the preceding Late Archaic period. For instance, birdstones continue to be manufactured, although the Early Woodland varieties have "pop-eyes" which protrude from the sides of their heads. Likewise, the thin, well-made projectile points which were produced during the terminal part of the Archaic period continue in use. However, the Early Woodland variants were side-notched rather than corner-notched, giving them a slightly altered and distinctive appearance. The trade networks which were established in the Middle and Late Archaic also continued to function, although there does not appear to have been as much traffic in marine shells during the Early Woodland period. These trade items were included in increasingly sophisticated burial ceremonies, some of which involved construction of burial mounds.

In terms of settlement and subsistence patterns, the Middle Woodland (2,200 B.C.-1,100 B.P.) provides a major point of departure from the Archaic and Early Woodland periods. While Middle Woodland peoples still relied on hunting and gathering to meet their subsistence requirements, fish were becoming an even more important part of the diet. Middle Woodland vessels are often heavily decorated with hastily impressed designs covering the entire exterior surface and upper portion of the vessel interior. Consequently, even very small fragments of Middle Woodland vessels are easily identifiable.

It is also at the beginning of the Middle Woodland period that rich, densely occupied sites appear along the margins of major rivers and lakes. While these areas had been utilized by earlier peoples, Middle Woodland sites are significantly different in that the same location was occupied off and on for as long as several hundred years. Because this is the case, rich deposits of artifacts often accumulated. Unlike earlier seasonally utilized locations, these Middle Woodland sites appear to have functioned as base camps, occupied off and on throughout the course of the year. There are also numerous small upland Middle Woodland sites, many of which can be interpreted as special purpose camps from which localized resource patches were exploited. This shift towards a greater degree of sedentism continues the trend witnessed from the Middle Archaic, and provides a prelude to the developments that follow during the Late Woodland period.

There are three complexes of Middle Woodland culture in Ontario. The complex specific to eastern Ontario is known as "Point Peninsula" most notably represented by ceramics decorated with a stamped zigzag pattern applied at various angles to the exterior of the vessel, known as "pseudo scallop shell". Another common decorative style is the dentate stamp, a comb-like tool creating square impressions. Middle Woodland components have been identified at the confluence of the Ottawa and Gatineau Rivers at Lac Leamy Park in Gatineau, Quebec.

The relatively brief period of the Transitional Woodland period is marked by the acquisition of cultivar plant species, such as maize and squash, from communities living south of the Great Lakes. The appearance of these plants began a transition to food production, which consequently led to a much reduced need to acquire naturally occurring food resources. Sites were thus occupied for longer periods and by larger populations. Transitional Woodland sites have not been discovered in eastern Ontario.

The Late Woodland period in southern Ontario is associated with societies referred to as the Ontario Iroquois Tradition. This period is often divided into three temporal components; Early, Middle and Late Iroquoian (see Table 1). In eastern Ontario, especially in the Ottawa River Valley, there is considerable overlap of people continuing to practice a hunting and gathering economy and those using limited horticulture as a supplement to gathered plants. For the most part, however, classic Late Woodland sites in eastern Ontario are limited to an area at the east end of Lake Ontario and along the St. Lawrence River valley. Early Iroquoian components have been identified near Pembroke on the Muskrat River; however, there is evidence of only limited use of cultivated plants. Middle Iroquoian sites have not been identified east of the Kingston area.

During the Late Iroquoian period a distinctive material culture emerges at the east end of Lake Ontario and along the St. Lawrence River up to Québec City, known as the St. Lawrence Iroquois (SLI). East of the city of Montreal SLI sites are characterized by two types of settlements; large semi-permanent villages, often surrounded by a palisade or earthworks, and associated satellite settlements. The inhabitants of these villages and satellites practiced horticulture of staple crops which made up the bulk of their diet. Other food resources were hunted, fished and gathered. SLI village sites can be extensive, up to 10 acres or more in size and composed of

a number of longhouse structures. Special purpose satellite settlements, such as hunting and fishing camps, are smaller in area and in the number and size of structures within the settlement.

Our current knowledge suggests that there were six regional clusters of SLI sites along the St. Lawrence River, and possibly a seventh around Lake Champlain. The study area is part of the regional cluster that extends west from Lake St. Francis in the east to just past Cornwall in the west and includes sites on both the Ontario and New York side of the river (Figure 12.1 in Jamieson 1990).

1.3.3 Previously Identified Archaeological Sites and Surveys

In order to compile an inventory of archaeological resources, the registered archaeological site records kept by the MTCS were consulted. In Ontario, information concerning archaeological sites stored in the ASDB is maintained by the MTCS. This database contains archaeological sites registered according to the Borden system. Under the Borden system, Canada is divided into grid blocks based on latitude and longitude. A Borden Block is approximately 13 kilometers east to west and approximately 18.5 kilometers 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 areas under review are located within Borden Block BiFs.

Information concerning specific site locations is protected by provincial policy, and is not fully subject to the *Freedom of Information and Protection of Privacy 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.

An examination of the ASDB has shown that no archaeological sites have been registered within a 1 km radius of the study area and no assessments have taken place within 50 m of the study area (personal communication, Robert von Bitter; Government of Ontario n.d).

While not directly related to the Project, some archaeological survey has taken place in the area around Pendleton by Dr. Jean-Luc Pilon of the Canadian Museum of History (Pilon 1993 and pers. comm.). His work along the Nation River has shown that Archaic period sites appear to be distributed along a notable sandy terrace edge above the current river course, in an area 30-40 metres back from the edge of the terrace. He postulates that these sites may be associated with the distribution of butternut trees (Pilon pers. comm.). There is anecdotal evidence of later groups using the floodplain, which suggests that the land was being used differently in later periods (Pilon pers. comm.). This might also reflect a higher water level for the Nation River during the Archaic period, during which the present day floodplain may have been inundated.

1.3.4 Archaeological Potential

Archaeological potential is established by determining the likelihood that archaeological resources may be present on a subject property. Stantec applied archaeological potential criteria commonly used by the Ontario Ministry of Tourism, Culture and Sport (Government of Ontario 2011) to determine areas of archaeological potential within the region under study. These variables include proximity to previously identified archaeological sites, distance to various types of water sources, soil texture and drainage, glacial geomorphology, elevated topography and the general topographic variability of the area.

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).

Distance to water is an essential factor in archaeological potential modeling. When evaluating distance to water it is important to distinguish between water and shoreline, as well as natural and artificial water sources, as these features affect sites locations and types to varying degrees. The MTCS (Government of Ontario 2011b) categorizes water sources in the following manner:

- Primary water sources: lakes, rivers, streams, creeks;
- Secondary water sources: intermittent streams and creeks, springs, marshes and swamps;
- Past water sources: glacial lake shorelines, relic river or stream channels, cobble beaches, shorelines of drained lakes or marshes; and
- Accessible or inaccessible shorelines: high bluffs, swamp or marshy lake edges, sandbars stretching into marsh.

The project area is located approximately 900 m from Harris Creek to the north.

Soil texture can be an important determinant of past settlement, usually in combination with other factors such as topography. The property is located in the Russell and Prescott Sand Plain physiographic region, which is group of sand plains separated by the Ottawa Valley Clay Plains. The sand plains consist of one continuous plain from Ottawa to Hawkesbury and three large areas to the north of it. The sand plain was originally one continuous delta built by the Ottawa River and was separated when the Ottawa River rose above sea level (Chapman and Putnam 1984). Soils within the study area consist of Uplands fine sand, well drained and undulating topography (Wicklund and Richards 1962).

For Euro-Canadian sites, archaeological potential can be extended to areas of early Euro-Canadian settlement, including places of military or pioneer settlements; early transportation routes; properties listed on the municipal register or designated under the *Ontario Heritage Act*; and properties that local histories or informants have identified with possible historical events, activities or occupations. The study area has been part of actively cultivated agricultural fields

for over 100 years and beyond soil disturbances from agricultural activities there have been no intensive or extensive ground disturbances.

When the above listed criteria are applied to the study area, the archaeological potential for Aboriginal and historic Euro-Canadian sites is deemed to be moderate to high.

1.3.5 Existing Conditions

The project property is composed of approximately 136 acres consisting of cleared agricultural field and undeveloped land in parts of Lots 19 and 20, Concession 8, Geographic Township of Plantagenet, Township of Alfred and Plantagenet, United Counties of Prescott and Russell, and along part of the road allowance between Lots 20 and 21. The property is an irregularly shaped parcel bordered by County Road 19 to the west, County Road 2 to the north and woodlot to the east and south.

2.0 FIELD METHODS

The Stage 1 and 2 assessment of the Solar Energy Centre of the Pendleton study area was conducted between May 16 and August 29, 2016 under archaeological licence P415 issued to Patrick Hoskins, MA, of Stantec by the Ministry of Tourism, Culture, and Sport (MTCS).

During the Stage 1 and 2 assessment conditions were excellent and at no time were the field, the weather or the lighting conditions detrimental to the recovery of archaeological material. Photos 1 to 12 in Section 8.1 of this report confirm that field conditions met the requirements for a Stage 2 archaeological assessment, as per the MTCS's 2011 *Standards and Guidelines for Consultant Archaeologists* (Section 7.8.6 Standard 1a; Government of Ontario 2011b). Figure 5 provides an illustration of the Stage 1 and 2 assessment methods, as well as photograph locations and directions.

Table 2: Field and Weather Conditions

Date	Activity	Weather	Field Conditions
May 16, 2016	Stage 2 Pedestrian Survey	Sunny, hot	85-95% visibility
May 17, 2016	Stage 2 Pedestrian Survey and test Pit Survey	Sunny, hot	85-95% visibility; Soils friable and dry
August 29, 2016	Stage 2 Test Pit Survey	Sunny, hot	Soils friable and dry

Approximately 90% of the study area consists of recently ploughed and well weathered fallow field. As such, it was determined that these portions would be assessed by pedestrian survey at a five-metre interval (Photos 1 to 4). The pedestrian survey was conducted in accordance with Section 2.1.1 of the MTCS's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011b).

Approximately 5% of the study area was assessed using the test pit survey method in accordance with Section 2.1.2 of the MTCS' 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011b) (Photos 6 to 7). Each test pit was approximately 30 centimetres in diameter and excavated, where possible, five centimetres into sterile subsoil. The soils were examined for stratigraphy, cultural features, and evidence of fill. All soil was screened through six millimetre mesh hardware cloth to facilitate the recovery of small artifacts and then used to backfill the pit. The test pit survey was conducted at 5 metre intervals until test pits provided evidence of disturbance. No further archaeological methods were employed since no artifacts were recovered during the test pit survey.

Approximately 5% was documented as being previously disturbed due to previous sand extraction activities, road construction, utility installation and brush piling. These areas were not surveyed and were photo documented (Photos 8 to 12).

3.0 RECORD OF FINDS

The Stage 1 and 2 archaeological assessment was conducted employing the methods described in Section 2.0. An inventory of the documentary record generated by fieldwork is provided in Table 3 below.

Table 3: Documentary Records

Document Type	Current Location of Document Type	Additional Comments
9 Pages of Field Notes	Stantec office in Ottawa	In original field book and photocopied in project file
2 Hand Drawn Maps	Stantec office in Ottawa	In original field book and photocopied in project file
1 Map Provided by Client	Stantec office in Ottawa	Hard and digital copies in project file
164 Digital Photographs	Stantec office in Ottawa	Stored digitally in project file

No archaeological resources were identified during the Stage 2 assessment of the project area.

4.0 ANALYSIS AND CONCLUSIONS

Stantec Consulting Ltd. was retained by Pendleton Energy Centre Limited Partnership to complete a Stage 1 and 2 archaeological assessment of their proposed solar energy centre located on part Lots 19 and 20, Concession 8, Geographic Township of Plantagenet, Township of Alfred and Plantagenet, United Counties of Prescott and Russell, Ontario. The Stage 1 archaeological assessment of the study area determined that archaeological potential was still present. A Stage 2 assessment using pedestrian and test pit survey methods was undertaken. No archaeological resources were identified.

5.0 RECOMMENDATIONS

The Stage 1-2 archaeological assessment of the proposed Pendleton Solar Energy Centre did not identify any archaeological sites, and therefore **no further archaeological assessment is required**.

The Ministry of Tourism, Culture and Sport is asked to review and accept this report into the Ontario Public Register of Archaeological Reports.

6.0 ADVICE ON COMPLIANCE WITH LEGISLATION

This report is submitted to the Ontario 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 0.18 (Government of Ontario 1990c). 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, 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 Ontario Ministry of Consumer Services.

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7.2 PERSONAL COMMUNICATIONS

Pilon, Dr. Jean-Luc, Curator, Central Archaeology, Canadian Museum of History, Gatineau, Quebec, e-mail, June 27, 2016.

8.0 IMAGES

8.1 PHOTOGRAPHS

Photo 1: View of Study Area, facing west

Photo 2: View of Study Area, facing southwest

Images

Photo 3: Crew Performing Pedestrian Survey at 5 m Intervals, facing southwest

Photo 4: Crew Performing Pedestrian Survey at 5 m Intervals, facing west

Images

Photo 5: Test Pit Survey at 5 m Intervals, facing north

Photo 6: Test Pit Survey at 5 m Intervals, facing south

Images

Photo 7: View of Test Pit

Photo 8: View of Disturbed Ditch and RoW, facing southeast

Images

Photo 9: View of Disturbed Ditch and RoW, facing southwest

Photo 10: View of Disturbance from Utility Installation, facing northeast

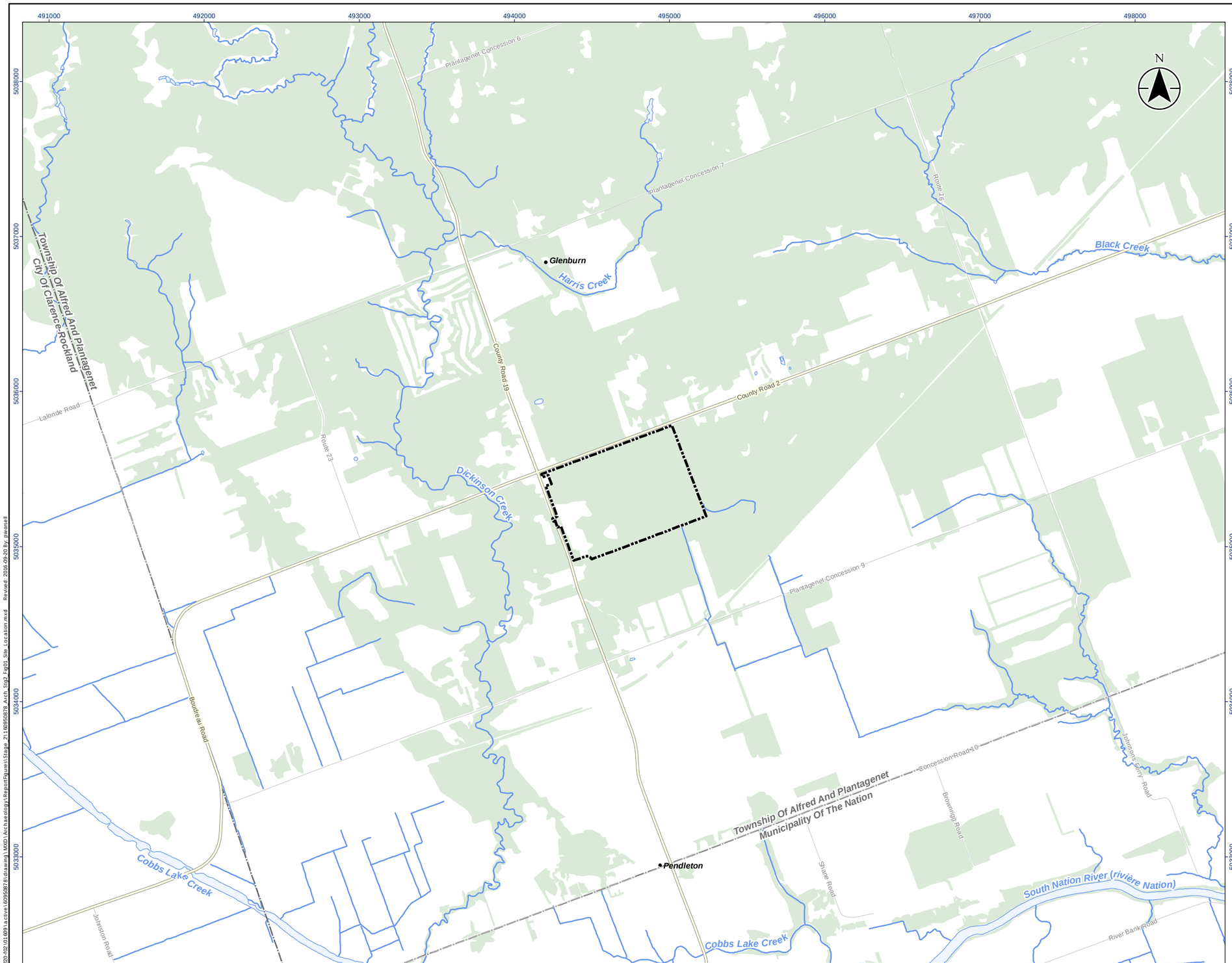
Images

Photo 11: View of Area Disturbed by Previous Sand Extraction, facing north

Photo 12: View of Brush Piles, facing east

9.0 MAPS

All maps will follow on succeeding pages.



Stantec

Legend

- Site Location
- Major Road
- Minor Road
- Watercourse
- Waterbody
- Municipal Boundary - Lower Tier
- Wooded Area

0 500 1,000 metres

1:25,000 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 UTM Zone 18N
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2016.

Project Location
United Counties of Prescott and Russell

160950878 REVA
Prepared by PW on 2016-09-20

Client/Project
PENDLETON ENERGY CENTRE LIMITED PARTNERSHIP
PENDLETON SOLAR ENERGY CENTRE

Figure No.
1

Title
Site Location

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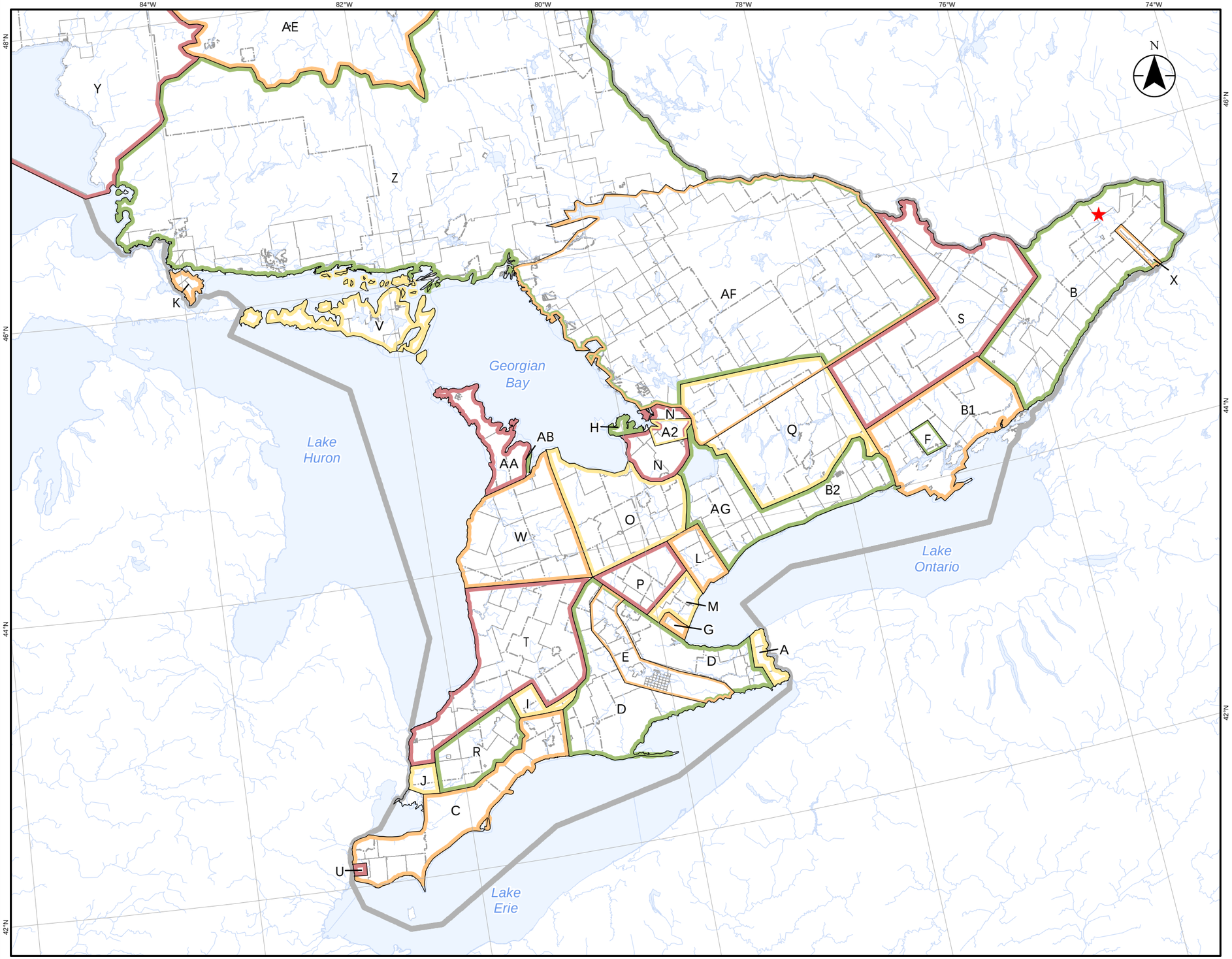

Stantec

Legend

- Site Location
- Municipal Boundary - Upper Tier
- Municipal Boundary - Lower or Single Tier
- Watercourse
- Waterbody

A Treaty No. 381, May 9th, 1781 (Mississauga and Chippewa)
B Crawford's Purchase, October 9th, 1783 (Algonquin and Iroquois)
B1 Crawford's Purchase, October 9th, 1783 (Mississauga)
B2 Crawford's Purchases, 1784, 1787 And 1788 (Mississauga)
A2 John Collins' Purchase, 1785 (Chippewa)
C Treaty No. 2, May 19th, 1790 (Odawa, Chippewa, Pottawatomi, and Huron)
D Treaty No. 3, December 2nd, 1792 (Mississauga)
E Haldimand Tract:from the Crown to the Mohawk, 1793
F Tyendinaga:from the Crown to the Mohawk, 1793
G Treaty No. 3 3/4:from the Crown to Joseph Brant, October 24th, 1795
H Treaty No. 5, May 22nd, 1798 (Chippewa)
I Treaty No. 6, September 7th, 1796 (Chippewa)
J Treaty No. 7, September 7th, 1796 (Chippewa)
L Treaty No. 13, August 1st, 1805 (Mississauga)
M Treaty No. 13A, August 2nd, 1805 (Mississauga)
N Treaty No.16, November 18th, 1815 (Chippewa)
O Treaty No. 18, October 17th, 1818 (Chippewa)
P Treaty No. 19, October 28th 1818 (Chippewa)
Q Treaty No. 20, November 5th, 1818 (Chippewa)
R Treaty No. 21, March 9th, 1819 (Chippewa)
S Treaty No. 27, May 31st, 1819 (Mississauga)
T Treaty No. 27½, April 25th, 1825 (Ojibwa and Chippewa)
U Treaty No. 35, August 13th, 1833 (Wyandot or Huron)
V Treaty No. 45, August 9th, 1836 (Chippewa and Odawa, "For All Indians To Reside Thereon")
W Treaty No. 45½, August 9th, 1836 (Saugeen)
X Treaty No. 57, June 1st, 1847 (Iroquois of St. Regis)
Z Treaty No. 61, September 9th, 1850 (Robinson Treaty:Ojibwa)
AA Treaty No. 72, October 30th, 1854 (Chippewa)
AB Treaty No. 82, February 9th, 1857 (Chippewa)
AF Williams Treaty, October 31st and November 15th, 1923 (Chippewa and Mississauga)
AG Williams Treaty, October 31st, 1923 (Chippewa)

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Notes
1. Coordinate System: NAD 1983 Statistics Canada Lambert
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2016.
3. Treaty boundaries adapted from Morris 1943 (1964 reprint).

Project Location
United Counties of Prescott and Russell

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Prepared by PW on 2016-09-20

Client/Project
PENDLETON ENERGY CENTRE LIMITED PARTNERSHIP
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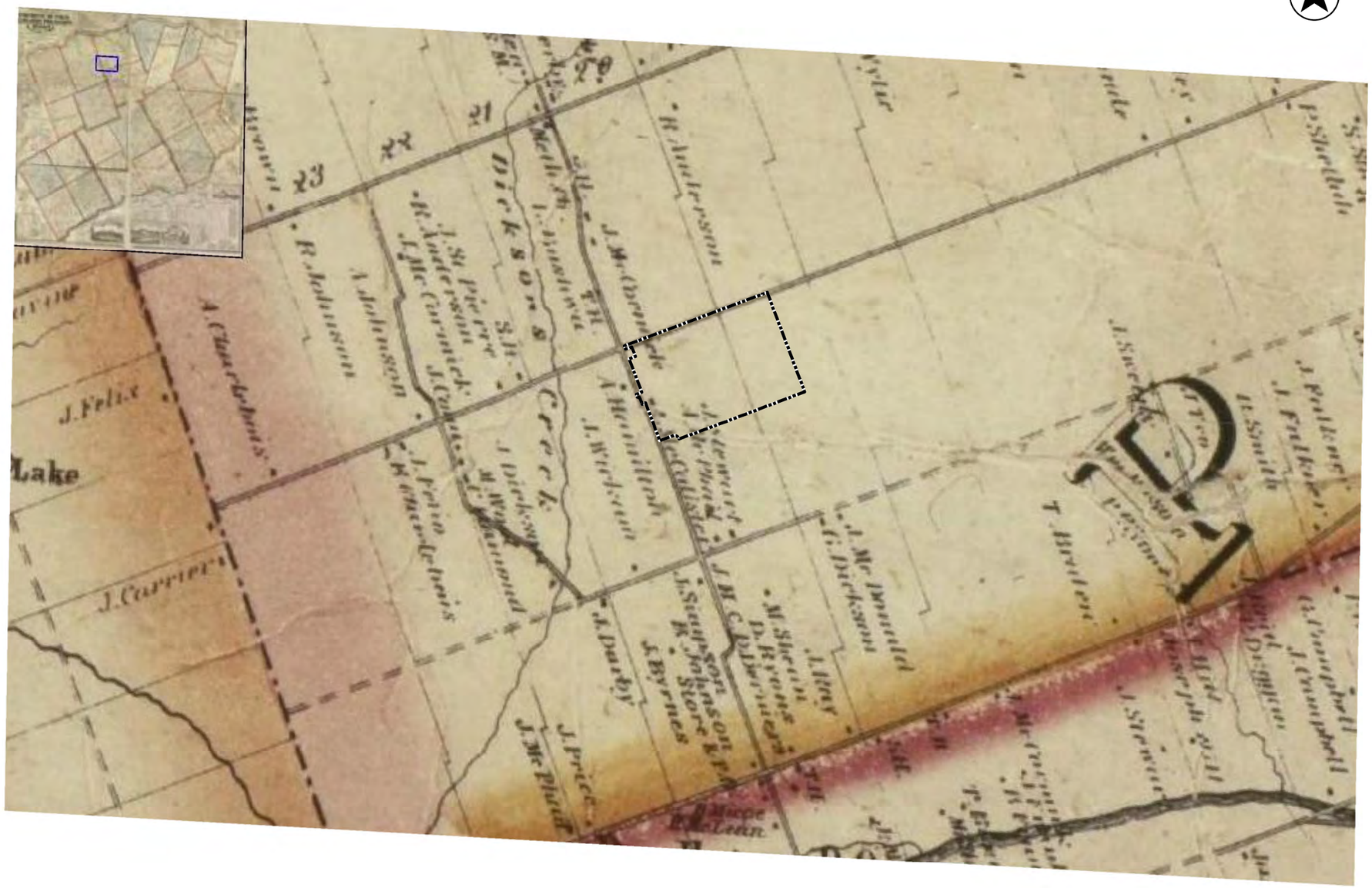
Figure No.
2

Title
Treaties and Purchases
(Adapted from Morris 1943)



Stantec

Legend
Site Location

Notes
1. Map is not to scale.
2. Historic base map: Walling, Henry F. 1862. Map of the Counties of Stormont, Dundas, Glengarry, Prescott & Russell, Canada West. Library and Archives Canada, National Map Collection 0021998, H2/420/Stormont/1862.

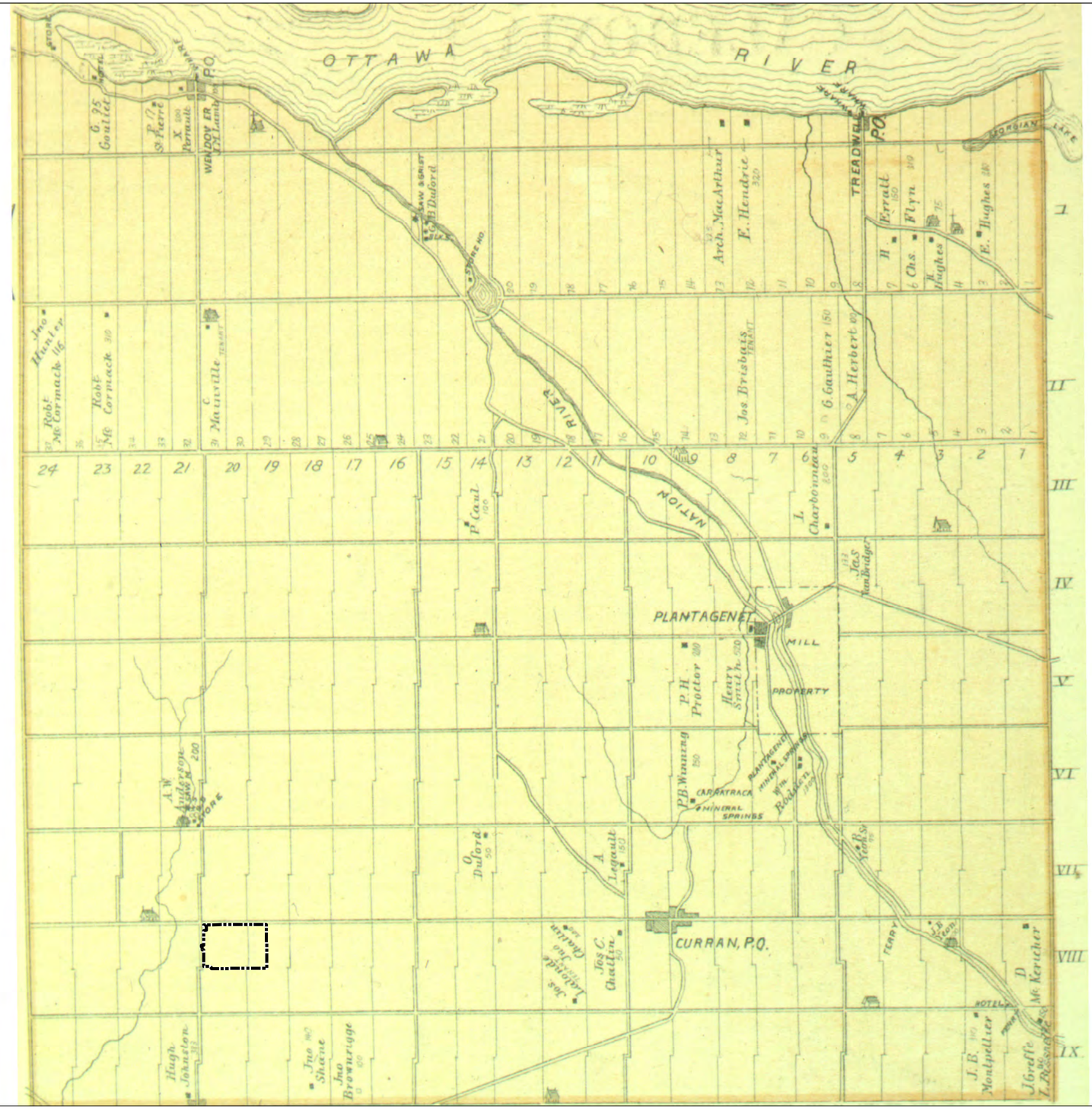
Project Location
United Counties of Prescott and Russell

160950878 REVA
Prepared by PW on 2016-09-21

Client/Project
PENDLETON ENERGY CENTRE LIMITED PARTNERSHIP
PENDLETON SOLAR ENERGY CENTRE

Figure No.
3

Title
Portion of the 1862 Walling Map of the Counties of Stormont, Dundas, Glengarry, Prescott and Russell Counties



N

Stantec

Legend

Site Location

Notes

1. Map is not to scale.
2. Historic base map: Belden, H., 1881. Prescott and Russell Supplement in Illustrated atlas of the Dominion of Canada Toronto: H. Belden & Co.

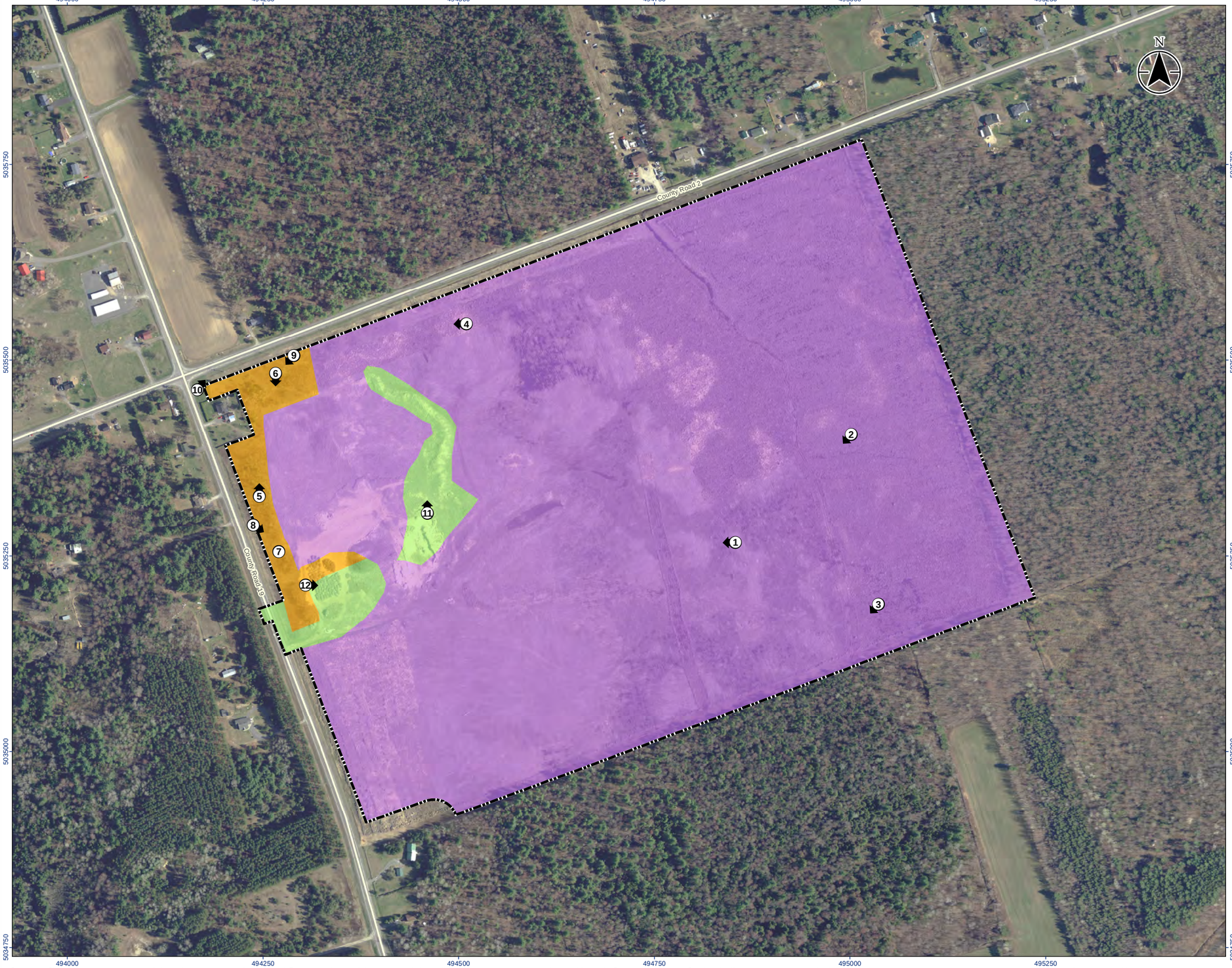
Project Location
United Counties of Prescott and Russell

160950878 REVA
Prepared by PW on 2016-09-22

Client/Project
PENDLETON ENERGY CENTRE LIMITED PARTNERSHIP
PENDLETON SOLAR ENERGY CENTRE

Figure No.
4

Title
Portion of the 1879 Belden & Co. Illustrated Historical Atlas of the Counties of Stormont, Dundas, and Glengarry



Stantec

Legend

- Site Location
- Major Road
- Municipal Boundary - Lower Tier
- Photo Location

Stage 2 Results

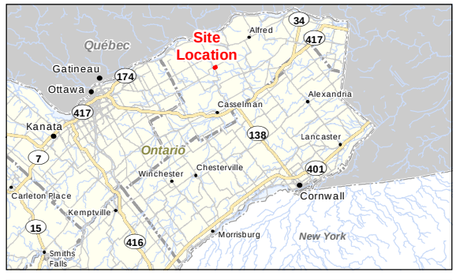
- Pedestrian Surveyed at 5 m Intervals
- Previously Disturbed, Not Surveyed
- Test Pit Survey at 5 m Intervals

0 100 200 metres

1:5,000 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 UTM zone 18N
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2016.
3. Orthoimagery: © First Base Solutions, 2016. Imagery taken in 2014.



Project Location
United Counties of Prescott and Russell

160950878 REVA
Prepared by PW on 2016-09-21

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PENDLETON ENERGY CENTRE LIMITED PARTNERSHIP
PENDLETON SOLAR ENERGY CENTRE

Figure No.
5

Title
Stage 2 Results

10.0 CLOSURE

This report documents work that was performed in accordance with generally accepted professional standards at the time and location in which the services were provided. No other representations, warranties or guarantees are made concerning the accuracy or completeness of the data or conclusions contained within this report, including no assurance that this work has uncovered all potential archaeological resources associated with the identified property.

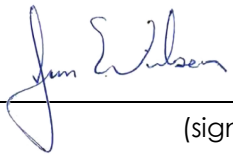
All information received from the client or third parties in the preparation of this report has been assumed by Stantec to be correct. Stantec assumes no responsibility for any deficiency or inaccuracy in information received from others.

Conclusions made within this report consist of Stantec's professional opinion as of the time of the writing of this report, and are based solely on the scope of work described in the report, the limited data available and the results of the work. The conclusions are based on the conditions encountered by Stantec at the time the work was performed. Due to the nature of archaeological assessment, which consists of systematic sampling, Stantec does not warrant against undiscovered environmental liabilities nor that the sampling results are indicative of the condition of the entire property.

This report has been prepared for the exclusive use of the client identified herein and any use by any third party is prohibited. Stantec assumes no responsibility for losses, damages, liabilities or claims, howsoever arising, from third party use of this report. 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 report.

Quality Review 
(signature)

Colin Varley, MA, RPA

Independent Review 
(signature)

Jim Wilson, MA