



December 2014

TECHNICAL SUPPORT DOCUMENT #6

Archaeological Assessment

REPORT





Executive Summary

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.

Golder Associates Ltd. (Golder) completed an archaeological assessment of the lands located on Lots 22 - 25, Concession 11, Cumberland Township, Ontario. The archaeological investigation is part of an overall assessment of lands located between Boundary Road and Frontier Road and south of Highway 417. This study area, known as the Boundary Road Site (BR), is being assessed as a possible location for the Capital Region Resource Recovery Centre (CRRRC). The objective of the archaeological investigation was to identify known heritage and archaeological sites within and in the vicinity of the study area and to assess its archaeological potential.

The study area consisted of 4 part lots totalling approximately 192 hectares. The study area was composed primarily of overgrown agricultural fields with two smaller components of actively cultivated fields and commercial land stripped by R. Pomerleau Ltd and a former auto wrecker. There are three existing residences along Frontier Road and one existing residence along Boundary Road (all owned by Taggart Miller). The study area is bounded to the north by Highway 417, to the west by the Boundary Road Industrial Park and Boundary Road, to the east by Frontier Road and to the south by a Devine Road and a mix of wood lots and agricultural fields.

There is evidence of human occupation in Eastern Ontario dating at least 9,000 Before Present (B.P.) following the retreat of the Champlain Sea. Although open at this time, Cumberland Township would have been very sparsely populated through the Palaeo-Indian period but would have experienced a gradual increase in population during the subsequent Archaic and Woodland periods. Even with this increase, the highly mobile and seasonal nature of habitation ensured that the region would remain sparsely populated until European colonization and agricultural intensification during the early nineteenth century.

Settlement on Lots 22 – 25 did not occur until the late nineteenth century and early twentieth century. Crown patents for Lots 22, 23 & 24 were granted in 1865, while patents for Lot 25 were granted in 1874. According to the available historic maps, no structures were located within the study area in 1825, 1840, 1861 or 1881. Furthermore, the first roads to border the study area do not appear until 1923, and at the time it was only a small section of Frontier Road, south of Devine Road that was in use (Prescott and Russell Counties Map, 1923).

There are no registered archaeological sites in the study area or within a three kilometre radius. Due to the flat topography, poorly drained soils, and relatively late settlement date, the study area contains low archaeological potential for both aboriginal and historic resources.

This archaeological assessment has provided the basis for the following recommendations:

- 1) That the CRRRC Boundary Road study area does not require further archaeological assessment.

In addition to the Advice on Compliance with Legislation in Section 5.0, the following is applicable to this Site:

- If during the process of development any archaeological resources or human remains of potential Aboriginal interest are encountered, the Algonquins of Ontario Consultation Office will be contacted.



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Abbreviations

MTCS	Ministry of Tourism, Culture and Sport (Ontario)
ASDB	Archaeological Sites Database
CRRRC	Capital Region Resource Recovery Centre
PIF	Project Information Form
B.P.	Before Present (Taken to be 1950)
C14	Carbon 14 dating technique



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1.0 PROJECT CONTEXT

1.1 Objectives

This archaeological assessment was completed to assess the archaeological potential of the subject property, and to determine if any additional archaeological investigations are required. The objectives of this assessment are based on principles outlined in the *Ontario Heritage Act* (Consolidated 2007), and with the Ministry of Tourism, Culture and Sport's *Standards and Guidelines for Consulting Archaeologists* (MTCS, 2011). More specifically, studies were completed with the following objectives:

- To provide information about the property's geography, history, previous archaeological fieldwork and current land condition;
- To evaluate in detail the property's archaeological potential, which will support recommendations for further assessment of all or parts of the property, if appropriate; and,
- To recommend appropriate strategies for a more detailed survey, if indicated.

1.2 Development Context

Golder Associates Ltd. (Golder) was retained by Taggart Miller Environmental Services (Taggart Miller) to undertake an archaeological assessment of the properties located on Part Lots 22 - 25, Concession 11, Geographic Township of Cumberland, Ontario. This study area is being assessed as a possible location for the Capital Region Resource Recovery Centre (CRRRC).

The study area is situated in parts of four separate lots totalling approximately 192 hectares. The study area consists predominantly of overgrown agricultural fields with two smaller components of active fields and disturbed commercial land owned by R. Pomerleau Ltd and a former auto wrecker. There are three existing residences along Frontier Road and one existing residence along Boundary Road. The study area, known as the Boundary Road Site (BR), is bounded to the north by Highway 417, to the west by the R. Pomerleau Ltd., Boundary Road Industrial Park and Boundary Road, to the east by Frontier Road and to the south by Devine Road and a mix of wood lots and agricultural land. The study area is indicated by the boundaries on Maps 1 & 2 (pp.28 & 29); these are the physical limits of any proposed development. A wider study area of 3 km was used to investigate the Ministry of Tourism, Culture and Sports' (MTCS) *Archaeological Sites Database* (ASDB) in accordance with the *Standards and Guidelines for Consulting Archaeologists* (MTCS, 2011) and professional standards of due diligence.

This assessment was undertaken in advance of the pre-development permitting process, and for the purposes of the MTCS was triggered by the need to identify any potential impacts to archaeological resources. The CRRRC project has an approved Terms of Reference (TOR) from the Ontario Ministry of the Environment and Climate Change, and this assessment was undertaken as contemplated by the approved TOR.

Permission to access the study area for the purpose of archaeological assessment was provided by Taggart Miller in consultation with local landowners.



1.3 Historical Context

Our understanding of the local sequence of human activity in the study area following the recession of the last ice sheet and the Champlain Sea is incomplete. It is possible, however, to provide a general outline of prehistoric occupation in the Ottawa region based on the archaeological investigations conducted throughout eastern Ontario.

1.3.1 Regional Pre-European Aboriginal Occupation

Human occupation of southern Ontario dates back approximately 10,000 years B.P. These first peoples, known as Palaeo-Indians to archaeologists, moved into Ontario as the last of the glaciers retreated northward. The former shores of the vast glacial lakes such as Lake Algonquin in the area that is now southern Georgian Bay, and along the north shore of present day Lake Ontario, contain remnants of some of their sites. Isolated finds of the distinctive, parallel-flaked Palaeo-Indian spear points have been recorded in the Rideau Lakes and north of Kingston (Watson 1982). Although there is limited information on the lifestyle of the Palaeo-Indians, the little evidence that is available suggests that they were highly mobile hunters and gatherers relying on caribou, small game, fish and wild plants found in the sub-arctic environment.

The Ottawa Valley remained very much on the fringe of occupation at this time. The ridges and old shorelines of the Champlain Sea and early Ottawa River channels would be the areas most likely to contain evidence of Palaeo-Indian occupation in this region. What is believed by some to be late Palaeo-Indian material has been found in several locations within the City of Ottawa including a site in Honey Gables as well as in general proximity to the study area, near Albion Road and Rideau Road, Innes Road, and north of the Mer Bleue close to the intersection of Navan Road and Page Road (Swayze 2001, 2003 & 2004).

It was not until the succeeding Archaic Period (ca. 9,000 to 3,000 B.P.), that the environment of southern Ontario approached modern conditions. While more land became available for occupation as the glacial lakes drained, Archaic populations continued as hunter-gatherers, however they appear to have focused more on local food resources, abandoning the highly mobile lifestyle of their predecessors. Although Palaeo-Indian workmanship of stone tools was also lost, the Archaic Period tool kit became more diversified, reflecting the adaptation to a temperate forest environment. Ground stone tools such as adzes and gouges first appeared and may indicate the construction of the dug-out canoes or other heavy wood working activities. Extensive trade networks had developed by the middle to late Archaic Period. Items such as copper from the north shore of Lake Superior were exchanged during this time.

The first significant evidence for occupation in the Ottawa Valley appears at this time. Archaic sites have been identified on Allumettes and Morrison Islands on the Ottawa River near Pembroke, and within the boundaries of Leamy Lake Park within the City of Gatineau (Pilon 1999: 43-53, 64). Late Archaic sites have also been identified to the west in the Rideau Lakes, and the east at Jessup Falls and Pendleton along the South Nation River (Daechsel 1980). A few other poorly documented finds of Archaic artifacts have been made within the City limits (Jamieson 1989).

The Woodland Period (ca. 3,000 to 400 B.P.) is distinguished by the introduction of ceramics. Early Woodland groups continued to live as hunters, gatherers and fishers in much the same way as earlier populations had done. They also shared an elaborate burial ceremonialism evidenced by the inclusion of exotic artifacts within graves (Spence et. al. 1990: 129). Extensive trade networks continued through the early part of this period and



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Early Woodland populations in Ontario appear to have been heavily influenced by groups to the south, particularly the Adena people of the Ohio Valley. By 1,700 B.P., the trade networks had reached their peak and covered much of North America.

Through the Middle Woodland Period (ca. 2,400 to 1,100 B.P.) there was an increase in the decorative styles found on ceramic pots and changes in the shapes and types of tools used. For the first time, it is possible to identify regional cultural traditions within the province, with 'Point Peninsula' being the distinctive variant found in eastern and south-central Ontario. A greater number of known sites from this period have allowed archaeologists to develop a better picture of the seasonal round followed in order to exploit a variety of resources within a home territory. Through the late fall and winter, small groups would occupy an inland 'family' hunting area. In the spring, these dispersed families would congregate at specific lakeshore sites to fish, hunt in the surrounding forest, and socialize. This gathering would last through to the late summer when large quantities of food would be stored for the approaching winter. The proliferation of sites suggests an increase in the population of Eastern Ontario, although the Ottawa area has yet to yield as many sites as other parts of south-eastern Ontario. Middle Woodland sites have been noted in the South Nation Drainage Basin and along the Ottawa River including the northwest end of Ottawa at Marshall's and Sawdust Bays (Daechsel 1980; Daechsel 1981).

Another significant development of the Woodland Period was the appearance of domesticated plants ca. 1,450 B.P. Initially only a minor addition to the diet, the cultivation of corn, beans, squash, sunflowers and tobacco gained economic importance for Late Woodland peoples. Along with this shift in subsistence, settlements located adjacent to the corn fields began to take on greater permanency as sites with easily tillable farmland became more important. Eventually, semi-permanent and permanent villages were built, many of which were surrounded by palisades, evidence of growing hostilities between neighbouring groups. By the end of the Late Woodland Period, distinct regional populations occupied specific areas of southern Ontario separated by vast stretches of largely unoccupied land, including the Huron along the north shore of Lake Ontario, and the St. Lawrence Iroquois along the St. Lawrence River.

While there is clear evidence of these latter developments in much of southern Ontario, the Ottawa Valley remained a sparsely occupied region utilized by mobile hunter-gatherers. In part, this was because the terrain was less than suitable for early agriculture. It was also a reflection of the increased pressure on hunting territories and conflict over trade routes at the end of the Woodland Period. Facing persistent hostilities with Iroquoian populations based in what is now New York State, the Huron moved from their traditional lands on the north shore of Lake Ontario to the Lake Simcoe and Georgian Bay region. Algonquin groups, who had occupied the lands north of the Huron, also appear to have retreated further northward in order to place greater distance between themselves and the Iroquois.

Woodland sites have been recorded throughout the Ottawa Valley. Two small Late Woodland sites were recently located on a property near the Village of Cumberland to the east of the study area (Adams 2009:8). A significant Woodland occupation has also been identified at the Leamy Lake site (Pilon 1999: 76-80). Finally, an ossuary burial identified near the Chaudière Falls in the 1840s dates to this period. Although ossuaries are a burial practice normally associated with Iroquoian speaking populations, especially the Huron, this internment may have been Algonquin. Once again, a number of poorly documented Woodland find spots are known for the general study area (Jamieson 1989).



At the time of initial contact, the French documented three Algonquin groups residing in the vicinity of the study area (Heidenreich & Wright 1987: Plate 18). These included the Matouweskariini along the Madawaska River to the west, the Onontchataronon in the Gananoque River basin to the southwest, and the largest of the three, the Weskarini, situated in the Petite Nation River basin north of the study area. While prolonged occupation of the region may have been avoided as a result of hostilities with Iroquoian speaking populations to the south, at least the northern reaches of the South Nation River basin were undoubtedly used as hunting territories by the Algonquin at this time.

1.3.2 Regional Post-Euro-Canadian Contact History

Étienne Brûlé is reported to be the first European in the region; having travelled up the Ottawa River in 1610, three years before Samuel de Champlain. For the next two centuries, the Ottawa River served as a major route for explorers, traders and missionaries from the St. Lawrence into the interior, and throughout the seventeenth and eighteenth centuries this route remained an important link in the French fur trade. A seigneurie was established at L'Original, east of the study area, in 1674 and granted to Nathaniel Hazard Treadwell but there was little permanent European settlement at this early date. The recovery of European trade goods (i.e., iron axes, copper kettle pieces and glass beads) from Aboriginal sites throughout the Ottawa River drainage basin has provided evidence of the extent of contact between Aboriginals and the fur traders during this period. The English, upon assuming possession of New France, continued to use the Ottawa River as an important transportation corridor.

A French trading post was built near the mouth of Le Lievre River, near the present community of Buckingham, Quebec, sometime in the eighteenth century. This post had been abandoned by the time Alexander Henry travelled up the Ottawa River in 1761 (Voorhis 1930:62). Independent trading posts at Buckingham and in the Rockland area were reportedly operated by Gabriel Foubert in the late eighteenth century (Beaulieu n.d.). Gabriel was the father of Amable Foubert, one of the first recorded settlers in Cumberland Township.

Significant European settlement of the region did not occur until United Empire Loyalists and other immigrants began to move to lands along the Ottawa River in the late eighteenth and early nineteenth centuries. The need for land on which to settle the Loyalists led the British government into hasty negotiations with their indigenous military allies, the Mississauga, who were assumed, erroneously, to be the only Aboriginal peoples inhabiting eastern Ontario. Captain William Redford Crawford, who enjoyed the trust of the Mississauga chiefs living in the Bay of Quinte region, negotiated on behalf of the British government. In the so-called 'Crawford Purchase,' the Mississauga were cajoled into giving up Aboriginal title to most of eastern Ontario, including what would become the counties of Stormont, Dundas, Glengarry, Prescott, Russell, Leeds, Grenville and Prince Edward, as well as the front Townships of Frontenac, Lennox, Addington and Hastings and much of what is now the City of Ottawa (including the Geographic Townships of Gloucester, Nepean, Osgoode, Marlborough and North Gower) (Lockwood 1996: 24). Two years after the 1791 division of the Province of Quebec into Upper and Lower Canada, John Stegmann, the Deputy Surveyor for the Province of Upper Canada, undertook an initial survey of four Townships (Nepean, Gloucester, North Gower and Osgoode) on both sides of the Rideau River near its junction with the Ottawa River.



1.3.3 Cumberland Township

The Ottawa River was an important transportation route during the early trading days of settlement in the area. Fur trading posts were erected along the Ottawa River where the Algonquin traded with the Europeans. A French trading post was situated across the river from Cumberland in modern day Buckingham in 1761. This area was controlled by France until 1763 when the British gained control of the region at the end of the Seven Year War. The Township of Cumberland still has a large French population to this day.

The first official survey of the Township of Cumberland was conducted in 1791 (CTHS n.d.) in order to divide the land into individual lots for settlement. Although many of the lots were granted at an early date to Loyalists, very few were settled. Many of the Loyalists had already settled on properties along the St. Lawrence River and remained absentee landowners of their Cumberland lots. Another hindrance to early settlement of Cumberland was the lack of roads to the interior (Belden 1881). The first major road, Montreal Road (originally called L'Original-Bytown Rd.) was not built until 1850; this road ran directly through Concession 1 along the Ottawa River (CTHS n.d.; McGilvray 2005).

The first settlers of the Township of Cumberland were Abijah Dunning and Amable Faubert (also written Foubert), both arriving in 1801. Abijah Dunning originally obtained 800 acres of land in Cumberland from the Crown and continued to acquire land, eventually coming to own 3,000 acres throughout Cumberland, Buckingham and Onslow Townships. Amable Faubert opened up a trading post along the river in 1807. Cumberland Township was used for trading mostly fur, potash and lumber through the nineteenth century. The Foubert and Dunning families continued to have a large presence in the Township throughout the nineteenth century.

By 1858 the Village of Cumberland had a population of over 1,000 with an additional 2,000 residents in the rural parts of the Township. Cumberland became a major seasonal forwarding center along the Ottawa River in the 1870's, where two wharves were built and several forwarding companies were established, including one owned by the Faubert brothers. This helped facilitate a small ship building industry in the Township during the mid-nineteenth century (CTHS n.d.).

In 1882, the Grand Trunk Railway was built through the community of Vars which provided the first rail transportation route through the Township. Another railway, the Canadian National Railway (CNR), was built through Cumberland Township in 1899 and was extended in 1907 to run through Concession 1 along the river (CTHS n.d.). The CNR was closed during the depression and in 1952 the old line was replaced by the current Highway 417.

Present Land Use

The study area is currently a mix of fields, low quality secondary growth forest cover, a small commercial property to the north-west and a small historical commercial property along the western boundary. Three residential buildings are also present along Frontier Road at the eastern edge of the study area. One residential property is located at the western edge of the study area. The residences are owned by Taggart Miller.

Property History

Land registry documents were examined to provide a history of ownership and development within the study area. The documents indicated that Lots 22-24 in Concession 11 were granted by Crown Patent to Andrew F. Gault in 1865, with all Lots subsequently bought by James Boyd in 1872. The block transfer of large



amounts of land is usually indicative of speculative holding rather than settlement. All Lots were sold concurrently between O.N. Schnei, N. Smith, J. Bond, R. Scott and E. Keays during the period between 1875 and 1885 before returning to the possession of A. Gault. The Lots continued to be frequently traded well into the 1890's and early 1900's. It is highly unlikely that the Lots were settled prior to 1872, with the land registry suggesting that the area was settled possibly after 1880.

Lot 25, Concession 11 was granted by Crown Patent to William, F. Powell in 1874, and subsequently sold to John Nicholas in 1880. Ownership appears to have reverted to the Crown later in 1880, a series of entries involving the Ontario Bank occur, the net result of which is that the Lot was obtained from the Chancery by Martin O'Gara in 1885. The Lot was sold immediately by O'Gara and bought and sold with frequency over the next 10 years. The Lot appears to be split in the late 1890's. It is unlikely that the Lot was settled prior to 1880, possibly even the 1890's.

1.3.4 Historic Maps and Air Photos

A review of available historic maps was undertaken to identify the locations of any early historic structures within the study area. The earliest map referenced was the 1825 Coffin Map (Map 3, p.30) which showed no structures present within the 4 lots of the study area. Similarly, the 1841 census map, the 1861 Walling Map and the 1881 Belden map (Map 3, p.30) showed no structures present in any of the lots. Interestingly, the first roads in the study area do not appear until the 1923 Prescott and Russell Counties Map. At this stage a portion of what is now Frontier Road, south of Devine Road, was the only road present. The lack of roads in and around the study area was likely one reason why this area was not settled until the late nineteenth to early twentieth century; this corresponds with documentary evidence obtained from land registry records.

A review of six air photos was undertaken to determine how the study area has developed over time and to identify any previous water sources or features that might indicate archaeological potential. The dates of air photos examined included: 1945 (NAPL A9611-84), 1955 (NAPL A14755-65), 1964 (NAPL A18649-23), 1975 (NAPL A31016-122), 1984 (NAPL 26469-227) and 1998 (A28361-202) (Map 4, p.31). These show that in 1945 the study area had been primarily used for agricultural purposes, with over 90% of the study area having been cleared and operating as agricultural fields. Slowly over time the fields were abandoned and have now become overgrown with the majority of the study area composed of secondary woodlot and bush with only a small portion at the north end remaining as agricultural land (Images 1-6, pp.20-22.). Two small areas to the northwest and the west have become the commercial property of R. Pomerleau Ltd. which specializes in sand, gravel and topsoil distribution and large equipment rentals and a former auto wrecker, respectively. The R. Pomerleau Ltd. area has since been significantly impacted by stripping for these purposes (Images 7-13, pp.23-26).

Two buildings present within the 1945 air photo (Map 4, p.31) have disappeared from the landscape by 1964. One appears to have been destroyed by the re-alignment of the junction between Boundary Road and Devine Road. The other property further north along Boundary Road was developed in the 1980s to support a commercial property for new and used auto parts. Due to the relatively late settlement of the area and the existence of buildings till the mid-twentieth century, this location is deemed to possess low archaeological potential.

There is no evidence of any active creeks or streams within the study area, only man made channels and ditches.



1.4 Archaeological Context

Previous Environmental Conditions

The study area began to emerge from the Wisconsin Ice Cap during the onset of the Holocene, roughly 12,000 years B.P. Immediately adjacent to the retreating ice sheets, melt water lakes formed within the low lying Ottawa Valley; itself having been depressed by the great weight of the ice cap. Around 11,000 to 11,500 B.P. the ice had sufficiently melted to allow sea water from the Atlantic Ocean access to the glacially lowered lands of eastern Ontario via the St. Lawrence (Cronin et al 2008). This marine inundation formed the Champlain Sea, briefly extending as far west as parts of Renfrew County, and is represented within the sedimentary record by a change from laminated glaciolacustrine clays to marine deposited clays.

Isostatic rebound gradually raised the Ottawa Valley, resulting in the shrinkage of the Champlain Sea eastwards. Large amounts of meltwater from the retreating ice sheets to the northwest flowed down through the Ottawa Valley, resulting in the freshwater mixing with the saline Champlain Sea resulting in a brackish environment, eventually producing the smaller freshwater Lake Lampsilis by around 9,800 B.P. By this period an extensive sand delta had formed over the study area as the large amounts of sediment transported downstream entered into the less turbulent and slower waters of the Lake and subsequently dropped from suspension. This resulted in the draping of the existing deep water marine clays with a thick layer of fluvial sands and silts across the entire deltaic fan. Following the further draining of Lake Lampsilis, the Ottawa River remained as a drainage route to the Atlantic for larger glacial lakes and water bodies to the west, with occasional large release episodes. The study area would have been uncovered from the draining waters shortly after 9,800 B.P.

“The most significant alterations to the landscape following the withdrawal of the Champlain Sea are related to the shifting channels of the Ottawa River. A series of terraces and abandoned channels in the vicinity of Ottawa indicates that the Ancestral Ottawa River was much larger than present. Isostatic adjustment and the erosion of a lower channel upstream from Ottawa gradually caused the river to abandon the southern channel and shift to the north, to occupy the pre-glacial valley and what is now the Ottawa River channel. Terraces at various levels in the clay mark successive periods of downcutting by the Pre-Ottawa River. The south channel east of Ottawa has several cross channels separated by elongated islands underlain by marine clay and covered by fluvial sands” (Marshall et al 1979:14).

The study area is located in close proximity to the southern bank of this ancestral channel, with most of the channel at this location currently occupied by the Mer Bleue Bog. A carbon date obtained from the peat (GSC-681, 7650± 120 years BP) indicates this bog to be at least 7,700 years old (Marshall et al, 1979:15). The development of the bog indicates that the channel must have been abandoned by the Ottawa River by this time, and that potentially it existed earlier as an open lake before reverting to a peat forming marsh.

Pollen cores taken from the Mer Bleue, immediately north of the study area (Anderson 1988), and Ramsay Lake, 50 km to the northwest (Rocheleau et al 2008) provide a record of paleoflora at the time of the emergence of the study area from the Champlain Sea (9,800 B.P.). Pollen cores indicate the existence of a tundra that gave way to coniferous tree cover, likely spruce, pine and willow, later supplanted with oak and birch at the expense of the spruce. These forests increased in density and remained dominant between 10,600 and 7,500 B.P. A more mixed forest, characterised as Great Lakes Forest began to be established with the onset of a warmer and more humid environment between 7,500 and 4,700 B.P. with the predominance of pine giving way to hemlock.



A cooling of the climate and the decimation of the hemlock by disease led to a massive increase in the birch composition of the tree cover between 4,700 and 3,000 B.P. This birch, pine and hemlock tree cover remained established until 200 B.P. with lumbering and agriculture clearing the area (Rocheleau et al, 2008).

Study Area Characteristics

The study area falls within the Upper St. Lawrence sub-region of the Great Lakes - St. Lawrence Forest Region (Kershaw 2001). On the acidic soils of the area, a representation of conifers is usually found, particularly the eastern hemlock, eastern white pine, white spruce and balsam fir. The more coarse textured soils commonly support stands of eastern white pine and red pine, with wetter sites supporting black spruce and eastern white cedar. After large fires, largetooth aspen and white birch, along with balsam fir and white spruce play a prominent role in the pioneer forest stands (Rowe 1977). Bogs, such as Mer Bleue, tend to be dominated by willows, poplars and alders at the fringe, with tamarack and black spruce invading the centre (Marshall et al 1979). Extensive clearance of the land through settling, farming and lumbering has greatly reduced tree cover and altered its composition, with the Great Fire of 1870 resulting in almost total devastation of Carleton County, although the study area was probably spared (Currie 2009); as a consequence no old growth tree cover is expected to remain within the study area. Recent abandonment of cleared agricultural land has resulted in the gradual re-growth of immature forest cover within the study area. Significant topsoil and subsoil loss has also been affected by the stripping of the land for commercial purposes of R. Pomerleau Ltd in the northwest portion of the study area.

The overall geology of the study area consists of Ordovician bedrock of the Carlsbad Formation, comprised of grey shale, sandy shale and occasional dolomitic layers, covered with Pleistocene fluvial gravels and subsequently overlain by sand and clay soils that characterize the Prescott and Russell Sand Plains physiographic region (Chapman & Putnam 1984).

The coarse sand plains of the study area have mature Podzol soils with thin ash-grey horizons, modified to Ground-Water Podzols in areas with a high or fluctuating water table, indicated by the development of iron and humus hardpans. These soils are classed as low fertility, being deficient in lime, nitrogen, potash, phosphorus and manganese (Chapman and Putnam 1984).

Specifically, the study area is shown to contain three distinct soil types. The north half of the study area is shown to consist of poorly drained fine sandy loam, either fluvial or eolian in origin. The soils in the majority of the southern half of the study area consist of poorly drained fluvial or marine fine sandy loam over clay loam, silty clay loam, silty clay or clay marine material. Portions of the southern boundary of the study area are located in the poorly drained fine sandy loam with similar underlying clay deposits (Schut and Wilson 1987).

Primary drainage within the study area is provided by the Simpson Municipal Drain; this traverses the centre-north of the study area parallel to, and well north of Devine Road. Minor drainage is also provided by the Regimbald Municipal Drain and an old farm ditch across the southern part of the study area. All of these outlet to Shaws Creek, which connects to Bear Brook and eventually with the South Nation River, that in turn drains into the Ottawa River.



The study area possesses a moderate limitation to the production of Ungulates, due to a lack of nutrients in the soil to facilitate optimum plant growth for deer grazing (Brassard & Bouchard 1971). It also possesses such severe limitations that almost no waterfowl are produced. The majority of the study area has severe limitations to agricultural production due to low soil fertility and poor drainage.

Property Inspection

Property inspections were conducted on November 22, 2012 and June 18, 2013. Photographs were taken of the existing conditions and a field log maintained (Map 2, p.29; Images 1-13, pp.20-26). Visibility was excellent and conformed to the stipulations laid out in the *Standards and Guidelines for Consulting Archaeologists* (MTCS, 2011).

Registered Archaeological Sites

The primary source of information regarding known archaeological sites in the study area is the Ontario Ministry of Tourism, Culture and Sport's archaeological sites database. A current version of this database was consulted and, at present, there are no documented or registered archaeological sites either within the study area or a 3 kilometre radius (Von Bitter per comms, January 13, 2012).

Previous Research and Fieldwork

There are a number of publications regarding the history and development of portions of Russell County. *From Swamp to Shanty* (Wendell 1987) discusses the historic development of the western half of neighbouring Russell Township while *Histoire d'Embrun* (Bourgie 1980) describes early settlers' lives in the eastern half of Russell Township. *The Illustrated Historical Atlas of Prescott and Russell* (Belden 1881) provides historical maps and specific information about people and places within Cumberland Township. Other historical accounts include *The History of the Ottawa Valley* (Gourlay 2009) and *Histoire de Comtes unis de Prescott et de Russell* (Brault 1965).

M. Emard (1974) did statistical studies of settlement patterns in Eastern Ontario, including Russell County according to linguistic groups.

There has been very little archaeological assessment work done close to the study area. Some archaeological work that has been done in the area includes an overview of the archaeology and inventory of known archaeological sites, as well as an assessment of archaeological potential of the adjacent Russell Township was provided by Heritage Quest in 2004 (Daechsel & Bauer 2004; PIF P051-P051-33-2004). A Stage 1 archaeological assessment was undertaken for the expansion of Embrun and Russell Lagoons in 2006 (Daechsel 2007; PIF P051-109-2006), a Stage 2 assessment on the same properties was undertaken in 2007 and 2008 (Golder 2009; PIF P302-038-2008). More recently Golder undertook a Stage 1 and 2 assessments for lands located directly north of the study area and to the northwest (Golder 2011; PIF P311-049-2011 and Golder 2012; P311-080-2011, respectively).

The study area is covered by the Archaeological Resource Potential Mapping Study of the Regional Municipality of Ottawa-Carleton (ASI 1999).



2.0 FIELD METHODS

As noted above, property inspections were conducted on the study area on November 22, 2012 and June 18, 2013. These inspections were undertaken to determine if there were any areas of disturbance which would have affected the archaeological potential, and what assessment strategies would be appropriate for further assessment should it be required.

On November 22, 2012, the weather was clear, 7 degrees Celsius with a SW wind. On June 18, 2013, the weather was variably cloudy and 25 degrees Celsius.

Field notes and photographs of the property were taken during the inspections. The photograph locations and directions were noted and all photographs were catalogued (Appendix A). All photograph locations and directions referenced in this report have been shown on Map 2, p.29. No archaeological remains were noted during the course of the property inspection.

The following documents were generated in the field and will be kept with the licensee at Golder Associates until an appropriate repository can be identified:

- Field notes (in 1 note book); totalling 3 pages
- Digital photographs; totalling 55 photographs
- GPS points
- Sketch maps



3.0 ANALYSIS AND CONCLUSIONS

There are no registered archaeological sites within a reasonable proximity of the study area.

Archaeological Potential of Site

There are a number of criteria employed in the assessment of archaeological site potential. For aboriginal sites, these criteria are principally focused on the topographical features of the landscape including ridges, knolls and eskers, and the type of soils found within the area being assessed. For post-contact or historic sites, documentary evidence such as maps and census records may indicate areas of settlement and activity. These criteria were formulated in close consultation with the *Ministry of Tourism, Culture and Sport's set guidelines* for archaeological resource potential mapping (MTCS, 2011).

The following assessment of archaeological potential has also been formulated in consideration of the Archaeological Resource Potential Mapping Study of the Regional Municipality of Ottawa-Carleton: Technical Report (Archaeological Services Inc. & Geomatics International Inc. 1999). Hereafter referred to as the Archaeological Master Plan, this report identifies areas of archaeological potential within the now amalgamated City of Ottawa and sets out guidelines for requiring testing. These guidelines also follow the *Checklist for Determining Archaeological Potential* developed by the Ontario Ministry of Tourism and Culture (1993) for archaeological assessments.

According to the Archaeological Master Plan modelling criteria, lands within 300 metres of 'two-line' rivers, watercourses with mapped floodplains and wetlands (as shown on 1:10 000 topographic maps) are considered to have aboriginal site potential, while lands with moderate or well drained soils within 200 metres of 'one-line' watercourses also have potential. Further, areas up to 300 metres from abandoned Ottawa and Rideau River terrace scarps have aboriginal site potential. In the case of drumlins and eskers, the entire feature has aboriginal potential. Areas near historical schools, churches, commercial buildings, industrial sites and early settlement roads are considered to have potential within 100 metres of the structure, known structure location or settlement road, the last with the object of locating early pioneer homes. Areas within 50 metres of historical railways are also considered to have site potential and, finally, any area within 100 metres of a registered or unregistered archaeological site.

The Archaeological Master Plan does not indicate any archaeological potential within the study area.

Aboriginal Archaeological Potential

Aboriginal potential for the study area is low (Map 5, p.32). The site has very limited potential for aboriginal resources as it is poorly drained, low lying and a significant distance from any permanent or ancient source of water. In addition, there are no raised glacial or geological features that might be considered areas of aboriginal focus. As such, there is no direct evidence that would suggest that the study area would have been an area of focus or habitation for aboriginal populations in the Ottawa Valley.

Historic Archaeological Potential

The available historic information (historic maps, land records) indicate that this area of Cumberland Township was settled relatively late compared to other areas of the Township. The roads that border the study area have not been considered significant historic corridors as they do not appear on any maps until 1923. In addition, there is no evidence of historic structures present in the study area in any of the historic maps. As such, the potential for historic archaeological resources within the study area is very low.



4.0 RECOMMENDATIONS

No registered archaeological sites and no areas of archaeological potential were identified by this archaeological assessment.

This investigation has provided the basis for the following recommendations:

- 1) The CRRRC Boundary Road study area does not require further archaeological assessment.

In addition to the Advice on Compliance with Legislation in Section 5.0, the following is applicable to this Site:

- If during the process of development any archaeological resources or human remains of potential Aboriginal interest are encountered, the Algonquins of Ontario Consultation Office will be contacted.



5.0 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 0.18. 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 and Culture, 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 archaeological 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 Ministry of Consumer Services.

Reports recommending further archaeological fieldwork or protection for one or more archaeological sites must include the following standard statement: "Archaeological sites recommended for further archaeological fieldwork or protection remain subject to Section 48 (1) of the *Ontario Heritage Act* and may not be altered, or have artifacts removed from them, except by a person holding an archaeological licence."



Report Signature Page

GOLDER ASSOCIATES LTD.

Erin Wilson, M.A.
Archaeologist

Hugh J. Daechsel, M.A.
Principal, Senior Archaeologist

EW/HJD/clb/sg

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A9611-84	1945
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7.0 IMAGES



Image 1: View across area of archaeological potential.
Highway 417 is located behind woods on the right, looking northwest.



Image 2: View along drainage channel, looking west.



Image 3: Typical area of woodlot at the northern end of the study area, looking west.



Image 4: Typical area of scrubland at the eastern edge of the study area, looking west.



Image 5: Man-made drainage and culvert flowing through the study area, looking west.



Image 6: Typical scrubland at the southern end of the study area, looking north.



TECHNICAL SUPPORT DOCUMENT #6 ARCHAEOLOGICAL ASSESSMENT



Image 7: Man-made drainage ditch along Boundary Road at future road access location in northwest of study area, looking southwest.



Image 8: View of commercial gravel area (left) and man-made drainage ditch (right) running along the southern edge of the R. Pomerleau Ltd property, looking northeast.



Image 9: Significant ground disturbance caused by stripping and man-made drainage ditch common throughout R. Pomerleau Ltd. property in the northwest of the study area, looking northeast.



Image 10: Typical view of topsoil and subsoil stripping in southern area of R. Pomerleau Ltd. property, looking northeast.



Image 11: Evidence of soil stripping activity in center of R. Pomerleau Ltd. property, looking north.



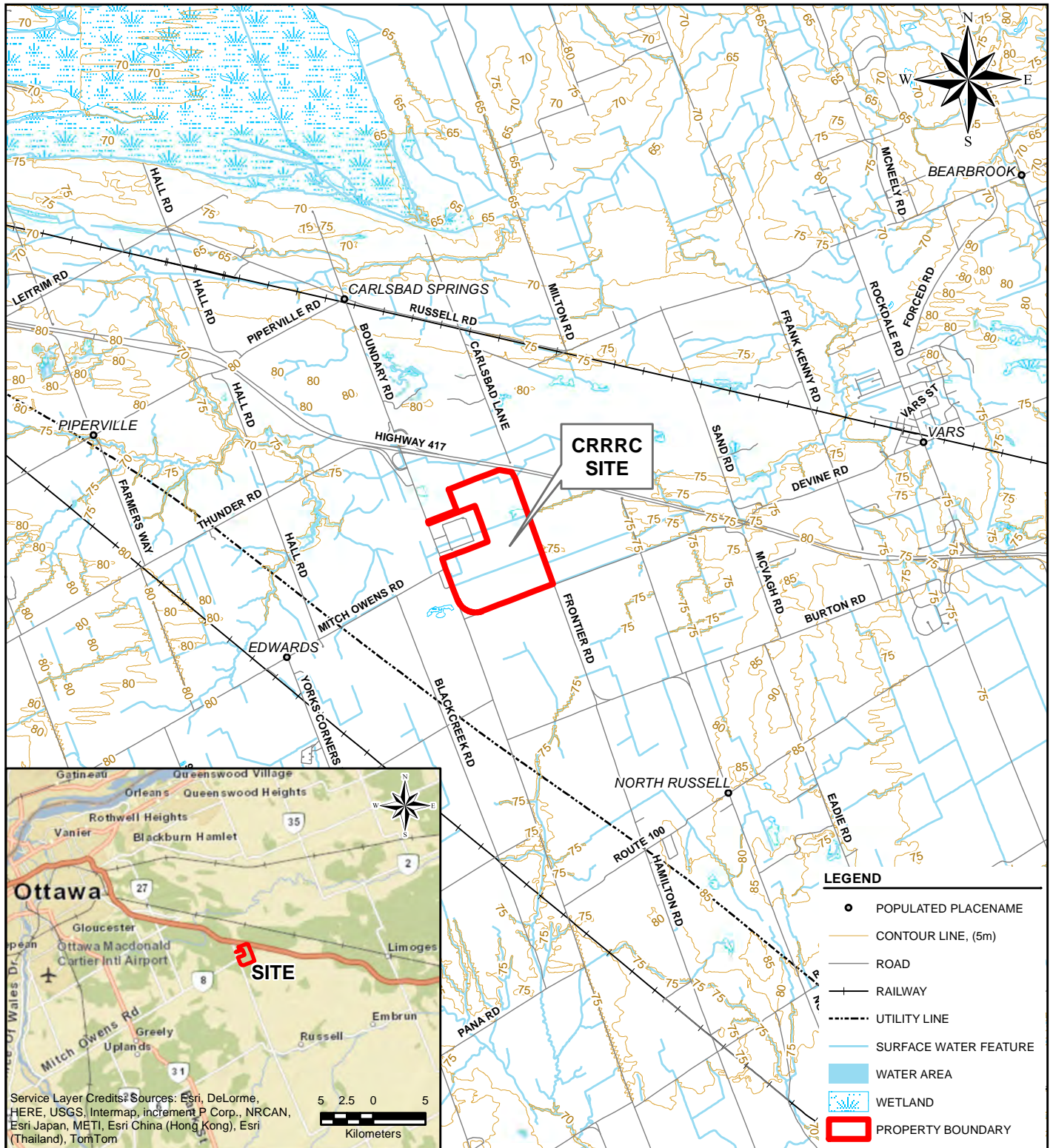
Image 12: Poorly drained areas resulting from commercial activity in eastern portion of R. Pomerleau Ltd. property, looking north.



Image 13: View of continued man-made drainage systems throughout R. Pomerleau Ltd property, looking west.



8.0 MAPS



KEY PLAN



DATE	AUG. 2014
DESIGN	EW
GIS	BR
CHECK	EW
REVIEW	HJD

PROJECT No. 12-1125-0045

SCALE AS SHOWN

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PROJECT ENVIRONMENTAL ASSESSMENT OF THE CAPITAL REGION RESOURCE RECOVERY CENTRE

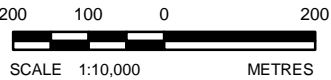
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LEGEND

- PHOTO LOCATION AND DIRECTION
- ROAD
- CONTOUR LINE, (5m)
- SURFACE WATER FEATURE
- PROPERTY BOUNDARY




NOTE

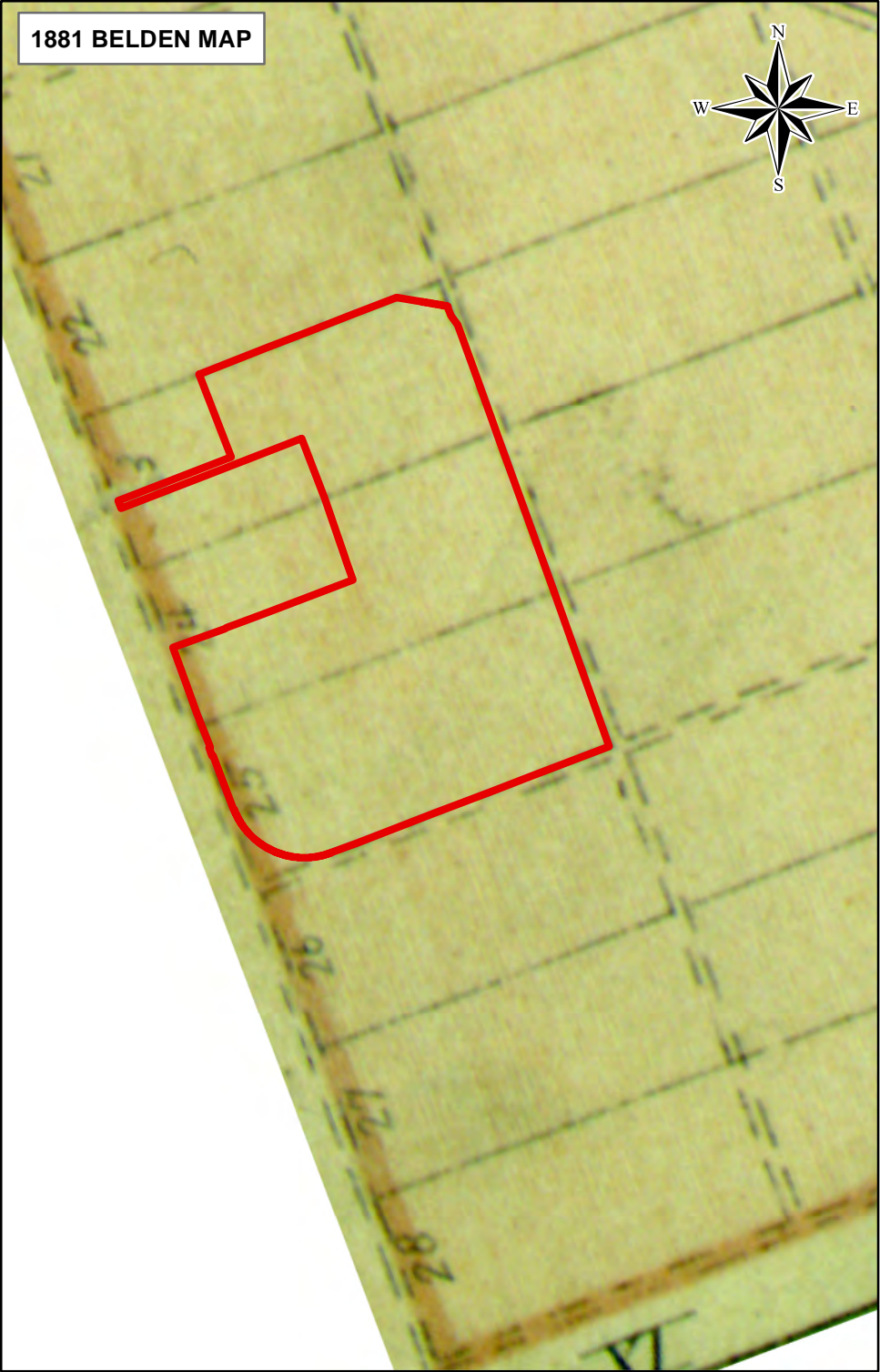
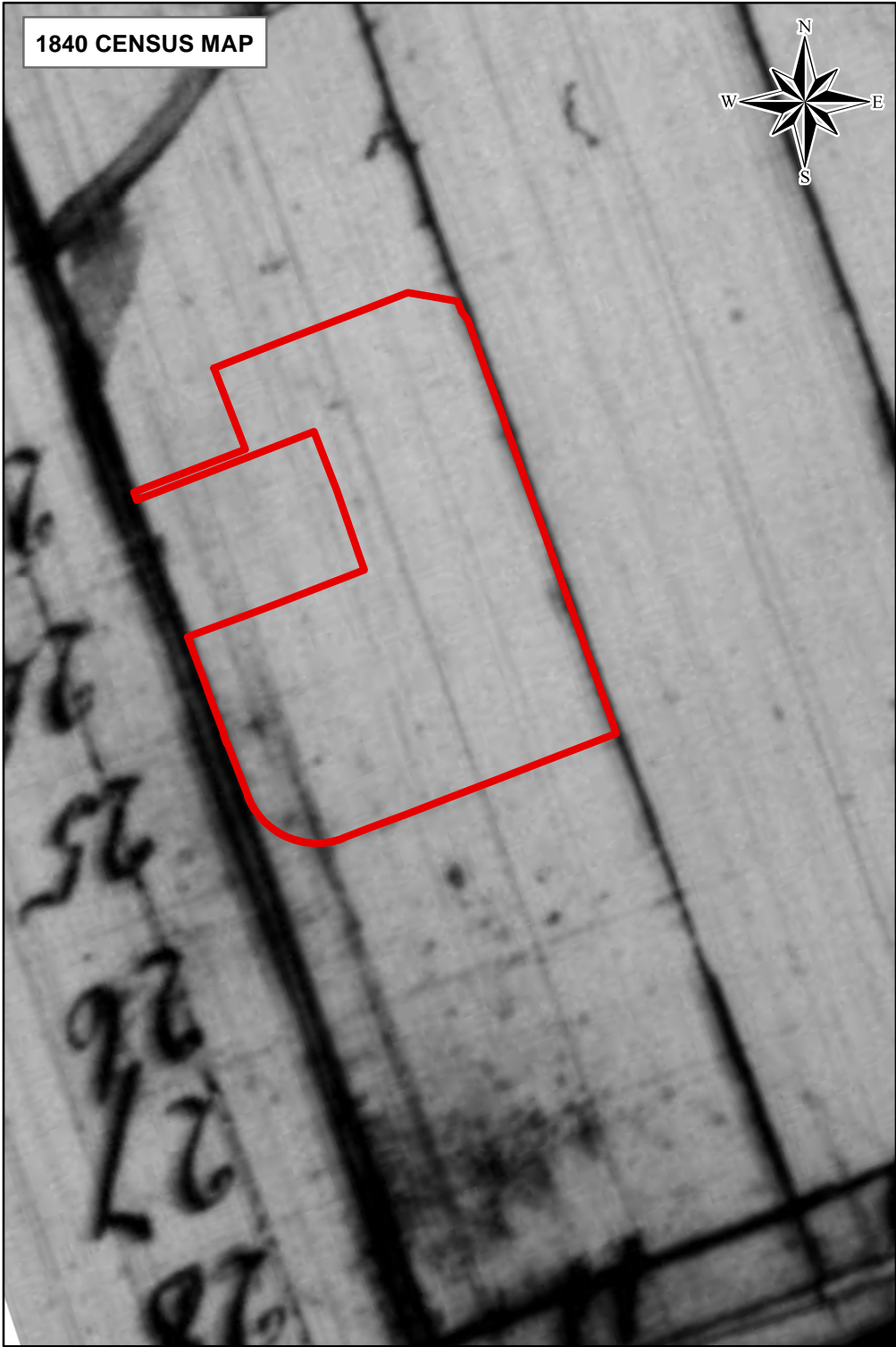
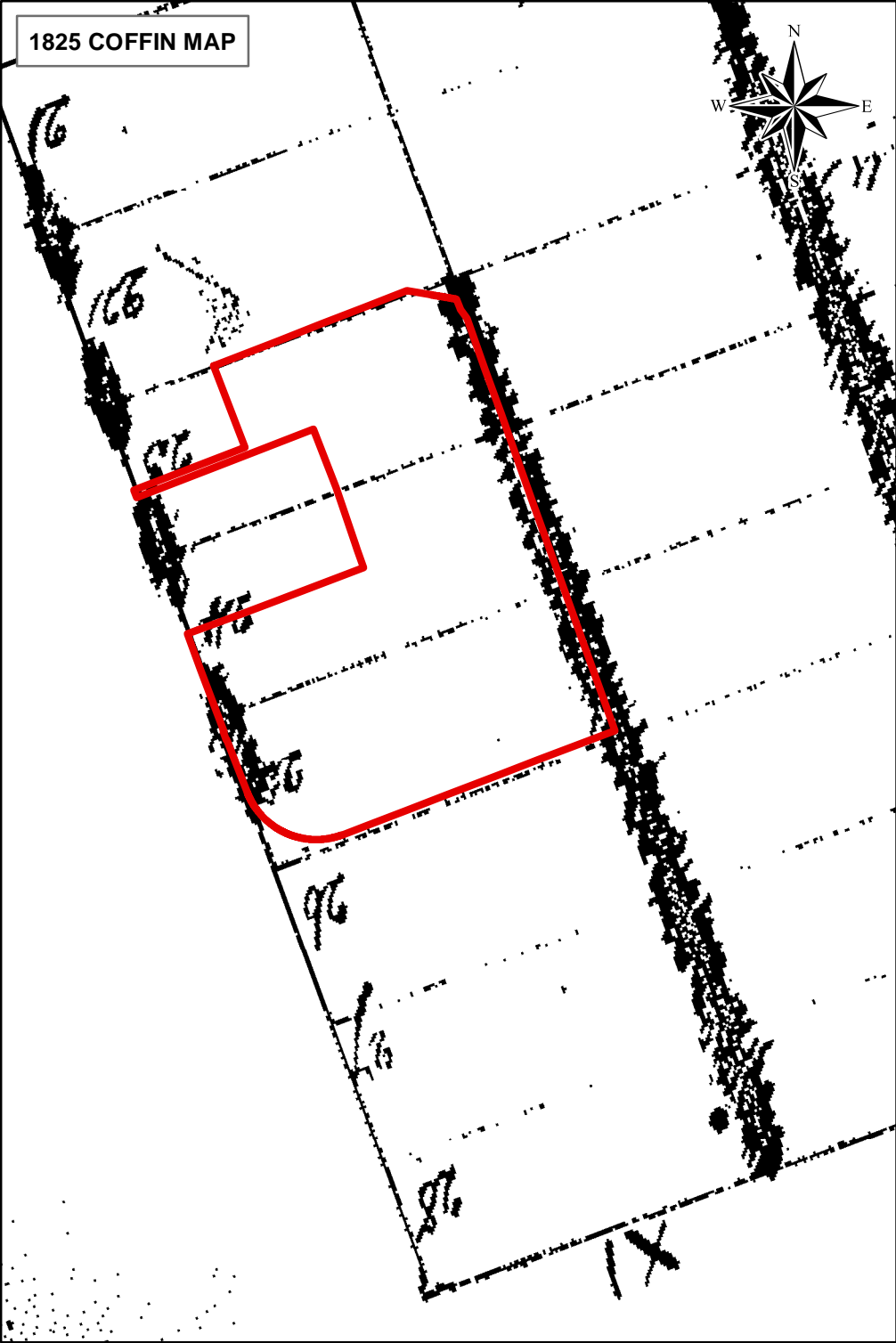
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REFERENCE

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BING MAPS AERIAL, SEPT. 2010, PROVIDED BY ARCGIS ONLINE, ESRI, 2012.
SOURCE: (C) 2010 MICROSOFT CORPORATION AND ITS DATA SUPPLIERS.
LAND INFORMATION ONTARIO (LIO) DATA PRODUCED BY GOLDER ASSOCIATES LTD. UNDER LICENCE FROM ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2012.
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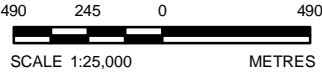
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LEGEND

 PROPERTY BOUNDARY




NOTE

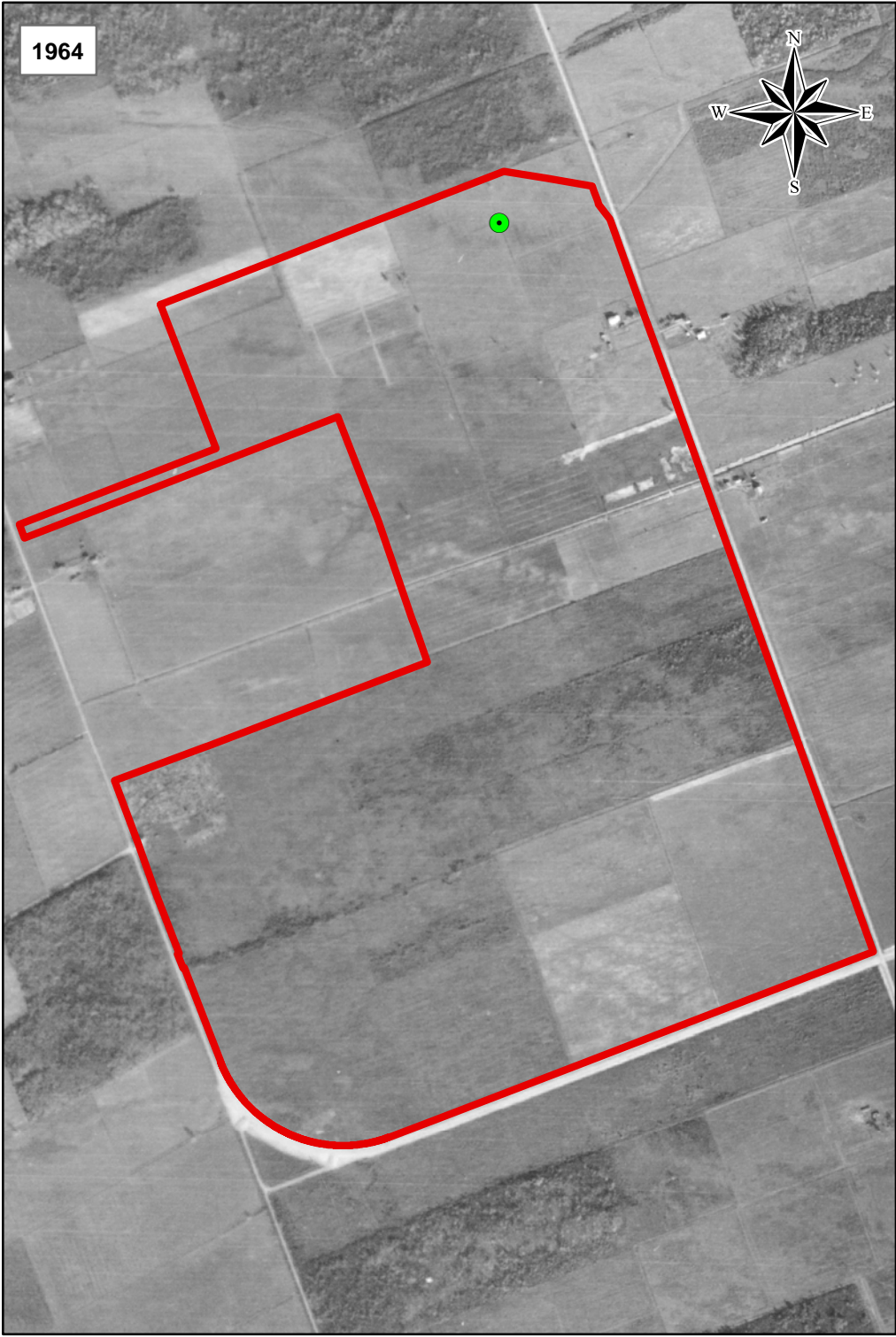
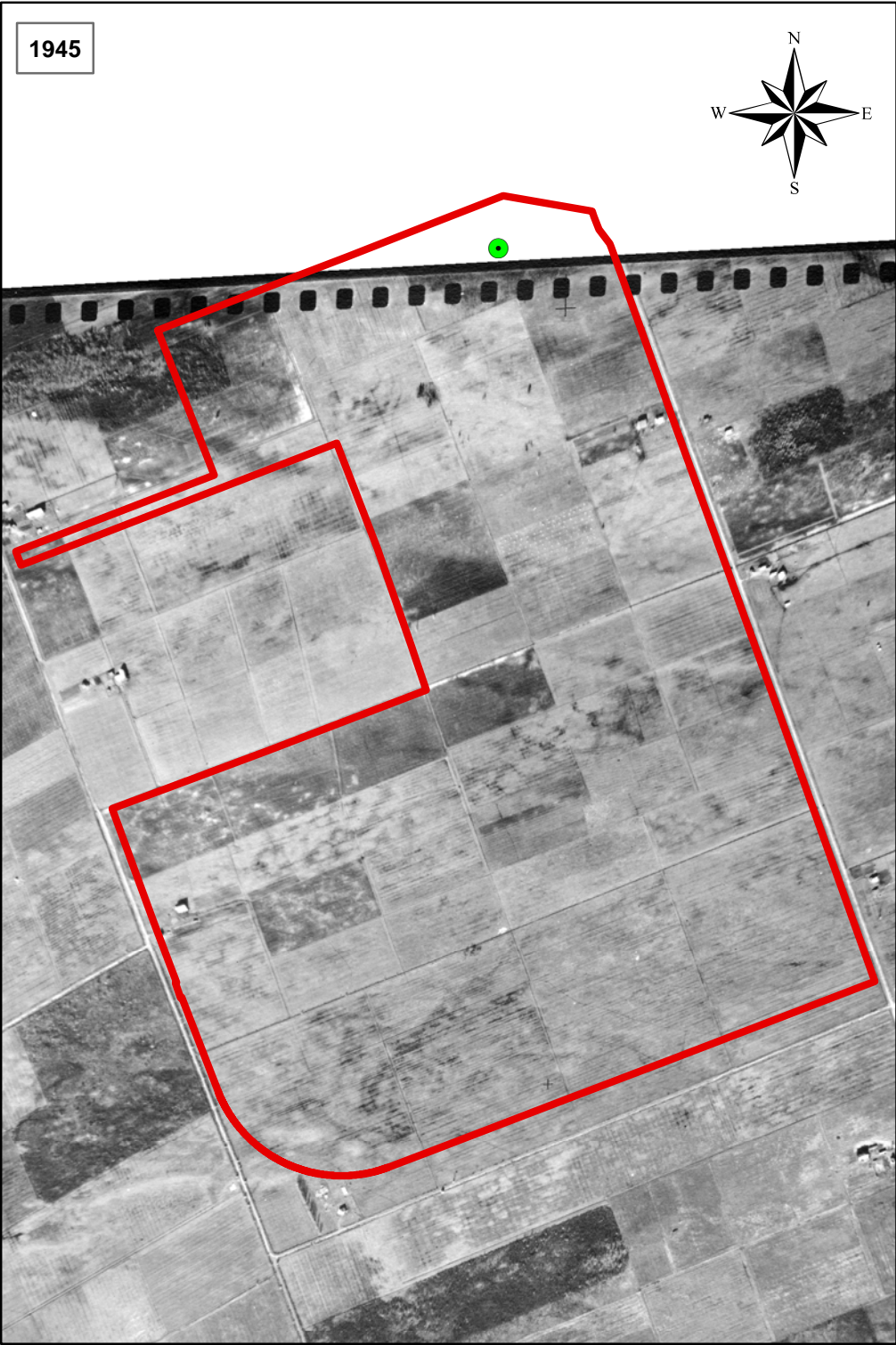
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REFERENCE



1826 COFFIN MAP - CUMBERLAND TOWNSHIP (RUSSELL COUNTY).
1840 CENSUS MAP - CUMBERLAND TOWNSHIP (RUSSELL COUNTY) - NATIONAL ARCHIVES OF CANADA, REEL NUMBER M-7735.
1881 BELDEN MAP - CUMBERLAND TOWNSHIP (RUSSELL COUNTY).
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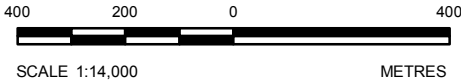
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LEGEND

-  EVIDENCE OF ABANDONED BEAR BROOK CREEK
-  PROPERTY BOUNDARY




NOTE

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REFERENCE

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TITLE		AIR PHOTOS			
	PROJECT No. 12-1125-0045			SCALE AS SHOWN	REV. 0.0
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LEGEND

ROAD

CONTOUR LINE, (5m)

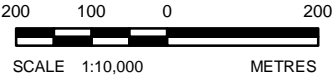
SURFACE WATER FEATURE

PROPERTY BOUNDARY

LOW/NO ARCHAEOLOGICAL POTENTIAL

1

DESTROYED 19th/20th CENTURY FARMSTEAD



NOTE

THIS FIGURE IS TO BE READ IN CONJUNCTION WITH THE ACCOMPANYING GOLDER ASSOCIATES LTD. REPORT

REFERENCE


AIR PHOTOS PROVIDED BY CITY OF OTTAWA, FEBRUARY, 2012.
BING MAPS AERIAL, SEPT. 2010, PROVIDED BY ARCGIS ONLINE, ESRI, 2012.
SOURCE: (C) 2010 MICROSOFT CORPORATION AND ITS DATA SUPPLIERS.
LAND INFORMATION ONTARIO (LIO) DATA PRODUCED BY GOLDER ASSOCIATES LTD. UNDER LICENCE FROM ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2012.
PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: UTM ZONE 18

PROJECT

ENVIRONMENTAL ASSESSMENT OF THE
CAPITAL REGION RESOURCE RECOVERY CENTRE

TITLE

AREA OF
ARCHAEOLOGICAL POTENTIAL



Golder Associates
Ottawa, Ontario

PROJECT No.	12-1125-0045	SCALE AS SHOWN	REV. 0
DESIGN	EW JUN. 2013	MAP 5	
GIS	BR MAY 2014		
CHECK	EW AUG. 2014		
REVIEW	HJD AUG. 2014		



APPENDIX A

Photographic Catalogue



TECHNICAL SUPPORT DOCUMENT #6 ARCHAEOLOGICAL ASSESSMENT

Photo No.	Description	Dir.	Date	Photographer
1211250045-D01	View across area of archaeological potential, Highway 417 is located behind woods on the right	NW	22/10/2012	TR
1211250045-D02	View along drainage channel	W	22/10/2012	TR
1211250045-D03	View along drainage channel	S	22/10/2012	TR
1211250045-D04	View of ploughed fields	W	22/10/2012	TR
1211250045-D05	View along drainage channel	W	22/10/2012	TR
1211250045-D06	View of ploughed fields	W	22/10/2012	TR
1211250045-D07	View of ploughed fields and drainage channel	NW	22/10/2012	TR
1211250045-D08	View of ploughed fields	SW	22/10/2012	TR
1211250045-D09	Typical area of woodlot at the northern end of the study area	W	22/10/2012	TR
1211250045-D10	Typical area of woodlot at the northern end of the study area	W	22/10/2012	TR
1211250045-D11	Ploughed fields	NW	22/10/2012	TR
1211250045-D12	Typical scrubland and secondary forest	W	22/10/2012	TR
1211250045-D13	Ploughed fields and scrub	W	22/10/2012	TR
1211250045-D14	Man-made drainage and culvert flowing through the study area	W	22/10/2012	TR
1211250045-D15	Man-made drainage and culvert flowing through the study area	SW	22/10/2012	TR
1211250045-D16	Laneway to farmstead	W	22/10/2012	TR
1211250045-D17	Frontier Road	N	22/10/2012	TR
1211250045-D18	Typical scrubland and secondary forest	NW	22/10/2012	TR
1211250045-D19	Graveled parking lot on Pomerleau Property in southwest corner	SW	18/06/2013	EW
1211250045-D20	Man-made drainage and parking lot area in southwest corner of Pomerleau site	NE	18/06/2013	EW
1211250045-D21	Graveled parking lot on Pomerleau Property in southwest corner	N	18/06/2013	EW
1211250045-D22	Future road access with man-made drainage from Boundary Rd.	W	18/06/2013	EW
1211250045-D23	Man-made drainage and parking lot area in southwest corner of Pomerleau site	NE	18/06/2013	EW



TECHNICAL SUPPORT DOCUMENT #6 ARCHAEOLOGICAL ASSESSMENT

Photo No.	Description	Dir.	Date	Photographer
1211250045-D24	Man-made drainage and parking lot area in southwest corner of Pomerleau site	NE	18/06/2013	EW
1211250045-D25	Man-made drainage and parking lot area in southwest corner of Pomerleau site	N	18/06/2013	EW
1211250045-D26	Man-made drainage and parking lot area in southwest corner of Pomerleau site	NE	18/06/2013	EW
1211250045-D27	Man-made drainage and stripped in southwest corner of Pomerleau site	NE	18/06/2013	EW
1211250045-D28	Typical stripped area throughout Pomerleau site	N	18/06/2013	EW
1211250045-D29	Man-made drainage and stripped in southwest corner of Pomerleau site	NE	18/06/2013	EW
1211250045-D30	Man-made drainage and stripped in southwest corner of Pomerleau site	NE	18/06/2013	EW
1211250045-D31	Typical stripped area throughout Pomerleau site	N	18/06/2013	EW
1211250045-D32	Typical stripped area throughout Pomerleau site	N	18/06/2013	EW
1211250045-D33	Typical stripped area throughout Pomerleau site	NE	18/06/2013	EW
1211250045-D34	Typical stripped area throughout Pomerleau site	NE	18/06/2013	EW
1211250045-D35	Evidence of stripping activity on site	N	18/06/2013	EW
1211250045-D36	Man-made drainage east along Pomerleau property	N	18/06/2013	EW
1211250045-D37	View of disturbed land caused by stripping	N	18/06/2013	EW
1211250045-D38	Poor drainage in northeast area	N	18/06/2013	EW
1211250045-D39	Poor drainage in northeast area	NW	18/06/2013	EW
1211250045-D40	Poor drainage in northeast area	NW	18/06/2013	EW
1211250045-D41	Exposed subsoil caused by stripping	N	18/06/2013	EW
1211250045-D42	Exposed subsoil caused by stripping	W	18/06/2013	EW
1211250045-D43	Exposed subsoil caused by stripping and man-made drainage in north area of Pomerleau property	NW	18/06/2013	EW
1211250045-D44	Exposed subsoil caused by stripping and man-made drainage in north area of Pomerleau property	NW	18/06/2013	EW
1211250045-D45	View across central Pomerleau site area taken from above topsoil mound	NW	18/06/2013	EW
1211250045-D46	View across central Pomerleau site area taken from above topsoil mound	W	18/06/2013	EW



TECHNICAL SUPPORT DOCUMENT #6 ARCHAEOLOGICAL ASSESSMENT

Photo No.	Description	Dir.	Date	Photographer
1211250045-D47	View across central Pomerleau site area taken from above topsoil mound	N	18/06/2013	EW
1211250045-D48	Exposed subsoil caused by stripping and man-made drainage in north area of Pomerleau property	N	18/06/2013	EW
1211250045-D49	View across site	NW	18/06/2013	EW
1211250045-D50	Exposed subsoil caused by stripping and man-made drainage in north area of Pomerleau property	W	18/06/2013	EW
1211250045-D51	Exposed subsoil caused by stripping and man-made drainage in north area of Pomerleau property	E	18/06/2013	EW
1211250045-D52	View across site in northeast corner of Pomerleau site	W	18/06/2013	EW
1211250045-D53	View across site in northeast corner of Pomerleau site	W	18/06/2013	EW
1211250045-D54	View across site in northeast corner of Pomerleau site	SW	18/06/2013	EW
1211250045-D55	View across centre of site with road access for large equipment	W	18/06/2013	EW

As a global, employee-owned organisation with over 50 years of experience, Golder Associates is driven by our purpose to engineer earth's development while preserving earth's integrity. We deliver solutions that help our clients achieve their sustainable development goals by providing a wide range of independent consulting, design and construction services in our specialist areas of earth, environment and energy.

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