November 8, 2016

STAGE 1 AND 2 ARCHAEOLOGICAL ASSESSMENT

Stage 1 and 2 Archaeological Assessment, Part of Lots 51 and 52 Concession West of Hastings Road, Faraday Township, Ontario

ORIGINAL REPORT

Submitted to:
Freymond Lumber Ltd.
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Licence Number: P243
PIF: P243-0311-2015

Report Number: 1543500-1000-R001

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Executive Summary

A Stage 1-2 Archaeological Assessment was conducted on behalf of Freymond Lumber Ltd. (the client), for a study area located on part of Lot 51 and 52, Concession West of Hastings Road (WHR), Faraday Township, County of Hastings, Ontario. The licenced study area is approximately 33.3 hectares, consisting of mature woodlot and land currently used as a lumber yard. This proposed assessment has been undertaken prior to development in order to meet the requirements of a standard condition of development approval under the *Ontario Aggregate Resources Act* R.S.O. 1990 c. A.8, in advance of a proposed quarry.

The objective of the Stage 1 assessment was to compile all available information about the known and potential archaeological resources within the study area and to provide direction for the protection, management and/or recovery of these resources, consistent with Ministry of Tourism, Culture and Sport (MTCS) guidelines (MTCS 2011). The Stage 1 background study found potential to exist within the study area for the recovery of archaeological resources.

The objectives of the Stage 2 archaeological assessment were to provide an overview of archaeological resources on the property and to determine whether any of the resources might be artifacts and archaeological sites with cultural heritage value or interest and to provide specific direction for the protection, management and/or recovery of these resources. Areas recommended for Stage 2 assessment were surveyed through systematic test pitting at five metre intervals, as per Sections 2.1.1 and 2.1.2 of the *Standards and Guidelines for Consultant Archaeologists* (MTCS 2011).

No artifacts or features were uncovered during the Stage 2 test pit survey.

The study area was sufficiently assessed and no items of cultural heritage value or interest were recovered; no further archaeological assessment of the study area is required. This conclusion is consistent with the cultural heritage value or interest evaluation criteria in Section 2.2 of the *Standards and Guidelines for Consultant Archaeologists* (MTCS 2011).

It is recommended that the study area located on part of Lots 51 and 52, Concession WHR, Faraday Township, Ontario be considered free from further archaeological concern. No further archaeological assessment is necessary.

The MTCS is asked to review the results and recommendations presented herein, to accept this report into the Ontario Public Register of Archaeological Reports and to inform the proponent that the provincial concerns for archaeological resources for this study area have been met.

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.

Project Personnel

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Acknowledgments

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Ministry of Tourism, Culture and Sport	Robert von Bitter

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1.1 Development Context

A Stage 1-2 Archaeological Assessment was conducted on behalf of Freymond Lumber Ltd. (the client), for a study area located on part of Lot 51 and 52, Concession West of Hastings Road (WHR), Faraday Township, County of Hastings, Ontario. The licenced study area is approximately 33.3 hectares, consisting of mature woodlot and land currently used as a lumber yard. This proposed assessment has been undertaken prior to development in order to meet the requirements of a standard condition of development approval under the *Ontario Aggregate Resources Act* R.S.O. 1990 c. A.8, in advance of a proposed quarry.

1.1.1 Stage 1 Archaeological Assessment Objectives

The objectives of the Stage 1 Archaeological Overview/Background Study were to compile all available information about the known and potential cultural 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 Ministry of Tourism, Culture and Sport's (MTCS) *Standards and Guidelines for Consultant Archaeologists* (MTCS 2011), the objectives of the Stage 1 Archaeological Overview/Background Study were 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 to 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 Golder archaeologists employed the following research strategies:

- A review of relevant archaeological, historic and environmental literature pertaining to the study area;
- An examination of the Ontario Archaeological Sites Database (OASD) to determine the presence of known archaeological sites in and around the project area; and
- A review of the land use history, including pertinent historic maps.

Given indicators of archaeological potential stemming from desktop research during the Background Study, a Property Inspection (Optional) was not conducted and, instead, the first field visit was to conduct the Stage 2 Property Assessment through test pit survey. This strategy is consistent with Section 1.2 of the *Standards and Guidelines for Consultant Archaeologists* (MTCS 2011).

In addition to the consultation of records kept by the MTCS, the Background Study was conducted online and in Golder's corporate library.

1.1.2 Stage 2 Archaeological Assessment Objectives

The objectives of the Stage 2 Property Assessment were to provide an overview of archaeological resources within the project area and to determine whether any of the resources might be artifacts and/or archaeological sites with cultural heritage value or interest. In compliance with the *Standards and Guidelines for Consultant Archaeologists* (MTCS 2011), the Stage 2 property assessment:

- Documents the presence or absence archaeological resources with cultural heritage value or interest in the study area;
- Determines whether the study area requires further Archaeological Assessment; and/or
- Recommends no further Archaeological Assessment in the study area.

To meet these objectives Golder archaeologists conducted:

- Test pit survey at five metre intervals within the study area, as per Section 2.1.2 of the MTCS' *Standards and Guidelines for Consultant Archaeologists* (MTCS 2011), as well as test pitting to within one metre of existing built structures as per Section 2.1.2, Standard 4 of the MTCS' *Standards and Guidelines for Consultant Archaeologists* (MTCS 2011).

Permission to enter the property was given by Mr. Lou Freymond (Freymond Lumber Ltd.), on November 9, 2015. The Stage 1 and 2 Archaeological Assessments were conducted under Project Information Form (PIF) P243-0311-2015 issued to Dr. Carla Parslow of Golder.

1.2 Historical Context

1.2.1 Pre-contact Aboriginal Documentation

Previous archaeological assessments and research surveys have demonstrated that the Bancroft area was occupied by pre-contact Aboriginal people.

While our current understanding of the local sequence of human occupation of the Bancroft area is incomplete it is possible to deduce a basic culture chronology of the area based on the findings of archaeological investigations conducted across Ontario. The following subsections outline the generally accepted temporal sequence of human occupation of Ontario following the recession of the last ice sheet and resulting post glacial lakes.

1.2.1.1 Paleo Period

The first human occupation of Ontario began just after the end of the Wisconsin Glacial period. Although there was a complex series of ice retreats and advances which played a large role in shaping the local topography, southwestern Ontario was finally ice free by 12,500 years ago.

The first human settlement can be traced back 11,000 years, when this area was settled by Native groups that had been living south of the Great Lakes. These early Native inhabitants have been called "Paleo-Indians", which literally means old or ancient Indians (Ellis and Deller 1990:37).

Our current understanding of Early Paleo period settlement patterns suggest that small bands, consisting of probably no more than 25-35 individuals, followed a pattern of seasonal mobility extending over large territories (Ellis and Deller 1990:54). One of the most thoroughly studied of these groups followed a seasonal round that extended from as far south as Chatham to the Horseshoe Valley north of Barrie. Early Paleo sites tend to be located in elevated locations on well-drained loamy soils.

Many of the known sites were located on former beach ridges associated with Lake Algonquin, the post-glacial lake occupying the Lake Huron/Georgian Bay basin. There are a few extremely large Early Paleo sites, such as one located close to Parkhill, Ontario, which covered as much as six hectares (Ellis and Deller 1990:51).

It appears that these sites were formed when the same general locations were occupied for short periods of time over the course of many years. Given their placement in locations conducive to the interception of migratory mammals such as caribou, it has been suggested that they may represent communal hunting camps (Ellis and Deller 1990:51). There are also smaller Early Paleo camps scattered throughout the interior of southwestern Ontario, usually situated adjacent to wetlands. The most recent research suggests that population densities were very low during the Early Paleo period (Ellis and Deller 1990:54). Because this is the case, Early Paleo sites are exceedingly rare.

Isolated finds of the distinctive, parallel-flaked Paleo-Indian spear points have been recorded in the Rideau Lakes and north of Kingston (Watson 1982; Earl and Kennett 2000).

While the Late Paleo period (8400-8000 B.C.) is more recent, it has been less well researched, and is consequently more poorly understood. By this time the environment of southwestern Ontario was coming to be dominated by closed coniferous forests with some minor deciduous trees (Ellis and Deller 1990:60). It seems that many of the large game species that had been hunted in the early part of the Paleo period had either moved further north, or as in the case of the mastodons and mammoths, become extinct (Ellis and Deller 1990).

As in the early Paleo period, late Paleo period peoples covered large territories as they moved about in response to seasonal resource fluctuations. On a province wide basis Late Paleo-Indian projectile points are far more common than Early Paleo materials, suggesting a relative increase in population (Ellis and Deller 1990:62).

The end of the Paleo period was heralded by numerous technological and cultural innovations which may be best explained in relation to the dynamic nature of the post-glacial environment and region-wide population increases.

1.2.1.2 Archaic Period

During the Early Archaic period (8000-6000 B.C.), the jack and red pine forests that characterized the Late Paleo-Indian environment were replaced by forests dominated by white pine with some associated deciduous trees (Ellis et al. 1990:68-69). One of the more notable changes in the Early Archaic period is the appearance of side and corner-notched projectile points.

Other significant innovations include the introduction of ground stone tools such as celts and axes, suggesting the beginnings of a simple woodworking industry (Ellis and Deller 1990:65). The presence of these often large and not easily portable tools suggests there may have been some reduction in the degree of seasonal movement, although it is still suspected that population densities were quite low, and band territories large.

During the Middle Archaic period (6000-2500 B.C.) the trend to more diverse toolkits continued, as the presence of netsinkers suggest that fishing was becoming an important aspect of the subsistence economy. It was also at this time that "bannerstones" were first manufactured (Ellis et al. 1990:65). Bannerstones are carefully crafted ground stone devices that served as a counterbalance for "atlatls" or spear-throwers. Another characteristic of the Middle Archaic is an increased reliance on local, often poor quality chert resources for the manufacturing of projectile points. It seems that during earlier periods, when groups occupied large territories, it was possible for them to visit a primary outcrop of high quality chert at least once during their seasonal round. However, during the Middle Archaic, groups inhabited smaller territories that often did not encompass a source of high quality raw material. In these instances lower quality materials which had been deposited by the glaciers in the local till and river gravels were utilized.

This reduction in territory size was probably the result of gradual region-wide population growth which led to the infilling of the landscape (Ellis et al. 1990:67). This process resulted in a reorganization of Native subsistence practices, as more people had to be supported from the resources of a smaller area.

During the latter part of Middle Archaic, technological innovations such as fish weirs have been documented as well as stone tools especially designed for the preparation of wild plant foods. It is also during the latter part of the Middle Archaic period that long distance trade routes began to develop, spanning the northeastern part of the continent. In particular, native copper tools manufactured from a source located northwest of Lake Superior were being widely traded (Ellis et al. 1990:66). By 3500 B.C. the local environment had stabilized in a near modern form (Ellis et al. 1990:69).

During the Late Archaic (2500-900 B.C.) the trend towards decreased territory size and a broadening subsistence base continued. Late Archaic sites are far more numerous than either Early or Middle Archaic sites, and it seems that the local population had definitely expanded. It is during the Late Archaic that the first true cemeteries appear (Ellis et al. 1990:66). Before this time individuals were interred close to the location where they died. During the Late Archaic, if an individual died while his or her group happened to be at some distance from their group cemetery, the bones would be kept until they could be placed in the cemetery. Consequently, it is not unusual to find disarticulated skeletons, or even skeletons lacking minor elements such as fingers, toes or ribs, in Late Archaic burial pits.

The appearance of cemeteries during the Late Archaic has been interpreted as a response to increased population densities and competition between local groups for access to resources. It is argued that cemeteries would have provided strong symbolic claims over a local territory and its resources. These cemeteries are often located on heights of well-drained sandy/gravel soils adjacent to major watercourses (Ellis et al. 1990:66-67, 106, 117).

This suggestion of increased territoriality is also consistent with the regionalized variation present in Late Archaic projectile point styles. It was during the Late Archaic that distinct local styles of projectile points appear. Also during the Late Archaic the trade networks which had been established during the Middle Archaic continued to flourish. Native copper from northern Ontario and marine shell artifacts from as far away as the Mid-Atlantic coast are frequently encountered as grave goods (Ellis et al. 1990:117; Ellis et al. 2009:824-825). Other artifacts such as polished stone pipes and banded slate gorgets also appear on Late Archaic sites. One of the more unusual and interesting of the Late Archaic artifacts is the "birdstone" (Ellis et al. 1990:111). Birdstones are small, bird-like effigies usually manufactured from green banded slate.

1.2.1.3 Woodland Period

The Early Woodland period (900-200 B.C.) 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 (Spence et al. 1990:137). 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 (Spence et al. 1990:129).

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 shell during the Early Woodland period (Spence et al. 1990:129). During the last 200 years of the Early Woodland period, projectile points manufactured from high quality raw materials from the American Midwest begin to appear in southern Ontario (Spence et al. 1990:138).

In terms of settlement and subsistence patterns, the Middle Woodland (200 B.C.-900 A.D.) 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 (Spence et al. 1990:151). Some Middle Woodland sites have produced literally thousands of bones from spring spawning species such as walleye and sucker. Nuts such as acorns were also being collected and consumed (Spence et al. 1990:134). In addition, Middle Woodland peoples relied much more extensively on ceramic technology. Middle Woodland vessels are often 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 on the valley floor of major rivers. 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 over 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 at least Middle Archaic times, and provides a prelude to the developments that follow during the Late Woodland period.

The Late Woodland period began with a shift in settlement and subsistence patterns involving an increasing reliance on corn horticulture (Fox 1990:185; Smith 1990; Williamson 1990:312). Corn may have been introduced into southwestern Ontario from the American Midwest as early as 600 A.D. (Fox 1990:174; Williamson 1990:312). However, it did not become a dietary staple until at least three to four hundred years later.

The first agricultural villages in southern Ontario date to the 10th century A.D. (Williamson 1990:291). Unlike the riverine base camps of the Middle Woodland period, these sites are located in the uplands, on well-drained sandy soils.

Categorized as "Early Ontario Iroquoian" (900-1300 A.D.), many archaeologists believe that it is possible to trace a direct line from the Iroquoian groups which inhabited southwestern Ontario at the time of first European contact, to these early villagers.

Village sites dating between 900 and 1300 A.D., share many attributes with the historically reported Iroquoian sites, including the presence of longhouses and sometimes palisades. However, these early longhouses were actually not all that large, averaging only 12.4 metres in length (Dodd et al. 1990:349; Williamson 1990:304-305). It is also quite common to find the outlines of overlapping house structures, suggesting that these villages were occupied long enough to necessitate re-building. The Jesuits reported that the Huron moved their villages once every 10-15 years, when the nearby soils had been depleted by farming and conveniently collected firewood grew scarce (Pearce 2010). It seems likely that Early Ontario Iroquoians occupied their villages for considerably longer, as they relied less heavily on corn than did later groups, and their villages were much smaller, placing less demand on nearby resources.

Judging by the presence of carbonized corn kernels and cob fragments recovered from sub-floor storage pits, agriculture was becoming a vital part of the Early Ontario Iroquoian economy. However, it had not reached the level of importance it would in the Middle and Late Ontario Iroquoian periods. There is ample evidence to suggest that more traditional resources continued to be exploited, and comprised a large part of the subsistence economy. Seasonally occupied special purpose sites relating to deer procurement, nut collection, and fishing activities, have all been identified (Williamson 1990:317). While beans are known to have been cultivated later in the Late Woodland period, they have yet to be identified on Early Ontario Iroquoian sites (Williamson 1990:291).

The Middle Ontario Iroquoian period (1300-1400 A.D.) witnessed several interesting developments in terms of settlement patterns and artifact assemblages. Changes in ceramic styles have been carefully documented, allowing the placement of sites in the first or second half of this 100-year period. Moreover, villages, which averaged approximately 0.6 hectares in extent during the Early Ontario Iroquoian period, now consistently range between one and two hectares.

House lengths also change dramatically, more than doubling to an average of 30 metres, while houses of up to 45 metres have been documented. This radical increase in longhouse length has been variously interpreted. The simplest possibility is that increased house length is the result of a gradual, natural increase in population (Dodd et al. 1990:323, 350, 357; Smith 1990). However, this does not account for the sudden shift in longhouse lengths around 1300 A.D. Other possible explanations involve changes in economic and socio-political organization (Dodd et al. 1990:357). One suggestion is that during the Middle Ontario Iroquoian period small villages were amalgamating to form larger communities for mutual defence (Dodd et al. 1990:357). If this was the case, the more successful military leaders may have been able to absorb some of the smaller family groups into their households, thereby requiring longer structures.

This hypothesis draws support from the fact that some sites had up to seven rows of palisades, indicating at least an occasional need for strong defensive measures. There are, however, other Middle Ontario Iroquoian villages which had no palisades present (Dodd et al. 1990:358). More research is required to evaluate these competing interpretations.

The lay-out of houses within villages also changes dramatically by 1300 A.D. During the Early Ontario Iroquoian period villages were haphazardly planned at best, with houses oriented in various directions. During the Middle Ontario Iroquoian period villages are organized into two or more discrete groups of tightly spaced, parallel aligned, longhouses.

It has been suggested that this change in village organization may indicate the initial development of the clans which were a characteristic of the historically known Iroquoian peoples (Dodd et al. 1990:358).

Initially at least, the Late Ontario Iroquoian period (1400-1650 A.D.) continues many of the trends which have been documented for the proceeding century. For instance, between 1400 and 1450 A.D. house lengths continue to grow, reaching an average length of 62 metres.

One longhouse excavated on a site southwest of Kitchener stretched an incredible 123 metres (Lennox and Fitzgerald 1990:444-445). After 1450 A.D., house lengths begin to decrease, with houses dating between 1500-1580 A.D. averaging only 30 metres in length. Why house lengths decrease after 1450 A.D. is poorly understood, although it is believed that the even shorter houses witnessed on historic period sites can be at least partially attributed to the population reductions associated with the introduction of European diseases such as smallpox (Lennox and Fitzgerald 1990:405, 410).

Village size also continues to expand throughout the Late Ontario Iroquoian period, with many of the larger villages showing signs of periodic expansions. The Late Middle Ontario Iroquoian period and the first century of the Late Ontario Iroquoian period was a time of village amalgamation.

One large village situated in London expanded one-fifth of its size (Anderson 2009) and one village north of Toronto have been shown to have expanded on no fewer than five occasions (Ramsden 1990:374-375). These large villages were often heavily defended with numerous rows of wooden palisades, suggesting that defence may have been one of the rationales for smaller groups banding together.

After 1525 A.D. communities of pre-contact Aboriginals of the Late Ontario Iroquoian period who had formerly lived throughout southwestern Ontario as far west as the Chatham area moved further east to the Hamilton area. During the late 1600s and early 1700s, the French explorers and missionaries reported a large population of Iroquoian peoples clustered around the western end of Lake Ontario. They called these people the "Neutral", because they were not involved in the on-going wars between the Huron and the League Iroquois located in upper New York State. It has been satisfactorily demonstrated that the Late Ontario Iroquoian communities which were located in southwestern Ontario as far west as the Chatham area were ancestral to at least some of the Neutral Nation groups (Lennox and Fitzgerald 1990; Smith 1990:283). For this reason the Late Ontario Iroquoian groups which occupied southwestern Ontario prior to the arrival of the French are often identified as "Prehistoric Neutral". They occupied a large area extending along the Grand River and throughout the Niagara Peninsula as far east as Fort Erie and Niagara Falls (Lennox and Fitzgerald 1990:448).

1.2.2 Post-Contact or Historic Aboriginal Documentation

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

The nature of their settlement size, population distribution, and material culture shifted as European settlers encroached upon their territory. However, despite this shift, “written accounts of material life and livelihood, the correlation of historically recorded villages to their archaeological manifestations, and the similarities of those sites to more ancient sites have revealed an antiquity to documented cultural expressions that confirms a deep historical continuity to Iroquoian systems of ideology and thought” (Ferris 2009:114). As a result, First Nations peoples of

Ontario have left behind archaeologically significant resources throughout Ontario which show continuity with past peoples, even if they have not been recorded in historical Euro-Canadian documentation.

The study area falls within the limits of the Williams Treaty AF conducted between the Crown and the Chippewas and Mississauga. The Chippewas signed the treaty on October 31, 1923, while the Mississauga signed on November 15, 1923 under Clause 1 (Morris 1943:61).

Although no Aboriginal engagement was conducted as part of the Stage 1 and 2 assessment, should pre- or post-contact site(s) be identified during the Stage 2 survey and recommended for Stage 3 assessment, Aboriginal engagement measures consistent with MTCS standards will need to be undertaken.

1.2.3 Historic Euro-Canadian Documentation

1.2.3.1 Hastings County

Hastings County is a long, linear county that extends from Lake Ontario into the Haliburton area; the size and linear length of the County is reflected in the wide range of environmental conditions encountered throughout the area. Hasting County was first established in 1792; at this time the southern townships closest to Lake Ontario were established. In 1821 the south-central townships of Marmora, Madoc and Elzevir were established. In 1858 Hasting's 12 northern townships were created, including Faraday Township where the study area is located. 19th century settlement for the most part was clustered in the southern townships and centered on Belleville. Ore and iron mines in the central townships, particularly Marmora and Madoc were influential in attracting settlers to the central part of the County in the 19th century.

1.2.3.2 Lot 51 and 52, Concession West of Hastings Road, Faraday Township

The study area is located on part of Lots 51 and 52, Concession WHR, in Faraday Township. As detailed in Boyce 1967: 338-339:

> *The surveying of Hastings Road along the eastern boundary of Faraday Township in the 1850's showed the problems of introducing settlement and agriculture to the area. L'Amble Lake and a steep bluff nearby forced the surveyor, Publuis V. Elmore, to veer east. This was the first large deviation in the Hastings Road…In 1857, Quintin Johnston surveyed much of the land west of the Hastings Road. He found the southern sections to be largely unsuited for agriculture and noted that Concessions X and XI were generally "Rough, Ridgy, Stony, Rocky and Swampy". A pocket of land in the north-east corner of Faraday, in the valley of the York River, was described as "Sandy, but good". Johnston believed the best place for settlement was at the site of the present village of Bancroft…most of the township's growth came after 1949, when the late Arthur H. Shore confirmed the presence of uranium.*

Map 2 indicates that no structures were present on the property in 1881.

1.3 Archaeological Context

1.3.1 Natural Environment

The study area is situated within the "Algonquin Highlands" physiographic region, an area that has soils that are low in nutrients and as such much of the region remains forested as the land is undesirable for agriculture use. According to Chapman and Putman 1984: 211 the Algonquin Highlands are described as:

> *locally the relief is rough, rounded knops and ridges standing up usually 50 to 200 feet but with occasional ridges 500 feet high. There are frequent outcrops of bare rock ….The soils are generally shallow but thickness over the bedrock varies greatly over short distances.*

The soils of the study area are comprised of Bancroft sandy loam and Rockland. Each of these soils types comprises approximately fifty percept of the study area. Gillespie et al. (1962) describe the Bancroft sandy loam as having good drainage, suitable for crop agriculture but indicate that less than top yields are obtained from this soil. The Rockland is described as being able to support some pasture use but is inferior for this use when compared to other soils types due to the thin topsoil overlying a moderate to steeply sloping bedrock (Gillespie et al. 1962).

1.3.2 Land Use and Current Conditions

The study area comprises approximately 33.3 hectares and currently consists primarily of densely forested undulating to steeply sloped lands with a lesser section currently being used as a lumber yard.

1.3.3 Registered Archaeological Sites and Previous Archaeological Assessments

The OASD, maintained by the MTCS, was consulted in order to determine if any archaeological sites had been identified within one kilometre of the study area (MTCS 2015). 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 km west to east and approximately 18.5 km 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 area under review is within Borden Block *BgGk.*

A search of the Ontario Archaeological Sites Database as well as Golders corporate records did not reveal the presence of any previously registered archaeological sites within one kilometer of the study area.

In 2011, a Stage 1 was conducted for the study area, with the exception of a small section in the far northeast corner (Swayze 2011). In this report, the consultant determined that that part of the Study Area retains archaeological potential, particularly for the Late Palaeo-Indian and Early Archaic cultural periods. The rationale is that the Study area is in proximity to early postglacial river shores. It is further concluded that the terrain above 365 masl has moderate archaeological potential, due to its proximity to the relatively short-lived relict shoreline that occurred at that elevation, as well as proximity to an existing secondary water source. Map 4 illustrates the area that previously underwent this Stage 1 background assessment as well as the rationale for recommendation of Stage 2 or not recommending further work. There is no other record of any previous archaeological assessments having occurred within 50 metres of the current study area.

1.4 Determination of Archaeological Potential

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

- Previously identified archaeological sites;
- Water sources:
  - Primary water sources (lakes, rivers, streams, creeks);

- Secondary water sources (intermittent streams and creeks; springs; marshes; swamps);
- Features indicating past water sources (e.g., glacial lake shorelines indicated by the presence of raised gravel, sand, or beach ridges; relic river or stream channels indicated by clear dip or swale in the topography; shorelines of drained lakes or marshes; and cobble beaches);
- Accessible or inaccessible shoreline (e.g., high bluffs, swamps or marsh fields by the edge of a lake; sandbars stretching into marsh);

- Elevated topography (eskers, drumlins, large knolls, plateaux);
- Pockets of well drained sandy soil, especially near areas of heavy soil or rocky ground;
- Distinctive land formations that might have been special or spiritual places, such as waterfalls, rock outcrops, caverns, mounds, and promontories and their bases (there may be physical indicators of their use, such as burials, structures, offerings, rock paintings or carvings);
- Resource areas including:
  - Food or medicinal plants;
  - Scarce raw minerals (e.g., quartz, copper, ochre or outcrops of chert);
  - Early Euro-Canadian industry (fur trade, mining, logging);
- Areas of Euro-Canadian settlement; and
- Early historical transportation routes.

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

In archaeological potential modeling, a distance to water criterion of 300 metres is generally employed for primary water courses, such as lakes, rivers, streams and creeks as well as secondary watercourses, such as intermittent streams and creeks, springs, marshes and swamps.

Soil texture can be an important determinant of past settlement, usually in combination with other factors such as topography. The MTCS also views the presence of previously registered archaeological resources as a prime indicator of archaeological potential.

1.4.1 Archaeological Integrity

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

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

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

The types of disturbance referred to above includes, but is not restricted to, quarrying, sewage and infrastructure development, building footprints and major landscaping involving grading below topsoil. The previous Stage 1 indicated that there is a section in the east – central portion of the study area that no longer retains archaeological potential due to disturbance through development (Map 4).

1.4.2 Potential for Pre-contact Aboriginal Archaeological Sites

While no sites have been recorded within one kilometer of the study area boundaries there is a potable water source located 150 metres south of the limits of study area and a lesser creek runs approximately 50 metres south of the study area. Given that we assume potential for the recovery of pre-contact materials within 300 metres of a potable water source there is potential for the recovery of pre-contact materials along the southern, eastern and northern limits of the study area, should flat, well-drained conditions be present. Also the previously conducted Stage 1 report (Swayze 2011) indicated the following:

> *The consultant concludes that the summit of the northern ridge and the apron of outwash at its base have potential for archaeological material from the Late Paleo-Indian and Early Archaic cultural period, because they would have been in proximity to early post glacial river shores. High archaeological discovery potential occurs at the foot of the hill, where there is an apparent fluvial feature, and on the summit, where a hunter-gather lookout site may occur.*
>
> Swayze 2011:8

The portion of the study area not included in Swayze's report contains well-drained, flat soils that would have been conducive to the establishment of a pre-contact habitation area. This area is situated within 120 metres of the York River. Given this the potential exists in this additional portion for the recovery of pre-contact aboriginal cultural remains (Map 4).

1.4.3 Potential for Historic Euro-Canadian Archaeological Sites

No sites have been recorded within one kilometre of the study area boundaries. While the study area is situated in proximity to the 19th century road grid allowances, there is no evidence these roads were ever opened. Given these conditions there is low potential for the recovery of historic Euro-Canadian cultural remains in this area.

2.0 FIELD METHODOLOGY

2.1 Stage 2 Property Assessment

The Stage 2 property assessment of the study area was conducted on Tuesday November 10, 2015 and Wednesday November 11th 2015. The work was undertaken under Professional Archaeological License P243 issued to Dr. Carla Parslow of Golder. The field work was directed by Mr. Christopher Lemon (R289) also of Golder. Mr. Lemon was delegated the responsibility of the day-to-day supervision of the archaeological fieldwork at the site as per Section 12 of the MTCS 2013 *Terms and Conditions for Archaeological Licences*, issued in accordance with clause 48(4)(d) of the *Ontario Heritage Act*.

The weather during the assessment ranged from sunny and cool to overcast drizzly and cool with temperatures ranging from 4 to 10 degrees Celsius. At no time were the weather conditions detrimental to the observation, identification and recovery of archaeological material. Table 2 presents the weather and lighting conditions during the Stage 2 property survey. Map 5 illustrates the Stage 2 assessment results. Map 6 illustrates Photo Locations and directions, while Images 1-25 depicts the conditions of the study area.

Table 1: Stage 2 Weather and Lighting Conditions

Date	Weather	Lighting
November 10, 2015	Sunny and Clear, 8^{O} C on average	Excellent – Sunny skies
November 11, 2015	Cloudy and drizzly 5^{O} C on average	Good - Overcast skies with diffuse light

The Stage 2 property assessment commenced at 11am on November 10, 2015 with Mr. Lemon conducting a walking assessment of the entire study area to assess the findings of the Stage 1 previously conducted by Mr. Ken Swayze of Kinickinick Heritage Consulting (Swayze 2011) and to assess the potential of the portions of the property not covered by Mr. Swayze's report.

Upon arrival at the property it was apparent that the findings of the 2011 Stage 1 report were in keeping with the as found conditions of the property. A cursory view of the property indicated that much of the property was dominated by steep slopes in excess of 20 degrees and that test pit assessment would only be required on isolated pockets of flat, well-drained soils distributed sporadically across the study area. A prominent ridge on the property was quickly identified and attributed to the "Pleistocene relict shore Bedrock-Drift above Sandy outwash" identified in the Stage 1 (Swayze 2011). This ridge was carefully inspected and test pit where appropriate during the Stage 2 test pit assessment of the property.

The initial survey of the property commenced in the southwest end of the property where the gravel access road crossed from the study area into the area of previous aggregate extraction to the north. The northern limit of the study area was clearly defined by a modern off-road trail that mirrored the remains of an historic wire fence line. Image 1 depicts the off-road trail with the fence being located just out of view to the right. The off-road trail climbed west towards the northwest corner of the study area located at Gaebel Road. By traversing this off-road trail it was possible to get a sense of the rugged nature of the study area. When the trail intersected Gaebel Road a wire fence was found (Image 2) that delineated the western limit of the study area. The wire fence did not continue the full length of the study area and at times varied from wire to split rail (Image 3). The location of all property limits were confirmed by way of GPS mapping as well as by way of the previously established property boundaries marked in with flagging tape tied to trees (Image 4).

In addition to finding the limits of the study area the initial walking survey also confirmed that much of the study area was comprised of steep slopes (Images 5 and 6). In addition to steep slope many areas consisting of rocky outcrops (Images 7 and 8), as well as two large permanently wet areas (Images 9 and 10). Overall very little of the study area contained areas that presented with flat, well-drained soils suitable to the recovery of archaeological remains.

Following Mr. Lemon's initial survey of the property the field crew arrived and Mr. Lemon and the crew set out to test pit all areas of potential within the study area. To ensure that all areas of potential were test pit the crew walked transects of the property at 10 metre spacing and test pit all areas of potential as they were encountered. While survey transects were conducted at 10 metre spacing, all test pit assessment was conducted at five metre spacing with all test units being a minimum of 30 centimetres in diameter, and excavated five centimetres into subsoil. Image 11 provides an example of how a typical test pit looked following excavation.

During the Stage 2 assessment several geophysical test pits were identified (Image 12). Geophysical test pits are excavated using a backhoe and are used to determine the depth of overburden to bedrock. Archaeologically the geophysical test pits provided conformation of soil conditions and a glimpse of the study areas stratigraphy.

Map 5 depicts the survey results and identifies the areas were Stage 2 test pit assessment was conducted. Image 13 provides an example of the crew test pitting the crest of a hill comprised of sandy loam; several similar hills were identified and assessed across the study area. In addition to test pitting small areas on top of hills, larger flat areas were also encountered and subjected to test pit assessment at five metre intervals (Images 14, 15, 16 and 17).

The most promising archaeological area encountered during the assessment was the remains of a kettle-like pond located in the northwest portion of the property, Map 5 depicts this area as the northwest ovate-shaped area subject to test pitting. The area around this kettle-like feature was test pit at five metre intervals regardless of terrain conditions to a distance of 50 metres, where slopes in excess of 20 degrees were present. Image 18 provides an overview of this kettle-like pond, while Image 19 depicts the excavation of test pits around this area. Image 20 depicts an excavated test pit in this area, revealing grey silty sand soils.

A sugar shack used for the processing of maple sap to produce maple syrup was identified on the property (Image 21). This structure was located at the base of a steep slope associated with an area of potential identified in the Stage 1 report (Swayze 2011). All areas exhibiting slope less than 20 degrees were subjected to test pit assessment at five metre spacing; the assessment continued up to the exposed rock face (Image 22) and continued west up the slope until excessive slope, greater than 20 degrees, was encountered.

Overall the study area presented with extremely steeply sloped terrain containing rock outcrops and permanently wet areas interspersed with areas of well drained relatively flat sand soil. Lesser areas of previous disturbance were identified in the northeast part of the study area (Image 25).

The small portion of the study area located in the northeast was the only area not covered by the 2011 Stage 1. This area depicted in Map 4 presented with a large area of well-drained, flat sandy soil as well as a small section that had been previously disturbed by the installation of infrastructure associated with the current use of the property as a lumber yard. All areas not previously impacted by subsoil disturbance were subjected to test pit assessment at five metre intervals. Image 23 depicts test pitting in this area while Image 24 depicts the area of previous disturbance noted above.

3.0 RECORD OF FINDS

The Stage 2 archaeological assessment was conducted employing the methods described in Section 2.0, above. An inventory of the documentary record generated during the archaeological assessment is provided in Table 2.

Table 2: Inventory of Documentary Record

Document Type	Current Location of Document	Additional Comments	Quantity
Field Notes	Golder office in Whitby	Stored digitally in electronic project folder, and in original field note book	4 pages
Hand Drawn Maps	Golder office in Whitby	In hard copy and electronic project folders	1
Maps Provided by Client	Golder office in Whitby	Stored digitally in electronic project folder	3
Digital Photographs	Golder office in Whitby	All photos stored digitally in electronic project folder	276 photos in .jpeg format

No archaeological resources were recovered from the Stage 2 test pit survey of the study area illustrated in Map 4 of this report.

4.0 ANALYSIS AND CONCLUSIONS

The Stage 1 archaeological assessment of the Study Area has determined that there is archaeological potential within portions of the Study Area. While archaeological potential was documented in the Stage 1 background study, the Stage 2 Archaeological Assessment did not result in the identification of any archaeological resources of cultural heritage value or interest. Given the absence of finds, the cultural heritage value or interest of the study area is considered to be sufficiently documented. Since no archaeological resources of cultural heritage value or interest were recovered, none of the criteria in Section 2.2 of the *Standards and Guidelines for Consultant Archaeologists* (MTCS 2011) were met.

5.0 RECOMMENDATIONS

The study area was sufficiently assessed and no items of cultural heritage value or interest were recovered; no further archaeological assessment of the study area is required. This conclusion is consistent with the cultural heritage value or interest evaluation criteria in Section 2.2 of the *Standards and Guidelines for Consultant Archaeologists* (MTCS 2011).

It is recommended that the study area at located on part of Lots 51 and 52, Concession WHR, Faraday Township, Ontario be considered free from further archaeological concern. No further archaeological assessment is necessary.

The MTCS is asked to review the results and recommendations presented herein, to accept this report into the Ontario Public Register of Archaeological Reports and to inform the proponent that the provincial concerns for archaeological resources for this study area have been met.

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 O.18. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ministry of Tourism, Culture and Sport, a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.

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

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

The *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33, requires that any person discovering or having knowledge of a burial site shall immediately notify the police or coroner. It is recommended that the Registrar of Cemeteries at the Ministry of Consumer Services is also immediately notified.

Archaeological sites recommended for further archaeological fieldwork or protection remains 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.

7.0 BIBLIOGRAPHY AND SOURCES

Anderson, Jacob

2009 *The Lawson Site: An Early Sixteenth Century Neutral Iroquoian Fortress*. Museum of Ontario Archaeology, Special Publication No. 2. London.

Boyce, Gerald E.

1967 *Historic Hastings*. Hastings County Council Centennial Project, 1867-1967. Ontario Intelligencer Limited, Belleville.

Chapman, L.J. and Putnam, D.F.

1984 *The Physiography of Southern Ontario. 3rd Edition*. Ontario Geological Survey Special Volume 2. Ontario Ministry of Natural Resources, Toronto, Ontario.

Dodd, Christine F., Dana R. Poulton, Paul A. Lennox, David G. Smith and Gary A. Warrick

1990 The Middle Ontario Iroquoian Stage. In *The Archaeology of Southern Ontario to A.D. 1650,* edited by Chris Ellis and Neal Ferris, pp. 321-360. Occasional Publication Number 5. London Chapter, Ontario Archaeological Society, London.

Earl, Jeff and Brenda Kennett

2000 *Stage 1 Archaeological Assessment of the LaFleche Gravel Pit Part of Lot 6, Concession IX, Township of North Stormont (Former Township of Roxborough) United Counties of Stormont, Dundas and Glengarry*. Consultant's report prepared by Heritage Quest for Golder Associates Ltd.

Ellis, Christopher and D. Brian Deller

1990 Paleo-Indians. In *The Archaeology of Southern Ontario to A.D. 1650,* edited by Chris Ellis and Neal Ferris, pp. 37-63. Occasional Publication Number 5. London Chapter, Ontario Archaeological Society, London.

Ellis, Chris J. and Neal Ferris (editors)

1990 *The Archaeology of Southern Ontario to A.D. 1650*. Occasional Publication of the London Chapter, Ontario Archaeological Society, Number 5.

Ellis, Chris, Ian Kenyon and Michael Spence

1990 The Archaic. In *The Archaeology of Southern Ontario to A.D. 1650,* edited by Chris Ellis and Neal Ferris, pp. 65-124. Occasional Publication Number 5. London Chapter, Ontario Archaeological Society, London.

Ferris, Neal

2009 The Archaeology of Native-Lived Colonialism: Challenging History in the Great Lakes. University of Arizona Press, Tucson.

Fox, William A.

1990 The Middle Woodland to Late Woodland Transition. In *The Archaeology of Southern Ontario to A.D. 1650,* edited by Chris Ellis and Neal Ferris, pp. 171-188. Occasional Publication Number 5. London Chapter, Ontario Archaeological Society, London.

Gillespie, J.E., R.E. Wicklund and N. R. Richards

1962 *Soil Survey of Hastings County*. Report No. 27 of the Ontario Soil Survey. Experimental Farms Service, Canada Department of Agriculture and the Ontario Agricultural College, Guelph.

Government of Ontario

1990a Ontario Heritage Act, R.S.O. 1990, c. O.18. Electronic document: http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90o18_e.htm (retrieved January 22, 2016).

1990b Aggregate Resources Act, R.S.O. 1990, c. A.8. Electronic document: https://www.ontario.ca/laws/statute/90a08 (retrieved January 22, 2016).

Lennox, Paul and William Fitzgerald

1990 The Culture History and Archaeology of the Neutral Iroquoians. In *The Archaeology of Southern Ontario to A.D. 1650,* edited by Chris Ellis and Neal Ferris, pp. 405-456. Occasional Publication Number 5. London Chapter, Ontario Archaeological Society, London.

Morris, J.L.

1943 *Indians of Ontario*. 1964 Reprint. Department of Lands and Forests, Government of Ontario.

MTCS (Ministry of Tourism, Culture and Sport)

2011 *Standards and Guidelines for Consultant Archaeologists*. Ministry of Tourism, Culture and Sport, Culture Division, Programs and Services Branch, Culture Programs Unit, Toronto, Ontario.

2015 Sites within a One Kilometre Radius of the Project Area, provided from the Ontario Archaeological Sites Database, November, 2015.

Pearce, Robert J.

2010 *Southwestern Ontario: The First 12,000 Years*. Web site developed by Museum of Ontario Archaeology, London, with funding from Department of Canadian Heritage. Electronic document: http://diggingontario.uwo.ca. Last accessed May 7, 2015.

Phelps, E.C. (ed)

2000 *Belden's Illustrated Historical Atlas of the County of Hastings, Ontario 1881* facsimile, Millennium Edition, Alexander Publishing, Ancaster, Ontario.

Ramsden, Peter G.

1990 The Hurons: Archaeology and Culture History. In *The Archaeology of Southern Ontario to A.D. 1650*, edited by Christopher Ellis and Neal Ferris, pp. 361-384. Occasional Papers of the London Chapter, Ontario Archaeological Society, No. 5. Ontario Archaeological Society, London.

Schmalz, Peter S.

1991 *The Ojibwa of Southern Ontario*. University of Toronto Press, Toronto, Ontario.

Smith, David G.

1990 Iroquoian Societies in Southwestern Ontario: Introduction and Historic Overview. In *The Archaeology of Southern Ontario to A.D. 1650*, edited by Christopher Ellis and Neal Ferris, pp. 279-290. Occasional Papers of the London Chapter, Ontario Archaeological Society, No. 5. Ontario Archaeological Society, London.

Spence, Michael, Robert Pihl and Carl Murphy

1990 Cultural Complexes of the Early and Middle Woodland Periods. In *The Archaeology of Southern Ontario to A.D. 1650*, edited by Christopher Ellis and Neal Ferris, pp. 125-169. Occasional Papers of the London Chapter, Ontario Archaeological Society, No. 5. Ontario Archaeological Society, London.

Swayze, Ken

2011 *A Stage 1 Archaeology Assessment of Freymond Quarry, Part of Lots 51 & 52, Concession WHR Faraday Twp. (Geo.), Hastings County*. Report on file with the MTCS, Toronto.

Watson, Gordon

1982 Prehistoric Peoples of the Rideau Waterway. In *Archaeological and Historical Symposium, October 2-3, 1982, Rideau Ferry, Ontario*. F.C.L. Wyght, ed., Smiths Falls: Performance Printing.

Williamson, Ronald

1990 The Early Iroquoian Period of Southern Ontario. In *The Archaeology of Southern Ontario to A.D. 1650*, edited by Christopher Ellis and Neal Ferris, pp. 291-320. Occasional Papers of the London Chapter, Ontario Archaeological Society, No. 5. Ontario Archaeological Society, London.

8.0 IMAGES

Image 1: Off-road trail demarcating the northern limit of study area, facing west.

Image 2: Wire fence demarcating part of the western limit of study area, facing north.

Image 3: Split rail fence demarcating part of the western limit of study area, facing south.

Image 4: Survey flag demarcating limit of study area, facing west.

Image 5: Representative sample of steep slope common on study area, facing north.

Image 6: Representative sample of steep slope common on study area, facing south-southeast.

Image 7: Representative sample of rocky outcrop common on study area, facing southwest.

Image 8: Representative sample of steep rocky outcrop common on study area, facing north.

Image 9: Example of a permanently wet area, facing east.

Image 10: Example of a permanently wet area, facing southeast.

Image 11: Excavated test pit, showing sandy soils, facing down north is up.

Image 12: Example of a geotechnical test pit found, facing northeast.

Image 13: Test pitting the top of a sand ridge, facing east.

Image 14: Example of test pitting, facing south.

Image 15: Test pitting, facing west.

Image 16: Test pitting, facing east.

Image 17: Test pitting, facing south.

Image 18: Overview of kettle-like pond, facing east.

Image 19: Test pitting around kettle-like pond, facing northwest.

Image 20: Open test pit around kettle-like pond, facing down, west is up.

Image 21: Sugar shack, facing south-southwest.

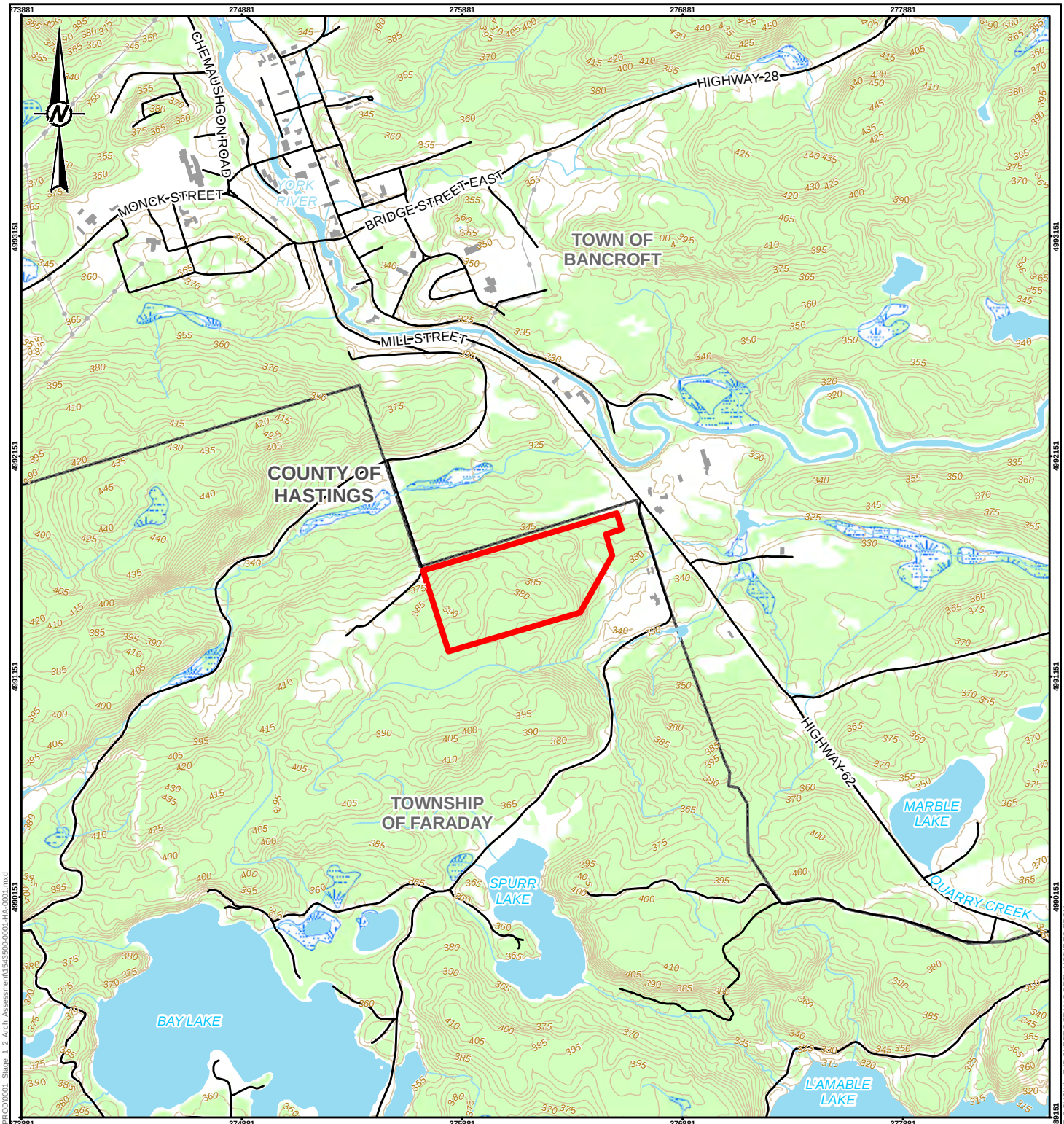
Image 22: Bedrock outcrop, northeast of sugar shack, facing north.

Image 23: Test pitting area that is the focus of the Stage 1 assessment this report, facing south.

Image 24: Area of previous disturbance that is the focus of the Stage 1 assessment this report, facing north-northeast

Image 25: Area of previous disturbance, facing northwest.

9.0 MAPS



LEGEND

- CONTOURS (M)
- ROAD
- UTILITY LINE
- WATERCOURSE
- APPROXIMATE STUDY AREA
- BUILDING
- MUNICIPAL BOUNDARY
- WATERBODY
- WETLAND
- WOODED AREA

0 500 1,000

1:25,000 METRES

CLIENT
FREYMOND LUMBER LTD.

PROJECT
STAGE 1 AND 2 ARCHAEOLOGICAL ASSESSMENT OF THE FREYMOND QUARRY, BANCROFT, ONTARIO

TITLE
LOCATION OF STUDY AREA

CONSULTANT
Golder Associates

YYYY-MM-DD	2016-04-20
DESIGNED	JT
PREPARED	JT
REVIEWED	CL
APPROVED	CP

PROJECT NO. 1543500 | CONTROL | REV. | MAP 1

REFERENCE(S)
BASE DATA - MNR LIO, OBTAINED 2016
PRODUCED BY GOLDER ASSOCIATES LTD UNDER LICENCE FROM ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2016
PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: UTM ZONE 18N

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 25mm

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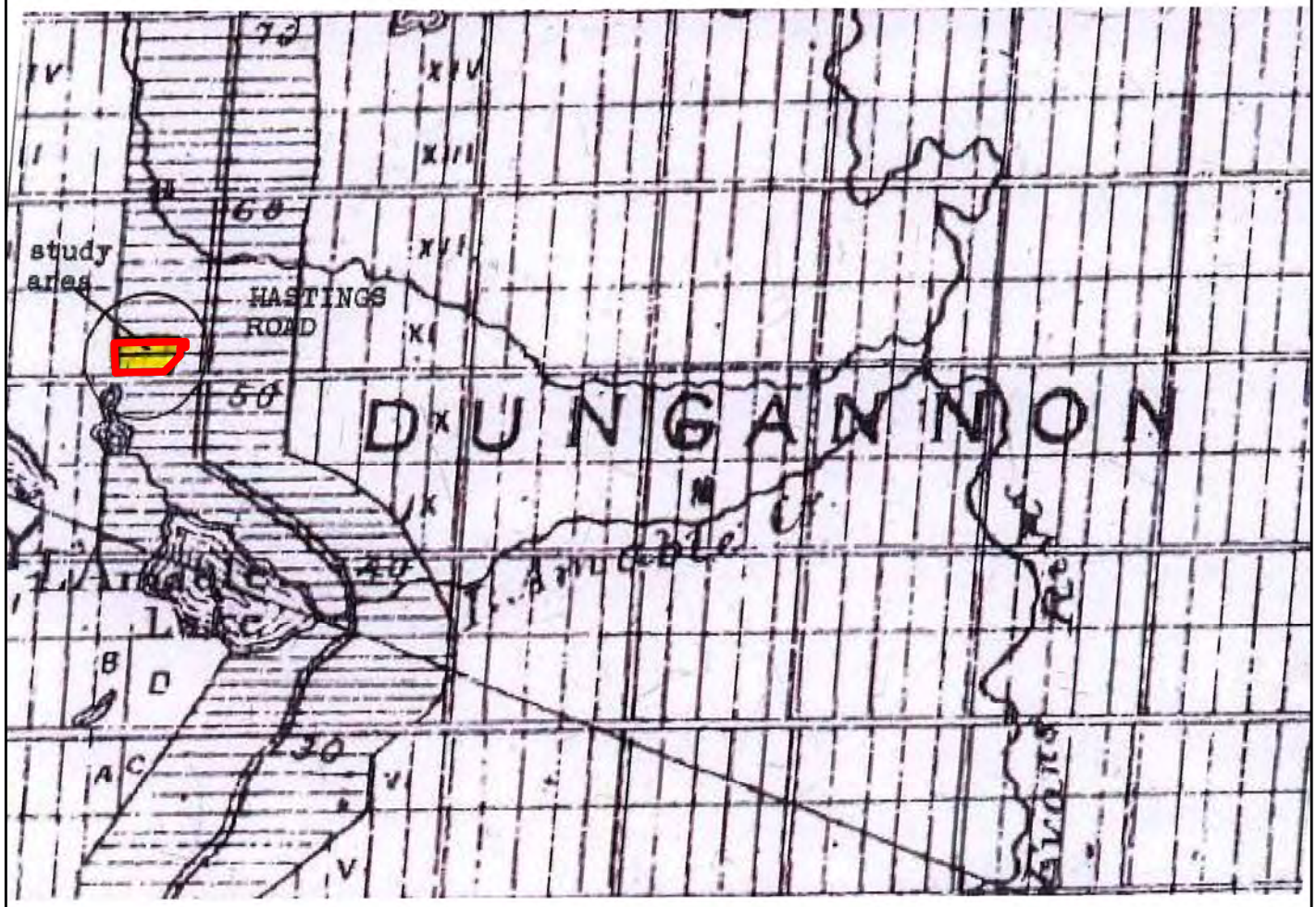

LEGEND

APPROXIMATE STUDY AREA

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE
2. NOT TO SCALE

REFERENCE(S)

PHELPS, E.C. (ED), 2000 BELDEN'S ILLUSTRATED HISTORICAL ATLAS OF THE COUNTY OF HASTINGS, ONTARIO, 1881 FACSIMILE, MILLENNIUM EDITION, ALEXANDER PUBLISHING, ANCASTER ONTARIO.

CLIENT

FREYMOND LUMBER LTD.

PROJECT

STAGE 1 AND 2 ARCHAEOLOGICAL ASSESSMENT OF THE FREYMOND QUARRY, BANCROFT, ONTARIO

TITLE

A PORTION OF THE 1881 HISTORIC MAP OF FARADAY TOWNSHIP

CONSULTANT

Golder Associates

YYYY-MM-DD	2016-04-20
DESIGNED	JT
PREPARED	JT
REVIEWED	CL
APPROVED	CP

PROJECT NO.	CONTROL	REV.	MAP
1543500			2

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LEGEND

- WATERCOURSE
- APPROXIMATE STUDY AREA

0 100 200

1:4,000 METRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

BASE DATA - MNR LIO, OBTAINED 2016
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PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: UTM ZONE 18N

CLIENT

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PROJECT

STAGE 1 AND 2 ARCHAEOLOGICAL ASSESSMENT OF THE FREYMOND QUARRY, BANCROFT, ONTARIO

TITLE

AERIAL IMAGE OF STUDY AREA

CONSULTANT

Golder Associates

YYYY-MM-DD	2016-04-20
DESIGNED	JT
PREPARED	JT
REVIEWED	CL
APPROVED	CP

PROJECT NO.	CONTROL	REV.	MAP
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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 25mm 0

LEGEND

- WATERCOURSE
- APPROXIMATE STUDY AREA
- AREA OF ARCHAEOLOGICAL POTENTIAL STAGE 2 TEST PIT SURVEY RECOMMENDED
- PREVIOUSLY DISTURBED NO FURTHER ASSESSMENT RECOMMENDED
- DISTURBED AND/OR PREVIOUSLY DEVELOPED AREA. OMIT FROM SURVEY (SWAZEY, 2011)
- POTENTIAL FOR EARLY HOLOCENE DEPOSITS. TEST PIT SURVEY AT 5M INTERVALS (SWAZEY, 2011)
- POTENTIAL FOR LATE PLEISTOCENE DEPOSITS. TEST PIT SURVEY AT 5M INTERVALS (SWAZEY, 2011)
- STEEP SLOPES AND ESCARPMENTS. OMIT FROM SURVEY (SWAZEY, 2011)

0 100 200

1:4,000 METRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

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PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: UTM ZONE 18N

CLIENT
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PROJECT
STAGE 1 AND 2 ARCHAEOLOGICAL ASSESSMENT OF THE FREYMOND QUARRY, BANCROFT, ONTARIO

TITLE
STAGE 1 ASSESSMENT RESULTS

CONSULTANT
Golder Associates

YYYY-MM-DD	2016-04-20
DESIGNED	JT
PREPARED	JT
REVIEWED	CL
APPROVED	CP

PROJECT NO.	CONTROL	REV.	MAP
1543500			4

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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:
25mm
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LEGEND

- WATERCOURSE
- APPROXIMATE STUDY AREA
- PERMANENTLY WET
- PREVIOUSLY DISTURBED
- STEEPLY SLOPED AND ROCKY
- TEST PIT ASSESSMENT AT 5M INTERVAL

0 100 200

1:4,000 METRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

BASE DATA - MNR LIO, OBTAINED 2016
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PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: UTM ZONE 18N

CLIENT
FREYMOND LUMBER LTD.

PROJECT
STAGE 1 AND 2 ARCHAEOLOGICAL ASSESSMENT OF THE FREYMOND QUARRY, BANCROFT, ONTARIO

TITLE
STAGE 2 ASSESSMENT RESULTS

CONSULTANT
Golder Associates

YYYY-MM-DD	2016-04-20
DESIGNED	JT
PREPARED	JT
REVIEWED	CL
APPROVED	CP

PROJECT NO.	CONTROL	REV.	MAP
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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:
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LEGEND

- PHOTO LOCATION AND DIRECTION
- WATERCOURSE
- APPROXIMATE STUDY AREA

0 100 200

1:4,000 METRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

BASE DATA - MNR LIO, OBTAINED 2016
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CLIENT
FREYMOND LUMBER LTD.

PROJECT
STAGE 1 AND 2 ARCHAEOLOGICAL ASSESSMENT OF THE FREYMOND QUARRY, BANCROFT, ONTARIO

TITLE
PHOTO LOCATIONS

CONSULTANT
Golder Associates

YYYY-MM-DD	2016-04-20
DESIGNED	JT
PREPARED	JT
REVIEWED	CL
APPROVED	CP

PROJECT NO. 1543500 | CONTROL | REV. | MAP 6

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10.0 IMPORTANT INFORMATION AND LIMITATIONS FOR THIS REPORT

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

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

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

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

Report Signature Page

GOLDER ASSOCIATES LTD.

Christopher W. Lemon, B.Sc.
Project Archaeologist

Carla A. Parslow, Ph.D.
Associate, Senior Archaeologist

CWL/CAP/mp/wlm

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APPENDIX A

Resumes

Education

Ph.D. Anthropology, specialization in Archaeology, University of Toronto, Toronto, Ontario, 2006

M.A. Anthropology, University of Manitoba, Winnipeg, Manitoba, 1999

B.A. Anthropology, Honours, University of Alberta, Edmonton, Alberta, 1996

Certifications

Wilderness First Aid Certification, Basic Life Support – CPR Provider A, Exp. Oct. 6, 2016

Canadian Red Cross Standard Firs Aid, Level C, Exp. June 19, 2015

Professional Affiliations

Canadian Archaeological Association

Ontario Association of Professional Archaeologists (Elected as Director 2013 – 2015)

MTCS Professional License to Practice Archaeology in Ontario (P-243)

Languages

English – Fluent

GTA Operations

Associate, Senior Archaeologist/Aboriginal Engagement Specialist

Dr. Parslow (Carla), is a licensed archaeological consultant who specializes in archaeology and Aboriginal (First Nation) cultural heritage. Carla has over 16 years' experience in the field of archaeology and Aboriginal consultation as well as managing the cultural heritage component for Environmental Assessments within Ontario and liaising with government bodies. She has a PhD. in Anthropology, with archaeology as the specialization, from the University of Toronto (2006) and has lectured on Canadian archaeology and Canadian Aboriginal history at the University of Toronto, University of Guelph and McMaster University.

Employment History

Golder Associates Ltd. – Mississauga, Ontario
Group Leader, Senior Archaeologist and Aboriginal Engagement Specialist (2009 – Present)

Carla is responsible for the coordination, technical review and quality assurance of archaeological, Aboriginal consultation and cultural heritage projects for Golder's GTA Operations.

Ontario Ministry of Transportation – Downsview, Ontario
Regional Archaeologist (2007 to 2009)

Participate in the development of ministry archaeological/heritage policy development and procedures and fulfil an advisory. Plan and direct all aspects of multi-side projects/programs; provide leadership/guidance and supervision to consultants; provide input into the RFP process for consultants; and recommends budgets and assignments to consultants.

Liaise and provide advice to senior management, ministry colleagues and other offices outside the region; provide specialist and policy advice/guidance to other regions; liaise with Aboriginal communities regarding recovered artifacts and research proposals; and liaise and negotiate with external agencies including MOE, MCL, and MNR.

Archaeological Services Inc. – Toronto, Ontario
Assistant Manager, Environmental Assessment Division (2006 to 2007)

Assist the manager of the Environmental Assessment Division with management and coordination of archaeological and heritage assessments. Manage the cultural component for Individual Class EA assessments.

PROJECT EXPERIENCE – ARCHAEOLOGY

Cultural Resource Vulnerability Study District of Thunder Bay, ON	Project manager and lead researcher for to undertake an archaeological study to determine if and how select cultural resources, primarily archaeological sites, on the Rainy River are being affected by the 2000 Rule Curves for the Rainy River International Dam. (2014 – Present)
Stage 3 and 4 Archaeological Assessments Durham Region, OM	Project Director and Senior Reviewer for a $1million archaeological program to conduct site specific survey and archaeological mitigation of archaeological sites in advance of construction for the expansion of Highway 407, Phase 1 from Brock Road in Pickering to Harmony Road in Oshawa. Duties include maintaining close communications with the Prime consultant and the Owner Operator (MTO); senior technical review of reports and advising. (2014 – Present)
Stage 1 Archaeological Assessment District of Kenora, ON	Senior Technical Reviewer/Advisor for background archaeological study for the New Transmission Line to Pickle Lake Project (the Project), as part of a larger environmental assessment Retained by Wataynikaneyap Power, a partnership between Central Corridor Energy Group which represents 13 First Nation communities, and Goldcorp Canada Ltd. The Project includes the construction of a proposed 230 kilovolt (kV) High Voltage alternating current (HVac) electricity transmission system in a corridor extending approximately 300 km. (2012 – 2014)
Stage 3-4 Archaeological Assessment Township of Kincardine, Bruce County, ON	Senior technical advisor and reviewer for Stages 2-4 archaeological work for a Project Manager for Stage 3 and 4 archaeological assessments. Served as reviewer for all documentation and data submitted to the client or the regulatory body, client contact, and senior advisor to the Golder archaeology team. (2012 – Present)
Stage 2–3 Archaeological Assessments Middlesex, County, ON	Project Manager for Wind Energy project managing a budget of over $1 million. Project Management involved delivery of Stage 2 and 3 program for the various project. Duties include scheduling and budgeting of projects; providing senior review for archaeological reports; client communications; liaison with MTCS. (2012-2013)
Stage 1–4 Archaeological Assessments Welland, East Durham, Huron, and Bruce County, ON	Project Manager for six major Wind Energy projects managing a combined budget of over $3 million. Project Management involved delivery of Stage 1 and 2 program for the various project. Also includes Project Management for Stage 3 and 4 archaeological assessments. Duties include scheduling and budgeting of projects; providing senior review for archaeological reports; client communications; liaison with MTCS. (2012-2013)
Stage 1–4 Archaeological Assessments Haldimand County, ON	Archaeological component lead for the Wind Energy project totaling six million in archaeological work. Duties involved providing technical review for Stage 3 and 4 reports; client communications; liaison with MTCS; and leading a team of archaeologists to complete the project and provide construction monitoring. (2012-2013)

Stage 3-4 Archaeological Assessment Township of Kinkardine, Bruce County, ON	Senior technical advisor and reviewer for Stages 2-4 archaeological work for a Project Manager for Stage 3 and 4 archaeological assessments. Served as reviewer for all documentation and data submitted to the client or the regulatory body, client contact, and senior advisor to the Golder archaeology team. (2012 – Present)
Stage 1-2 Archaeological Assessment York Region, ON	Project Manager for Stage 2 archaeological assessment for an approximately 11.5 hectare portion of the property located at 5783 Bloomington Road, part of Lot 10 Concession 8, Town of Whitchurch-Stouffville, in the Regional Municipality of York. Field Director and Project Manager. (2012)
Stage 3-4 Archaeological Assessment Mississauga, ON	Senior Technical Reviewer for a Stage 1 background assessment and Stage 2 property survey for approximately 2 hectares of land located at the former Hancock Nursery at 2151 Camilla Road, Mississauga, Ontario. (2012)
Stage 1-2 Archaeological Assessment Mississauga, ON	Project Manager and Professional Licensee for Stage 3 and 4 Archaeological Assessment, Site AjGv-73, T. Kamel Property, Part of Lot 3, Range 2 Credit Indian Reserve, Geographic Township of Toronto, now City of Mississauga, Regional Municipality of Peel, Ontario. (2011)
Stage 1 Archaeological Assessment Municipality of Timmins, Cochrane District, ON	Provide due diligence archaeological assessment (desktop research) to produce an archaeological potential model for two entire mining properties. Archaeological activities part of Clients Aboriginal engagement activities. Also working with local First Nation Community, Mattagami, on incorporating cultural values mapping. (2011)
Stage 3-4 Archaeological Assessment City of Hamilton, ON	Project manager for Stage 3 site specific assessment and Stage 4 partial mitigation for proposed pathway within the boundaries of the Olmstead site. Primary client contact, managed budgets and scheduling, and provided senior technical review for reports. Liaised with the Ministry of Tourism, Culture, and Sport. (2011)
Stage 1-2 Archaeological Assessment City of Hamilton, ON	Project manager for Stage 2 property survey for proposed road improvements to Dartnall Road, from Stone Church Road and Rymal Road, from Dartnall Road to the New Trinity Church Corridor, City of Hamilton, Ontario. Primary client contact, managed budgets and scheduling, and provided senior technical review for reports. (2011)
Stage 1-2 Archaeological Assessment St. Catharines, ON	Project manager for Stage 1 background research and Stage 2 property assessment for two proposed sanitary sewer easements within the hydro corridor along Glen Morris Drive, in the City of St. Catharines, Ontario. Primary client contact, managed budgets and scheduling, and provided senior technical review for reports. (2011)
Ministry of Transportation 2009-E-0078 (WO# 10-20001) Consolidated Intersection Control PDR	Contracted by HDR/iTRans to provided lead for Cultural Heritage and archaeology component, for eight intersections in MTO's Central Region. Of these eight intersections, three intersections are located in Simcoe Region with one intersection (Highway 12 and Triple Bay Road) within the Township of Tay. (2011)
Stage 1-2 Archaeological Assessment City of Toronto, ON	Project Coordinator for Stage 2 archaeological assessment and heritage bridge assessments. Managed Stage 2 archaeological assessment and archaeological monitoring plan for construction within the railway right of way. (2010-2011)

PROJECT EXPERIENCE – REGIONAL ARCHAEOLOGIST AT MTO

407 East Transportation Corridor EA Study Ontario, Canada	Managed consultant based Cultural Heritage studies and directly in charge of Aboriginal consultation management and coordination including all correspondence, workshops and information sessions as well as development of protocols for engagement. Hwy 407 East is one of the largest highway construction projects ever to take place in Ontario. The project will construct a 70 km transportation corridor. (MTO 2006-2009)
Niagara to GTA and GTA West EA Study Ontario, Canada	Aboriginal consultation research and advising to senior management on scope of consultation and plans of action. (MTO 2007-2009)
Detroit River International Crossing Ontario, Canada	Stage 1 and 2 Archaeological Assessment: project management and coordination of fieldwork and research. Reviewed reports and working papers submitted to client; liaised with client. (MTO 2006-2007)
Highway 427 Extension Ontario, Canada	Aboriginal consultation research and advising to senior management on scope of consultation and plans of action. (MTO 2008-2009)
Highway 7/12 and Columbus Road Intersection Widening, Town of Whitby, Region of Durham, Ontario.	Completed, through a phased investigation, a Stage 1 and 2 archaeological assessment of the proposed widening of the Highway 7/12 and Columbus road intersection. The investigation included sub-surface (test pitting) archaeological assessment and background assessment. A late nineteenth century historic site, the Croxall Site, was identified as part of the survey. (MTO 2008-2009)
QEW Ontario Street Carpool Parking Lot, Regional Municipality of Niagara, Ontario	Stage 1 archaeological assessment of Carpool lot in QEW interchange. Project included both background research and field review. (MTO 2008)

Education

M.A. Course Work, Department of Anthropology, Western University, 2012

B.Sc. (Honours) Department of Anthropology, University of Toronto, Toronto, Ontario, 2006

Certifications

Ontario Ministry of Culture Applied Research License #R289

First Aid and CPR – Level C

Wilderness First Aid

Awards

Golder London Office Award – Health and Safety Excellence (2009)

Golder Ottawa Office Innovation Award (2010)

Golder Excellence Award (Highly Commended Projects) (2011)

Golder Continued Learning Award (2013)

Languages

English – Fluent

Golder Associates Ltd. – Whitby

Project Archaeologist

Chris is a licensed research archaeologist (R289) who has worked full-time in the field of Cultural Resource Management for the past ten years. He has supervised the survey and excavation of sites ranging from the Archaic period to the late 19th century in a wide variety of settings and conditions across southern and northern Ontario. As the senior field director in Greater Toronto Area, Chris manages the activities of the field crews to ensure that all projects are completed on time and to the highest standards. Chris received a B.Sc. in Anthropology from the University of Toronto in 2006 and has completed course work towards an MA from the University of Western Ontario. Chris holds valid certificates in First Aid and CPR (Level C) and Wilderness First Aid.

Employment History

Golder Associates Ltd. – Whitby, Ontario
Project Archaeologist (2010 to Present)

Senior field director responsible for the day to day supervision of field crews. Provides a main point of contact for clients while in the field.

Golder Associates Ltd. – London, Ontario
Licensed Field Director (2008 to 2010)

Archaeologist responsible for the day to day supervision of field crews. Additional responsibilities include coordinating the cataloguing and analysis of artifacts recovered.

Archaeologix Inc. – London, Ontario
Licensed Field Director (2007 to 2008)

Archaeologist responsible for the day to day supervision of field crews. Additional responsibilities include participating in the cataloguing and analysis of artifacts recovered.

Archaeologix Inc. – London, Ontario
Archaeological Field Technician (2006 to 2007)

Participated in Stage 2, 3, and 4 archaeological assessments on a range of projects including pre-contact aboriginal and historic Euro-Canadian sites.

PROFESSIONAL AFFILIATIONS

Ontario Archaeological Society (OAS)

Canadian Archaeological Association (CAA)

Ontario Association of Professional Archaeologists (APA)

PROJECT EXPERIENCE – URBAN ARCHAEOLOGY WITH TRENCHING

Stage 2-3, St. Lawrence Market – North Building
City of Toronto, Ontario
2015

Project archaeologist responsible for monitoring trenching excavation, interpretation of complex stratigraphy, artifact recovery, trench photography, drawing and public relations. Responsible for implementing health and safety protocols on site.

Stage 2, Matchedash Street South
City of Orillia, Ontario
2015

Senior field director responsible for monitoring trenching excavation, interpretation of complex stratigraphy, artifact recovery, trench photography, drawing and public relations. Responsible for developing and implementing health and safety protocols on site. Primary author of site report.

Stage 2, Haileybury Courthouse
Town of Haileybury, Ontario
2015

Senior field director responsible for monitoring trenching excavation, artifact recovery, trench photography, drawing and public relations. Responsible for developing and implementing health and safety protocols on site. Trenching assessment ongoing

Stage 2-3, 543 Richmond Street West
City of Toronto, Ontario
2015

Project archaeologist responsible for monitoring trenching excavation, artifact recovery, trench photography, drawing and public relations. Responsible for implementing health and safety protocols on site

PROJECT EXPERIENCE – ARCHAEOLOGY

Stage 4, CTC Distribution Facility
Bolton, Ontario
2015

Senior field director for construction monitoring; responsibilities including coordinating field logistics, client relations, and on site monitoring on an active construction site of a protective buffer around an early to mid-19th century historical site

Stage 1, Proposed Quarry & Pit Expansion
Gordon Lake, Northern Ontario
2015

Senior field director for property inspection in remote area close to Manitoba border.

Stage 2, Transmission Corridor
Thunder Bay, Ontario
2015

Senior field director for test pit survey in remote locations along TransCanada corridor; responsibilities included coordinating field logistics and implementing health and safety protocols.

Stage 4, 407 East Expansion Phase 1 & 2
Durham Region, Ontario
2014

Senior field director for the Stage 4 mitigation of five historic Euro-Canadian sites in support of the 407 East Expansion Project, Phase 1 and 2.

Stage 3, 407 East Expansion Phase 1
Durham Region, Ontario
2013-2014

Senior field director for the Stage 3 assessment of five historic Euro-Canadian sites and one pre-contact Aboriginal site in support of the 407 East Expansion Project, Phase 1.

Stage 2, Chromite Mine Development
Ring of Fire, Northern Ontario
2013

Field director for large scale Stage 2 test pit survey in support of a chromite mine development, Ring of Fire, Northern Ontario; responsibilities included directing the field crew and coordinating daily helicopter transportation.

Stage 4, Samsumg GREP Solar Project
Haldimand, Ontario
2013

Logistical Director for multiple Stage 4 mitigations by excavation in support of a solar energy project in Haldimand County, Ontario; responsibilities included managing crews, coordinating field logistics and coordinating First Nations participation.

Stage 2, NEEC East Durham Wind Energy Project
Durham, Ontario
2012

Field director for large scale Stage 2 pedestrian survey and test pit survey in support of a wind energy project outside of Durham, Ontario; responsibilities included managing crews and coordinating field logistics over an approximate 6 month period.

Gold Mine Development
Thunder Bay District, Ontario
2012

Field director for large scale Stage 2 test pit survey as a component of baseline EA studies in advance of a gold mine development; responsibilities included managing crews and coordinating day to day logistics including ATV and boating transportation.

Walton Developments
Alliston, Ontario
2012

Field director for Stage 3 archaeological assessment of 4 mid to late 19th century historic sites; responsibilities included managing crews undertaking excavation, photography and drawing of subsurface features.

Kingston Solar Farm
Kingston, Ontario
2012

Field director for Stage 3 archaeological assessment and Stage 4 mitigation of 4 early to mid 19th century historic sites; responsibilities included managing crews undertaking excavation, photography and drawing of subsurface features.

RioCan Windfields Farm
Oshawa, Ontario
2012

Field director for Stage 1 to 4 archaeological assessments related to the recovery of mid to late 19th century historic material. Responsibilities included managing field crews on site and directing field activities.

Minto Windfields Farm
Oshawa, Ontario
2012

Field director for Stage 1 to 3 archaeological assessments related to the recovery of mid to late 19th century historic material. Responsibilities included managing field crews on site and directing field activities.

Armow Wind Energy Project
Kincardine, Ontario
2011-2012

Field director for Stage 2-3 archaeological assessment for large wind energy project, Bruce County, Ontario. Stage 2 assessment was undertaken in order to meet the requirements of an environmental assessment conducted under the Renewable Energy Act, as outlined in Ontario Regulation 359/09 section 22(3). The Stage 2 assessment focused upon the proposed wind turbine layout, including turbine sites, collector cable routes, access roads and substations. Responsibilities included coordination between client and land owners to prepare fields for assessment, balanced the specialized needs of the client within the regulations governing the practice of CRM and managed field crews.

Consolidated Intersection Control Stream 1 (MTO)
Central Region, Ontario
2011

Field director for property inspection for four study areas located in Niagara, Hamilton and Peel. Documented conditions at each study area to determine if areas exhibited the potential for the recovery of archaeological resources.

Consolidated Intersection Control Stream 2 (MTO)
Central Region, Ontario
2011

Field director for property inspection for four study areas located in Simcoe County. Documented conditions at each study area to determine if areas exhibited the potential for the recovery of archaeological resources.

Proposed Highway 7 Expansion (MTO)
County of Peterborough, Ontario
2011

Field director for Stage 2 property survey and Stage 3 test unit excavation for proposed expansion of Highway 7 from Highway 115 to Fowler's Corners.

Runnymede Currey Property
R.M. of Durham, Ontario
2010

Field director for Stage 1 to 4 archaeological assessments related to the recovery of mid 19th century historic material. Responsibilities included frequent communication with the client to ensure field work was being conducted to their satisfaction, managing field crews and ensuring site safety by applying Health & Safety standards and practices.

TCI Adelaide Wind Farm
Adelaide-Metcalfe, Ontario
2009

A Stage 1-2 archaeological background study was previously conducted for a parcel of approximately 8275 hectares in the Township of Adelaide-Metcalfe, Middlesex County, Ontario. Stage 2 assessment was undertaken in order to meet the requirements of an environmental assessment conducted under the Renewable Energy Act, as outlined in Ontario Regulation 359/09 section 22(3). The Stage 2 assessment focused upon the proposed wind turbine layout, including turbine sites, collector cable routes, access roads, and the substation. Responsibilities included coordination between client and land owners to prepare fields for assessment, balanced the specialized needs of the client within the regulations governing the practice of CRM and managed field crews.

Shell Albian Oil Sands
Fort McMurray, Alberta
2009

Stage 4 mitigation of the archaeological resources found within the Albian Sands Jackpine Mine Operating Area and the Muskeg River Mine External Tailings Disposal Extension Area. Responsibilities included managing the select group of Ontario field crew that were sent out to Alberta for 2 four week terms.

Hamilton Road Subdivision
London, Ontario
2009

An archaeological assessment (Stages 1-4) was conducted for an approximate 50 acre property located in the City of London, Ontario. This assessment was undertaken in order to meet the requirements of a standard condition of development approval as required by the City of London Department of Planning and Development. Responsibilities included frequent communication with the client to ensure field work was being conducted to their satisfaction, managing field crews, mentoring Ministry of Culture summer students and ensured site safety by applying Health & Safety standards and practices.

Church of Our Lady Immaculate
Guelph, Ontario
2008

Field Director for the removal of a cemetery to be transferred to an alternate location. Supervised crews excavating 19th century burials and participated in analysis of the minimum number of individuals from two mass graves.

Ricardo Street, Niagara-on-the-Lake
Niagara Region, Ontario
2008

An archaeological assessment (Stages 1 -4) was conducted for a 0.22 hectare property located at 289 Ricardo Street in the Town of Niagara-on-the-Lake, Ontario. Responsibilities on this project included managing field crews during the mitigation of a complicated and highly important historic site, analysis of Military buttons and insignias, assisted in preparation of final report, mapping of site features, digitization of feature forms and site plans and liase with the public.

Hydro One - Transmission Line Reinforcement
Tiverton to Hanover, Ontario
2008-2010

Field Director for the multi-year archaeological assessment under the Ontario Heritage Resources Act required prior to the construction and operation of approximately 90.5 kilometres of 550kv transmission line running from Bruce Nuclear to the Proton/Egremont townline east of Hanover, Ontario. Responsibilities included coordinating meetings on a weekly basis with representatives of Hydro One, Liase with land agents and property owners and alleviate property owner's concerns, processed weekly planning and property access requests and managed field crews. Also assisted with final report production.

RioCan Developments
Ajax, Ontario
2007

Archaeological field technician for a Stage 1-4 archaeological assessment under the Ontario Heritage Resources Act required prior development in Ajax, Ontario. This assessment involves an archaeological survey of lands within the proposed area of impact, as well as the testing and mitigation of a mid 19th century Euro-Canadian archaeological site.

Coyle Creek Subdivision
Welland, Ontario
2007

Archaeological field technician/field director for an archaeological assessment under the Ontario Heritage Resources Act required prior to the construction of the proposed Coyle Creek Subdivision (Phase 1) by Sterling Developments, Inc. in Welland, Ontario. This assessment involved an extensive archaeological survey of lands within the proposed area of impact, as well as the testing and mitigation of several large Pre-Contact Aboriginal sites. Responsibilities included supervision of field crew during excavation, lithic analysis, map production, artifact cataloguing and inking and client relations.

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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