Appendix H

STAGE 1 ARCHEOLOGICAL ASSESSMENT
Stage 1 Archaeological Assessment for the
Iron and Manganese Treatment Upgrades for the
Shingletown Wells
Located at 2324 Bleams Road
and Extending 1000 metres from the Shingletown Wells
Within Part of Lots 10-14, German Block South of Bleams Road and
Part of Lots 9-13, German Block North of Bleams Road
In the Geographic Township of Wilmot
County of Waterloo
Now in the Township of Wilmot
Regional Municipality of Waterloo
Ontario

Project #: 008-WA8103-18
Licensee (#): Ian Boyce (P1059)
PIF#: P1059-0008-2019

Original Report

June 7, 2019

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EXECUTIVE SUMMARY

Archeoworks Inc. was retained by R.V. Anderson Associates Limited to conduct a Stage 1 AA in support of the Iron and Manganese Treatment Upgrades for the Shingletown Wells Class EA, encompassing the Shingletown Wells, located at municipal address 2324 Bleams Road (herein referred to as the “Shingletown Wells site area”). To support the proposed upgrades to the Shingletown Wells site area, the land extending 1000 metres in all directions around the property was also subject to archaeological assessment. This entire parcel of land will herein be referred to as the “study area.” The study area is located in part of Lots 9 to 13, German Block North of Bleams Road and Part of Lots 10 to 14, German Block South of Bleams Road, in the Geographic Township of Wilmot, County of Waterloo, now in the Township of Wilmot, Regional Municipality of Waterloo.

Stage 1 AA background research established elevated potential for the recovery of archaeologically significant materials within the study area. To determine if the archaeological potential classification of the study area is relevant, a desktop review of ground conditions was undertaken using historical mapping, 20th century topographic maps and aerial photography. The desktop review identified parts of the study area as having been subject to previous archaeological assessment and cleared of further archaeological concern, parts as having archaeological potential removed and parts as having no or low archaeological potential. The remaining balance of the study area was identified as retaining archaeological potential and requires further archaeological assessment.

Considering the findings detailed in the following sections, the following recommendations are presented:

1. Lands that were subjected to previous archaeological assessments (AHA, 2007; ARA, 2018) and deemed free of further archaeological concern are recommended to be exempt from further assessment.

2. Parts of the study area that were identified as having archaeological potential removed are exempt from requiring Stage 2 AA (extents of these areas to be confirmed during the Stage 2 AA).

3. Parts of the study area that were identified as having no or low archaeological potential are exempt from requiring Stage 2 AA (extents of these areas to be confirmed during the Stage 2 AA).

4. All areas identified as retaining archaeological potential must be subjected to a Stage 2 AA. These areas must be subjected to pedestrian or test pit survey at five-metre intervals in accordance with the standards set within Sections 2.1.1 and 2.1.2 of the 2011 S&G.
5. Following the completion of the Stage 2 AA, should lands directly adjacent to the Wilmot Centre Cemetery property limits, located at 2517 Bleams Road, be impacted by development/construction activities, a Stage 3 investigation consisting of mechanical topsoil removal of 10-metre-wide swaths of topsoil beyond the cemetery limits will need to be undertaken, recognizing Section 2.2., Guideline 4, and in accordance with Section 3.3.3, Standard 2 of the 2011 S&G. Mechanical excavation must be preceded by the removal of the existing asphalt surface and any underlying fill, where applicable. Following the asphalt and fill removal, mechanical excavation is to be carried out employing a flat-edged bucket. Unless human remains are encountered, mechanical stripping of topsoil is to reach sterile subsoil depths.

No construction activities shall take place within the study area prior to the Ministry of Tourism, Culture and Sport (Archaeology Programs Unit) confirming in writing that all archaeological licensing and technical review requirements have been satisfied.
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1.0 PROJECT CONTEXT

1.1 Objective

The objectives of a Stage 1 Archaeological Assessment (AA), as outlined by the 2011 Standards and Guidelines for Consultant Archaeologists (‘2011 S&G’) published by the Ministry of Tourism, Culture, and Sport (MTCS) (2011), are as follows:

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

1.2 Development Context

Archeoworks Inc. was retained by R.V. Anderson Associates Limited to conduct a Stage 1 AA in support of the Iron and Manganese Treatment Upgrades for the Shingletown Wells Class EA, encompassing the Shingletown Wells, located at municipal address 2324 Bleams Road (herein referred to as the “Shingletown Wells site area”). To support the proposed upgrades to the Shingletown Wells site area, the land extending 1000 metres in all directions around the property was also subject to archaeological assessment. This entire parcel of land will herein be referred to as the “study area.” The study area is located in part of Lots 9 to 13, German Block North of Bleams Road and Part of Lots 10 to 14, German Block South of Bleams Road, in the Geographic Township of Wilmot, County of Waterloo, now in the Township of Wilmot, Regional Municipality of Waterloo (see Appendix A – Map 1).

This study was triggered by the Environment Assessment Act in support of the Municipal Class EA regulatory process. It was conducted under the project direction of Mr. Ian Boyce, under the archaeological consultant licence number P1059, in accordance with the Ontario Heritage Act (2009) and 2011 S&G. Permission to investigate the study area was granted by R.V. Anderson Associates Limited on March 14th, 2019.

The Region of Waterloo has an Archaeological Facilities Master Plan which documents archaeological resources and evaluates archaeological potential within the region (Region of Waterloo, 1989). This resource “allows for the modification of development plans at an early stage of planning by allowing developers to arrange for an archaeological assessment of properties which exhibit moderate to high archaeological potential and arrange for the appropriate stage of mitigation or selecting an alternative area for development” (p.1). According to this resource, numerous portions of the study area require archaeological assessment (see Map 2).
1.3 Historical Context

To establish the historical context and archaeological potential of the study area, Archeoworks Inc. conducted a review of Aboriginal and Euro-Canadian settlement history, and a review of historic mapping.

The results of this background research are documented below and summarized in Appendix B – Summary of Background Research.

1.3.1 Pre-Contact Period
The pre-contact period of Southern Ontario includes numerous Aboriginal groups that continually progressed and developed within the environment they inhabited. Table 1 includes a brief overview and summary of the pre-contact Aboriginal history of Southern Ontario.

Table 1: Pre-Contact Period

<table>
<thead>
<tr>
<th>Periods</th>
<th>Date Range</th>
<th>Overview and Attributes</th>
</tr>
</thead>
<tbody>
<tr>
<td>PALEO-INDIAN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Early</td>
<td>ca. 11000 to 8500 B.C..</td>
<td>Small groups of nomadic hunter-gathers who utilized seasonal and naturally available resources; sites are rare; hunted in small family groups who periodically gathered into larger groups/bands during favourable periods in the hunting cycle; campsites used during travel episodes and found in well-drained soils in elevated situations; sites found primarily along glacial strandlines due to current understanding of regional geological history; artifacts include fluted and lanceolate stone points, scrapers and dart heads - Gainey, Barnes, Crowfield Fluted Points (Early Paleo-Indian) - Holcombe, Hi-Lo, Lanceolates (Late Paleo-Indian) (Ellis and Deller, 1990, pp.37-64; Wright, 1994, p.25; Ellis, 2013, p.37).</td>
</tr>
<tr>
<td>Late</td>
<td>ca. 8500 to 7500 B.C.</td>
<td></td>
</tr>
<tr>
<td>ARCHAIC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Early</td>
<td>ca. 7800 to 6000 B.C.</td>
<td>Descendants of Paleo-Indian ancestors; lithic scatters are the most commonly encountered site type; trade networks appear; artifacts include reformed fluted and lanceolate stone points with notched bases to attach to wooden shaft; ground-stone tools shaped by grinding and polishing; stone axes, adzes and bow and arrow - Side-notched, corner-notched, bifurcate projectile points (Early Archaic) - Stemmed, Otter Creek/Other Side-notched, Brewerton side and corner-notched projectile points (Middle Archaic) (Ellis et al., 1990, pp.65-124; Wright, 1994, pp.26-28; Ellis, 2013, pp.41-46).</td>
</tr>
<tr>
<td>Middle</td>
<td>ca. 6000 to 2000 B.C.</td>
<td></td>
</tr>
<tr>
<td>Late</td>
<td>ca. 2500 to 500 B.C.</td>
<td></td>
</tr>
<tr>
<td>WOODLAND</td>
<td></td>
<td>Evolved out of the Late Archaic Period; introduction of pottery (ceramic) where the earliest were coil-formed, under fired and likely utility usage; two primary cultural complexes: Meadowood (broad extent of occupation in southern Ontario) and Middlesex (restricted to Eastern Ontario); poorly understood settlement-subsistence patterns; artifacts include cache blades, and side-notched points that were often recycled into other tool forms; primarily Onondaga chert; commonly associated with Saugeen and Point Peninsula complexes - Meadowood side-notched projectile points</td>
</tr>
</tbody>
</table>
Middle ca. 200 B.C. to A.D. 700

Three primary cultural complexes: Point Peninsula (generally located throughout south-central and eastern Southern Ontario), Saugeen (generally located in southwestern Southern Ontario), and Couture (generally located in southwesternmost part of Ontario); introduction of large “house” structures and substantial middens; settlements have dense debris cover indicating increased degree of sedentism; incipient horticulture; burial mounds present; shared preference for stamped, scallop-edged or tooth-like decoration, but each cultural complex had distinct pottery forms
- Saugeen Point projectile points (Saugeen)
- Vanport Point projectile points (Couture)
- Snyder Point projectile points

Late (Transitional) ca. A.D. 600 to 1000

Princess Point exhibits few continuities from earlier developments with no apparent predecessors; hypothesized to have migrated into Ontario; the settlement data is limited, but oval houses are present; artifacts include ‘Princess Point Ware’ vessels that are cord roughened, with horizontal lines and exterior punctation; smoking pipes and ground stone tools are rare; introduction of maize/corn horticulture; continuity of Princess Point and Late Woodland cultural groups
- Triangular projectile points

Late (Early Ontario Iroquois) ca. A.D. 900 to 1300

Two primary cultures: Glen Meyer (located primarily in southwestern Ontario from Long Point on Lake Erie to southwestern shore of Lake Huron) and Pickering (encompassed north of Lake Ontario to Georgian Bay and Lake Nipissing); well-made and thin-walled clay vessels with stamping, incising and punctation; multi-family longhouses and some small, semi-permanent palisade villages; adoption of greater variety of harvest products; increase in corn-yielding sites; crudely made smoking pipes, and worked bone/antler present; evolution of the ossuary burials
- Triangular-shaped, basally concave projectile points with downward projecting corners or spurs

Late (Middle Ontario Iroquois) ca. A.D. 1300 to 1400

Fusion of Glen Meyer and Pickering caused by conquest and absorption of Glen Meyer by Pickering; two primary cultures: Uren (A.D. 1300-1350) and Middleport (A.D. 1350-1400); decorated clay vessels decrease; well-developed clay pipe complex that includes effigy pipes; increase in village sizes (0.5 to 1.7 hectares) and campsites (0.1 to 0.6 hectares) appear with some palisades; classic longhouse takes form; increasing reliance on maize and other cultigens such as beans and squash; intensive exploitation of locally available land and water species
- Triangular and (side of corner or corner removed) notched projectile points
- Middleport Triangular and Middleport Notched projectile points

Late (Late Ontario Iroquois) ca. A.D. 1400 to 1600

Ontario Iroquoian sites describe two major groups east and west of the Niagara Escarpment: the ancestral Neutral Natives to the west, and the ancestral Huron-Wendat to the east; pre-contact Neutral Native (called Attiawandaron by the Huron-Wendat) sites found clustered around the western end of Lake Ontario and eastward across the Niagara Peninsula; Natives distributed west of the Niagara Escarpment as far as Milton, and the County of Waterloo was on the northerly edge; ancestral Neutral Native settlements include villages up to five acres in size to isolated fishing cabins; villages tend to be located along smaller creeks, headwaters and marshlands;
1.3.2 Contact Period
The contact period of Southern Ontario is marked by the European arrival, interaction and influence with the established Aboriginal communities of Southern Ontario. Table 2 includes a brief overview and summary of some of the main developments that occurred during the contact period of Southern Ontario.

Table 2: Contact Period

<table>
<thead>
<tr>
<th>Periods</th>
<th>Date Range</th>
<th>Overview and Attributes</th>
</tr>
</thead>
<tbody>
<tr>
<td>European Contact</td>
<td>ca. A.D. 1600s</td>
<td>The area “south of Lake Simcoe and along the north shore of Lake Ontario remained a no-man’s land, with no permanent settlements and traversed only by raiding parties from the north or from the south” (Robinson, 1965, p.11); Neutral Native villages were clustered in the Niagara Peninsula but their territorial hunting grounds stretched from the “Niagara River on the east, Lake Erie on the south, Lake St. Clair on the west, and a hazy Huron-Wendat-Attiwandaron frontier on the north” (Hunt, 1940, p.50); Neutral Natives were referred to as la Nation neutre by Samuel de Champlain but there was limited European contact with Neutrals; French missionaries visited Neutral Native villages but no permanent missions were established; no direct commercial trade relationship was formed between the French and Neutral Natives; trade goods begin to replace traditional tools/items; epidemics (Jury, 1974, pp.3-4; White, 1978, pp.407-411; Lennox and Fitzgerald, 1990, pp.405-456; Trigger, 1994, pp.47-55; Warrick, 2008, pp.12, 15, 80, 245).</td>
</tr>
<tr>
<td>Five Nation (Haudenosaunee) Arrival</td>
<td>ca. A.D. 1650s</td>
<td>The Five (later Six) Nations (or Haudenosaunee), originally located south of the Great Lakes, engaged in warfare with Huron-Wendat neighbours as their territory no longer yielded enough furs; the Five Nations of Iroquois attacked the Neutrals in ca. 1650s and caused their dispersal; many survivors not captured were incorporated into the Five Nations of Iroquois or sought refuge within other groups; the Five Nations of Iroquois, particularly the Seneca, established settlements along the Lake Ontario shoreline at strategic locations along canoe-and-portage routes and used the territory for extensive fur trade; Teiaiagon at a bend near the mouth of the Humber River and along the Niagara River; a fort and trading post, Fort Niagara, had been constructed along the eastern bank of the Niagara River; European fur trade and exploration continues (Smith, 1897, p.40; Robinson, 1965, pp.15-16; Abler and Tooker, 1978, p.506; Schmalz, 1991, pp.12-34; Trigger, 1994, p.53-59; Warrick, 2008, p.208; Williamson, 2013, p.60).</td>
</tr>
<tr>
<td>Anishinaabeg Arrival</td>
<td>ca. A.D. 1650s to 1700s</td>
<td>Algonquin-speaking and cultural groups within the Anishinaabeg (Ojibway, Chippewa, Odawa, Mississauga and others) began to challenge the Five Nations of Iroquois dominance in the region; by 1690s, the Five Nations of Iroquois settlements were abandoned; battles fought throughout Southern Ontario; by 1701, the Five Nations of Iroquois were defeated and the Anishinaabeg replaced the Five Nations of Iroquois in Southern Ontario; gathered collectively as First Nations to participate in Great Peace negotiations; the term ‘Mississauga’ was used.</td>
</tr>
<tr>
<td>STAGE 1 AA FOR THE SHINGLETOWN WELLS CLASS EA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOWNSHIP OF WILMOT, R.M. OF WATERLOO, ONTARIO</td>
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</table>

| Applied to those on the north shore of Lake Ontario and were granted land extending northward of Lake Ontario and Lake Erie; Mississauga focused on hunting/fishing/gathering with little emphasis on agriculture; temporary and moveable houses (wigwam) left little archaeological material behind; settlements included one near abandoned Teiaiagon (Hathaway, 1930, p.433; Trigger, 1994, pp.57-59; Johnston, 2004, pp.9-10; McMillian and Yellowhorn, 2004, pp.110-111; Gibson, 2006, pp.35-41; Smith, 2013, pp.16-20; Williamson, 2013, p.60). |

### Fur Trade Continues

**ca. A.D. 1750s**

The Anishinaabeg continued to trade with both the English and the French; Métis development; Seven Years War between France and Britain resulted in French surrender of New France in 1763; Royal Proclamation of 1763; Beaver Wars between groups within the (now) Six Nations of Iroquois and groups within the Anishinaabeg against the British; fur trade continued until Euro-Canadian settlement (Schmalz, 1991, pp.35-62, 81; Surtees, 1994, pp.92-97; Johnston, 2004, pp.13-14).

### British Land Treaties

**ca. A.D. 1750s to 1800s**

American Revolution caused large numbers of United Empire Loyalists, military claimants, immigrants from the British Isle/European locations, and groups who face persecution in the United States to arrive in Upper Canada; Treaty of Paris signed in 1784; Haldimand Proclamation of 1784 granted a track of land along the Grand River from its headwaters to Lake Erie to the Six Nations of Iroquois (Haudenosaunee) as compensation for their alliance with the British during the American Revolution; that same year, the Mississauga at the western end of Lake Ontario ceded a large tract of land that “included the Niagara Peninsula, lands close to the head of Lake Ontario, and the north shore of Lake Erie as far west as Cat Fish Creek” (Surtees, 1994, p.103); the purchase became known as the Between the Lakes Purchase, or Treaty No. 3 (Government of Ontario, 2019); a track of land nearly 12 miles (or 19 kilometres) wide on either side of the Grand River was granted to the Six Nations of Iroquois; a document from 1792 confirmed this transaction; in 1825, a provisional surrender was made by the Chippewa Indians, and in 1827 a confirmatory surrender was issued for the sale of land that would become the Township of Wilmot (Department of Indian Affairs, 1891, p.lxiv; Bricker, 1935, p.82; Bourgeois, 1986, p.11; Surtees, 1994, pp.103-104; Bloomfield, 1995, p.19; Government of Ontario, 2014; Government of Ontario, 2019).

### 1.3.3 Euro-Canadian Settlement Period (A.D. 1800s to present)

#### 1.3.3.1 Township of Wilmot

The Township of Wilmot, surrounded by other townships in Waterloo County, Perth County and Oxford County, was described as having a favourable climate, fertile soil and numerous streams “rendering it one of the most advantageous locations for the husbandman [a farmer] to be found on the continent” (Parsell & Co., 1881, p.vii). The Township of Wilmot was “first settled in 1822 by Christian Naffziger [also spelled Nafziger], a German of the Menonist persuasion, who applied to the British Government for a free grant of fifty acres of land to each family who should emigrate with him from Germany to Canada” (Sutherland, 1864, p.51; Parsell & Co., 1881, p.vii). Christian Naffziger was part of a society of German Non-Conformists, or Amish, and was originally from Amsterdam (Eby, 1895, p.57). He successfully received the land grants and returned to Canada with a number of German settlers who each received a front quarter of each lot north and south of Erbs Road, Snyder’s Road and Bleams Road (Sutherland, 1864, p.51). Consequently, the survey of the Township of Wilmot divided the township into three horizontal blocks of lands:
the German Blocks North and South of Erbs Road, Snyder’s Road and Bleams Road; and Block A and Block B, which were purchased by the Canada Company (Sutherland, 1864, p.51).

Soon after, “Roman Catholics and Lutherans from Alsace and Germany, Anglicans from the British Isles and others joined the initial settlers in clearing land and building roads, mills, shops, churches, schools and villages” (Heritage Wilmot, 2015). In 1825, the township contained 720 individuals; by 1841, there were 2,220 individuals (who were primarily German, with few Canadians); by 1854, there were 4,863 individuals; and by 1861, there were 6,173 individuals living in the Township of Wilmot (Smith, 1846, p.220; Smith, 1851, p.122; Sutherland, 1864, p.51). By the 1850s, there were three grist mills, 14 sawmills and 15,310 acres were under cultivation of the 51,463 acres owned (Smith, 1846, p.220). As the township continued to develop, small villages began to form that serviced the surrounding rural community.

1.3.3.2 Village of Baden
Baden, located northwest of the study area, was founded and established in 1855. The community was originally named Weissenburg after an elderly bachelor living in the area, but was renamed Baden, after the Grand Duchy of Baden-Baden in Germany (Heritage Wilmot, 2015). By 1873, Baden was described as, “a thriving post village in Waterloo Co., Ont., on the G.T.R. [Grand Trunk Railway], 72 miles W. of Toronto. It contain[ed] a large iron foundry, woollen, flax and stave factories, a brewery, a telegraph office, and several stores” (Lovell, 1873, p.25).

1.3.3.3 Community of Wilmot Centre
Wilmot Centre, located west of the study area, was formerly the Township of Wilmot’s seat of government (Heritage Wilmot, 2015).

1.3.3.4 Community of Shingletown
Shingletown (or Schindlesteddle), encompassed within the study area, is located along Bleams Road. The community was originally named Victoriaburg, likely in respect to Queen Victoria who was the ruling monarch of the United Kingdom of Great Britain and Ireland, and Empress of India from 1837 to 1901. A popular shingle industry developed in the community from 1852 to 1882, and the community became known as Shingletown (Rayburn, 2006; Heritage Wilmot, 2015).

1.3.4 Past Land Use

1.3.4.1 Pre-1900 Land Use
Several documents were reviewed to gain an understanding of the land use history and of the study area’s potential for the recovery of historic pre-1900 remains, namely the 1861 Tremaine’s Map of the County of Waterloo and the 1881 Illustrated Historical Atlas of the County of Waterloo (see Maps 3-4; Tables 3-4).

Table 3: Historic Structures within the Study Area in the 1861 Tremaine Map

<table>
<thead>
<tr>
<th>Concession</th>
<th>Lot</th>
<th>Owner</th>
<th>Structure(s) Present</th>
</tr>
</thead>
<tbody>
<tr>
<td>German Block North of Bleams Road</td>
<td>9</td>
<td>Mich Frances</td>
<td>No structure(s)</td>
</tr>
<tr>
<td>German Block North of Bleams Road</td>
<td>10</td>
<td>Amos Crossman</td>
<td>No structure(s)</td>
</tr>
<tr>
<td>German Block North of Bleams Road</td>
<td>10</td>
<td>J. Appel</td>
<td>No structure(s)</td>
</tr>
</tbody>
</table>
According to the 1861 Tremaine’s Map of the County of Waterloo, five historic homesteads, two sawmills, one schoolhouse (No.10) and two churches are located within the study area. The Hunsburger Creek and Silver Spring Creek are also depicted traversing the study area. No additional historic homesteads are depicted within 300 metres of the study area.

Table 4: Historic Structures within the Study Area in the 1881 Illustrated Atlas

<table>
<thead>
<tr>
<th>Concession</th>
<th>Lot</th>
<th>Owner</th>
<th>Structure(s) Present</th>
</tr>
</thead>
<tbody>
<tr>
<td>German Block North of Bleams Road</td>
<td>9</td>
<td>Unlisted</td>
<td>No structure(s)</td>
</tr>
<tr>
<td>German Block North of Bleams Road</td>
<td>10</td>
<td>Unlisted</td>
<td>No structure(s)</td>
</tr>
<tr>
<td>German Block North of Bleams Road</td>
<td>11</td>
<td>Unlisted</td>
<td>No structure(s)</td>
</tr>
<tr>
<td>German Block North of Bleams Road</td>
<td>12</td>
<td>Unlisted</td>
<td>One factory</td>
</tr>
<tr>
<td>German Block North of Bleams Road</td>
<td>13</td>
<td>Unlisted</td>
<td>No structure(s)</td>
</tr>
<tr>
<td>German Block North of Bleams Road</td>
<td>10</td>
<td>Unlisted</td>
<td>No structure(s)</td>
</tr>
<tr>
<td>German Block South of Bleams Road</td>
<td>11</td>
<td>Unlisted</td>
<td>One sawmill; two churches (Baptist Church and Evangelical Church); one homestead</td>
</tr>
<tr>
<td>German Block South of Bleams Road</td>
<td>12</td>
<td>John B. Hainacher</td>
<td>One sawmill; two churches (Baptist Church and Evangelical Church); one homestead</td>
</tr>
<tr>
<td>German Block South of Bleams Road</td>
<td>13</td>
<td>John Brennann</td>
<td>One homestead, one schoolhouse (No.10)</td>
</tr>
<tr>
<td>German Block South of Bleams Road</td>
<td>14</td>
<td>Peter S. Grugerich</td>
<td>No structure(s)</td>
</tr>
</tbody>
</table>

The 1881 Illustrated Historical Atlas of the County of Waterloo depicts the study area encompassing one factory, a sawmill and one schoolhouse (No.10). Only the Hunsburger Creek continued to be depicted as flowing through the study area. No additional historic structures are depicted within 300 metres of the study area.
Additionally, the study area is located along present-day Bleams Road (also spelled Bleeams) and Sandhills Road, which were originally laid out during the survey of the Township of Wilmot. In Ontario, the 2011 S&G considers areas of early Euro-Canadian settlements (e.g., pioneer homesteads, isolated cabins, farmstead complexes, early wharf or dock complexes, pioneer churches, and early cemeteries), early historic transportation routes (e.g., trails, passes, roads, railways, portage routes), and properties that local histories or informants have identified with possible archaeological sites, historical events, activities, or occupations as features or characteristics that indicate archaeological potential (per Section 1.3.1 of the 2011 S&G). Therefore, based on the proximity of both early Euro-Canadian settlements and historic transportation routes, there is potential for the location of Euro-Canadian archaeological resources (pre-1900) within the study area.

**1.3.4.2 Post-1900 Land Use**

To facilitate the evaluation of the established archaeological potential, a detailed review of topographic maps from 1927 and 1938 (see Maps 5-6), an aerial photograph from 1954 (see Map 7), and satellite images from 2006, 2016 and 2018 (see Map 8-10) was undertaken.

The 1927 Topographic Map revealed the study area consisted of land that had been cleared of overgrown vegetation that was likely agricultural lands as well as pockets of treed areas situated around the Hunsburger Creek. Numerous houses are depicted in the study area, as well as access driveways to several houses. Additionally, a church and a school are depicted on the southeastern and southwestern corners, respectively, of the intersection of Bleams Road and Sandhills Road. The study area remained unchanged to 1938.

By 1954, the study area primarily consisted of open agricultural lands and small woodlots. Houses were constructed fronting on Bleams Road and Sandhills Road, with few situated far back from both roadways. The parcel of land currently located at 2324 Bleams Road appears to have been within an open area cleared for agricultural use.

By 2005, the study area saw continued development along Bleams Road and Sandhills Road, primarily with the construction of a number of new structures, particularly along the eastern portion of Bleams Road. Apart from this, the majority of the study area remained in open agricultural lands with blocks of forested areas largely surrounding residential areas and following the Hunsburger Creek. Silver Spring Creek also continued to flow through the western portion of the study area, flowing under Sandhills Road and traversing open fields. At this time the Shingletown Wells site area consisted of the fenced off wells site surrounded by an open grassed area dotted with trees. On the west side of this parcel of land are residential properties with manicured lawn, structures and a small forested area. A tributary of Hunsburger Creek is also depicted as flowing on the west side of this property. To the east and north are open agricultural fields. The study area remained relatively unchanged to 2018.

**1.3.5 Present Land Use**

The present land use of the study area is categorized as Prime Agriculture/Protected Countryside and Rural Settlement/Protected Countryside (Township of Wilmot, 2019).
1.4 Archaeological Context

To establish the archaeological context and further establish the archaeological potential of the study area, Archeoworks Inc. conducted a comprehensive review of designated and listed heritage properties, commemorative markers and pioneer churches and early cemeteries in relation to the study area. Furthermore, an examination of registered archaeological sites and previous AAs within proximity to the study area limits, and a review of the physiography of the study area were performed.

The results of this background research are documented below and summarized in Appendix B – Summary of Background Research.

1.4.1 Designated and Listed Cultural Heritage Resources

Per Section 1.3.1 of the 2011 S&G, property listed on a municipal register or designated under the Ontario Heritage Act, or that is a federal, provincial, or municipal historic landmark or site are considered features or characteristics that indicate archaeological potential. As part of the requirements set forth in the Ontario Heritage Act (2009), the Township of Wilmot and the Heritage Wilmot Advisory Committee identified heritage properties within the municipal boundaries of the Township of Wilmot and created a Heritage Register of all the properties that have cultural heritage value. The Heritage Register includes an inventory of all properties designated under Part IV (individual), Part V (Heritage Conservation Districts), and those properties that have been listed as Non-Designated properties. Non-designated properties (or “listed” properties) are properties that have cultural heritage value or interest to the community but have not been formally designated (Township of Wilmot, 2015; MTCS, 2019c).

One Non-Designated cultural heritage property is located in the study area (Township of Wilmot, 2015; Township of Wilmot, 2017; see Table 5; see Map 13). Therefore, this feature contributes in establishing the archaeological potential of the study area.

<table>
<thead>
<tr>
<th>Address</th>
<th>Details</th>
<th>Heritage Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>2344 Sandhills Road</td>
<td>Brenneman House: built in 1848; Georgian style stone house, 2-storey, four openings on both floors, walk-in basement; built by John Brenneman, one of the two first ordained ministers for the first congregation in Wilmot Township as noted by the plaque located in front of Steinmann Mennonite Church cemetery.</td>
<td>Listed (“non-designated”)</td>
</tr>
</tbody>
</table>

1.4.2 Heritage Conservation Districts

Per Section 1.3.1 of the 2011 S&G, heritage resources listed on a municipal register or designated under the Ontario Heritage Act are considered features or characteristics that indicate archaeological potential. The study area is not located in or within 300 metres of a Heritage Conservation District (MTCS, 2019a). Therefore, this feature does not contribute in establishing the archaeological potential of the study area.
1.4.3 Commemorative Plaques or Monuments
Per Section 1.3.1 of the 2011 S&G, commemorative markers of Aboriginal and Euro-Canadian settlements and history which may include local, provincial, or federal monuments, cairns or plaques, or heritage parks are considered features or characteristics that indicate archaeological potential. The study area is not located in or within 300 metres of a commemorative plaque or monument (Ontario Historic Plaques, 2019; OHT, 2019). Therefore, this feature does not contribute in establishing the archaeological potential of the study area.

1.4.4 Pioneer/Historic Cemeteries
Per Section 1.3.1 of the 2011 S&G, pioneer churches and early cemeteries are considered features or characteristics that indicate archaeological potential. The Wilmot Centre Cemetery, a pioneer cemetery, is located within the study area (OGS, 2019; see Table 6). Therefore, this feature contributes in establishing the archaeological potential of the study area.

Table 6: Pioneer Cemetery within the Study Area

<table>
<thead>
<tr>
<th>Address</th>
<th>Name and Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>2517 Bleams Road</td>
<td>Wilmot Centre Cemetery: the cemetery is maintained by School Section No. 10; approximately 225 markers in the community burial ground; is known locally as “the Section Ten cemetery”; oldest graves are at the east end, near the school; established in 1843 (Bloomfield, et al, 1993, p.53; Find a Grave, 2019).</td>
</tr>
</tbody>
</table>

1.4.5 Registered Archaeological Sites
Per Section 1.1, Standard 1 and Section 7.5.8, Standard 1 of the 2011 S&G, the Ontario Archaeological Sites Database (OASD) maintained by the MTCS was consulted in order to provide a summary of registered or known archaeological sites within a minimum one-kilometre distance of the study area limits.

According to the OASD there are 11 archaeological sites within a one-kilometre radius of the study area (MTCS, 2019b) (see Table 7). A map detailing the location of the registered archaeological sites that fall within one kilometre (1000 metres) of the study area is provided within Map S1 of the attached Supplementary Document.

Table 7: Registered Archaeological Sites within One-Kilometre of the Study Area

<table>
<thead>
<tr>
<th>Borden #</th>
<th>Name</th>
<th>Cultural Affiliation</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>AiHd-148</td>
<td>Freeman</td>
<td>Middle Archaic</td>
<td>Findspot</td>
</tr>
<tr>
<td>AiHd-82</td>
<td>Sluyter</td>
<td>Late Woodland</td>
<td>Village</td>
</tr>
<tr>
<td>AiHd-171</td>
<td>-</td>
<td>Woodland</td>
<td>Scatter</td>
</tr>
<tr>
<td>AiHd-172</td>
<td>-</td>
<td>Post-Contact, Euro-Canadian</td>
<td>Farmstead</td>
</tr>
<tr>
<td>AiHd-16</td>
<td>Shantz</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>AiHd-18</td>
<td>Baden Hill</td>
<td>Late Woodland (Neutral)</td>
<td>Village</td>
</tr>
<tr>
<td>AiHd-20</td>
<td>Wolf</td>
<td>Late Woodland (Iroquoian)</td>
<td>Village</td>
</tr>
</tbody>
</table>
Per Section 1.3.1 of the 2011 S&G, previously registered archaeological sites in close proximity are considered to be features or characteristics that indicate archaeological potential. Given the presence of four registered archaeological sites within 300 metres of the study area limits, this feature contributes in establishing the archaeological potential of the study area.

### 1.4.6 Previous Archaeological Assessments

Per Section 1.1, Standard 1 of the 2011 S&G, to further establish the archaeological context of the study area, a review of previous AAs carried out within the limits of, or immediately adjacent (i.e., within 50 metres) to the study area (as documented by all available reports) was undertaken. Two previous AA reports were identified (see Table 8):

<table>
<thead>
<tr>
<th>Company, Report Date</th>
<th>Stage of Work</th>
<th>Relation to Study Area</th>
<th>Details and Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alder Heritage Assessments, 2007</td>
<td>Stage 1-2 AA</td>
<td>Encompassing part of the study area</td>
<td>Located at 2215 Bleams Road East. During the Stage 2 AA, a total of six isolated findspots were discovered: Findspots 1 to 5 represent predominately common to the 20th century occupation of the farmstead; Findspot 6 was a Brewerton side-notched projectile point from the Middle Archaic Period. It was determined that based on the long-term occupation of the farmstead, late date of the artifacts recovered, and lack of evidence of sealed cultural deposits from a discrete time period, Findspots 1 to 5 do not represent a significant archaeological site. Findspot 6 was given a borden number (AiHd-148); however due to its isolated nature, it did not represent a significant archaeological site. The subject area has been determined to be of no further archaeological concern and is recommended that the archaeological condition placed on this subject area be cleared.</td>
</tr>
<tr>
<td>Archaeological Research Associates, 2018</td>
<td>Stage 1-2 AA</td>
<td>Encompassing part of the study area</td>
<td>Located at 1894 Witmer Road. During the Stage 2 AA, four locations of archaeological materials were encountered: Site 1 (AiHd-171), Site 2, Site 3 (AiHd-172) and Site 4. Sites 1, 2 and 4 consisted of Aboriginal material, and Site 3 consisted of Euro-Canadian artifacts. It was recommended that Site 1 (AiHd-171), Site 2 (which may form part of Site 1) and Site 3 (AiHd-172) be subject to Stage 3 site specific assessments, while Site 4 and the remainder of the study area do not require further archaeological assessment.</td>
</tr>
</tbody>
</table>

A map detailing the location of the previously assessed areas is provided within Map S1 of the attached Supplementary Document.
1.4.7 Physical Features

1.4.7.1 Physiographic Region

The study area is primarily located in the Waterloo Hills physiographic region, while the northwest portion is located in the Stratford Till Plain physiographic region. The Waterloo Hills physiographic region lies chiefly in the Regional Municipality of Waterloo. The surface is composed of sandy hills, some of them being ridges of sandy till while others are kames or kame moraines, with outwash sands occupying the intervening hollows. A peculiar characteristic is the preponderance of fine sand, particularly on the surface. Adjoining the hilly region is an extensive area of alluvial terraces of the Grand River spillway system which, although nearly horizontal, contains similar but more uniform sandy and gravelly materials. The Conestogo River and the till plain lying north of it separate the northern end from the main body of this area. In the main part of the region, a number of kettle lakes appear. Small swamps are even more numerous. The soils of the hilly areas are well drained and have developed as mature Grey Brown Luvisolic soils. For the most part they may be classified in four series: Guelph, Harriston, Dumfries, and Waterloo. The Guelph and Harriston soils are found on gentle slopes in the areas where loamy tills occur, while there are some nearly level areas which may have the imperfectly drained London and Listowel soils. Dumfries soils are found in rougher parts where the parent material is a loose gravelly till. Waterloo sandy loam is found on most of the rounded, sandy hills of the area but there are associated small areas of many other types (Chapman & Putnam, 1984, pp.136-137).

The Stratford Till Plain physiographic region is located on a clay plain measuring 1,370 square miles from London in the south, Blyth and Listowel in the north and a projection towards Arthur and Grand Valley. It is a ground moraine interrupted by terminal moraines, where moraines in the southwestern portion of the region are more closely spaced together, while the northern half is mostly level. The soils are heavy-textured calcareous till brought in by the Huron ice lobe during the last glacial period. There are no large cities on the Stratford Till Plain (Chapman & Putnam, 1984, pp.133-135).

1.4.7.2 Soil Type

Several soil types are found within the study area including Burford-Fox, Brant-Waterloo, and Huron-St. Clements. A description of their characteristics may be found in Table 9 (Soil Research Institute, 1971). The great variety in soil types highlights the mixed landscape that the study area encompasses and supports the mixed nature of past subsistence practices and changing industries of early settlers in these areas.

Table 9: Study Area Soil Types

<table>
<thead>
<tr>
<th>Soil Association</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burford-Fox</td>
<td>Coarse and medium textured soils formed on outwash and shallow lacustrine deposits</td>
</tr>
<tr>
<td>Brant-Waterloo</td>
<td>Moderately coarse- and medium-textured soils formed on lacustrine deposits</td>
</tr>
<tr>
<td>Huron-St. Clements</td>
<td>Fine-textured soils formed on till or lacustrine deposits.</td>
</tr>
</tbody>
</table>
1.4.7.3 Hydrological Features

Hydrological features such as primary water sources (i.e. lakes, rivers, creeks, streams) and secondary water sources (i.e. intermittent streams and creeks, springs, marshes, swamps) would have helped supply plant and food resources to the surrounding area and are indicators of archaeological potential (per Section 1.3.1 of the 2011 S&G). Silver Spring Creek and Hunsburger Creek are located within the study area while Hofstetter Lake and a second kettle lake are located within 300 metres of the study area. Therefore, this feature contributes in establishing the archaeological potential of the study area.

1.4.8 Current Land Conditions

The study area is situated mainly within a rural setting of the Township of Wilmot. The study area encompasses several residential properties (extant houses, garages, sheds/outbuildings, gravel and paved driveways, the Wilmot Centre Missionary Church, Our Lady of Mount Carmel Academy, the Wilmot Centre Cemetery, two municipal wells, areas of open agricultural fields, woodlots and manicured yards, as well as several ponds. The topography is gently rolling with an elevation range of 339-384 metres above sea level.

Specifically, regarding the Shingletown Wells site area, this property is comprised of a pumphouse housing two wells, a generator room, a chemical room, a gravel driveway and parking area, underground utilities, manicured lawn dotted with trees, and a tributary of the Hunsburger Creek. The topography in this area increases from south to north at an elevation range of 358-361 metres above sea level.

1.4.9 Date of Review

A desktop review of field conditions using historic aerial photographs, and past and current satellite imagery obtained through the Google Earth application was undertaken on May 24th, 2019.

1.5 Confirmation of Archaeological Potential

Based on the information gathered from the background research documented in the preceding sections, elevated archaeological potential has been established within the study area boundary. Features contributing to archaeological potential are summarized in Appendix B.
2.0 ANALYSIS AND CONCLUSIONS

In combination with data gathered from the background research (see Sections 1.3 and 1.4) and an inspection of topographic maps and aerial photography, an evaluation of the established archaeological potential was performed. An inventory of the documented records can be found within Appendix C.

2.1 Previous Assessments

Lands encompassed within the study area limits which have already been subjected to an archaeological assessment (AHA, 2007; ARA, 2018), and deemed free of further archaeological concern are recommended to be exempt from further assessment (see Section 1.4.6, Table 8; Maps 12 and 14).

2.2 Identified Deep and Extensive Disturbances

The study area was evaluated for extensive disturbances that have removed archaeological potential. Disturbances may include but are not limited to: grading below topsoil, quarrying, building footprints, or sewage and infrastructure development. Section 1.3.2 of the 2011 S&G considers infrastructure development among those “features indicating that archaeological potential has been removed.”

Obvious visual disturbances include but are not limited to the existing paved roadways (Bleams Road and Sandhills Road), asphalt and gravel driveways and parking areas, rights-of-ways (gravel shoulders, shallow ditching, and utilities), extant structures (residential – houses, garages, sheds, agricultural – farm complexes, infrastructural – Shingletown Wells site area, and institutional – school and church), previous construction and grading activities, and extensive landscaping (patios, walkways, inground pools, basketball courts) (see Maps 11-14).

Specific disturbances tied to the Shingletown Wells site area include the gravel driveway and parking area, the pump house including two wells, a chemical room, a generator room, and various underground utilities (see Map 15).

The construction of these features would have resulted in severe damage to the integrity of any archaeological resources which may have been present within their footprints and, as such, are exempt from Stage 2 survey. On-site confirmation and documentation of the actual condition and exact extent of the disturbances will, however, be required during the Stage 2 AA.

2.3 Physiographic Features of No or Low Archaeological Potential

The study area was evaluated for physical features of no or low archaeological potential. These usually include but are not limited to: permanently wet areas, exposed bedrock, and steep slopes.
(greater than 20°) except in locations likely to contain pictographs or petroglyphs, as per Section 2.1, Standard 2.a of the 2011 S&G.

Physical features of low or no archaeological potential include the low-lying and permanently wet terrain associated with Hunsburger Creek, Silver Spring Creek and a number of small ponds and marshlands (see Maps 11-14). A tributary of the Hunsburger Creek flows along the western portion of the Wilmot Centre well field property (see Map 15). On-site confirmation and documentation of the actual condition and exact extent of these features will, however, be required during the Stage 2 AA.

### 2.4 Identified Areas of Archaeological Potential

Portions of the study area that neither exhibit extensively disturbed conditions nor contain physical features of no or low archaeological potential are considered to retain the established archaeological potential. This includes wooded areas, areas of overgrown vegetation, manicured lawn, minor landscaping/gardening and agricultural fields (see Maps 11-14). Specifically, within the Wilmot Centre well field property, this includes manicured lawn dotted with trees and overgrown vegetation along the creek (see Map 15).

Given the established potential to recover archaeological resources within these identified areas, a Stage 2 AA will be required. Actively or recently cultivated agricultural land must be subjected to pedestrian survey, in accordance with the standards outlined in Section 2.1.1 of the 2011 S&G. In areas where ploughing is not possible or viable due to the presence of overgrown vegetation or existing infrastructure and landscaping, a Stage 2 test pit survey at five metre intervals must be performed, in accordance with the standards outlined in Section 2.1.2 of the 2011 S&G.

### 2.5 Cemetery

The Wilmot Centre Cemetery is a nineteenth century cemetery located at the southwest corner of the intersection of Bleams Road and Sandhills Road at 2517 Bleams Road within the study area (see Maps 11 and 13). Established in 1843, this cemetery is considered a sensitive cultural resource of high archaeological potential. Burials in nineteenth century historic cemeteries were not highly regulated, and burials may have occurred outside the current limits, often employing markers of little substance that have since disappeared. The possible absence of grave markers can result in inaccurate depictions of present-day cemetery limits. Therefore, should lands immediately adjacent to the limits of the Wilmot Centre Cemetery be impacted by any development/construction activities, a Stage 3 AA recognizing Section 2.2, Guideline 4 of the 2011 S&G, and in accordance with Section 3.3.3, Standard 2 of the 2011 S&G, will be necessary to confirm the presence or absence of burial features (see Maps 11 and 13).
3.0 RECOMMENDATIONS

Considering the findings detailed in preceding sections, the following recommendations are presented:

1. Lands that were subjected to previous archaeological assessments (AHA, 2007; ARA, 2018) and deemed free of further archaeological concern are recommended to be exempt from further assessment.

2. Parts of the study area that were identified as having archaeological potential removed are exempt from requiring Stage 2 AA (extents of these areas to be confirmed during the Stage 2 AA).

3. Parts of the study area that were identified as having no or low archaeological potential are exempt from requiring Stage 2 AA (extents of these areas to be confirmed during the Stage 2 AA).

4. All areas identified as retaining archaeological potential must be subjected to a Stage 2 AA. These areas must be subjected to pedestrian or test pit survey at five-metre intervals in accordance with the standards set within Sections 2.1.1 and 2.1.2 of the 2011 S&G.

5. Following the completion of the Stage 2 AA, should lands directly adjacent to the Wilmot Centre Cemetery property limits, located at 2517 Bleams Road, be impacted by development/construction activities, a Stage 3 investigation consisting of mechanical topsoil removal of 10-metre-wide swaths of topsoil beyond the cemetery limits will need to be undertaken, recognizing Section 2.2., Guideline 4, and in accordance with Section 3.3.3, Standard 2 of the 2011 S&G. Mechanical excavation must be preceded by the removal of the existing asphalt surface and any underlying fill, where applicable. Following the asphalt and fill removal, mechanical excavation is to be carried out employing a flat-edged bucket. Unless human remains are encountered, mechanical stripping of topsoil is to reach sterile subsoil depths.

No construction activities shall take place within the study area prior to the MTCS (Archaeology Programs Unit) confirming in writing that all archaeological licensing and technical review requirements have been satisfied.
4.0 ADVICE ON COMPLIANCE WITH LEGISLATION

1. This report is submitted to the MTCS as a condition of licensing in accordance with Part VI of the Ontario Heritage Act, R.S.O. 1990, c 0.18. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the MTCS, 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.

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

3. 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.


5. Archaeological sites recommended for further archaeological fieldwork or protection remain subject to Section 48 (1) of the Ontario Heritage Act and may not be altered, or have artifacts removed from them, except by a person holding an archaeological licence.
5.0 BIBLIOGRAPHY AND SOURCES


Alder Heritage Assessments, (2007). Stage 1 & 2 Archaeological Assessment of Consent Applications B01/07; B02/07; B03/07, Part Lot 10, Concession South of Bleams Road, 2215 Bleam's Road East, Shingletown, Township of Wilmot, Regional Municipality of Waterloo (Report on file with MTCS).


Department of Indian Affairs, (1891). Indian Treaties and Surrenders from 1680 to 1890. Ottawa: Browns Chamberlin Printers.


Ontario Ministry of Tourism, Culture and Sport, (2019b). *Sites within a One Kilometre Radius of the Study Area,* provided from the Ontario Archaeological Sites Database, 17 May 2019.


Sutherland, J. (1864). *County of Waterloo Gazetteer and General Business Directory for 1864, containing a Brief Historical and Descriptive Sketch of the County, Townships, Towns, Villages and Post Offices with the Names of Residents of Each Locality Arranged Alphabetically and the Local Magistracy*. [online] Available at: http://archive.org/stream/countyofwaterloo1864suthuoft#page/x/mode/1up [Accessed 22 May 2019].


APPENDIX A: MAPS

Map 1: National Topographic Map 1:30,000, Stratford 040P07 (Natural Resources Canada, 2013) identifying the Stage 1AA study area.
Map 2: Archaeological potential mapping from The Region of Waterloo Archaeological Facilities Master Plan with the Stage 1 AA study area.
Map 3: Stage 1 AA study area within the 1861 Tremaine’s Map of the County of County of Waterloo – Township of Wilmot (Tremaine, 1861).
Map 4: Stage 1 AA study area within the Parsell & Co.’s 1881 Illustrated Atlas of the County of Waterloo – Township of Wilmot (McGill University, 2019).
Map 5: Stage 1 AA study area within a 1927 Topographic Map (Department of National Defence, 1927).
Map 6: Stage 1 AA study area within a 1938 aerial photograph (Department of National Defence, 1927; reprinted in 1938).
Map 7: Stage 1 AA study area within a 1954 aerial photograph (Digital Archive at McMaster University, 2019).
Map 8: Stage 1 AA study area within a 2006 satellite image (Google Earth, 2019a).
Map 9: Stage 1 AA study area within a 2016 satellite image (Google Earth, 2019b).
Map 10: Stage 1 AA study area within a 2018 satellite image (Google Earth, 2019c).
Map 11: Stage 1 AA results – Northwest section of study area.
Map of study area

Map 12: Stage 1 AA results – Northeast section of study area.
Map 13: Stage 1 AA results- Southwest section of study area.
Map 14: Stage 1 AA results – Southeast section of study area.
Map 15: Stage 1 AA results within and surrounding the Shingletown Wells site area.
## APPENDIX B: SUMMARY OF BACKGROUND RESEARCH

<table>
<thead>
<tr>
<th>Feature of Archaeological Potential</th>
<th>Yes</th>
<th>No</th>
<th>Unknown</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Known archaeological sites within 300 m?</td>
<td>X</td>
<td></td>
<td>Unknown</td>
<td>If Yes, potential confirmed</td>
</tr>
</tbody>
</table>

### Physical Features

<table>
<thead>
<tr>
<th>Feature of Archaeological Potential</th>
<th>Yes</th>
<th>No</th>
<th>Unknown</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Is there water on or adjacent to the property?</td>
<td>X</td>
<td></td>
<td></td>
<td>If Yes, potential confirmed</td>
</tr>
<tr>
<td>2a Presence of primary water source within 300 metres of the study area (lakes, rivers, streams, creeks)</td>
<td>X</td>
<td></td>
<td></td>
<td>If Yes, potential confirmed</td>
</tr>
<tr>
<td>2b Presence of secondary water source within 300 metres of the study area (intermittent creeks and streams, springs, marshes, swamps)</td>
<td>X</td>
<td></td>
<td></td>
<td>If Yes, potential confirmed</td>
</tr>
<tr>
<td>2c Features indicating past presence of water source within 300 metres (former shorelines, relic water channels, beach ridges)</td>
<td>X</td>
<td></td>
<td></td>
<td>If Yes, potential confirmed</td>
</tr>
<tr>
<td>2d Accessible or inaccessible shoreline (high bluffs, swamp or marsh fields by the edge of a lake, sandbars stretching into marsh)</td>
<td>X</td>
<td></td>
<td></td>
<td>If Yes, potential confirmed</td>
</tr>
<tr>
<td>3 Elevated topography (knolls, drumlins, eskers, plateaus, etc.)</td>
<td>X</td>
<td></td>
<td></td>
<td>If Yes to two or more of 3-5 or 7-10, potential confirmed</td>
</tr>
<tr>
<td>4 Pockets of well-drained sandy soil, especially near areas of heavy soil or rocky ground</td>
<td>X</td>
<td></td>
<td></td>
<td>If Yes to two or more of 3-5 or 7-10, potential confirmed</td>
</tr>
<tr>
<td>5 Distinctive land formations (mounds, caverns, waterfalls, peninsulas, etc.)</td>
<td>X</td>
<td></td>
<td></td>
<td>If Yes to two or more of 3-5 or 7-10, potential confirmed</td>
</tr>
</tbody>
</table>

### Cultural Features

<table>
<thead>
<tr>
<th>Feature of Archaeological Potential</th>
<th>Yes</th>
<th>No</th>
<th>Unknown</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 Is there a known burial site or cemetery that is registered with the Cemeteries Regulation Unit on or directly adjacent to the property?</td>
<td>X</td>
<td></td>
<td></td>
<td>If Yes, potential confirmed</td>
</tr>
<tr>
<td>7 Associated with food or scarce resource harvest areas (traditional fishing locations, food extraction areas, raw material outcrops, etc.)</td>
<td>X</td>
<td></td>
<td></td>
<td>If Yes to two or more of 3-5 or 7-10, potential confirmed</td>
</tr>
<tr>
<td>8 Indications of early Euro-Canadian settlement (monuments, cemeteries, structures, etc.) within 300 metres</td>
<td>X</td>
<td></td>
<td></td>
<td>If Yes to two or more of 3-5 or 7-10, potential confirmed</td>
</tr>
<tr>
<td>9 Associated with historic transportation route (historic road, trail, portage, rail corridor, etc.) within 100 metres of the property</td>
<td>X</td>
<td></td>
<td></td>
<td>If Yes to two or more of 3-5 or 7-10, potential confirmed</td>
</tr>
</tbody>
</table>

### Property-specific Information

<table>
<thead>
<tr>
<th>Feature of Archaeological Potential</th>
<th>Yes</th>
<th>No</th>
<th>Unknown</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 Contains property designated under the Ontario Heritage Act</td>
<td>X</td>
<td></td>
<td></td>
<td>If Yes, potential confirmed</td>
</tr>
<tr>
<td>11 Local knowledge (aboriginal communities, heritage organizations, municipal heritage committees, etc.)</td>
<td>X</td>
<td></td>
<td></td>
<td>If Yes, potential confirmed</td>
</tr>
<tr>
<td>12 Recent ground disturbance, not including agricultural cultivation (post-1960, extensive and deep land alterations)</td>
<td>Parts of the study area exhibit recent ground disturbance</td>
<td></td>
<td></td>
<td>If Yes, low archaeological potential is determined</td>
</tr>
</tbody>
</table>
APPENDIX C: INVENTORY OF DOCUMENTARY AND MATERIAL RECORD

<table>
<thead>
<tr>
<th>Project Information:</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Project Number:</td>
<td>008-WA8103-18</td>
<td></td>
</tr>
<tr>
<td>Licensee:</td>
<td>Ian Boyce (P1059)</td>
<td></td>
</tr>
<tr>
<td>MTCS PIF:</td>
<td>P1059-0008-2019</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Document/ Material</th>
<th>Location</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Research/</td>
<td>Archeoworks Inc.,</td>
<td></td>
</tr>
<tr>
<td>Analysis/</td>
<td>16715-12 Yonge Street,</td>
<td></td>
</tr>
<tr>
<td>Reporting Material</td>
<td>Suite 1029,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Newmarket, ON,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Canada, L3X 1X4</td>
<td>Stored on Archeoworks network servers</td>
</tr>
<tr>
<td>Digital files stored in:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>/2018/008-WA8103-18 - K50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wells Manganese</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upgrades/Stage 1/</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Under Section 6 of Regulation 881 of the *Ontario Heritage Act*, *Archeoworks Inc.* will, “keep in safekeeping all objects of archaeological significance that are found under the authority of the licence and all field records that are made in the course of the work authorized by the licence, except where the objects and records are donated to Her Majesty the Queen in right of Ontario or are directed to be deposited in a public institution under subsection 66 (1) of the Act.”