December 26, 2023

Stage 1-2 Archaeological Assessment: Chippawa Community, Niagara Falls ON

Stage 1-2 Archaeological Assessment: Part of Lots 21 & 22, Concession 1, Formerly Township of Willoughby, Welland County, now the City of Niagara Falls, Regional Municipality of Niagara, ON

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Laurence Avenue Group

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ORIGINAL REPORT

Executive Summary

Seguin Archaeological Services (SAS) was contracted by Laurence Avenue Group (the Proponent), to conduct a Stage 1-2 archaeological assessment on Part of Lots 21 & 22, Concession 1, Formerly Township of Willoughby, Welland County, now the City of Niagara Falls, Regional Municipality of Niagara, Ontario (Figure 1), now the 'Study Area'.

This assessment was undertaken in advance of a proposed residential subdivision of a portion of Part of Lots 21 & 22, Concession 1, Formerly Township of Willoughby, Welland County, now the City of Niagara Falls, in Niagara Falls, ON. The Study Area measures 10.93 hectares (27 acres). At the time of the assessment, the study area was a vacant lot comprised of ploughed fields with treed verges as well as woodlot and manicured lawns.

The assessment was triggered by the Provincial Policy Statement (PPS) that is informed by the Planning Act (Government of Ontario 1990a), which states that decisions affecting planning matters must be consistent with the policies outlined in the larger Ontario Heritage Act (1990b). According to Section 2.6.2 of the PPS, "development and site alteration shall not be permitted on lands containing archaeological resources or areas of archaeological potential unless significant archaeological resources have been conserved." To meet the condition, a Stage 1-2 assessment of the Study Area was conducted, during the pre-approval phase of the development, under archaeological consulting license P1018 issued to Matthew Seguin by the MCM's 2011 Standards and Guidelines for Consultant Archaeologists ('Standards and Guidelines'; Government of Ontario 2011).

The Stage 1 background research indicated that the Study Area exhibited moderate to high potential for the identification and recovery of archaeological resources and was recommended for a Stage 2 assessment. The subsequent Stage 2 archaeological assessment was conducted by SAS on September 8-9 and 21-22, 2023, in accordance with the *Ontario Heritage Act*, and the *Standards and Guidelines for Consultant Archaeologists*. This investigation consisted of a typical test pitting survey at 5-meter intervals of the manicured lawns, woodlot and treed verges of the Study Area. No archaeological materials or features were located during the test pit survey. It also consisted of a typical pedestrian survey of the ploughed fields. The pedestrian survey produced two post-contact Euro-Canadian sites, Location 1 and Location 2, and one pre-contact Aboriginal findspot, Location 3.

Location 1 was comprised of 4 Euro-Canadian artifacts. Despite an intensified pedestrian survey around the findspot, as well as an intensified test pit survey in the verge near the findspot, no other archaeological materials were identified. Given the

isolated nature of the artifacts, Location 1 does not fulfill any of the criteria for a Stage 3 archaeological investigation as per Section 2.2 of the Standards and Guidelines (Government of Ontario 2011). The CHVI of Location 1 is judged to be sufficiently documented.

Location 2 was comprised of 17 Euro-Canadian artifacts. Given the isolated nature of the artifacts, Location 2 does not fulfill any of the criteria for a Stage 3 archaeological investigation as per Section 2.2 of the Standards and Guidelines (Government of Ontario 2011). The CHVI of Location 2 is judged to be sufficiently documented.

Location 3 was comprised of two pieces of chipping detritus made from Onondaga chert. Despite an intensified pedestrian survey around the findspot no other archaeological materials were identified. Given the isolated nature of the artifact, Location 3 does not fulfill any of the criteria for a Stage 3 archaeological investigation as per Section 2.2 of the Standards and Guidelines (Government of Ontario 2011). The CHVI of Location 3 is judged to be sufficiently documented.

Based upon the background research of past and present conditions, and the archaeological assessment, the following is recommended:

- No further archaeological assessment is required for the Study Area; and,
- Compliance legislation must be adhered to in the event of the discovery of deeply buried cultural materials or features

The MCM is asked to review the results and recommendations presented in this report and provide a letter indicating their satisfaction that the fieldwork and reporting for this archaeological assessment are consistent with, and in compliance with, the *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), as well as the terms and conditions for archaeological licenses, and to enter this report into the Ontario Public Register of Archaeological Reports.

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Project Personnel

Project Manager:	Matthew Seguin, P1018
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Acknowledgments

Generous contributions by the following individuals made this report possible.

Laurence Avenue Group

1.0 Project Context

1.1 Development Context

Seguin Archaeological Services (SAS) was contracted by Laurence Avenue Group, (the Proponent), to conduct a Stage 1-2 archaeological assessment on a portion of Part of Lots 21 & 22, Concession 1, Formerly Township of Willoughby, Welland County, now the City of Niagara Falls, Regional Municipality of Niagara, Ontario, now the 'Study Area' (Figure 1). This assessment was undertaken in advance of a proposed subdivision on a portion of Part of Lots 21 & 22, Concession 1, Formerly Township of Willoughby, Welland County, now the City of Niagara Falls, in Niagara Falls, ON. The Study Area measures 10.93 hectares (27 acres). At the time of the assessment, the study area was a vacant lot comprised of ploughed fields with treed verges as well as woodlot and manicured lawns.

The assessment was triggered by the Provincial Policy Statement (PPS) that is informed by the Planning Act (Government of Ontario 1990a), which states that decisions affecting planning matters must be consistent with the policies outlined in the larger Ontario Heritage Act (1990b). According to Section 2.6.2 of the PPS, "development and site alteration shall not be permitted on lands containing archaeological resources or areas of archaeological potential unless significant archaeological resources have been conserved." To meet this condition, a Stage 1-2 assessment of the Study Area was conducted, during the pre-approval phase of the development, under archaeological consulting license P1018 issued to Matthew Seguin by the MCM's 2011 Standards and Guidelines for Consultant Archaeologists ('Standards and Guidelines'; Government of Ontario 2011).

The purpose of a Stage 1 Background Study is to compile all available information about known and potential cultural heritage resources within the Study Area and then to provide specific direction regarding the protection, management and/or recovery of any resources which may be present. The objectives of the Stage 1 Background Study, as outlined by the Ministry of Citizenship and Multiculturalism's (MCM) Standards and Guidelines for Consultant Archaeologists (Government of Ontario 2011), are as follows:

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

SAS archaeologists employed the following research strategies to meet these objectives:

- A detailed documentary review of relevant archaeological, historic and environmental literature pertaining to the Study Area;
- a review of the land-use history, including pertinent historic maps; and

- an examination of the Ontario Archaeological Sites Database ('ASDB') to determine the presence of known archaeological sites in and around the Study Area.

The purpose of a Stage 2 Property Assessment is to provide an overview of any archaeological resources within the Study Area, and to determine whether, or not, any of those resources might be archaeological sites that retain cultural heritage value or interest (CHVI), and then to provide specific direction regarding the protection, management and/or recovery of said resources. The objectives of Stage 2 archaeological assessment, as outlined by the Ministry of Citizenship and Multiculturalism's (MCM) Standards and Guidelines for Consultant Archaeologists (Government of Ontario 2011), are as follows:

- To document all archaeological resources within the Study Area;
- to determine whether the Study Area contains archaeological resources requiring further assessment; and
- to recommend appropriate Stage 3 assessment strategies for any archaeological sites determined to require additional assessment.

The licensee received permission from the Proponent to enter the land and conduct all required archaeological fieldwork activities, including the recovery of artifacts.

1.2 Historical Context

1.2.1 Post-Contact Aboriginal Resources

Early Euro-Canadian records suggest that the people living in the area were the Attawandarons, or Neutrals. They were called 'Neutral' by the French because they had remained neutral during the conflicts between the Iroquois and the Huron. In 1626 Father La Roche Daillon, who was a French Jesuit missionary, travelled throughout Neutral territory spending three months and visiting twenty-eight villages in an attempt to create a trade alliance with the Neutral. However these negotiations were to ultimately fail due to opposition from the already allied Huron (White 1978). By 1638, the Neutral were occupying lands east to the Niagara River that had been left empty when the Wenro migrated out of the area to Huronia and the Erie to the southwest. Not long after, during the 1640's, the Neutral were engaged in large conflict with the warfare with the Assistaeronons to the west of them, while maintaining their neutral stance with the Huron and Iroquois. Although European influence was spreading through the region it was generally restricted to the beaver pelt trade, and the Aboriginal groups largely practiced a way of life similar to that of the Pre-Contact period. However largescale trapping led to an increased scarcity of Beaver, and their valuable pelts, which prompted an invasion of the Neutral by the Iroquois' League of Five Nations in the late 1640's. The resulting aftermath of this invasion was the complete destruction, and absorption, of the Neutral into the League of Five Nations. By the early 1650's the League of Five Nations Iroquois were living to the west and south of the Neutral lands any surviving Neutral members, which had not been absorbed, had left Ontario (Trigger 1994).

In the latter half of the seventeenth century it appears that most of the region, in the wake of this conflict, was relatively unpopulated by permanent settlements. However, much of southern Ontario continued to be used as a hunting territory by the Iroquois. However, Ojibway groups previously thought to have settled along the northern shores of Georgian Bay and Lake Superior gradually migrated into southern Ontario, and by 1707 had settled in the Niagara region (Rogers 1978).

By 1781, the British government signed Treaty No. 381, purchasing the areas west of the Niagara River from the Mississaugas for "300 suits of clothing", this became known as the Niagara Purchase (Surtees 1994:102). The Study Area enters the Euro-Canadian historic records beginning with Treaty No. 381, which was…

> *… a strip of land four miles in width along the western bank of the Niagara River. This strop comprises the greater parts of the Townships of Lincoln, Stamford, Willoughby and Bertie. The western boundary of the Township laid out in 1787 agreed with the western boundary of the Treaty, but as a later purchase was made from the Indians for adjoining western lands before the other three Townships were laid out, their western boundary was not likewise governed.*
>
> Morris 1943:15

The British government, by 1784, had already purchased over a million hectares of land between Lake Ontario and Lake Erie from the Mississauga, this area became known as the Between the Lakes Purchase (Surtees 1994:102). The Mississauga eventually relocated to the Grand River at New Credit in 1847.

It is important to remember that the size, and nature, of the pre-contact Aboriginal settlements and therefore the spread and distribution of their culture material throughout Southern Ontario shifted with the increased establishment of European settlers through these lands. Ferris 2009 wrote that the "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). These archaeological resources which were left behind by these communities are significant, and they create an important continuity with their pre-contact ancestors.

1.2.2 Euro-Canadian Resources

The current Study Area is located in the Geographical Township of Willoughby, Former County of Welland, now the City of Niagara Falls, Regional Municipality of Niagara, Ontario.

In July 1788, the government of the Province of Québec began creating new districts, hoping to better serve and administer at the local level. The first new divisions were the administrative districts of Hesse, Nassau, Mecklenburg and Lunenburg (Archives of Ontario 2009). Further

change came in December 1791 when the province was rearranged into Upper Canada and Lower Canada under the Constitutional Act. Colonel John Graves Simcoe was appointed as Lieutenant-Governor of Upper Canada; he initiated several initiatives to populate the province including the establishment of shoreline communities with effective transportation links between them (Coyne 1895).

In July 1792, Simcoe divided Upper Canada into 19 counties, including Lincoln County, stretching from Essex in the west to Glengarry in the east. Later that year, the four districts originally established in 1788 were renamed the Western, Home, Midland and Eastern Districts. As population levels in Upper Canada increased, smaller and more manageable administrative bodies were needed resulting in the establishment of many new counties and townships. As part of this realignment, the boundaries of the Home and Western Districts were shifted and the London and Niagara Districts were established. Under this new territorial arrangement, the Study Area became part of Lincoln County in the Niagara District (Archives of Ontario 2009). In 1845, after years of increasing settlement that began after the War of 1812, the southern portion of Lincoln County was severed to form Welland County (the two counties would be amalgamated once again in 1970 to form the Regional Municipality of Niagara).

Settlement began in the region of Willoughby Township in 1784, the year that most of the townships bordering Niagara River and the lake commenced to receive their pioneers. It was surveyed in 1787, and by the year 1817 it contained nearly four hundred and fifty inhabitants. The first settlers in the area that would become Chippawa Village, were Thomas Cummings and John Burch, both United Empire Loyalists who arrived in the area during 1783 and settled on near the Chippawa River (later renamed to the Welland River in 1792) (Seibel 1990). The Village of Chippawa was quickly flourishing and in 1802 became a Port of Customs. There were multiple commercial and industrial buildings were constructed, including taverns, a distillery, a tannery, an iron foundry, a post office and mills (Seibel 1990). The area around the Chippawa Village was considered to be potentially the best defensive position between Fort Erie and Fort George, as the Americans had been expected to invade the Niagara peninsula from the south, where it was easier to cross the turbulent Niagara River. Indeed, Chippawa became the base for the British army during the Battle of Chippawa and the later bloody seige of Fort Erie in August and September of 1814 (Owen n.d.:6). After suffering significant damage during the War of 1812, Chippawa Village had to be rebuilt. Luckily growth came fast, and it was able to surpass where it had been prior to the war. The construction of the Welland Canal began on the mouth of the Chippawa (Welland) River in 1824 and formally opened in 1829. In 1837-38 Chippawa was the scene of some action during the Upper Canada Rebellion, where 60 volunteers disembarked from Chippawa by boat to capture the American Steamer the *Caroline. (Mika and Mika 1977). S*purred by further growth in the area and in order to accommodate this growing population the Erie and Ontario Rail Road was opened in 1841, extending between Queenston and Chippawa.

The Illustrated Historical Atlas of the Counties of Lincoln and Welland (Historical Atlas), demonstrates the extent to which Willoughby Township had been settled by 1876 (Page & Co 1876; Figure 2). Landowners are listed for virtually every lot within the township, many of which had been subdivided multiple times into smaller parcels to accommodate an ever-increasing population throughout the late 19th century. Structures and orchards are prevalent throughout the township, almost all of which front onto early roads. According to the Historical Atlas map of Willoughby Township, the portions of Lot 21 and 22 where the Study Area is located were attributed to Richard Walsh. There are no structures, or orchards illustrated within the limits of the Study Area. A portion of the western limits of the subject property fronts a main road that leads to the bridge crossing the Welland River. The property is also in proximity to the historic Chippawa Village and the Erie & Ontario Railroad

Although there is significant and detailed information available about the landowners on the current Historical Atlas map of Willoughby Township, it should be recognized that not all features of interest were mapped systematically in the Ontario series of historical atlases, given that they were financed by subscription, and subscribers were given preference about the level of detail provided on the maps, while nonsubscribers were not always listed on the maps (Caston 1997:100). Moreover, not every feature of interest would have been within the scope of the atlases, and structures or features of interest that were within scope, may not have been depicted or placed accurately (Gentilcore and Head 1984).

1.3 Archaeological Context

1.3.1 Property Description and Physical Setting

The Study Area occupies a vacant lot located on a portion of Part of Lots 21 & 22, Concession 1, Formerly Township of Willoughby, Welland County, now the City of Niagara Falls ON. The Study Area measures 10.93 hectares (27 acres). At the time of the assessment, the study area was a vacant lot comprised of ploughed fields with treed verges as well as woodlot and manicured lawns.

Most of the region surrounding the Study Area has been subject to European-style agricultural practices for over 100 years, having been settled by Euro-Canadian farmers by the mid-19th century. Much of the region today continues to be used for agricultural purposes.

The Study Area is situated within the Haldimand Clay Plain, a 3,500 square kilometre area of parallel clay belts deposited during the time of glacial Lake Warren. According to Chapman and Putnam

> …although it was all submerged in Lake Warren, the till is not all buried by stratified clay; it comes to the surface generally in low morainic ridges in the north. In fact, there is in that area a confused intermixture of stratified clay and till. The northern part has more relief than the southern part where the typically level lake plains occur.
>
> Chapman and Putnam 1984:156

The study area consists of Welland Clay series soils, a dark greyish to reddish brown clay and clay loam over a compact mottled reddish brown gritty clay. It is considered to have poor soil drainable and high water holding capacities. If properly drained Welland soils suitable for most common field crops, although they range from unsuitable to poor for vegetable and fruit crops (Kingston and Presant 1989).

The closest sources of potable water are the Welland River, 735m to the Northwest and Streets Creek (also known as Usshers Creek), which runs approximately 937m to the South of the Study Area.

1.3.2 Pre-Contact Aboriginal Land Use

This portion of southwestern Ontario has been demonstrated to have been occupied by people as far back as 11,000 years ago as the glaciers retreated. For the majority of this time, people were practicing hunter-gatherer lifestyles with a gradual move towards more extensive farming practices. Table 1 provides a general outline of the cultural chronology of Willoughby Township, based on Ellis and Ferris (1990).

Table 1: Cultural Chronology for Willoughby Township

Time Period	Cultural Period	Comments
9500 – 7000 BCE	Paleo Indian	first human occupation hunters of caribou and other extinct Pleistocene game nomadic, small band society
7500 - 1000 BCE	Archaic	ceremonial burials increasing trade network hunter gatherers
1000 - 400 BCE	Early Woodland	large and small camps spring congregation/fall dispersal introduction of pottery
400 BCE – CE 800	Middle Woodland	kinship based political system incipient horticulture long distance trade network
800 - 1300 CE	Early Iroquoian (Late Woodland)	limited agriculture developing hamlets and villages
1300 - 1400 CE	Middle Iroquoian (Late Woodland)	shift to agriculture complete increasing political complexity large palisaded villages
1400 - 1650 CE	Late Iroquoian	regional warfare and political/tribal alliances destruction of Huron and Neutral

1.3.3 Previously Identified Archaeological Work

To compile an inventory of previously identified archaeological resources, the registered archaeological site records kept by the MCM were consulted. In Ontario, information concerning archaeological sites is stored in the Archaeological Sites Database (ASDB) (Government of Ontario n.d.) which is maintained by the MCM. 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 13km east to west and approximately 18.5km north to south, and each Borden Block is referenced by a four-letter designator and sites within a block are numbered sequentially as they are found. The Study Area under review is within Borden Block AgGs.

According to the ASDB, a total of fifty-four archaeological sites have been registered within 1km of the Study Area (Table 2); none of which are located within 50m of the study area. Fifty have been identified as pre-contact Aboriginal sites, two as multicomponent sites (Euro-Canadian and pre-contact), and one as a Euro-Canadian site.

Table 2: Registered Archaeological Sites within 1km of the Study Area

Borden Number	Site Name	Time Period	Affinity	Site Type
AgGs-132	-	Pre-Contact	Aboriginal	Findspot
AgGs-136	-	Pre-Contact	Aboriginal	Findspot
AgGs-137	-	Archaic, Late Archaic, Middle	Aboriginal	Scatter
AgGs-139	-	Archaic, Late	Aboriginal	Findspot
AgGs-140	-	Archaic, Late	Aboriginal	Scatter
AgGs-142	-	Archaic, Early Archaic, Late	Aboriginal	Scatter
AgGs-143	-	Pre-Contact	Aboriginal	Findspot
AgGs-144	-	Pre-Contact	Aboriginal	Findspot
AgGs-145	-	Pre-Contact Woodland, Late	Aboriginal Iroquoian, Neutral	Scatter
AgGs-146	-	Pre-Contact	Aboriginal	Scatter
AgGs-147	-	Archaic, Middle Woodland, Early Woodland, Late	Aboriginal, Neutral	Scatter
AgGs-148	-	Archaic, Late	Aboriginal	Scatter
AgGs-150	-	Pre-Contact	Aboriginal	Scatter
AgGs-151	-	Woodland, Late	Aboriginal Iroquoian, Neutral	Findspot
AgGs-152	-	Pre-Contact	Aboriginal	Scatter
AgGs-160	-	Woodland, Late	Aboriginal Iroquoian, Neutral	Scatter
AgGs-161	-	Archaic, Middle	Aboriginal	Findspot
AgGs-162	-	Archaic, Early	Aboriginal	Findspot
AgGs-163	-	Pre-Contact	Aboriginal	Findspot
AgGs-164	-	Pre-Contact	Aboriginal	Findspot
AgGs-165	-	Archaic, Late	Aboriginal	Findspot
AgGs-166	-	Pre-Contact	Aboriginal	Scatter
AgGs-167	-	Pre-Contact	Aboriginal	Scatter
AgGs-168	-	Woodland, Early	Aboriginal	Findspot
AgGs-169	-	Woodland, Early	Aboriginal	Findspot
AgGs-170	-	Woodland, Late	Aboriginal, Iroquoian, Neutral	Findspot
AgGs-171	-	Pre-Contact	Aboriginal	Findspot
AgGs-172	-	Woodland, Early	Aboriginal	Findspot
AgGs-173	-	Archaic, Early	Aboriginal	Findspot

AgGs-174	-	Pre-Contact	Aboriginal	Findspot
AgGs-175	-	Pre-Contact	Aboriginal	Findspot
AgGs-176	-	Archaic, Early	Aboriginal	Findspot
AgGs-177	-	Archaic, Late Woodland, Early	Aboriginal	Findspot
AgGs-178	-	Pre-Contact	Aboriginal	Findspot
AgGs-179	-	Archaic, Late	Aboriginal	Findspot
AgGs-180	-	Pre-Contact	Aboriginal	Findspot
AgGs-181	-	Pre-Contact	Aboriginal	Findspot
AgGs-182	-	Pre-Contact	Aboriginal	Findspot
AgGs-183	-	Archaic, Early	Aboriginal	Findspot
AgGs-184	-	Woodland, Early	Aboriginal	Findspot
AgGs-210	-	Post-Contact	Euro-Canadian	Findspot
AgGs-215	-	Post-Contact	Aboriginal, Euro-Canadian	Midden, Scatter
AgGs-217	-	Pre-Contact	Aboriginal	Scatter
AgGs-218	-	Pre-Contact	Aboriginal	Scatter
AgGs-219	-	Pre-Contact	Aboriginal	Findspot
AgGs-220	-	Pre-Contact	Aboriginal	Findspot
AgGs-221	-	Pre-Contact	Aboriginal	Findspot
AgGs-222	-	Pre-Contact	Aboriginal	Findspot
AgGs-223	-	Pre-Contact	Aboriginal	Scatter
AgGs-285	-	Pre-Contact	Aboriginal	Findspot
AgGs-396	H1	Pre-Contact, Post-Contact	Aboriginal, Euro-Canadian	Unknown
AgGs-412	WEGO 1	Pre-Contact	Aboriginal	Unknown
AgGs-434	-	Pre-Contact	Aboriginal	Unknown

*Table colouration to differentiate the projects which initially documented the sites in question

The first fifty sites, AgGs-132 – AgGs-223, were first documented by New Directions Archaeology in 1999 during a Stage 1-3 archaeological assessment for the Willoughby Lands Development.

- AgGs-132 was described as a pre-contact aboriginal findspot. It consisted of one rotated core and eight flakes over a 20 x 20m area.
- AgGs-136 was described as a pre-contact aboriginal findspot. It consisted of one utilized.
- AgGs-137 was described as a Middle and Late Archaic Aboriginal scatter. It consisted of a "lithic scatter and outliers in a 130 m x 80 m area". Additional work was conducted in 2000, as part of a partial Stage 4 excavation. This excavation resulted in the recovery of "1460 flakes [of which] 99% [are] Onondaga chert, 12 utilized flakes, 1 scraper, 5 cores, 2 hammerstones, 2 groundstone fragments, 16 bifaces, 12 Lamoka projectile points, [11 from Onondaga chert, 1 Port Colborne chert]. "As well as surface collected: 1 Lamoka, 1 Brewerton, 1 Genesee point, 1 point tip, 3 flakes, 2 scrapers, 7 bifaces. The remainder of the site was covered with geotextile fabric and soil. Further CHVI.

- AgGs-139 was described as a late archaic aboriginal findspot. It consisted of one projectile point and one flake over approximately 10m apart.
- AgGs-140 was described as a late archaic aboriginal scatter over a 50 x 30m area. A total of eight flakes were recovered from four test units.
- AgGs-142 was described as an early and late archaic aboriginal scatter covering a 60 x 200m area. A total of 93 1 x 1 m units were excavated during the Stage 3 assessment, and the site was recommended to be covered with geotextile fabric and gravel to protect the remaining site. Further CHVI.
- AgGs-143 was described as a pre-contact aboriginal findspot. It consisted of one projectile point midsection and one flake found 10m apart.
- AgGs-144 was described as a pre-contact aboriginal findspot.
- AgGs-145 was described as a pre-contact and late woodland aboriginal scatter. It initially described as “2 bifaces, 1 utilized flake, 16 flakes in a 30 m x 15 m area and 1 projectile point 15 m SW of scatter”. A total of 26 additional flakes, and 1 biface tip were recovered from five test units.
- AgGs-146 was described as a pre-contact aboriginal scatter. It initially described as “1 spokeshave, 8 flakes in a 20 m x 20 m area”. A total of 5 additional flakes, and 1 core recovered from two test units.
- AgGs-147 was described as a pre-contact aboriginal scatter (Middle Archaic, Early and Late Woodland). It initially described as “large multi-component scatter [over] an area [[of] 30 m x 50 m”. A total of 31 test units were dug during the Stage 3 assessment, the site is to be capped with geotextile fabric and soil. Further CHVI.
- AgGs-148 was described as a late archaic aboriginal scatter. It initially described as “large amorphous scatter with 2 higher density loci in a 100 m x 50 m area”. Presence of exotic chert types is noteable. To be avoided during construction. Further CHVI.
- AgGs-150 was described as a pre-contact aboriginal scatter. It consisted of “3 flakes in a 5 m x 5m area”.
- AgGs-151 was described as a pre-contact Late Woodland aboriginal findspot. It consisted of a single Daniels projectile point.
- AgGs-152 was described as a pre-contact aboriginal scatter. It consisted of “5 flakes in a 5 m x 5 m area”.
- AgGs-160 was described as a late woodland aboriginal scatter. It initially described as “2 bifaces, 1 projectile point, 45 flakes in 2 discreet loci in a 40 m x 20 m area”. An additional “251 flakes, 3 chert chunks, 2 cores, 2 bifaces from [19] test units”. Further CHVI.
- AgGs-161 was described as a pre-contact Middle Archaic aboriginal findspot. It consisted of a single Brewerton Corner Notched projectile point.
- AgGs-162 was described as a pre-contact Early Archaic aboriginal findspot. It consisted of a single Nettling projectile point fragment.

- AgGs-163 was described as a pre-contact aboriginal findspot. It consisted of one hafted bifacial knife fragment.
- AgGs-164 was described as a pre-contact aboriginal findspot. It consisted of one projectile point midsection fragment.
- AgGs-165 was described as a pre-contact Late Archaic aboriginal findspot. It consisted of one projectile point.
- AgGs-166 was described as a pre-contact aboriginal scatter. It consisted of “6 flakes in a 10 m x 10 m area”.
- AgGs-167 was described as a pre-contact aboriginal scatter. It consisted of “2 biface fragments, 2 flakes in a 5 m x 15 m area”.
- AgGs-168 was described as a pre-contact Early Woodland aboriginal findspot. It consisted of one side notched projectile point fragment.
- AgGs-169 was described as a pre-contact Early Woodland aboriginal findspot. It consisted of one reworked Meadowood projectile point fragment.
- AgGs-170 was described as a pre-contact Late Woodland aboriginal findspot. It consisted of one Nanticoke Notched projectile point.
- AgGs-171 was described as a pre-contact aboriginal findspot. It consisted of one projectile point tip made of Haldimand Chert.
- AgGs-172 was described as a pre-contact Early Woodland aboriginal findspot. It consisted of one Kramer projectile point.
- AgGs-173 was described as a pre-contact Early Archaic aboriginal findspot. It consisted of one possibly Nettling or Brewerton type projectile point.
- AgGs-174 was described as a pre-contact aboriginal findspot. It consisted of one side notched projectile point fragment.
- AgGs-175 was described as a pre-contact aboriginal findspot. It consisted of one end scraper fragment and one flake.
- AgGs-176 was described as a pre-contact Early Archaic aboriginal findspot. It consisted of one corner notched projectile point fragment.
- AgGs-177 was described as a pre-contact Late Archaic and Early Woodland aboriginal findspot. It consisted of one Kramer projectile point and one Innes projectile point.
- AgGs-178 was described as a pre-contact aboriginal findspot. It consisted of one end scraper fragment.
- AgGs-179 was described as a pre-contact Late Archaic aboriginal findspot. It consisted of one ground stone gouge.
- AgGs-180 was described as a pre-contact aboriginal findspot. It consisted of one side notched projectile point fragment and one utilized flake, approximately 15m apart.
- AgGs-181 was described as a pre-contact aboriginal findspot. It consisted of one biface fragment.
- AgGs-182 was described as a pre-contact aboriginal findspot. It consisted of one projectile point tip.

- AgGs-183 was described as a pre-contact Early Archaic aboriginal findspot. It consisted of two bifaces, one Nettling projectile point tip in a 20 m diameter area.
- AgGs-184 was described as a pre-contact Early Woodland aboriginal findspot. It consisted of one Meadowood projectile point.
- AgGs-210 was described as a post-contact Euro-Canadian findspot. It consisted of one lead musketball, likely related to the historic battle of Chippawa fought in the vicinity in 1812.
- AgGs-215 was described as a pre-contact aboriginal scatter and a post-contact Euro-Canadian midden. It consisted of "111 flakes, 1 point, 1 denticulate, 1 biface, 1 utilized flake, [as well as] 58 Euro-Canadian artifacts".
- AgGs-218 was described as a pre-contact aboriginal scatter. It consisted of "23 flakes recovered from 7 test pits".
- AgGs-219 was described as a pre-contact aboriginal findspot. It consisted of one flake from one test pit.
- AgGs-220 was described as a pre-contact aboriginal findspot. It consisted of three flakes recovered from a 30 m x 40 m area.
- AgGs-221 was described as a pre-contact aboriginal findspot. It consisted of a single flake.
- AgGs-222 was described as a pre-contact aboriginal findspot. It consisted of a single flake.
- AgGs-223 was described as a pre-contact aboriginal scatter. It consisted of "18 flakes, 1 chert chunk, 1 biface tip in a 20 mx 20 m area". Further CHVI.

The next site, AgGs-285, was first documented in 2006 during the Stage 1-2 archaeological assessment of the Warren Woods property by Archaeological Services Inc. (ASI). It was described as a pre-contact Aboriginal findspot.

The next site, AgGs-396 (also known as H1), was first documented in 2016 during a Stage 1-2 archaeological assessment by Amick Consultants Limited, under PIF P038-0858-2016. The site was described as a post-contact Euro-Canadian site of unknown type. A total of 140 Euro Canadian artifacts were recovered. An additional Stage 3 assessment, under PIF P038-0888-2017, was conducted in 2017 resulting in the recovery of an additional 6,169 artifacts over a 52 x 33 m area, including six pre-contact lithic flake artifacts.

The next site, AgGs-412, the WEGO site, was first documented in 2019 as part of a Stage 1-2 archaeological assessment for WeGo Garage under PIF P1078-0036-2019 by WSP. It was described as a pre-contact Aboriginal site of unknown type. An additional Stage 3 assessment was conducted resulting in the recovery of 89 lithic artifacts.

The final site, AgGs-434, was first documented in 2021 during a Stage 1-2 archaeological assessment by Detritus Consulting Ltd., under PIF P389-0544-2021. An additional Stage 3 assessment was conducted the same year under PIF P1131-0014-2021. In total over 5000 lithic artifacts were recovered but the Stage 3 assessment was halted due to budgetary constraints.

A Stage 1 archaeological assessment was conducted on the Study Area previously, by Archaeological Services Inc., in 2009 under the PIF P049-386-2009. The associated report for this project recommended that a Stage 2 archaeological assessment be conducted on any portions of the Study Area which retain archaeological potential.

To the best of SAS's knowledge, no other assessments have been conducted or within 50m of the Study Area.

1.3.4 Archaeological Potential

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

Distance to modern or ancient water sources is generally accepted as the most important determinant of past human settlement patterns and considered alone, may result in a determination of archaeological potential. However, any combination of two or more other criteria, such as well-drained soils or topographic variability, may also indicate archaeological potential. When evaluating distance to water it is important to distinguish between water and shoreline, as well as natural and artificial water sources, as these features affect site locations and types to varying degrees. The MCM (Government of Ontario 2011) categorizes water sources in the following manner:

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

As previously discussed, the closest sources of potable water are the Welland River, 735m to the Northwest and Streets Creek (also known as Usshers Creek), which runs approximately 937m to the South of the Study Area.

Soil texture is also an important determinant of past settlement, usually in combination with other factors such as topography. The Study Area is situated within the Haldimand Clay Plain physiographic region. As was discussed earlier, the primary soils within the Study Area, meanwhile, have been documented as being suitable for pre-contact Aboriginal practices. Add to this discussion the presence of fifty pre-contact Aboriginal sites, and two multi-component sites, within 1km of the Study Area and the Aboriginal archaeological potential is judged to be high.

For Euro-Canadian sites, archaeological potential can be extended to areas of early Euro-Canadian settlement, including places of military or pioneer settlements; early transportation routes; and properties listed on the municipal register or designated under the Ontario Heritage Act (Government of Ontario 1990b) or property that local histories or informants have identified with possible historical events. As was discussed above, the Historical Atlas map (Page & Co. 1876; Figure 2) demonstrates the extent to which Willoughby Township had been settled by 1876. Landowners are listed for most of the lots within the township, many of which had been subdivided multiple times into smaller parcels to accommodate an increasing population throughout the late 19th century. The Study Area occupied part of Lots 21 and 22, Concession 1, fronts onto a historic roadway, now Willoughby Drive. Add to this discussion the presence of two multi-component, and one Euro-Canadian site within 1 km and the potential for post-contact Euro-Canadian archaeological resources is judged to be moderate to high.

Finally, despite the factors mentioned above, extensive land disturbance can eradicate archaeological potential within a Study Area (Wilson and Horne 1995). At the time of the assessment, the study area was a vacant lot, comprised of ploughed fields, manicured lawns and treed areas. Given all of the above SAS has determined that the Study Area has demonstrated the potential for the recovery of pre-contact Aboriginal, post-contact Aboriginal, and Euro-Canadian archaeological resources, and as a result a Stage 2 archaeological assessment was determined to be required.

2.0 Field Methods

The Stage 2 archaeological assessment was conducted on September 8-9, and 21-22, 2023, under PIF#: P1018-0067-2023, issued to Matthew Seguin (P1018) by the MCM. Weather conditions were cool and overcast, and then cool and sunny during the assessment (Photos 1 & 2). Soil conditions and visibility were ideal for conducting the assessment and recovering archaeological material.

During the pedestrian survey weather conditions were sunny and warm and at no time during the assessment were the field, weather, or lighting conditions detrimental to the recovery of archaeological material. Approximately 73% of the Study Area was comprised of fields which were was accessible for ploughing. As per Section 2.1.1, Standards 2 and 3 of the Standards and Guidelines (Government of Ontario 2011; Photos 1 to 5), the field had been ploughed and allowed to weather prior to assessment. The ploughing was deep enough to provide total topsoil exposure, and provided a minimum of 80% surface visibility, as per Section 2.1.1, Standards 4 and 5 of the Standards and Guidelines (Government of Ontario 2011). The ploughed area was subject to a typical pedestrian survey at 5m intervals, conducted in accordance with Section 2.1.1, Standard 6 of the Standards and Guidelines (Government of Ontario 2011). During the pedestrian survey, when archaeological resources were encountered, survey intervals were intensified to 1m within a 20m radius of the find as per Section 2.1.1, Standard 7 of the Standards and Guidelines (Government of Ontario 2011). This approach was taken to establish whether or not the artifact was an isolated find or part of a larger artifact scatter.

This investigation resulted in the documentation of three locations: Location 1 and Location 2, in the northern portion of the field, approximately 60m apart from each other. And Location 3, in the southern portion of the field roughly 250m away from the other two findspots. The recovered artifacts were given a single Universal Transverse Mercator ('UTM') coordinates, digitally mapped, and collected for laboratory analysis. Additionally, two fixed reference landmark UTM coordinates were taken as per Section 2.1, Standard 4 of the Standards and Guidelines (Government of Ontario 2011). All coordinates were taken using a Bad Elf GNSS Surveyor GPS unit with a minimum accuracy 2m (North American Datum 1983 ('NAD83') and UTM Zone 17T).

When the test pitting survey was conducted the weather conditions at the time of assessment were overcast and cool. The soil was friable and screened easily. Assessment conditions were excellent and at no time were the field, weather, or lighting conditions detrimental to the recovery of archaeological material. Approximately 27% of the Study Area comprised the treed verges around the field, wooded lot, and manicured lawns, which were inaccessible for ploughing. These areas were subject to a typical test pit survey at 5m intervals in accordance with Section 2.1.2 of the Standards and Guidelines (Government of Ontario 2011; Photos 6 and 7). All test pits were approximately 30 centimetres (cm) in diameter and were excavated 5cm

into sterile subsoil (Photos 8 - 14). A single soil layer (topsoil) was observed. All soil from the test pits was screened through six-millimetre (mm) hardware cloth to facilitate the recovery of small artifacts and then used to backfill the pit. No further archaeological methods were employed since no artifacts were identified during the test pit survey.

During the test pitting survey it was discovered that approximately 1 acre, or 3.7%, of the Study Area consisted of areas which were low and wet, or which were sloped and low and wet (resulting from a modern drain bisecting the Study Area). These areas were not surveyed but were instead photo-documented (Photos 15 – 18). The results of Stage 2 archaeological survey are presented in Figure 3.

3.0 Record of Finds

The Stage 2 archaeological assessment was conducted employing the methods described in Section 2.0 of this report. This investigation resulted in the documentation of two Euro-Canadian sites, Locations 1 and 2, and one pre-contact Aboriginal findspot, Location 3. Maps indicating the exact location of the findspots, as well as all UTM coordinates recorded during the Stage 2 assessment, are included in the Supplementary Documentation to this report. A description of the recovered artifacts is provided in Section 3.1; a sample of the artifacts is illustrated in Section 9.2. Table 3 illustrates an inventory of the documentary record which was generated by the Stage 2 fieldwork and is provided below.

Table 3 illustrates an inventory of the documentary record which was generated by the Stage 2 fieldwork and is provided below.

Table 3: Inventory of Documentary and Material Record

Document Type	Amount	Location	Comments
Page of Field Notes	1 Page	SAS office	Stored digitally in project file
Proponent Mapping	1 Map	SAS office	Stored digitally in project file
Field Map	1 Map	SAS office	Stored digitally in project file
Digital Photographs	138 photos	SAS office	Stored digitally in project file

All of the material culture collected during the Stage 2 assessment is contained in one box and will be temporarily housed in the offices of Seguin Archaeological Services.

3.1 Cultural Material

The Stage 2 assessment resulted in the identification of three locations. Location 1 resulted in the recovery of four Euro-Canadian artifacts: 1 personal artifact, and 3 household artifacts. Location 2 resulted in a total of seventeen Euro-Canadian artifacts recovered: 2 personal and 15 household artifacts. And Location 3 resulted in the recovery of two Indigenous artifacts being recovered. All artifacts were collected for laboratory analysis. Examples of these artifacts are illustrated in Plates 1, 2 and 3. The artifact catalogue is provided in Appendix A.

3.1.1 Location 1

The Stage 2 assessment of Location 1 resulted in the documentation of four Euro-Canadian artifacts over a 7 x 6 metre area: 1 personal artifact, and 3 household artifacts. Examples of these artifacts are illustrated in Plate 1.

Table 4: Location 1 – Artifact Summary

Artifact	Freq.	%
Household	3	75.00
Personal	1	25.00
Total	**4**	**100.00**

Household Artifacts

The Stage 2 assessment from Location 1 comprises 3 household artifacts, all glass. Some bottle glass colours can provide a tentative temporal range for Euro-Canadian domestic sites, although most are temporally non-diagnostic (Lindsey 2018). Glass colour present at Location 1 was aqua. Aqua glass generally dates to the early 20th century prior to 1920. Aqua coloured glass was commonly produced prior to 1920 but some examples, such as fruit jars, could date as late as the 1930s. Only one of the three glass fragments has any distinguishing marks, a broken embossed letter which appears to be a 'C'. The other two fragments have no distinguishing characteristics.

Personal Artifacts

The Stage 2 assessment from Location 1 comprises 1 personal artifact, a single white clay pipe stem fragment. White clay pipes were a popular item in the 19th century but declined in popularity in the last 20 years of the 1800s due to the increasing use of cigarettes (Adams 1994). A partial maker's mark was present on the pipe fragment, which read "SCOTL…" on one side and "…OUGALL" on the reverse. If complete it would have read "MCDOUGALL – SCOTLAND". The founder of McDougall pipes was originally a manager at Murray's in Glasgow. McDougall manufactured out of Glasgow from 1846 until 1967 (Walker 1983). From 1847 until 1890 all McDougall brand clay pipes were marked "MCDOUGALL – GLASGOW". America introduced the McKinley Tariff Act on 1st October 1890 requiring all imported goods to be marked with their country of origin, so after that date it would have been marked "Scotland". This act was amended in 1920 to require the words "made in…" as well, dating the pipe stem between 1891 and 1920.

Given the limited number of artifacts observed, Location 1 does not meet the requirement for a Stage 3 assessment based on Section 2.2 of the Standards and Guidelines for Consultant Archaeologists (Government of Ontario 2011), the cultural heritage value or interest of this site is judged to be low and no further archaeological assessment is recommended.

3.1.2 Location 2

The Stage 2 assessment of Location 2 resulted in the documentation of seventeen Euro-Canadian artifacts over a 26 x 13 metre area: 13 ceramic artifacts, and 4 household artifacts. Examples of these artifacts are illustrated in Plate 2.

Table 5: Location 2 – Artifact Summary

Artifact	Freq.	%
Ceramic	13	76.47
Household	4	23.53
Total	**17**	**100.00**

During the assessment of Location 2 a total of seventeen artifacts were recovered: 13 ceramic artifacts and 4 household artifacts. Examples of these artifacts are illustrated in Plates 1 and 2.

Ceramic Artifacts

Ironstone, which was also known as white granite or stone china, is a ceramic classified between earthenware and porcelain with thick vitrified white paste, a background colour of white to bluish gray tint and a thick clear glasslike glaze (Florida Museum of Natural History 2018). This ceramic was initially introduced in the 1840s for tablewares, kitchenwares and toiletwares and became the most popular tableware ceramic by the 1870s and 1880s (Saint Mary's University 2021). Undecorated ironstone was most common after 1840 (Miller 1991). By 1897, ironstone was the cheapest dinnerware available, and prices charged for moulded patterns were the same as those charged for plain, undecorated types (Sussman 1985).

Moulded ironstone was produced during the same time period as undecorated ironstone. Generally, up until the 1870s, potters produced wares with detailed molding or sharp angles (Maryland Archaeological Conservation Lab 2002). Geometric paneling and scalloped motifs were the earliest moulded forms, popular from the 1840s to the 1850s. Foliage or floral motifs, and classical motifs such as acanthus leaves and Greek keys, were popular from the 1850s to the 1860s (Wetherbee 1985). Wheat was one of the most common motifs on moulded ironstone from the 1860s to the turn of the century, sometimes used in combination with grapes, corn, or clover (Sussman 1985, Wetherbee 1985). Ribbed patterns were produced primarily in the late 19th century (Wetherbee 1985). Five moulded ironstone fragments were recovered from Location 1, two wheat, one scalloped and one unknown pattern.

Transfer printed ironstone was done using tissue paper, which allowed for shading and finer line details or the use of oil and a sheet of glue were used to create a design with little dots (Stelle 2001). Transfer printing was popular throughout the 19th century. During the 1830s and 1840s other colours like brown, black, red, green and purple became popular. Between 1850 and 1890 only blue, black, and brown were popular with a variety of colour becoming popular

again in the late 19th century (Adams 1994). There was one piece of transfer printed ironstone was recovered from Location 2, the colour represented is brown.

Yellowware is partially vitrified earthenware used mostly for food preparation, storage and toiletwares. It is made from naturally buff coloured clay and generally has a clear glaze (Sussman 1997). Yellowware was manufactured circa 1840 to present and was at its peak popularity between 1870 and 1900 (Saint Mary's University 2021). A total of 1 fragments was recovered from Location 2.

Household Artifacts

Some bottle glass colours can provide a tentative temporal range for Euro-Canadian domestic sites, although most are temporally non-diagnostic (Lindsey 2018). Glass colours present at Location 2 sun-coloured amethyst, aqua and cobalt blue. Sun coloured amethyst glass is manganese dioxide decolourized glass that has been exposed to sunlight. It generally dates to the early 20th century prior to 1920. Aqua coloured glass was commonly produced prior to 1920 but some examples, such as fruit jars, could date as late as the 1930s. The single aqua glass bottle fragments found on Location 2 is embossed saying: DR. KILMER'S, SWA…, Kidne…, AND. This represents a fragment of a bottle of Dr. Kilmer's Swamp Root Kidney Liver and Bladder Remedy which was developed by Dr. S. Andral Kilmer beginning in 1878 and continuing into the 20th century.

A single, complete, glass bottle cobalt blue glass was recovered from Location 2. It has been positively identified as Bromo-Seltzer by Emerson Drug Co. Balitmore MD. In 1880, Isaac E. Emerson opened his first drug store at Annapolis, Maryland, but moved to Baltimore the next year and ran three drug stores there during the 1884-1889 period. Emerson conceived the plan for a headache remedy at one of his Baltimore drugstores in 1888 and left the business on May 1, 1889, to concentrate on the wholesale manufacture of Bromo-Seltzer (Society for Historical Archaeology 2014). Numerous variations of bottles were made from the late 19th century well into the 20th century when Bromides were withdrawn from the US market do its toxicity. This particular bottle appears to be the eighth iteration, circa 1908-1911, noted as being mouth-blown, with a full front embossing, and a 1 or 2 digit embossed number on the base (Society for Historical Archaeology 2014: 24).

The faunal remains included one mammalian saw cut bone. The saw mark suggests the bone was from a 19th century or later Euro-Canadian domesticate.

Given the limited number of artifacts observed, Location 2 does not meet the requirement for a Stage 3 assessment based on Section 2.2 of the Standards and Guidelines for Consultant Archaeologists (Government of Ontario 2011), the cultural heritage value or interest of this site is judged to be low and no further archaeological assessment is recommended.

3.1.3 Location 3

Location 3 is a pre-contact Aboriginal site consisting of two pieces of Onondaga chipping detritus 5 meters apart. Chert type identification was accomplished visually using reference materials located online or in personal collections. No subsurface features or fire cracked rock were observed during the Stage 2 assessment.

Onondaga chert is a dense, non-porous rock with a dull to vitreous or waxy lustre. Its colour can be light to dark grey, bluish grey, brown, or black; it can also appear mottled (Ellis and Ferris 1990). The Onondaga formation chert is derived from outcrops occurring along the north shore of Lake Erie between Long Point and the Niagara River. With primary outcrops also having been reported along the banks of the Grand River. It typically occurs in nodules or irregular thin beds. Onondaga chert is considered to be a high-quality raw material that was frequently utilized by pre-contact people. As a result, it is often found at archaeological sites throughout southern Ontario (Eley and von Bitter 1989).

Outcrops of Onondaga chert are found South of the Study Area along the North shore of Lake Erie between Long Point and the Niagara River. The Onondaga chert utilized at all three findspots discovered within the Study Area was likely obtained through direct procurement from primary sources through travel-to-source methods.

Both pieces of Onondaga chipping detritus were determined to be a tertiary flakes, based on the classification scheme described by Lennox et al. (1986) and expanded upon by Fisher (1997). Tertiary flakes are produced during the reduction of blanks and preforms into formal tool shapes. They are the result of precise flake removal through pressure flaking, where the maker applies direct pressure onto a specific part of the blank/tool in order to facilitate flake removal.

Given the limited number of artifacts observed at Location 3, and that these flakes are temporally non-diagnostic, the cultural heritage value or interest of this site is judged to be low and no further archaeological assessment is recommended.

4.0 Analysis and Conclusions

SAS was contracted by the Proponent to conduct a Stage 1-2 archaeological assessment in advance of a proposed residential subdivision on Part of Lots 21 & 22, Concession 1, Formerly Township of Willoughby, Welland County, now the City of Niagara Falls, in Niagara Falls, ON. The Study Area measures 10.93 hectares (27 acres).

The Stage 1 background research indicated that the entire Study Area exhibited moderate to high potential for the identification and recovery of archaeological resources and was recommended for a Stage 2 assessment.

The subsequent Stage 2 assessment was conducted on September 8-9 and 21-22, 2023. This investigation consisted of a typical pedestrian survey of the ploughed land and a typical test pit survey of the grassy and treed areas. No archaeological resources were documented during the test pit survey. The pedestrian survey produced two Euro-Canadian sites (Location 1 and 2), and one pre-contact Aboriginal site (Location 3). Locations 1 and 2 area situated approximately 60m apart, and both are located 250m or more from Location 3.

Location 1 was comprised of a four Euro-Canadian artifacts. Location 2 was seventeen Euro-Canadian artifacts. Location 3 was two pieces of Onondaga chert chipping detritus. Despite an intensified pedestrian survey of all agricultural lands within 20m of each site, no other archaeological materials were identified. Figure 3 illustrates the methodologies used to assess the Study Area.

Based on Section 2.2 of the Standards and Guidelines for Consultant Archaeologists (Government of Ontario 2011), no further archaeological assessment is required for the Study Area.

5.0 Recommendations

The Stage 2 assessment resulted in the identification of three locations of archaeological materials: Location 1, Location 2, and Location 3. Given the isolated and sparse nature of the artifacts, Location 1, Location 2 and Location 3 do not fulfill any of the criteria for a Stage 3 archaeological investigation as per Section 2.2 of the Standards and Guidelines (Government of Ontario 2011). The CHVI of Location 1, Location 2 and Location 3 is judged to be sufficiently documented.

Based on the results of the Stage 1 background investigation and the subsequent Stage 2 archaeological assessment, the following is recommended:

No further archaeological assessment is required for the Study Area; and,

Compliance legislation must be adhered to in the event of the discovery of deeply buried cultural materials or features.

The MCM is asked to review the results and recommendations presented in this report and provide a letter indicating their satisfaction that the fieldwork and reporting for this archaeological assessment are consistent with, and in compliance with, the *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), as well as the terms and conditions for archaeological licenses, and to enter this report into the Ontario Public Register of Archaeological Reports.

6.0 Advice on Compliance with Legislation

SAS advises compliance with the following legislation:
This report is submitted to the Minister of Heritage, Sport, Tourism and Culture Industries as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act, R.S.O. 1990, c 0.18*. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ministry of Heritage, Sport, Tourism and Culture Industries, a letter will be issued by the ministry stating that there are no further concerns about 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 a licensed archaeologist has completed archaeological fieldwork on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the Ontario Public Register of Archaeology Reports referred to in Section 65.1 of the *Ontario Heritage Act*.

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

The *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33 requires that any person discovering human remains must notify the police or corner and the Registrar of Cemeteries at the Ministry of Consumer Services.

7.0 Bibliography and Sources

Adams, N. 1994. Field Manual for Avocational Archaeologists in Ontario. Ontario Archaeological Society Inc., Archaeological Stewardship Project. North York: Ontario Archaeological Society.

Archives of Ontario. 2009. The Evolution of the District and County System, 1788-1899. Electronic document: http://www.archives.gov.on.ca/en/maps/ontario-districts.aspx. Last accessed, June 5, 2023.

Caston, Wayne A. 1997. Evolution in the Mapping of Southern Ontario and Wellington County. Wellington County History 10:91-106.

Chapman, L.J. and D.F. Putnam. 1984. The Physiography of Southern Ontario. Third Edition. Ontario Geological Survey. Special Volume 2. Toronto: Ontario Ministry of Natural Resources.

Coyne, J. H. 1895. The Country of the Neutrals (As Far as Comprised in the County of Elgin): From Champlain to Talbot. St. Thomas: Times Print. Reprinted: ValdeBooks 2021.

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.

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

Florida Museum of Natural History. 2023. Ironstone, undecorated – Type Index. Electronic document: https://www.floridamuseum.ufl.edu/typeceramics/type/ironstone-undecorated/. Last accessed November 13, 2023

Gentilcore, R. Louis and C. Grant Head. 1984. Ontario's History in Maps. Toronto: University of Toronto Press.

Government of Ontario. 1990a. Ontario Planning Act, R.S.O. 1990, CHAPTER P.13. Last amendment: 2022, c. 21, Sched. 9. Electronic document: https://www.ontario.ca/laws/statute/90p13. Last accessed April 17, 2023.

Government of Ontario. 1990b. Ontario Heritage Act, R.S.O. 1990, CHAPTER O.18. Last amendment: 2022, c. 21, Sched. 6. Electronic document: https://www.ontario.ca/laws/statute/90o18. Last accessed April 17, 2023.

Government of Ontario. 1990c. Freedom of Information and Protection of Privacy Act, R.S.O.

1990, CHAPTER F.31. Last amendment: 2021, c. 40, Sched. 12, s. 2. Electronic document: https://www.ontario.ca/laws/statute/90f31. Last accessed April 17, 2023.

Government of Ontario. 2002. Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c.33. Last amendment: 2021, c. 4, Sched. 6, s. 49. Electronic document: https://www.ontario.ca/laws/statute/02f33. Last accessed April 17, 2023.

Government of Ontario. 2011. Standards and Guidelines for Consultant Archaeologists. Toronto: Ministry of Heritage, Sport, Tourism and Culture Industries.

Government of Ontario. n.d. Archaeological Sites Database Files. Toronto: Culture Services Unit, Ministry of Heritage, Sport, Tourism and Culture Industries.

Kingston, M.S. and E.W. Presant.1989. The Soils of the Regional Municipality of Niagara. Report No. 60 of the Ontario Institute of Pedology. Guelph: Ontario Ministry of Agriculture.

MacDonald, Robert and M.S. Cooper. 1997. Environmental Context. In R.F. Williamson and R.I. MacDonald (Eds.), The Shadow of the Bridge - The Archaeology of the Peace Bridge Site (AfGr-9),1994-1996 Investigations. Toronto: Occasional Publications of Archaeological Services Inc., Vol.1.

McAndrews, J.H. and G.C. Manville. 1987. Descriptions of Ecological Regions. In R. Cole Harris (Ed.), Historical Atlas of Canada from the Beginning to 1800. Toronto: University of Toronto Press.

Miller, George L. 1991. Thoughts Towards A User's Guide to Ceramic Assemblages, Part I: Lumping Sites into Mega assemblages by Those That Cannot Tell Time. Council for Northeast Historical Archaeology Newsletter 18: 2-5.

Morris, J.L. 1943. Indians of Ontario. 1964 reprint. Toronto: Department of Lands and Forests, Government of Ontario.

Page, H.R. & Co. 1876. The Illustrated Historical Atlas of the Counties of Lincoln and Welland. Toronto: H.R. Page & Co.

Rogers, E.S. 1978. Southeastern Ojibwa. In Handbook of North American Indians, William C. Sturtevant and Bruce Trigger (eds). Smithsonian Institution, Washington, D.C.

Saint Mary's University. 2021. Saint Mary's University Archaeology Lab Ceramics Database. Electronic document: https://web.archive.org/web/20170501100403/http://www.smu.ca/academics/departments/archaeology-lab-ceramics-database.htmlLast accessed on October 31, 2023.

Stelle, L. J. 2001. An Archaeological Guide to Historic Artifacts of the Upper Sangamon Basin, Central Illinois, U.S.A. Electronic document: http://virtual.parkland.edu/lstelle1/len/archguide/documents/arcguide.htm. Last accessed November 13, 2023.

Sussman, Lynne. 1985. The Wheat Pattern: An Illustrated Survey. Ottawa: Parks Canada.

Sussman, Lynne. 1997. Mocha, Banded, Cat's Eye, and Other Factory-Made Slipware. Number 1. Studies in Northeast Historical Archaeology. Boston. Boston University Press.

Surtees, Robert J. 1994. Land Cessions, 1763-1830. In Aboriginal Ontario, Edward S. Rogers and Donald B. Smith (eds.). Dundurn Press, Toronto.

Trigger, Bruce G. 1994. The Original Iroquoians: Huron, Petun and Neutral. In Aboriginal Ontario, Edward S. Rogers and Donald B. Smith (eds.). Dundurn Press, Toronto.

Wilson, J.A. and M. Horne 1995. City of London Archaeological Master Plan. London: City of London, Department of Planning and Development.

8.0 Figures

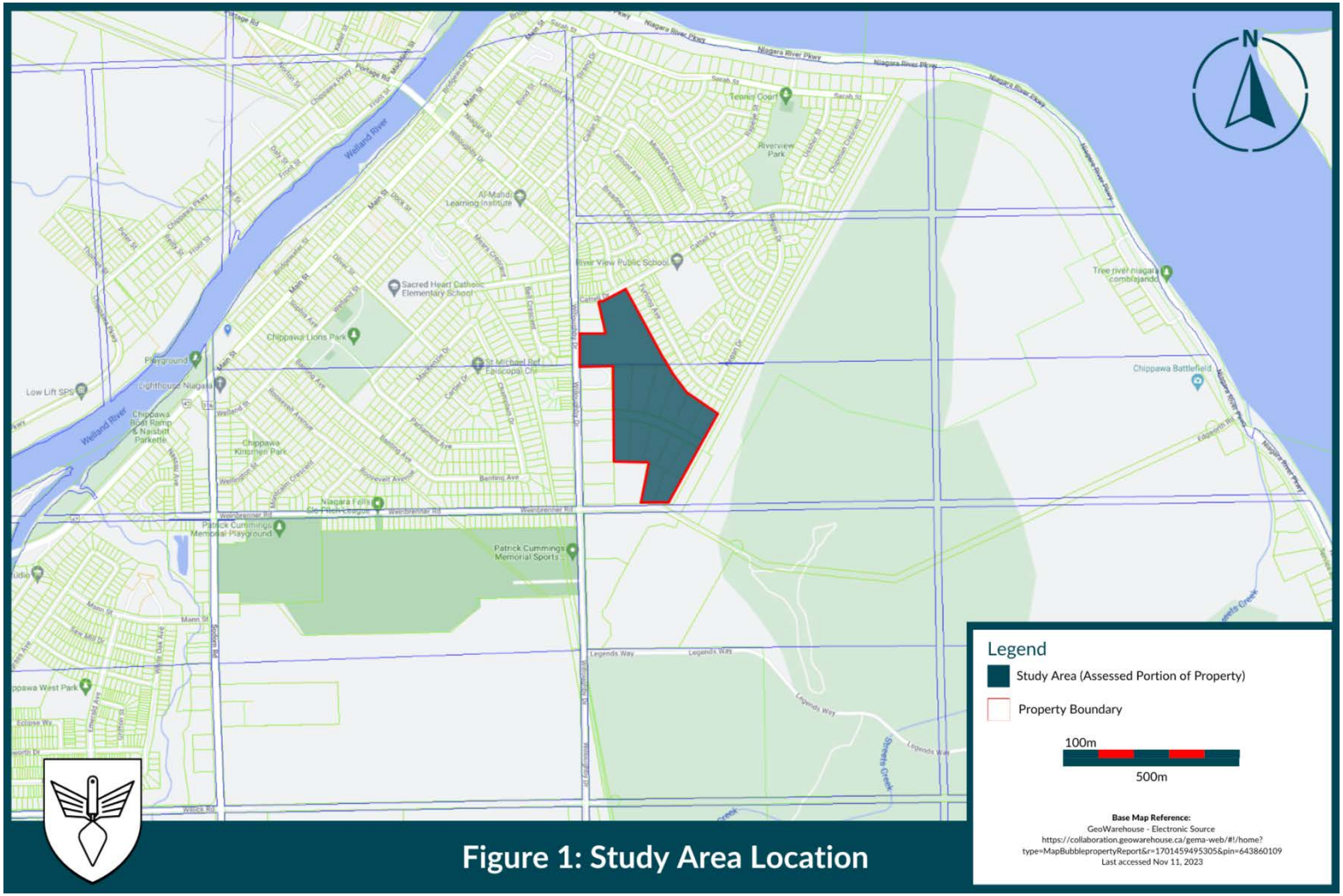

Figure 1: Study Area Location

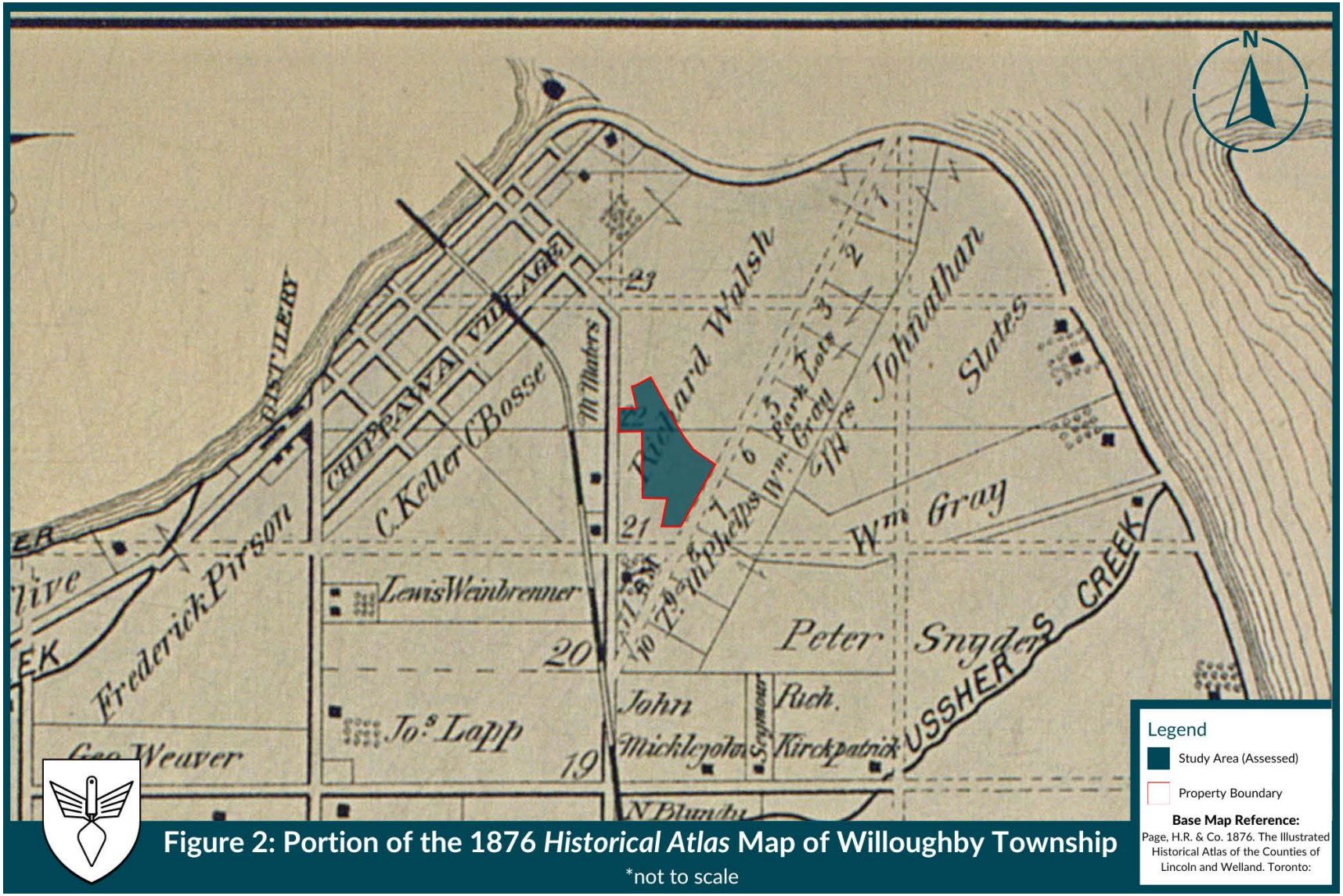

Figure 2: Portion of the 1876 *Historical Atlas* Map of Willoughby Township

*not to scale

Figure 3: Stage 2 Survey Results

	Units	Area(ha)
Stacked Townhouses	321	4.30
Apartments	603	4.83
Park		0.55
Walkway		0.02
Roads		1.31
Total	924	11.01

Cattell Drive
Furlong Avenue
Willoughby Drive
Caronpost Road
Weinbrenner Road

Block 1
4 Storey Stacked Townhouses
(165 units)
2.21ha.

Block 2
4 Storey Stacked Townhouses
(156 units)
2.09ha.

Block 3
8 Storey Apartments
(65 units)
0.52ha.

Block 4
8 Storey Apartments
(108 units)
0.87ha.

Block 5
8 Storey Apartments
(315 units)
2.52ha.

Block 6
10 Storey Apartment
(115 units)
0.92ha.

Block 7
Park
0.55ha.

3464
8552
8646
8700
8720
8800
3401-3421
8830

87.8
51.2
197.3
115.9
76.3
67.9
110.2
52.5
20
62.7
69.7
123.4
91.1
95.5
26
192.4
87.9
263.1
121.9
98.4
117.9
79.5
80.4

0 10 20 50 100
Meters

NOTE: This concept should be considered as a preliminary demonstration model that illustrates an 'order of magnitude' development scenario for the site. The number of units, floor area and parking supply are approximate and subject to more detailed design as well as municipal planning approvals. Property boundary is approximate and subject to survey.

DEVELOPMENT CONCEPT

Willoughby Drive, Niagara Falls

Scale 1:2,000 | December 3, 2020 | Project No.: 20282 | Drawn By: SL

GSP group

Figure 4: Development Map

9.0 Images

9.1 Field Photos

Photo 1: Typical conditions, facing East

Photo 2: Pedestrian survey at 5m Intervals, facing North

Photo 3: Pedestrian survey at 5m Intervals, facing North

Photo 4: Typical soil conditions

Photo 5: Typical soil conditions

Photo 6: Test pitting survey at 5m Intervals, facing North

Photo 7: Test pitting survey at 5m Intervals, facing West

Photo 8: Typical test pit

Photo 9: Typical test pit

Photo 10: Typical test pit

Photo 11: Typical test pit

Photo 12: Typical test pit

Photo 13: Typical test pit

Photo 14: Typical test pit

Photo 15: Low and wet, with sloped disturbance, facing Northwest

Photo 16: Low and wet, facing South

Photo 17: Low and wet, with sloped disturbance, facing Southeast

Photo 18: Low and wet, facing South

9.2 Artifact Plates

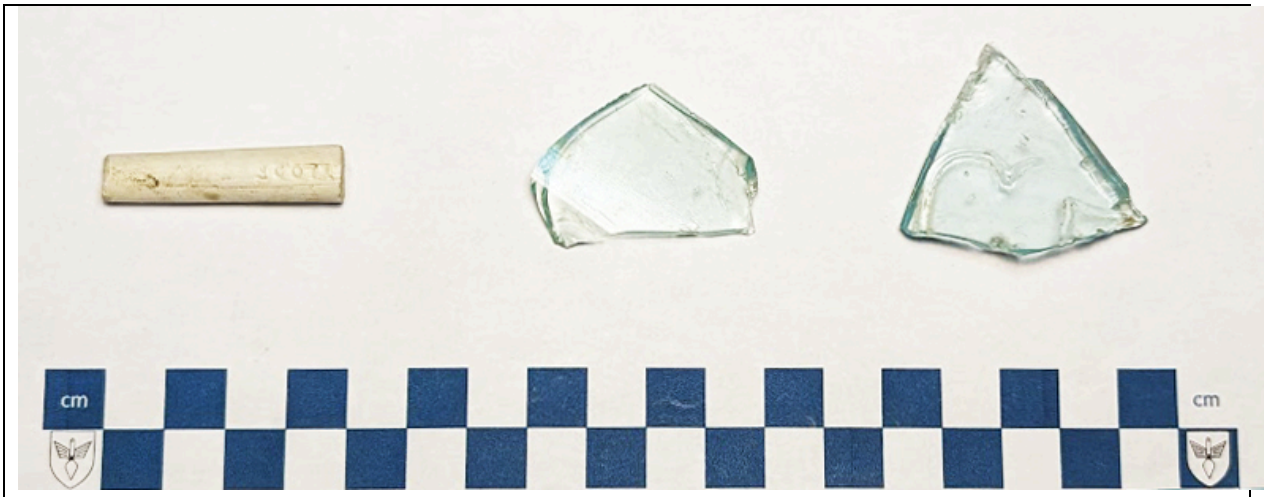

Plate 1: Sample Artifacts - Location 1

A) White Clay Pipe Stem (Cat#A001)
B) Glass, Aqua – Undecorated (Cat#A002)
C) Glass, Aqua – Embossed (Cat#A004)

Plate 2: Sample Artifacts - Location 2

A) Glass, Bromo-Seltzer Bottle (Cat#B009)
B) Glass, Aqua – Dr. Kilmer's (Cat#B001)
C) Ironstone –Embossed, Wheat (Cat#B006)

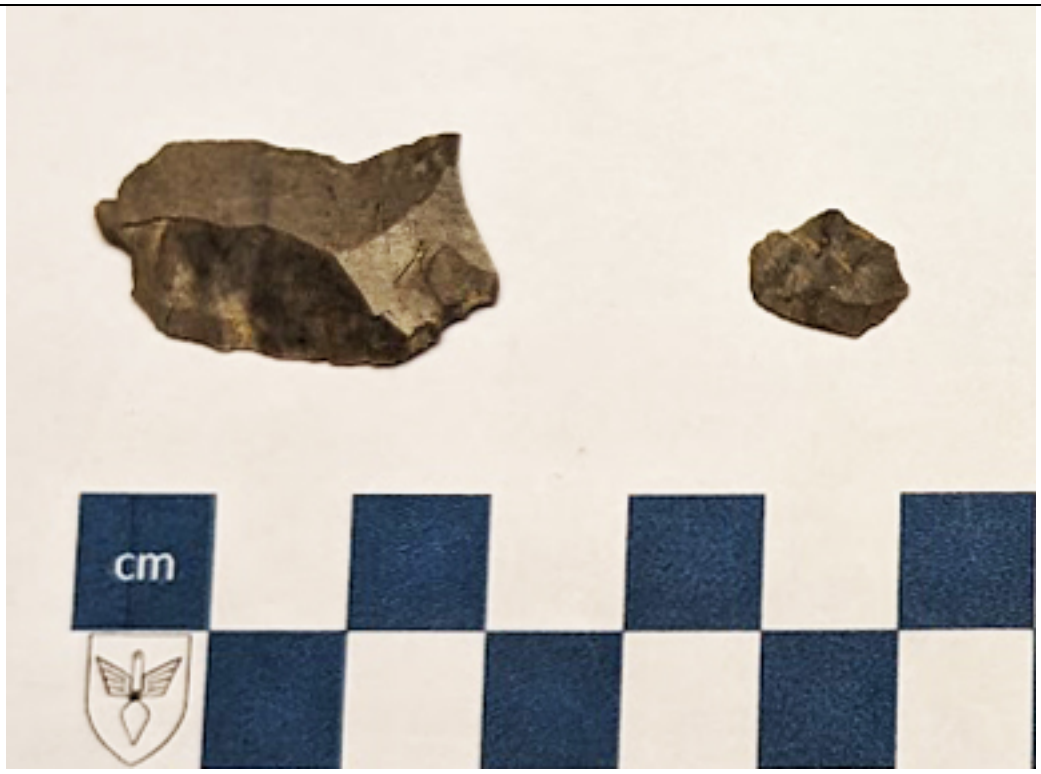

Plate 3: Sample Artifacts - Location 3

A) Chipping Detritus (Cat#C001)

B) Chipping Detritus (Cat#C002)

APPENDIX A – Artifact Catalogue

Cat #	Site	Context	Freq.	Artifact	Form / Function	Comments
A001	1	Surface	1	white clay pipe, stem		midsection fragment, stamped "SCOTL..." and "...OUGALL" Circa 1891-1920
A002	1	Surface	1	glass, undetermined		colourless, medium sized fragment
A003	1	Surface	1	glass, undetermined		colourless, large sized fragment
A004	1	Surface	1	glass, undetermined		colourless, medium sized fragment, embossed "C"?
B001	2	Surface	1	faunal remains		large mammal, saw cut, animal knawed
B002	2	Surface	1	glass, bottle		colourless, body fragment, embossed " DR. KILMER'S", "SWA...", "KIDNE...", AND Circa 1878+
B003	2	Surface	1	ironstone, undecorated	unidentifiable / unknown (non-rim)	
B004	2	Surface	1	ironstone, undecorated	unidentifiable / unknown (non-rim)	
B005	2	Surface	1	ironstone, moulded	flatware / unknown (rim)	harvest pattern
B006	2	Surface	1	ironstone, moulded	flatware / unknown (rim)	harvest pattern
B007	2	Surface	1	glass, undetermined		sun coloured amethyst
B008	2	Surface	1	ironstone, moulded	hollowware / unknown (non-rim)	harvest pattern
B009	2	Surface	1	glass, bottle		cobalt blue, embossed "BROMO-SELTZER / EMERSON / DRUG CO / BALTIMORE, MD" on front, and "15" on bottom 1908-1911
B010	2	Surface	1	ironstone, moulded	unidentifiable / unknown (non-rim)	small fragment, unknown pattern
B011	2	Surface	1	Ironstone, moulded	flatware / unknown (rim)	scalloped
B012	2	Surface	1	ironstone, undecorated	hollowware / unknown (non-rim)	

B013	2	Surface	1	ironstone, undecorated	flatware / unknown (non-rim)	
B014	2	Surface	1	ironstone, undecorated	unidentifiable / unknown (non-rim)	
B015	2	Surface	1	ironstone, undecorated	unidentifiable / unknown (non-rim)	
B016	2	Surface	1	yelloware	unidentifiable / unknown (non-rim)	
B017	2	Surface	1	ironstone, transfer printed	unidentifiable / unknown (non-rim)	brown floral transfer
C001	3	Surface	1	chipping detritus		Onondaga chert, tertiatry flake
C002	3	Surface	1	chipping detritus		Onondaga chert, tertiatry flake