

# Stage 1-2 Archaeological Assessment of Additional Lands at Waterford's Law Quarry Extension, Part of Lot 6, Concession 2, Geographic Township of Wainfleet, Welland County, Town of Wainfleet, Regional Municipality of Niagara, Ontario

---

## Original Report

Prepared for:

**Waterford Sand & Gravel Ltd.**

70 Ewart Ave.

Brantford, ON N3T 5M1

T 519 752-1300

Archaeological Licence: P449 (Bhardwaj)

PIF P449-0460-2020

Archaeological Services Inc. File: 20PL-268

6 August 2021



## Executive Summary

ASI was contracted by Waterford Sand and Gravel Ltd. to complete a Stage 1 and 2 Archaeological Assessment of the Law Crushed Stone Extension, part of Lot 6, Concession 2, Geographic Township of Wainfleet, Welland County, now in the Town of Wainfleet, Regional Municipality of Niagara. The subject property is approximately 9.84 ha.

The Stage 1 background assessment entailed consideration of the proximity of previously registered archaeological sites and the original environmental setting of the property, along with nineteenth- and twentieth-century settlement trends. The Stage 1 background research determined that there was potential for the presence of both Indigenous resources and Euro-Canadian historical resources within the subject property.

The Stage 2 field assessment was conducted on November 27, 2020, and April 15, 16, 20, 26, 27, 28, 2021 by means of pedestrian survey at one metre intervals, as well as test pitting initiated at five-metre intervals. This assessment resulted in the identification of 13 archaeological sites and 9 Indigenous isolated finds. Of these, a Stage 3 Archaeological Assessment is recommended for nine sites: Indigenous sites AfGt-22, AfGt-317, AfGt-321, AfGt-322, AfGt-323, AfGt-324, AfGt-326, AfGt-327, and AfGt-328.

The remaining isolated finds do not meet the evaluation criteria indicative of cultural heritage value or interest and are considered free of any further archaeological concern.



## Project Personnel

- **Senior Project Manager:** Bev Garner, Hons. BA, Senior Archaeologist, Manager, Planning Assessment Division
- **Project Manager:** Robb Bhardwaj, MA (P449), Associate Archaeologist, Project Manager, Planning Assessment Division
- **Project Director:** Robb Bhardwaj
- **Project Administrator:** Lauren Vince, Hons. BA (R1235), Archaeologist, Project Administrator, Planning Assessment Division
- **Project Archaeologists:** Sean Haefner, MA (R1253), Field Director, Planning Assessment Division
- **Field Archaeologist:**  
Alec McClellan, PhD (P1015), Field Director, Mitigation Division, Catherine Kitchen, BA, Cedric Sabourin, Hons. BA, Erika Johannsen, MA (R1193), Field Director, Mitigation Division, Jessica Thomas, MA, Russell Holland, MA (R1210), Field Director, Mitigation Division, Scott Evans, Hons. BA, William Lucas, Hons. BA (R1071)
- **Report Preparation:** Corbin Albani, BA (R1239), Archaeologist, Technical Writer, Planning Assessment Division, Robb Bhardwaj
- **Graphics:** Peter Bikoulis, PhD, Archaeologist, Geomatics Specialist, Operations Division
- **Artifact Processing:** Kaitlyn McMullen, Hons. BA, Archaeologist, Lab Technician, Laboratory and Fieldwork Services, Operations Division
- **Artifact Analysis and Photography:** Deborah Steiss, MA (P049), Senior Associate
- **Report Reviewer:** David Robertson, MA (P372), Partner, Director, Planning Assessment Division, Sara Cherubin, MA (P223), Senior Archaeologist, Manager – Indigenous Sites, Mitigation Division



## Table of Contents

Executive Summary	1
Project Personnel	2
1.0 Project Context	7
1.1 Development Context	7
1.2 Historical Context	7
1.2.1 Pre-Contact Settlement	8
1.2.2 Post-Contact Settlement	10
1.2.3 Review of Historic Map Sources	12
1.2.4 Review of Aerial Imagery	13
1.3 Archaeological Context	14
1.3.1 Registered Archaeological Sites	14
1.3.2 Previous Assessments	15
1.3.3 Physiography	16
1.3.4 Review of Pre-Contact Archaeological Potential	17
1.3.5 Review of Historical Archaeological Potential	18
1.3.7 Existing Conditions	19
2.0 Field Methods	20
2.1 Areas of No Potential	20
2.2 Test Pit Survey	20
2.3 Pedestrian Survey	21
3.0 Record of Finds	22
3.1 Inventory of Documentary and Material Record	22
3.2 Indigenous Locations	23
3.2.1 Isolated Finds	23



3.2.2	Indigenous Sites	24
3.2.2.1	Indigenous Sites - Diagnostic Lithic Scatters	25
3.2.2.1	Indigenous Sites – Non-Diagnostic Lithic Scatters	25
4.0	Analysis and Conclusions	26
5.0	Recommendations	29
6.0	Advice on Compliance with Legislation	31
7.0	Bibliography and Sources	33
8.0	Images	36
9.0	Maps	49
10.0	Appendix A: Registered Sites within One Kilometre of the Subject Property	57

## List of Tables

Table 1: Pre-Contact Indigenous Temporal Culture Periods in Southern Ontario	8
Table 2: Inventory of Documentary and Material Record	22
Table 3: Summary of Indigenous Isolated Finds	24
Table 4: Summary of Indigenous Diagnostic Sites	25
Table 5: Summary of Indigenous Non-Diagnostic Sites	26
Table 6: Summary of Indigenous Sites Requiring Stage 3 Archaeological Assessment	28
Table 7: Registered Sites within One-Kilometre of the Subject Property	57

## List of Images

Image 1: View of residence at 20642 Biederman Road.	36
Image 2: View of residence at 20642 Biederman Road.	36
Image 3: View of residence at 20642 Biederman Road.	37
Image 4: View of gravel driveway and garage within 20642 Biederman Road residential lot.	37
Image 5: View of old well within 20642 Biederman Road residential lot.	38
Image 6: View of demolished structure within 20642 Biederman Road residential lot.	38
Image 7: View of crew test pitting at five metre intervals.	39
Image 8: View of crew test pitting at five metre intervals within northwestern woodlot.	39



Image 9: View of typical intact test pit profile.	40
Image 10: View of typical intact test pit profile within northwestern woodlot.	40
Image 11: View of field conditions during pedestrian survey.	41
Image 12: Field crew conducting pedestrian survey at one metre intervals.	41
Image 13: Field crew conducting pedestrian survey at 2.5 metre intervals.	42
Image 14: Sample of artifacts from Site AfGt-22: top: L7, L11, L19, L35; bottom: L36, L39, L41, L44.	42
Image 15: Sample of artifacts from Site AfGt-22: top: L2, L4, L5, L9; bottom: L17, L19, L21, L22.	43
Image 16: Sample of artifacts from Site AfGt-317: top: L1, L5, L6; bottom: L7, L8, L9.	43
Image 17: Sample of artifacts from Site AfGt-318: top: L1, L2, L4, L4	44
Image 18: Sample of artifacts from AfGt-319: top – L1, L3, L6; bottom – L7, L8.	44
Image 19: Sample of artifacts from AfGt-320: L1, L2, L5.	45
Image 20: Sample of artifacts from AfGt-321 top – L4, L5, L9, L16; bottom – L18, L19, L22, L23.	45
Image 21: Sample of artifacts from AfGt-322 top – L3, L5, L11, L16; bottom – L18, L19, L22, L23.	46
Image 22: Sample of artifacts from AfGt-323 top – L1, L2, L3, L4; bottom – L6, L8, L13, L15.	46
Image 23: Sample of artifacts from AfGt-324 top – L1, L5, L7, L10; bottom – L14, L15, L16, L17.	47
Image 24: Sample of artifacts from AfGt-326 top – L4, L5, L6, L9; bottom – L10, L13, L14, L15.	47
Image 25: Sample of artifacts from AfGt-327 top – L1, L2, L3; bottom – L5, L7, L9.	48
Image 26: Sample of artifacts from AfGt-328 top – L1, L2, L3, L4; bottom – L5, L6, L8, L9.	48

## List of Maps

Figure 1: Location of the Subject Property	50
Figure 2: Subject Property Located on the 1860 <i>Tremaine Map of the County of Ontario</i>	51



Figure 3: Subject Property Located on the 1877 <i>Illustrated Historical Atlas of the County of Ontario</i>	52
Figure 4: Subject Property Located on the 1930 <i>Oshawa topographic sheet</i>	53
Figure 5: Subject Property Located on the 1954 aerial photograph of Southern Ontario	54
Figure 6: Existing Conditions of the Subject Property	55
Figure 7: Stage 2 Archaeological Assessment Results	56



## 1.0 Project Context

ASI was contracted by Waterford Sand and Gravel Ltd. to complete a Stage 1 and 2 Archaeological Assessment of the Law Crushed Stone Extension, part of Lot 6, Concession 2, Geographic Township of Wainfleet, Welland County, now in the Town of Wainfleet, Regional Municipality of Niagara (Figure 1). The subject property is approximately 9.84 ha.

### 1.1 Development Context

This assessment was conducted under the senior project management of Beverly Garner and project management and project direction of Mr. Robb Bhardwaj (P449), under the Ministry of Heritage, Sport, Tourism, and Culture Industries (henceforth the Ministry) P449-0460-2020. All activities carried out during this assessment were completed as part the proposed expansion of the existing Law Crushed Stone lands, situated immediately east of the subject property, in accordance with the Aggregate Resources Act (Ministry of Natural Resources and Forestry [MNRF] 1990).

All work was completed in accordance with the *Ontario Heritage Act* (Ministry of Culture [MCL] 1990, now administered by the Ministry) and the *Standards and Guidelines for Consultant Archaeologists* (henceforth the Standards) (Ministry of Tourism and Culture [MTC] 2011; now administered by the Ministry).

Permission to carry out all activities necessary for the completion of the assessment was granted by the proponent on October 5, 2020.

### 1.2 Historical Context

The purpose of this section is to describe the past and present land use and the settlement history, and any other relevant historical information gathered through the Stage 1 background research. First, a summary is presented of the current understanding of the Indigenous land use of the subject property. This is followed by a review of historic Euro-Canadian settlement trends.





Historically, the subject property is located within part of Lot 6, Concession 2, in the Geographic Township of Wainfleet, County of Welland. The property is situated on the west of Biederman Road, south of a farm lane, and east and north of agricultural fields, now in the Town of Wainfleet. The subject property currently consists of an agricultural field and the residential lot at 20642 Biederman Road. The property lies south of the Wainfleet Bog.

### 1.2.1 Pre-Contact Settlement

Table 1 provides a general summary of the pre-contact Indigenous settlement history of southern Ontario.

**Table 1: Pre-Contact Indigenous Temporal Culture Periods in Southern Ontario**

Period	Description
Paleo 13,000 B.P. – 9,000 B.P.	<ul style="list-style-type: none"><li>• First human occupation of Ontario</li><li>• Astronomers/ Artists/ Hunters/ Gatherers/ Foragers</li><li>• Language unknown</li><li>• Small occupations</li><li>• Non-stratified populations</li></ul>
Archaic 9,000 B.P. – 3,000 B.P.	<ul style="list-style-type: none"><li>• Astronomers/ Artists/ Hunters/ Gatherers/ Foragers</li><li>• Small occupations</li><li>• Non-stratified populations</li><li>• Mortuary ceremonialism</li><li>• Extensive trade networks for raw materials and finished objects</li></ul>



Period	Description
Early Woodland 3,000 B.P. – 2,400 B.P.	<ul style="list-style-type: none"> <li>• Astronomers/ Artists/ Hunters/ Gatherers/ Foragers</li> <li>• General trend in spring/summer congregation and fall/winter dispersal</li> <li>• Small and large occupations</li> <li>• First evidence of community identity</li> <li>• Mortuary ceremonialism</li> <li>• Extensive trade networks for raw materials and finished objects</li> </ul>
Middle Woodland 2,400 B.P. – 1,300 B.P., Transitional Woodland 1,300 B.P. – 1,000 B.P.	<ul style="list-style-type: none"> <li>• Astronomers/ Artists/ Hunters/ Gatherers/ Foragers</li> <li>• A general trend in spring/summer congregation and fall/winter dispersal into large and small settlements</li> <li>• Kin-based political system</li> <li>• Increasingly elaborate mortuary ceremonialism</li> <li>• Incipient agriculture in some regions</li> <li>• Longer term settlement occupation and reuse</li> </ul>
Late Woodland (Early) A.D. 900 – A.D. 1300	<ul style="list-style-type: none"> <li>• Foraging with locally defined dependence on agriculture</li> <li>• Villages, specific and special purpose sites</li> <li>• Socio-political system strongly kinship-based</li> </ul>
Late Woodland (Middle) A.D. 1300 – A.D. 1400	<ul style="list-style-type: none"> <li>• Major shift to agricultural dependency</li> <li>• Villages, specific and special purpose sites</li> <li>• Development of socio-political complexity</li> </ul>
Late Woodland (Late) A.D. 1400 – A.D. 1650	<ul style="list-style-type: none"> <li>• Complex agricultural society</li> <li>• Villages, specific and special purpose sites</li> <li>• Politically allied regional populations</li> </ul>



## **1.2.2 Post-Contact Settlement**

### **Between the Lakes Purchase, Treaty 3**

The subject property is within Treaty 3, the “Between the Lakes Purchase.” Following the 1764 Niagara Peace Treaty and the follow-up treaties with Pontiac, the English colonial government considered the Mississaugas to be their allies since they had accepted the Covenant Chain. The English administrators followed the terms of the Royal Proclamation and ensured that no settlements were made in the hunting grounds that had been reserved for the Mississaugas’ use (Johnston, 1964; Lytwyn, 2005). In 1784, under the terms of the “Between the Lakes Purchase” signed by Sir Frederick Haldimand and the Mississaugas, the Crown acquired over one million acres of land spanning westward in part from near modern-day Niagara-on-the-Lake along the south shore of Lake Ontario to modern-day Burlington (Aboriginal Affairs and Northern Development Canada, 2016).

### **Early Development of Wainfleet Township**

The first township survey was undertaken in 1791, and the first legal settlers occupied their land holdings the same year. The township is said to have been named after Wainfleet All Saints in Lincolnshire, England. Wainfleet Township is bounded on the north by the townships of Pelham and Gainsboro, on the east by Humberstone Township, on the west by the township of Moulton, and on the south by Lake Erie. In 1805, Boulton noted that Wainfleet was “particularly well suited for water” and “is a most delightful situation.” The settlement of a large part of the township was hindered due to the presence of a “large tamarack and cranberry swamp.” Initial settlement was by disbanded soldiers, mainly Butler’s Rangers, following the end of the American Revolutionary War. Early immigrants had to use the mill at Niagara Falls, which settlers in the southern part of the township could reach by water. By 1817, however, Wainfleet had 72 inhabited houses and a sawmill. The arrival of the Welland Canal in the 1830s enabled immigrants to settle in the previously unoccupied parts of the township. By 1850, the township had a population of 1,539. The line of the Welland Canal feeder was cut across the centre of the township. By the 1840s, the population comprised mainly Canadian, Irish, English and Dutch settlers (Boulton 1805:89; Smith



1846:202; Wainfleet Township Centennial Committee 1967; Armstrong 1985:148; Rayburn 1997:359; Page 1876:17; Anonymous 1887:375–376, 379).

According to secondary sources, three Zavitz brothers were amongst the earliest settlers in Wainfleet Township. Between 1786 and 1815, Jacob Jr., Christian, and Henry acquired all or part of Lots 1 to 7 and 12 and 15 in the first concession. These three brothers came to Canada from Pennsylvania after the American Revolution. Their grandfather, George Zavitz, had come to America from the Alsace region of France around 1730, likely to escape religious persecution (Wainfleet Historical Society 1992:274)

### **Development of Lot 6, Concession 2, Wainfleet Township**

According to the Abstract Index to Deed Titles, the Crown Patent for Lot 6 was granted to Henry Zavitz in 1797. The patent was for all 200 acres.

In 1823, Henry Zavitz sold a 35-acre parcel at the north end of the south half of the lot to John Macklem. Macklem sold his 35 acres to Edward Plant in 1830, who in turn sold it to Jacob Biederman [variously spelled Peterman, Bederman, Bitterman, and Betterman in the documents] in 1834. Biederman then subdivided the parcel and sold the east 18 acres to Michael Reeb in 1844. In 1853, Jacob Biederman sold the remaining 17 acres to Auguste Maltzer in 1853 (AO n.d.) No other transactions were noted for this parcel during the nineteenth century (AO n.d.)

To confirm who settled on the property, other sources of information were consulted. The 1851 Census of Wainfleet Township is no longer extant and the earliest assessment roll dates to 1854. Five heads of households are listed for Lot 6 in the 1854 assessment, including that of Auguste Maltzer, who is listed as a 25-year-old farmer who occupied 17 acres in the northeast part of Lot 6 (AO n.d.). The 1861 Census provides further information. In that year, Auguste Maltzer was a 33-year-old Prussian-born farmer of French origin who lived with his wife, three children, and 68-year-old Jacob Biederman in a one-storey log dwelling. The family possessed a total of 67 acres in Lots 6 and 9, of which 29 acres was devoted to crops, one to garden, and 37 left wild. The crops included wheat, barley, rye,



peas, oats, Indian corn, potatoes, and hay, while they also owned cows, horses, sheep, and pigs (AO 1861).

The name of Auguste Maltzer could not be found in subsequent assessment rolls or censuses until the 1891 assessment listed him as a 62-year-old freeholder who possessed 17 acres in the west-central part of Lot 6 (AO n.d.)

### 1.2.3 Review of Historic Map Sources

The previous Stage 1 assessment included a review of historical mapping in order to determine the presence of settlement features within the subject property during the nineteenth century and early twentieth century that may represent potential historical archaeological sites. The following review of historical mapping has been amended from the original Stage 1 discussion to address the Stage 2 subject property specifically.

Historical map sources are used to reconstruct/predict the location of former features within the modern landscape by cross-referencing points between the various sources and then georeferencing them in order to provide the most accurate determination of the location of any property from historic mapping sources. The results can be imprecise (or even contradictory) as various sources, such as the vagaries of map production, differences in scale or resolution, and distortions caused by the reproduction of the sources, introduce error into the process. The impacts of this error are dependent on the size of the feature in question, the constancy of reference points on mapping, the distances between them, and the consistency with which both are depicted on historical mapping.

In addition, not all settlement features were depicted systematically in the compilation of these historical map sources, given that they were financed by subscription, and subscribers were given preference with regards to the level of detail provided. Thus, not every feature of interest from the perspective of archaeological resource management would have been within the scope of these sources.

The 1862 *Tremaine Map of the Counties of Lincoln and Welland* indicates that much of the subject property is owned by Mrs. Zavitz, with the southern portion



being under the ownership of Andrew Rebb, and a small section of the subject property located along the north boundary located within a plot of land that has no identified owner. Biederman Road to the east of the property is an historically important transportation route as it represents an original concession road (Tremaine 1862).

On the 1876 *Illustrated Atlas of the County of Lincoln and Welland* (Figure 3), much of the subject property is identified as being owned by T. Zavitz; the southern area of the property remains under the ownership of A. Reeb, and a small section along the north boundary is within a plot owned by G. Peterman Sr. One structure is depicted within the boundaries of the subject property, centrally located within the area owned by T. Zavitz (Page 1876).

The Department of Militia and Defence topographic map series clearly shows features such as structures, streams, roads, and woodlots. The 1905 Niagara sheet (Figure 4) indicates the same road system as the nineteenth century maps with one additional north-south road extending northward from Highway 3, following the lot line between Lots 6 and 7 to the west of the subject property. One wood house is depicted within the boundaries of the subject property, located in the northeast area of the property, in the approximate location of the present-day residence at 20642 Biederman Road. An east-west band of woods spans the southern half of the subject property and the Wainfleet Bog is depicted to the north (Department of Militia and Defence 1906).

#### **1.2.4 Review of Aerial Imagery**

In order to further assess the past land use and potential of the subject property, twentieth century aerial imagery was reviewed (Department of National Defence 1934) (Figure 6). The 1934 aerial imagery shows the subject property as predominantly agricultural fields. A structure is visible at the northeast corner of the subject property, in the location of 20642 Biederman Road. The property is bounded by agricultural fields to the north, west and south, and Wainfleet Bog is visible to the north.



## 1.3 Archaeological Context

This section provides background research pertaining to previous archaeological fieldwork conducted within and in the vicinity of the subject property, its environment characteristics (including drainage, soils, surficial geology, topography, etc.), and current land use and field conditions.

### 1.3.1 Registered Archaeological Sites

In order that an inventory of archaeological resources could be compiled for the subject property, three sources of information were consulted: the site record forms for registered archaeological sites housed at the Ministry, published and unpublished documentary sources, and the files of ASI.

In Ontario, information concerning archaeological sites is stored in the Ontario Archaeological Sites Database (OASD) which is maintained by the Ministry. This database contains archaeological sites registered within the Borden system. The Borden system was first proposed by Dr. Charles E. Borden and is based on a block of latitude and longitude. Each Borden block measures approximately 13 km east-west by 18.5 km north-south. Each Borden block is referenced by a four-letter designator, and sites within a block are numbered sequentially as they are found. The subject property under review is located within the AfGt Borden block.

Fifty-five archaeological sites have been registered within an approximate one km radius of the subject property, and one site (AfGt-22) is located within the boundaries of the subject property (MHSTCI 2021). Each site has been summarized in Appendix A; AfGt-22 is discussed further in Section 1.3.2.

Of the fifty-five identified sites within one kilometre of the subject property, forty-nine were identified by ASI in 2017 as part of the first phase to the Law Crushed Stone expansion (ASI 2018).



### 1.3.2 Previous Assessments

During 1977, Christopher Ellis undertook an archaeological survey and testing project in the Niagara Peninsula (1979), including the ploughed fields within the subject property. The first phase of the survey was conducted in the immediate vicinity of the Wainfleet Bog and the Welland River and its tributaries north of the bog. It resulted in the documentation of 67 archaeological sites. The presence of numerous sites was not unexpected as easily accessible sources of Onondaga chert can be found along the Lake Erie shoreline, and Indigenous populations would have been attracted to this region to exploit this lithic resource (Ellis 1979; ASI 2018).

During his survey of cultivated fields within the subject property and adjacent fields, Ellis identified three pre-contact lithic sites associated with a “knoll” extending to the eastern boundary of a field. Small artifact collections were recovered from each of the three sites.

One pre-contact lithic site was identified within the property boundaries. Site AfGt-22 (Highway 3 No. 1, 1-8-1) is situated in the southwest area of the subject property, at an elevation of approximately 185 m asl. The lithic scatter measures 10 metres north-south, but the east-west extent is unknown as the site is described as being situated at the eastern edge of a field. Based on the site setting as described on the original Borden form, the site may be approximately 40 m further to the south-southeast than the site location mapped in the OASD.

In 2017, ASI completed a Stage 1 and 2 Archaeological Assessment of the Law Crushed Stone Extension, part of Lots 6 and 7, Concession 2, under PIF P449-0165-2017, which included the lands surrounding the subject property on the north, west and south sides, and resulted in the identification of a total of 81 sites. These include 24 Indigenous isolated finds, 53 Indigenous sites, two multi-component Indigenous and Euro-Canadian sites, and two Euro-Canadian sites; of the identified sites, 38 were recommended for a Stage 3 Archaeological Assessment (ASI 2018). The subject property is located within 300 metres of 33 sites identified during the course of the 2017 archaeological assessment (Table 2).





### 1.3.3 Physiography

The subject property is located within the Haldimand Clay Plain physiographic region of southern Ontario. The Haldimand Clay Plain physiographic region (Chapman and Putnam 1984:156–159) is among the largest of the 53 defined physiographic regions in southern Ontario, comprising approximately 3,500 square km (MacDonald 1980:3). Generally, this region is flat and poorly drained, although it includes several distinctive landforms including dunes, cobble, clay, and sand beaches, limestone pavements, and back-shore wetland basins. Within this part of the Niagara peninsula, a number of environmental sub-regions have been described, including the Niagara Slough Clay Plain, the Fort Erie Clay Plain, the Calcareous Rock Plain (Onondaga Escarpment), the Buried Moraines, the Lake Erie Coast, and the Niagara River Valley (MacDonald 1980). The distribution and nature of these sub-regions, and the specific environmental features they contain, have influenced land use in the region throughout history and pre-history.

In the Lake Erie basin, a progression of lake levels has resulted in a series of beach and offshore deposits. The non-glacial waters of early Lake Erie were initiated around 12,400 BP (Calkin and Feenstra 1985:163) but lake levels have ranged around the modern values due to the offsetting influences of an isostatic rebound rate of approximately six cm per century (Calkin and Feenstra 1985), erosion of the Niagara River outlet, and varying inflow from the Huron basin (Pengelly et al. 1997).

The subject property is situated at the interface of several landforms within the Haldimand Clay Plain region. The soils throughout the north area of the property are comprised of 20 – 50 cm of imperfectly drained level Franktown soil of variable texture overlying bedrock; to the southwest, there is a band of 15 – 40 cm loamy textured Welland soils over reddish-hued lacustrine heavy clay, and to the southeast there is a deeper deposit of 40 – 100 cm of reddish hued lacustrine silty clay over a clay loam till, both with level terrain and poor drainage. The southern portion of the subject property is comprised of a gently sloping area of rapid drainage, with 10-20 cm of variably textured Farmington soils over bedrock (Chapman and Putnam 1984:21, 156–159; Kingston and Presant 1989).



Drainage on the subject property is complex, and the Niagara Peninsula Conservation Authority (NPCA) mapping was utilized to identify drainages (NPCA 2018). Most of the property is within the Biederman Drain portion of the Central Welland River watershed; the southern area of the property is within the Eagle Marsh Drain portion of the Lake Erie north shore watershed.

### **1.3.4 Review of Pre-Contact Archaeological Potential**

The Standards stipulates that primary water sources (lakes, rivers, streams, creeks), secondary water sources (intermittent streams and creeks, springs, marshes, swamps), ancient water sources (glacial lake shorelines indicated by the presence of raised sand or gravel beach ridges, relic river or stream channels indicated by clear dip or swale in the topography, shorelines of drained lakes or marshes, cobble beaches), as well as accessible or inaccessible shorelines (high bluffs, swamp or marsh fields by the edge of a lake, sandbars stretching into marsh) are characteristics that indicate archaeological potential.

Potable water is the single most important resource necessary for any extended human occupation or settlement. Since water sources have remained relatively stable in south central Ontario after the Pleistocene era, proximity to water can be regarded as a useful index for the evaluation of archaeological site potential. Indeed, distance from water has been one of the most commonly used variables for predictive modelling of site location.

Several mapping sources were reviewed to determine the nearest source of water to the subject property. Although it is possible that surface drainage has been altered by the adjacent quarry operation, lands in the vicinity are generally poorly drained and are on the edge of the large Wainfleet Bog.

Other geographic characteristics that can indicate archaeological potential include: elevated topography (eskers, drumlins, large knolls, plateaux), pockets of well-drained sandy soil, especially near areas of heavy soil or rocky ground, distinctive land formations that might have been special or spiritual places, such as waterfalls, rock outcrops, caverns, mounds, and promontories and their bases. There may be physical indicators of their use, such as burials, structures, offerings, rock paintings or carvings. Resource areas, including food or medicinal



plants (migratory routes, spawning areas, prairie) and scarce raw materials (quartz, copper, ochre, or outcrops of chert) are also considered characteristics that indicate archaeological potential.

The most important feature of the local bedrock is the relative accessibility of its chert-bearing deposits. The Niagara Escarpment is the edge of a large bedrock bowl that is centred in Michigan. The Onondaga Formation provided one of the most widely used cherts for tool manufacture throughout regional prehistory. Commonly known as Onondaga chert, due to its presence in the Onondaga Formation, this material does not outcrop on the Onondaga Escarpment, except where exposed by modern stone quarrying. However significant and extensive outcrops occur along the north shore of Lake Erie from Fort Erie to Nanticoke (Parkins 1977:86; Eley and von Bitter 1989:28–29). In these locations, Onondaga chert would have been available in abundance to Indigenous peoples with large chert cobbles littering the local beaches as a result of wave action which fractures and reduces the tabular chert. During the Nipissing Rise from 5,500 to 3,800 BP, lake levels would have risen to about 180 m asl, and it is notable that the elevation of the subject property is approximately 186 m asl.

The Standards Section 1.4.1, Standard 1 also defines buffers of 300 m around registered pre-contact sites; thirty-two pre-contact sites registered with the OASD are located within 300 metres of the subject property, including one site located within the boundaries of the property; AfGt-19 (Highway 3 No. 2, 1-8-2).

Based on the presence of thirty-two pre-contact sites within 300 metres of the subject property, the presence of one pre-contact archaeological site within the property boundaries, the proximity to the Wainfleet Bog, and the proximity to chert outcrops in the general vicinity, there is the very high potential for the identification of Indigenous sites, depending on the degree of later developments or soil alterations.

### **1.3.5 Review of Historical Archaeological Potential**

Section 1.3.1 of the Standards stipulates those areas of early Euro-Canadian settlement, including places of early military pioneer settlement (pioneer homesteads, isolated cabins, farmstead complexes), early wharf or dock



complexes, pioneer churches, and early cemeteries, are considered to have archaeological potential. There may be commemorative markers of their history, such as local, provincial, or federal monuments or heritage parks. Also considered to have archaeological potential are early historical transportation routes (trails, passes, roads, railways, portage routes), properties listed on a municipal register or designated under the *Ontario Heritage Act* or a federal, provincial, or municipal historical landmark or site, and properties that local histories or informants have identified with possible archaeological sites, historical events, activities, or occupations.

For the Euro-Canadian period, the majority of early nineteenth-century farmsteads (i.e., those which are arguably the most potentially significant resources and whose locations are rarely recorded on nineteenth-century maps) are likely to be captured by the basic proximity to water model, since these occupations were subject to similar environmental constraints. An added factor, however, is the development of the network of concession roads and railroads through the course of the nineteenth century. These transportation routes frequently influenced the siting of farmsteads and businesses. Accordingly, undisturbed lands within 100 metres of an early historical transportation route are also considered to have potential for the presence of Euro-Canadian archaeological sites.

Given the proximity of the subject property to the historic transportation corridor that is Biederman Road, as well as the presence of structural features within the property boundaries on nineteenth century mapping, there is the potential for the presence of nineteenth-century historical Euro-Canadian resources within the property, depending on the degree of more recent land disturbances.

### **.3.7 Existing Conditions**

The subject property is approximately 9.86 hectares and is situated in a rural agricultural setting. The subject property is bounded by farm lane to the north, agricultural fields to the west and south, and Biederman Road to the east. The Wainfleet Marsh is located approximately 300 metres north of the subject property, and in general the topography of the property is level, with a gently



sloped area in its southeast area. The subject property consists of the residential lot at 20642 Biederman Road, a small woodlot in the northwest portion of the property, and an agricultural field (Figure 7).

## 2.0 Field Methods

The Stage 2 field assessment was conducted on November 27, 2020, and April 15, 16, 20, 26, 27, 28 2021 in order to inventory, identify, and describe any archaeological resources extant within the subject property prior to development. All fieldwork was conducted under the field direction of Sean Haefner (R1253) and was carried out in accordance with the Standards. The weather conditions were appropriate for the completion of fieldwork, permitting good visibility of the land features.

Representative photos documenting the field conditions during the Stage 2 fieldwork are presented in Section 8.0 of this report, and photo locations and field observations have been compiled on project mapping (Figure 7). Field observations and photographs were recorded with a Trimble Catalyst DA1 GPS unit using WGS 84. Photo locations and field observations have been compiled on project mapping (Images 1-13; Figure 7).

### 2.1 Areas of No Potential

The assessment was initiated by conducting a visual review in order to identify areas of no archaeological potential. During this review, approximately one percent of the subject property was determined to be disturbed, including the existing residence at 20642 Biederman Road (Images 1 – 3), a gravel driveway and a garage (Image 4), a well (Image 5), and a demolished structure (Image 6). In accordance with the Standards, Section 2.1, Standard 2b, these areas of deep and extensive disturbance are considered to have no archaeological potential and were not included in the Stage 2 field survey (Figure 7).

### 2.2 Test Pit Survey

Approximately two percent of the subject property comprised open lawns. In accordance with the procedures outlined in the Standards, Section 2.1.2,



Standard 2, these areas of closed surface visibility were subject to a test pit survey initiated at intervals of five metres. All test pits were excavated stratigraphically by hand to no less than five cm into subsoil, and all soil was screened through six-mm wire mesh to facilitate artifact recovery (Images 7-8). All test pits were at least 30 cm in diameter and examined for stratigraphy, cultural features, and evidence of fill. Test pits were excavated within one metre of all structures and other disturbances where possible, and each test pit was backfilled upon completion of the survey.

Intact test pit profiles were encountered within the residential lot of 20642 Biederman Road. Typical intact test pit profiles in this area consisted of approximately 5 cm of dark grey (10YR 4/1) laid clay loam topsoil over 15 cm of compacted light gray (10YR 7/1) gravel fill, over dark brown (10YR 3/2) intact clay A-horizon over 10YR 6/4 dark yellowish-brown clay subsoil (Image 9).

Intact test pit profiles were also encountered within the northwest woodlot. Typical test pit profiles in this area consisted of approximately 30 cm of dark brown (10YR 3/2) intact A-horizon over subsoil (Image 10).

## 2.3 Pedestrian Survey

Approximately 97% of the subject property is active agricultural land. Prior to the initiation of survey, all open areas within the subject property were ploughed and allowed to weather through several rainfalls. All standards under section 2.1.1 Pedestrian Survey of the Standards were met. Ploughing was deep enough to provide total topsoil exposure, but not deeper than previous ploughing. All ploughed lands were well weathered and ground surface visibility was better than 80 % (Image 11). Ploughzone soils were primarily clay loam. All ploughed lands were assessed by means of pedestrian survey at one metre transect intervals (Images 12-13). The reduced interval was employed given the potential for artifacts within the subject property.



## 3.0 Record of Finds

During the course of the Stage 2 assessment, nine Indigenous isolated finds and thirteen Indigenous sites were identified; this material accounts for a total of 272 lithic artifacts.

All sites have been registered into the OASD. The remaining findspots did not meet the requirements for registry as defined by the Standards.

### 3.1 Inventory of Documentary and Material Record

The documentation and materials related to this project will be curated by ASI until such a time that arrangements for their ultimate transfer to Her Majesty the Queen in right of Ontario, or other public institution, can be made to the satisfaction of the project owner(s), the Ontario Ministry of Heritage, Sport, Tourism and Culture Industries, and any other legitimate interest groups.

Table 2 provides an inventory and location of the documentary and material record for the project in accordance with the Standards, Sections 6.7 and 7.8.2.3.

**Table 2: Inventory of Documentary and Material Record**

Document/Material	Location	Comments
Written Field Notes, Annotated Field Maps, GPS Logs, etc.	ASI, 528 Bathurst Street, Toronto, ON, M5S 2P9	Hard copy notes stored in ASI project folder 20PL-268; GPS and digital information stored on ASI network servers.
Field Photography (Digital)	ASI, 528 Bathurst Street, Toronto, ON, M5S 2P9	Stored on ASI network servers.
Research, Analysis and Reporting Materials (Various Formats)	ASI, 528 Bathurst Street, Toronto, ON, M5S 2P9	Digital files stored on ASI network servers.





Document/Material	Location	Comments
Artifacts	ASI, 528 Bathurst Street, Toronto, ON, M5S 2P9	All artifacts collected stored by class and provenience. Artifacts stored in 12.7 cm x 20.32 cm plastic bags and further separated into 5.08 cm x 7.62 cm plastic bags. All material housed in a standard banker's box (width 30 cm, depth 38 cm, height 25 cm). Artifact assemblage stored in one box labeled: 20PL-268, Wainfleet Quarry Part 2

GPS coordinates for all surface artifacts were recorded with a Trimble Catalyst DA1 GPS unit using WGS 84. No correction was used for the coordinates, and conditions (clear skies, tree cover, etc.) were optimal for recording accuracy. Detailed site mapping and GPS coordinates are provided in the Supplementary Documentation (SD) associated with this project.

## 3.2 Indigenous Locations

A pre-contact Indigenous site is distinguished from an isolated find by either the quantity of material encountered (three or more artifacts) or by the presence of a diagnostic artifact (for example, a projectile point). Whenever artifacts were encountered, a unique field designation (P-number) was assigned. A total of 27 P-numbers were assigned: P1 through P27. A minimum distance of 13 metres separated each location (see SD: Figure 1).

### 3.2.1 Isolated Finds

In total nine non-diagnostic Indigenous isolated finds were documented across the ploughed fields. The field designation (P-number), artifact yield, artifact type(s), and pertinent comments regarding each are summarized in Table 3. A full





catalogue of all material is presented in Appendix B. None of the Indigenous isolated finds require further assessment.

**Table 3: Summary of Indigenous Isolated Finds**

<b>Isolated Find</b>	<b>Quantity</b>	<b>Artifact Type(s)</b>	<b>Comments</b>
P5	2	Flake fragments	
P7	1	Secondary Retouch Flake	
P8	1	Flake Fragment	
P18	1	Scraper	Beveled retouched laterally
P19	1	Flake Fragment	
P20	1	Flake Fragment	
P21	1	Secondary Retouch Flake	
P26	2	Biface, Flake Fragment	Tip fragment; semi-refined
P27	1	Flake Fragment	

Among the isolated artifacts collected are a non-diagnostic bifacial tool fragment and one scraper. All artifacts are Onondaga chert. No thermal alteration was observed on any of them.

### **3.2.2 Indigenous Sites**

Thirteen Indigenous sites were documented on the subject property. All lithic artifacts from sites are presented in Appendix B (Plates 14-26).



Site AfGt-22, previously identified by C. Ellis (1979) as a pre-contact Indigenous site, was compared to ASI's field results to determine whether the site could be accredited to any particular site identified during the course of this assessment. AfGt-22 was a 10 m by 10 m lithic scatter, documented within the western site limits of P1/P3. On account of being documented within AfGt-22, P1/P3 was combined with the registered site.

### 3.2.2.1 Indigenous Sites - Diagnostic Lithic Scatters

Two of the sites found during this assessment are lithic scatters that are diagnostic to a temporal/cultural affiliation (Table 4). At each of the sites, at least one diagnostic artifact was recovered with two or more non-diagnostic artifacts. These diagnostic lithic scatters represent a time frame spanning the Late Archaic through Late Woodland periods. A full catalogue of all material is presented in Appendix B and selected artifacts are displayed in Section 8.0 (Images 14-16).

**Table 4: Summary of Indigenous Diagnostic Sites**

<b>Isolated Find</b>	<b>Site Dimensions</b>	<b>Artifact (Collected/Observed)</b>	<b>Temporal/Cultural Affiliation</b>
AfGt-22	100m x 50m	73/650	Late Archaic, Late Woodland
AfGt-317	63mx50m	39/209	Late Woodland

### 3.2.2.1 Indigenous Sites – Non-Diagnostic Lithic Scatters

Eleven of the sites found during this assessment are non-diagnostic lithic scatters (Table 5). A full catalogue of all material is presented in Appendix A and the artifacts are displayed in Section 8.0 (Images 17-26).



**Table 5: Summary of Indigenous Non-Diagnostic Sites**

<b>Isolated Find</b>	<b>Site Dimensions</b>	<b>Artifact (Collected/Observed)</b>	<b>Comments</b>
AfGt-318	7m x 13m	4/4	
AfGt-319	15mx15m	8/8	
AfGt-320	15m X 4m	5/5	
AfGt-321	36mx40m	17/120	
AfGt-322	25mx37m	23/80	
AfGt-323	47mx20m	25/75	
AfGt-324	45mx20m	17/65	
AfGt-325	7mX16m	5/5	
AfGt-326	30mX40m	25/40	
AfGt-327	15m x 15m	10/15	
AfGt-328	18mx30m	10/30	

## 4.0 Analysis and Conclusions

ASI was contracted by Waterford Sand and Gravel Ltd. to complete a Stage 1 and 2 Archaeological Assessment of the Law Crushed Stone Extension, part of Lot 6, Concession 2, Geographic Township of Wainfleet, Welland County, now in the Town of Wainfleet, Regional Municipality of Niagara (Figure 1). The subject property is approximately 9.84 ha.



The Stage 1 assessment entailed consideration of the proximity of previously registered archaeological sites and the original environmental setting of the property, along with nineteenth and twentieth-century settlement trends. This research has concluded that there is potential for the presence of pre-contact Indigenous and historical Euro-Canadian archaeological resources.

The Stage 2 assessment included a pedestrian survey at one metre intervals and a test pit survey at five metre intervals in areas deemed to have archaeological potential. This assessment resulted in the identification of nine Indigenous findspots and thirteen Indigenous sites.

Due to the location of the subject property in close proximity to a small stream and the Wainfleet Bog, and the proximity to chert outcrops in the general vicinity, evidence of pre-contact Indigenous activity was highly probable. The presence of the nine dispersed Indigenous isolated finds across the 9.84 ha subject property is evidence of past travel through this area for hunting, fishing or on route to other destinations. These isolated finds represent ephemeral activity and/or casual losses. The dispersed nature of these finds does not reflect loci of prolonged activity or occupation and none of these isolated finds meet the criteria outlined in Standards Section 2.2, Standard 1. a. i. (3) for Stage 3 Archaeological Assessment.

Diagnostic projectile points were recovered from two of the thirteen Indigenous sites. AfGt-22 yielded two projectile points dating to the Late Archaic Period (6000 BP to 3000 BP) and a triangular projectile point, dating to the Late Woodland Period (1200 BP – 400 BP), and will require further Stage 3 Archaeological Assessment in accordance with Standards Section 2.2, Standard 1. a. i. (1).

AfGt-317 yielded a triangular projectile point, dating to the Late Woodland Period (1200 BP – 400 BP), and will require further Stage 3 Archaeological Assessment in accordance with Standards Section 2.2, Standard 1. a. i. (1).

The remaining 11 Indigenous sites represent non-diagnostic lithic scatters. Four of these non-diagnostic lithic scatters are low yielding (less than 10 artifacts within a 10 m by 10 m area). At each of these low yielding sites the artifact scatters were dispersed and no significant artifact concentrations that meet the criteria outlined



in Standards Section 2.2, Standard 1 for Stage 3 Archaeological Assessment were identified. The seven remaining non-diagnostic lithic scatters had high yields (10 artifacts or more within a 10 m by 10 m area) and each of these sites meets the criteria for further Stage 3 Archaeological Assessment in accordance with Standards Section 2.2, Standard 1. a. i. (3).

Table 6 below provides a list of all nine sites requiring further Stage 3 Archaeological Assessment on the subject property.

**Table 6: Summary of Indigenous Sites Requiring Stage 3 Archaeological Assessment**

Site	Site Dimensions	Artifact (Collected/Observed)	Criteria
AfGt-22	100mx 50m	73/650	Section 2.2, Standard 1. a. i. (1)
AfGt-317	63mx50m	39/209	Section 2.2, Standard 1. a. i. (1)
AfGt-321	36mx40m	17/120	Section 2.2, Standard 1. a. i. (3)
AfGt-322	25mx37m	23/80	Section 2.2, Standard 1. a. i. (3)
AfGt-323	47mx20m	25/75	Section 2.2, Standard 1. a. i. (3)
AfGt-324	45mx20m	17/65	Section 2.2, Standard 1. a. i. (3)
AfGt-326	30mX40m	25/40	Section 2.2, Standard 1. a. i. (3)
AfGt-327	15m x 15m	10/15	Section 2.2, Standard 1. a. i. (3)



Site	Site Dimensions	Artifact (Collected/Observed)	Criteria
AfGt-328	18mx30m	10/30	Section 2.2, Standard 1. a. i. (3)

## 5.0 Recommendations

In light of these results, the following recommendation is made:

1. Given the isolated and non-diagnostic nature of Indigenous isolated finds P5, P7, P8, P18, P19-21, P26-P27, they are determined to not exhibit CHVI and may be considered free of any further archaeological concern;
2. Given the ephemeral nature and low artifact density of Indigenous sites AfGt-318, AfGt-319, AfGt-320, and AfGt-325, these sites do not exhibit CHVI and may be considered free of any further archaeological concern.
3. Indigenous non-diagnostic sites AfGt-321, AfGt-322, AfGt-323, AfGt-324, AfGt-326, AfGt-327, AfGt-328 are considered to be archaeological resources of CHVI for which it is not clear that Stage 4 mitigation will be required. As such, it is recommended that the sites be subject to a comprehensive Stage 3 Archaeological Assessment in order to more fully identify the character, extent and significance of the archaeological deposit, in accordance with the Standards.
  - a) The Stage 3 assessment should commence with the creation of a recording grid on a fixed datum, the position of which has been recorded using a GPS. Then, a controlled surface collection (CSP) must be conducted to precisely define the nature and extent of the sites found within a ploughed context. This work will require that the site areas be re-ploughed and allowed to weather for a least one substantial rainfall prior to commencing this work. The location of each artifact must be mapped and a surface distribution map produced for each site.



- b) A series of 1 m by 1 m units must then be excavated across the site areas at 5 m intervals within an established grid in order to determine the nature and extent of the cultural deposits. An additional 20% of the total number of units excavated on the grids must be strategically excavated at 5 m intervals throughout the sites, around units of high artifact counts or other significant areas of the sites. The test units must be excavated 5 cm into the sterile subsoil and soil fills screened through 6 mm wire mesh to facilitate artifact recovery. The sterile subsoil must be troweled and all soil profiles examined for undisturbed cultural deposits.
  - c) The results of the Stage 3 assessment may then be used to evaluate the significance of each site and to develop a series of recommendations concerning any further mitigative options that may be necessary.
- 4. Indigenous diagnostic sites AfGt-22 and AfGt-317 represent predominately large plough-disturbed lithic scatters which are considered archaeological resources where the level of cultural heritage value and interest will result in a recommendation to proceed to Stage 4 mitigation. As such, it is recommended that the sites be subject to a comprehensive Stage 3 Archaeological Assessment in order to more fully identify the character, extent and significance of the archaeological deposit, in accordance with the Standards.
  - a) The Stage 3 assessment must commence with the creation of multiple recording grids over areas of artifact concentration on a fixed datum, the position of which has been recorded using a GPS. Then, a controlled surface collection (CSP) must be conducted to precisely define the nature and extent of the sites found within a ploughed context. This work will require that the site areas be re-ploughed and allowed to weather for a least one substantial rainfall prior to commencing this work. The location of each artifact must be mapped and a surface distribution map produced for each site.
  - b) A series of 1 m by 1 m units must then be excavated across multiple grids over identified loci of artifact concentrations at 5 m intervals within an established grid in order to determine the nature and extent of the cultural deposits. An additional 20% of the total



number of units will be excavated between identified loci of artifact concentrations to document areas of lower concentration. A further additional 10% units of the total number of units excavated on the grids must be strategically excavated on the periphery of the surface scatter to determine the site extent and sample the site periphery. All test units must be excavated 5 cm into the sterile subsoil and soil fills screened through 6 mm wire mesh to facilitate artifact recovery. The sterile subsoil must be troweled and all soil profiles examined for undisturbed cultural deposits.

- c) The results of the Stage 3 assessment may then be used to evaluate the significance of each site and to develop a series of recommendations concerning any further mitigative options that may be necessary.

**NOTWITHSTANDING** the results and recommendations presented in this study, ASI notes that no archaeological assessment, no matter how thorough or carefully completed, can necessarily predict, account for, or identify every form of isolated or deeply buried archaeological deposit. In the event that archaeological remains are found during subsequent construction activities, the consultant archaeologist, approval authority, and the Cultural Programs Unit of the Ministry of Heritage, Sport, Tourism and Culture Industries must be immediately notified.

The above recommendations are subject to Ministry approval and it is an offence to alter any archaeological site without Ministry of Heritage, Sport, Tourism and Culture Industries concurrence. No grading or other activities that may result in the destruction or disturbance of any archaeological sites are permitted until notice of Ministry approval has been received.

## 6.0 Advice on Compliance with Legislation

ASI advises compliance with the following legislation:

- This report is submitted to the Ministry of Heritage, Sport, Tourism and Culture Industries as a condition of licensing in accordance with Part VI of the Ontario Heritage Act, RSO 2005, 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 field work and report recommendations ensure the conservation, preservation and protection 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 with regards to alterations to archaeological sites by the proposed development.

- It is an offence under Sections 48 and 69 of the Ontario Heritage Act for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed archaeological field work 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 sec. 48 (1) of the Ontario Heritage Act.
- The Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c.33, requires that any person discovering or having knowledge of a burial site shall immediately notify the police or coroner. It is recommended that the Registrar of Cemeteries at the Ministry of Consumer Services is also immediately notified.
- Archaeological sites recommended for further archaeological field work or protection remain subject to Section 48(1) of the Ontario Heritage Act and may not be altered, nor may artifacts be removed from them, except by a person holding an archaeological license.



## 7.0 Bibliography and Sources

- AO (Archives Ontario). (n.d. [a]). Welland County LRO Records, Abstract Index Books, Wainfleet Township, vol. A, reel GSU 170983.
- AO (Archives Ontario). (n.d. [b]). Welland County LRO Records, Abstract Index Books, Wainfleet Township, vol. B, reel GSU 170984.
- AO (Archives Ontario). (n.d. [c]). Wainfleet Township Assessment Rolls, reel G.S. 2927.
- AO (Archives Ontario). (n.d. [d]). Wainfleet Township Assessment Rolls, reel G.S. 2928.
- AO (Archives Ontario). (1861). Microfilm of Census Rolls, Wainfleet Township, reel C-1081.
- AO (Archives Ontario). (1871). Microfilm of Census Rolls, Wainfleet Township, reel C-9919.
- AO (Archives Ontario). (1901). Microfilm of Census Rolls, Wainfleet Township, reel T-6470.
- ASI, (Archaeological Services Inc.). (2010). Stage 1 Archaeological Assessment, Wainfleet Water and Sewer Project, Regional Municipality of Niagara Ontario. Revised. MHSTCI P057-532-2009. ASI file 09EA-011.
- ASI, (Archaeological Services Inc.). (2012). Stage 2 Archaeological Assessment (Property Assessment, Wainfleet Water and Wastewater Servicing Class Environmental Assessment, Township of Wainfleet, Regional Municipality of Niagara, Ontario. MHSTCI PIF P057-639-2010. ASI file 09EA-012.
- ASI, (Archaeological Services Inc.). (2018). Stage 1 and 2 Archaeological Assessment of the Law Crushed Stone Extension, part of Lots 6 and 7, Concession 2, Geographic Township of Wainfleet, Welland County, now in the Town of Wainfleet, Regional Municipality of Niagara Ontario. MHSTCI PIF P449-0165-2017. ASI file 17PL-159.
- Armstrong, F.H. (1985). *Handbook of Upper Canadian Chronology*. Dundurn Press, Toronto.
- Arnold, P. (2003). *The History of the County of Welland, Ontario, Its Past and Present*. Global Heritage Press, Milton, Ont. (Orig. Pub. 1887).
- Boulton, D'A. (1805). *Sketch of His Majesty's Province of Upper Canada*. C. Rickaby, London (reprinted in Toronto by the Baxter Publishing Company, 1961).



- Burtiak, J, (1992). *Chronicles of Wainfleet Township: 200 Years of History*.  
Fonthill: printed by Niagara Yearbook Services Ltd. for the Wainfleet  
Historical Society.
- Calkin, P. and B. Feenstra, (1985). Evolution of the Erie Basin Great Lakes. *In*  
Quaternary Evolution of the Great Lakes, edited by P. Karrow and P. Calkin,  
pp.149-170. *Geological Association of Canada Special Paper* 30.
- Chapman, L. J., & Putnam, F. (1984). *The Physiography of Southern Ontario*  
(Vol. 2). Ontario Ministry of Natural Resources.
- Ellis, C., (1979). Survey and Testing in the Niagara Peninsula, 1977, McMaster  
University and OHF.
- Ellis, C. J., I. T. Kenyon, and M. W. Spence, (1990). The Archaic. *In The Archaeology  
of Southern Ontario to A.D. 1650*, edited by C. J. Ellis and N. Ferris, pp. 65–  
124. Occasional Publication of the London Chapter OAS Number 5. Ontario  
Archaeological Society Inc., London.
- Eley, B.E. and P.H. von Bitter, (1989). *Cherts of Southern Ontario*. Royal Ontario  
Museum Publications in Archaeology. University of Toronto Press, Toronto.
- Justice, N, (1987). *Stone Age Spear and Arrow Points of the Midcontinental and  
Eastern United States: A Modern Survey and Reference*. Indiana University  
Press, Bloomington.
- Kingston, M. and E. Presant, (1989). Soils of the Regional Municipality of Niagara.  
*Soil Survey Report* No. 60. Ontario Institute of Pedology.
- MCL (Ministry of Culture). (1990). *Ontario Heritage Act, R.S.O. 1990, c.O.18*  
*[as Amended in 2019]*.
- MHSTCI, (Ministry of Heritage, Sport, Tourism and Culture Industries). (2021).  
*Ontario's Past Portal*. PastPortal. <https://www.pastport.mtc.gov.on.ca>
- MMAH (Ministry of Municipal Affairs and Housing). (1990). Planning Act, R.S.O.  
1990, c. P.13, (1990).
- MTC (Ministry of Tourism and Culture (now administered by MHSTCI). (2011).  
*Standards and Guidelines for Consultant Archaeologists*. Cultural Programs  
Branch, Ontario Ministry of Tourism and Culture.
- Mitchener, D.M, (1967). *Wainfleet*. Printed for the Wainfleet Municipal Council.
- NPCA (Niagara Peninsula Conservation Authority), (2018). Watershed Explorer.  
Accessed February 22, 2018 at <http://maps.mPCA.ca>
- Page, H, (1876). *Illustrated Historical Atlas of the Counties of Lincoln & Welland,  
Ont*. Page and Smith, Toronto.



- Parkins, W, (1977). Onondaga Chert: Geological and Palynological Studies as Applied to Archaeology. Unpublished M.Sc. Thesis, Department of Geography, Brock University, St. Catharines, Ontario.
- Rayburn, A, (1997). Place Names of Ontario. University of Toronto Press, Toronto.
- Ritchie, W. A, (1971). *A typology and nomenclature of New York Projectile Points*. New York State Museum and Science Service, Bulletin Number 384, University of the State of New York, The State Education Department, Albany, New York.
- Smith, W.H, (1846). Smith's Canadian Gazetteer. H. & W. Rowsell, Toronto. Wainfleet Township Centennial Committee.
- Smith, W.H, (1967). *Wainfleet Township 1867-1967*. Printed for the Committee, Wellandport.



## 8.0 Images



**Image 1: View of residence at 20642 Biederman Road.**



**Image 2: View of residence at 20642 Biederman Road.**





**Image 3: View of residence at 20642 Biederman Road.**



**Image 4: View of gravel driveway and garage within 20642 Biederman Road residential lot.**



**Image 5: View of old well within 20642 Biederman Road residential lot.**



**Image 6: View of demolished structure within 20642 Biederman Road residential lot.**





**Image 7: View of crew test pitting at five metre intervals.**



**Image 8: View of crew test pitting at five metre intervals within northwestern wooded area.**





**Image 9: View of typical intact test pit profile in the residential area.**



**Image 10: View of typical intact test pit profile within northwestern wooded area.**



**Image 11: View of field conditions during pedestrian survey.**



**Image 12: Field crew conducting pedestrian survey at one metre intervals.**





**Image 13: Field crew conducting pedestrian survey at one metre intervals.**



**Image 14: Sample of artifacts from Site AfGt-22: top: L7 (P1), L11 (P1), L19 (P1), L35 (P1); bottom: L36 (P1), L39 (P1), L41 (P1), L44 (P1).**



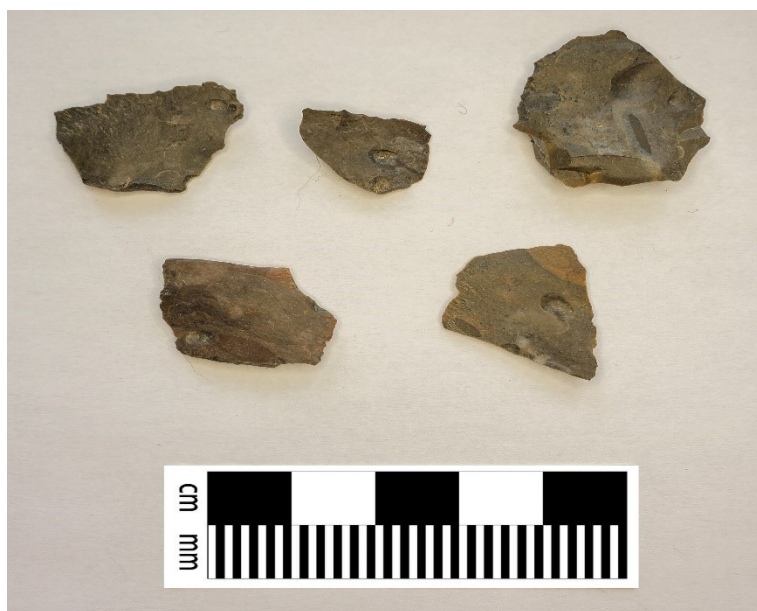
**Image 15: Sample of artifacts from Site AfGt-22: top: L2 (P3), L4 (P3), L5 (P3), L9 (P3); bottom: L17 (P3), L19 (P3), L21 (P3), L22 (P3).**



**Image 16: Sample of artifacts from Site AfGt-317: top: L1 (P4), L5 (P4), L6 (P4); bottom: L7 (P4), L8 (P4), L9 (P4).**

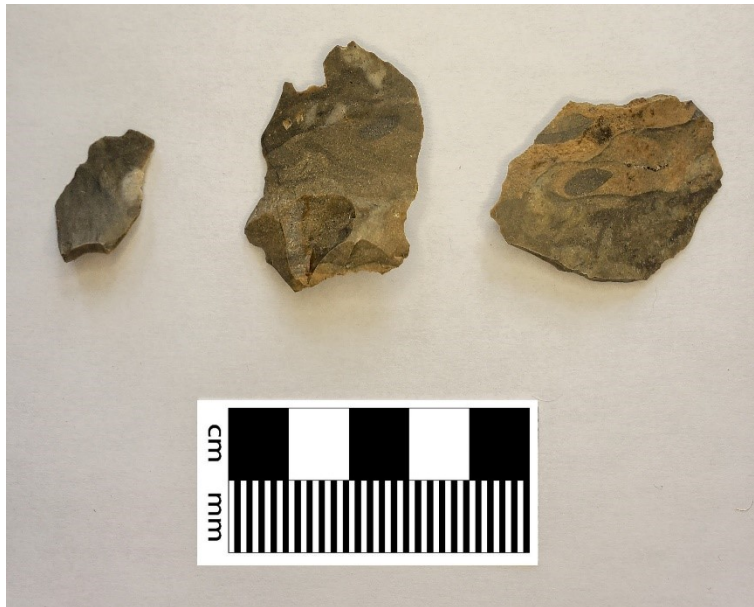


**Image 17: Sample of artifacts from Site AfGt-318: top: L1, L2, L3, L4**

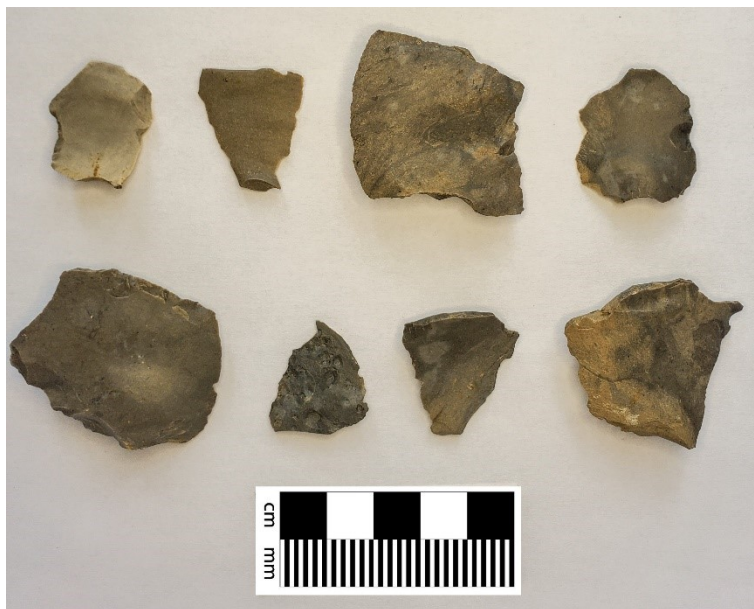


**Image 18: Sample of artifacts from AfGt-319: top – L1, L3, L6; bottom – L7, L8.**





**Image 19: Sample of artifacts from AfGt-320: L1, L2, L5.**



**Image 20: Sample of artifacts from AfGt-321 top – L4, L5, L9, L16; bottom – L18, L19, L22, L23.**



**Image 21: Sample of artifacts from AfGt-322 top – L3, L5, L11, L16; bottom – L18, L19, L22, L23.**



**Image 22: Sample of artifacts from AfGt-323 top – L1 (P13), L2 (P13), L3 (P13), L4 (P13); bottom – L6 (P13), L8 (P13), L13 (P13), L15 (P13).**

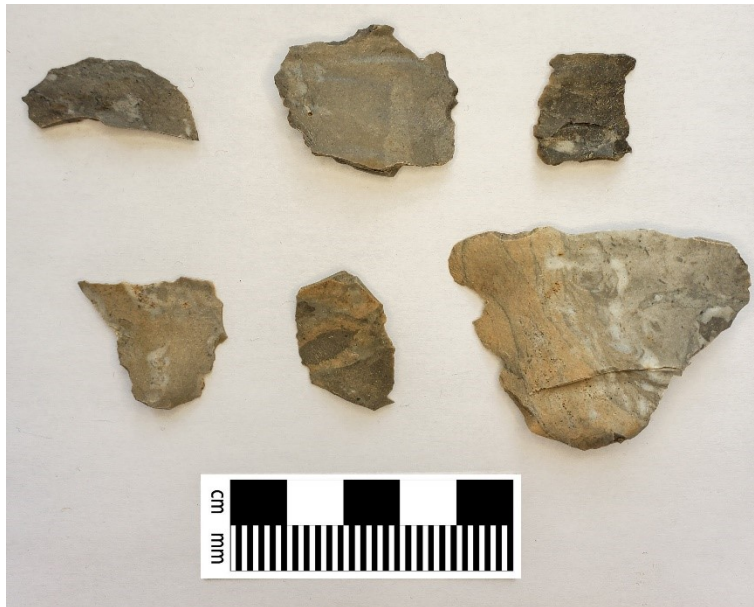


**Image 23: Sample of artifacts from AfGt-324 top – L1, L5, L7, L10; bottom – L14, L15, L16, L17.**



**Image 24: Sample of artifacts from AfGt-326 top – L4 (P23), L5 (P23), L6 (P23), L9 (P23); bottom – L10 (P23), L13 (P23), L14 (P23), L15 (P23).**





**Image 25: Sample of artifacts from AfGt-327 top – L1, L2, L3; bottom – L5, L7, L9.**



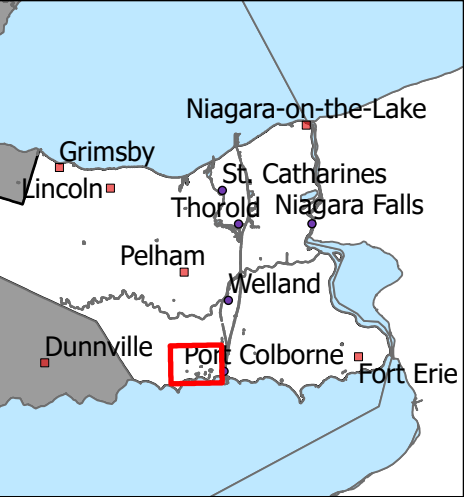
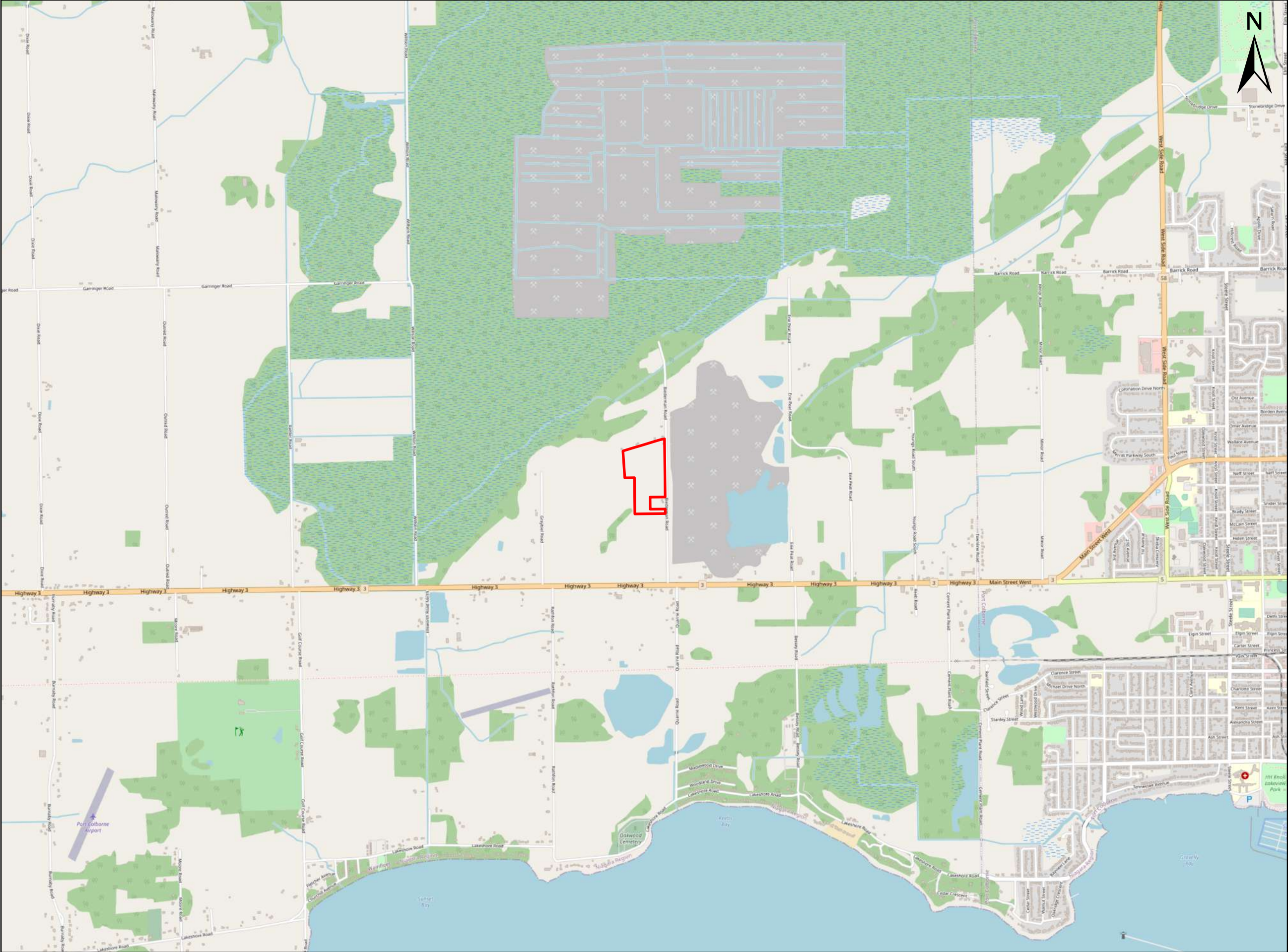
**Image 26: Sample of artifacts from AfGt-328 top – L1, L2, L3, L4; bottom – L5, L6, L8, L9.**

## 9.0 Maps

See following pages for detailed assessment mapping and figures

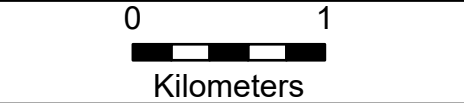






 Subject Property

Sources:© OpenStreetMap (and) contributors, CC-BY-SA  
Projection: NAD 1983 MTM 10  
Scale: 1:25,000  
Page Size: 11 x 17



ASI Project No: 20PL-268  
Date: 2020-10-06 4:43 PM  
Drawn By: pbikoulis  
File: Figure1



Providing Archaeological & Cultural Heritage Services  
528 Bathurst Street, Toronto, ONTARIO M5S 2P9  
T 416-966-1069 F 416-966-9723 asiheritage.ca

Figure 1: Location of Subject Property





Figure 2: Subject Property located on the 1862 Tremaine Map of the Counties of Lincoln and Welland



Figure 3: Subject Property located on the 1876 Illustrated Historical Atlas of the Counties of Lincoln and Welland






Figure 4: Subject Property located on the 1905 NTS Niagara Sheet



Figure 5: Subject Property located on the 1934 Aerial Imagery

	<div><div></div> Subject Property</div>	<div>Sources: 1905 NTS Niagara Sheet 1934 Aerial Photography of Niagara Region</div> <div>Projection: NAD 1983 MTM 10 Scale: 1:10,000 Page Size: 8.5 x 11</div>	<div><div>0250</div><div>Meters</div></div> <div>ASI Project No.: 20PL-268 Date: 2020-10-06 4:43 PM Drawn By: pbikoulis File: Figure 4-5</div>
--	---	---	--





	 Subject Property	Esri, HERE, Garmin, iPC, NRCan, GeoEye, Maxar	0 100  Meters	
		Projection: NAD 1983 MTM 10 Scale: 1:3,000 Page Size: 8.5x11	ASI Project No.: 20PL-268 Date: 2020-10-06 4:43 PM	Drawn By: pbikoulis File: Figure 6

Figure 6: Existing Conditions of the Subject Property



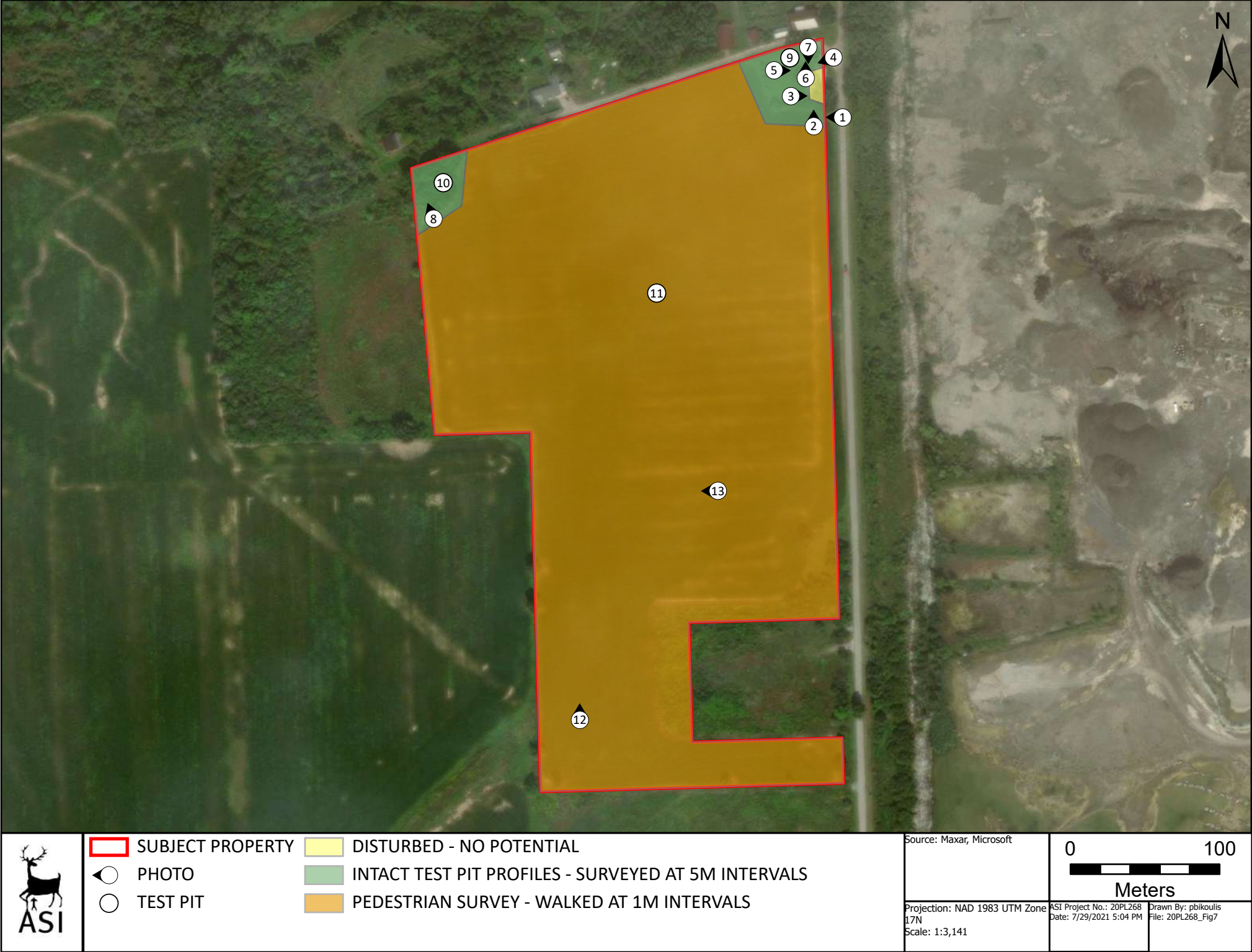


Figure 7: Stage 1-2 Archaeological Assessment Results

## 10.0 Appendix A: Registered Sites within One Kilometre of the Subject Property

**Table 7: Registered Sites within One-Kilometre of the Subject Property**

<b>Borden number</b>	<b>Site Name</b>	<b>Temporal/Cultural Affiliation</b>	<b>Site Type</b>	<b>Researcher</b>
AfGt-19	Highway 3 No 2	Undetermined Indigenous	Workshop	Ellis 1977
<b>AfGt-22</b>	<b>Highway 3 No.1</b>	<b>Undetermined Indigenous</b>	<b>n/a</b>	<b>Ellis 1977</b>
AfGt-23	Highway 3 No. 2	Archaic	n/a	Ellis 1977
AfGt-103		Archaic	Quarry	YNAS 2004
AfGt-104		Archaic	Quarry	YNAS 2004
AfGt-105		Archaic	Quarry	YNAS 2004
AfGt-239	P1	Undetermined Indigenous	Scatter	ASI 2018
AfGt-241	P3	Undetermined Indigenous	Scatter	ASI 2018
AfGt-242	P5	Undetermined Indigenous	Scatter	ASI 2018
AfGt-243	P7	Undetermined Indigenous	Scatter	ASI 2018





<b>Borden number</b>	<b>Site Name</b>	<b>Temporal/Cultural Affiliation</b>	<b>Site Type</b>	<b>Researcher</b>
AfGt-244	P9	Undetermined Indigenous	Scatter	ASI 2018
AfGt-245	P11	Undetermined Indigenous	Scatter	ASI 2018
AfGt-248	P14	Undetermined Indigenous	Scatter	ASI 2018
AfGt-249	P17	Undetermined Indigenous	Scatter	ASI 2018
AfGt-250	P18	Undetermined Indigenous	Scatter	ASI 2018
AfGt-255	P24	Late Woodland	Scatter	ASI 2018
AfGt-256	P25	Undetermined Indigenous	Scatter	ASI 2018
AfGt-257	P26	Undetermined Indigenous	Scatter	ASI 2018
AfGt-259	P28	Undetermined Indigenous	Scatter	ASI 2018
AfGt-260	P30	Undetermined Indigenous	Scatter	ASI 2018
AfGt-261	P32	Undetermined Indigenous	Scatter	ASI 2018



<b>Borden number</b>	<b>Site Name</b>	<b>Temporal/Cultural Affiliation</b>	<b>Site Type</b>	<b>Researcher</b>
AfGt-262	P36	Undetermined Indigenous	Scatter	ASI 2018
AfGt-263	P39	Undetermined Indigenous	Scatter	ASI 2018
AfGt-264	P40	Middle Archaic	Scatter	ASI 2018
AfGt-265	P41	Undetermined Indigenous	Scatter	ASI 2018
AfGt-266	P43	Middle Archaic	Scatter	ASI 2018
AfGt-267	P44	Late Woodland	Scatter	ASI 2018
AfGt-268	P45	Undetermined Indigenous	Scatter	ASI 2018
AfGt-269	P46	Undetermined Indigenous	Scatter	ASI 2018
AfGt-270	P47	Undetermined Indigenous	Scatter	ASI 2018
AfGt-271	P49	Undetermined Indigenous	Scatter	ASI 2018
AfGt-272	P50	Late Woodland	Scatter	ASI 2018
AfGt-273	P51	Late Woodland	Findspot	ASI 2018



<b>Borden number</b>	<b>Site Name</b>	<b>Temporal/Cultural Affiliation</b>	<b>Site Type</b>	<b>Researcher</b>
AfGt-274	P52	Middle Archaic	Scatter	ASI 2018
AfGt-275	P56	Undetermined Indigenous	Scatter	ASI 2018
AfGt-276	P60	Middle Archaic, Late Woodland	Scatter	ASI 2018
AfGt-277	P61	Late Woodland	Scatter	ASI 2018
AfGt-278	P63	Undetermined Indigenous	Scatter	ASI 2018
AfGt-279	P64	Undetermined Indigenous	Scatter	ASI 2018
AfGt-280	P67	Undetermined Indigenous	Scatter	ASI 2018
AfGt-281	P69	Middle Archaic	Scatter	ASI 2018
AfGt-282	P70	Undetermined Indigenous	Scatter	ASI 2018
AfGt-283	P74	Undetermined Indigenous	Scatter	ASI 2018
AfGt-284	P88	Undetermined Indigenous	Scatter	ASI 2018
AfGt-285	P89	Middle Archaic	Scatter	ASI 2018



<b>Borden number</b>	<b>Site Name</b>	<b>Temporal/Cultural Affiliation</b>	<b>Site Type</b>	<b>Researcher</b>
AfGt-286	H3/P90	Euro-Canadian, Undetermined Indigenous	Homestead, Scatter	ASI 2018
AfGt-287	P91	Undetermined Indigenous	Scatter	ASI 2018
AfGt-288	P93	Undetermined Indigenous	Scatter	ASI 2018
AfGt-289	P99	Undetermined Indigenous	Scatter	ASI 2018
AfGt-290	P99	Undetermined Indigenous	Scatter	ASI 2018
AfGt-291	P101	Undetermined Indigenous	Scatter	ASI 2018
AfGt-292	P105	Undetermined Indigenous	Scatter	ASI 2018
AfGt-293	H1	Euro-Canadian	Homestead	ASI 2018
AfGt-294	H2/P73	Euro-Canadian, Undetermined Indigenous	Homestead, Scatter	ASI 2018
AfGt-293	H4	Euro-Canadian	Homestead	ASI 2018

**Bolded** = sites within the subject property; YNAS = York North Archaeological Services



## 11.0 Appendix B: Lithic Catalogue



## Appendix B: Lithic Catalogue - All Sites

Cat #	Context	Type	Stratum	Qty	Material	TA	Notes
<b>AfGt-22</b>							
L1 (P3)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	1	
L1 (P1)	Surface	Secondary Retouch Flake	Ploughzone	1	Onondaga Chert	1	
L2 (P1)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L2 (P3)	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	
L3 (P3)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L3 (P1)	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	
L4 (P3)	Surface	Secondary Retouch Flake	Ploughzone	1	Onondaga Chert	0	dorsal lateral utilization/retouch
L4 (P1)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L5 (P3)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	continuous distal retouch
L5 (P1)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L6 (P1)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	1	
L6 (P3)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L7 (P3)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	1	
L7 (P1)	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	
L8	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L8 (P1)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	retouched margins
L9 (P1)	Surface	Flake Fragment	Ploughzone	1	Quartz	0	
L9 (P3)	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	distal retouch
L10 (P3)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L10 (P1)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L11 (P1)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L11 (P3)	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	
L12 (P1)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L12 (P3)	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	dorsal ventral retouch
L13 (P3)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	ventral lateral retouch
L13 (P1)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	1	dorsal lateral retouch
L14 (P1)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L14 (P3)	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	dorsal lateral retouch
L15 (P3)	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	ventral lateral utilization/retouch
L15 (P1)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L16 (P1)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L16 (P3)	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	1	
L17 (P3)	Surface	Projectile Point	Ploughzone	1	Onondaga Chert	0	base fragment; non-diagnostic; retouched basal margin; L 16 mm W 24 mm T 5 mm
L17 (P1)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L18 (P1)	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	
L18 (P3)	Surface	Secondary Retouch Flake	Ploughzone	1	Onondaga Chert	0	
L19 (P1)	Surface	Projectile Point	Ploughzone	1	Onondaga Chert	0	broken base; non-diagnostic; likely Late Archaic point; L 46 mm W 23 mm T 6 mm

Cat #	Context	Type	Stratum	Qty	Material	TA	Notes
L19 (P3)	Surface	Projectile Point	Ploughzone	1	Onondaga Chert	0	Triangular (Late Woodland Period [ca. 1200 BP - 400 BP]); tip fragment; refined; reworked beveled lateral margin; L 35 mm W 16 mm T 5 mm
L20 (P3)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	1	
L20 (P1)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L21 (P3)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L21 (P1)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L22 (P3)	Surface	Secondary Retouch Flake	Ploughzone	1	Onondaga Chert	1	
L22 (P1)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	ventral lateral retouch
L23 (P3)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L23 (P1)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L24 (P1)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	dorsal distal retouch
L24 (P3)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L25 (P3)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L25 (P1)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	1	
L26 (P1)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L27 (P1)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L28 (P1)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L29 (P1)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	dorsal lateral utilization/retouch
L30 (P1)	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	
L31 (P1)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L32 (P1)	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	
L33 (P1)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L34 (P1)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L35 (P1)	Surface	Secondary Retouch Flake	Ploughzone	1	Onondaga Chert	0	
L36 (P1)	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	distal retouch and ventral lateral concave retouch
L37 (P1)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	ventral lateral utilization/retouch
L38 (P1)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L39 (P1)	Surface	Projectile Point	Ploughzone	1	Onondaga Chert	0	Triangular (Late Woodland Period [ca. 1200 BP - 400 BP]); complete; unfinished thinning; edge retouch along 1 margin; L 35 mm W 25 mm T 10 mm
L40 (P1)	Surface	Secondary Retouch Flake	Ploughzone	1	Onondaga Chert	1	
L41 (P1)	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	
L42 (P1)	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	dorsal lateral retouch
L43 (P1)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L44 (P1)	Surface	Secondary Retouch Flake	Ploughzone	1	Onondaga Chert	0	retouch on lateral and distal margins
L45 (P1)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L46 (P1)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	1	
L47 (P1)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	ventral lateral retouch
L48 (P1)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	distal edge retouch
				73	11		

Cat #	Context	Type	Stratum	Qty	Material	TA	Notes
<b>AfGt-317</b>							
L1 (P4)	Surface	Projectile Point	Ploughzone	1	Onondaga Chert	0	Triangular (Late Woodland Period [ca. 1200 BP - 400 BP]); broken tip and basal ears; concave base; L 34 mm W 22 mm T 4 mm
L1 (P2)	Surface	Biface	Ploughzone	1	Onondaga Chert	0	tip portion; semi-refined; beveled; L 43 mm W 38 mm T 8 mm
L2 (P2)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	retouched distal margin
L2 (P4)	Surface	Secondary Retouch Flake	Ploughzone	1	Onondaga Chert	0	
L3 (P2)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	dorsal lateral retouch
L3 (P4)	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	
L4 (P2)	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	bi-lateral ventral retouch
L4 (P4)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	ventral lateral utilization/retouch
L5 (P2)	Surface	Secondary Retouch Flake	Ploughzone	1	Onondaga Chert	0	
L5 (P4)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L6 (P2)	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	ventral distal retouch
L6 (P4)	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	
L7 (P2)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L7 (P4)	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	
L8 (P4)	Surface	Secondary Retouch Flake	Ploughzone	1	Onondaga Chert	0	
L8 (P2)	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	
L9 (P2)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	retouched margin
L9 (P4)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L10 (P2)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	dorsal lateral retouch/utilization
L10 (P4)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L11 (P2)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L12 (P2)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L13 (P2)	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	
L14 (P2)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	dorsal lateral retouch
L15 (P2)	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	distal retouch
L16 (P2)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L17 (P2)	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	ventral lateral retouch
L18 (P2)	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	
L19 (P2)	Surface	Secondary Retouch Flake	Ploughzone	1	Onondaga Chert	0	
L20 (P2)	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	ventral lateral utilization/retouch
L21 (P2)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L22 (P2)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L23 (P2)	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	
L24 (P2)	Surface	Biface	Ploughzone	1	Onondaga Chert	0	tip portion; refined; L 36 mm W 31 mm T 7 mm
L25 (P2)	Surface	Biface	Ploughzone	1	Onondaga Chert	0	complete; refined; L 49 mm W 27 mm T 7 mm
L26 (P2)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L27 (P2)	Surface	Secondary Retouch Flake	Ploughzone	1	Onondaga Chert	0	
L28 (P2)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	1	alternate edge lateral retouch



Cat #	Context	Type	Stratum	Qty	Material	TA	Notes
L29 (P2)	Surface	Biface	Ploughzone	1	Onondaga Chert	0	complete; semi-refined; L 58 mm W 47 mm T 9 mm
				39		1	
<b>AfGt-318</b>							
L1	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L2	Surface	Flake Fragment	Ploughzone	1	Lockport Chert	0	
L3	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L4	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	1	
				4		1	
<b>AfGt-319</b>							
L1	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	1	
L2	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	1	
L3	Surface	Secondary Retouch Flake	Ploughzone	1	Onondaga Chert	1	
L4	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	1	
L5	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	1	
L6	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	1	ventral lateral utilization/retouch
L7	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	1	
L8	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	1	
				8		8	
<b>AfGt-320</b>							
L1	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L2	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L3	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L4	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	1	
L5	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
				5		1	
<b>AfGt-321</b>							
L1	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L2	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L3	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L4	Surface	Scraper	Ploughzone	1	Onondaga Chert	0	flake fragment with deep bi-lateral dorsal retouch; L 25 mm W 20 mm T 5 mm
L5	Surface	Secondary Retouch Flake	Ploughzone	1	Onondaga Chert	0	
L6	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L7	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L8	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	
L9	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	dorsal lateral retouch

Cat #	Context	Type	Stratum	Qty	Material	TA	Notes
L10	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L11	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L12	Surface	Secondary Retouch Flake	Ploughzone	1	Onondaga Chert	0	
L13	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	
L14	Surface	Secondary Retouch Flake	Ploughzone	1	Onondaga Chert	0	
L15	Surface	Secondary Retouch Flake	Ploughzone	1	Onondaga Chert	1	
L16	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L17	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	1	
				<b>17</b>		<b>2</b>	

#### AfGt-322

L1	Surface	Secondary Retouch Flake	Ploughzone	1	Onondaga Chert	0	dorsal lateral retouch on both margins
L2	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L3	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	lateral retouch
L4	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L5	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	
L6	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L7	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L8	Surface	Secondary Retouch Flake	Ploughzone	1	Onondaga Chert	0	
L9	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L10	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L11	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	dorsal lateral utilization/retouch
L12	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	1	
L13	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L14	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	
L15	Surface	Secondary Retouch Flake	Ploughzone	1	Onondaga Chert	0	
L16	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L17	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L18	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	
L19	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	1	
L20	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L21	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L22	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	ventral lateral and distal retouch
L23	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	distal retouch
				<b>23</b>		<b>2</b>	

#### AfGt-323

L1 (P15)	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	
L1 (P15)	Surface	Flake Fragment	Ploughzone	1	Lockport Chert	0	



Cat #	Context	Type	Stratum	Qty	Material	TA	Notes
L15	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	1	
L16	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	
L17	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
				<b>17</b>		<b>1</b>	

#### AfGt-325

L1	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	dorsal lateral utilization/retouch
L2	Surface	Biface	Ploughzone	1	Onondaga Chert	0	complete; semi-refined; incomplete bifacial flaking; micro-flaking along edges; L 51 mm W 38 mm T 16 mm
L3	Surface	Secondary Retouch Flake	Ploughzone	1	Onondaga Chert	0	
L4	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	distal retouch/utilization
L5	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
				<b>5</b>		<b>0</b>	

#### AfGt-326

L1 (P23)	Surface	Secondary Retouch Flake	Ploughzone	1	Onondaga Chert	0	
L1 (P22)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L2 (P23)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L2 (P22)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	distal utilization/retouch
L3 (P22)	Surface	Secondary Retouch Flake	Ploughzone	1	Onondaga Chert	0	
L3 (P23)	Surface	Secondary Retouch Flake	Ploughzone	1	Onondaga Chert	1	
L4 (P23)	Surface	Secondary Retouch Flake	Ploughzone	1	Onondaga Chert	0	
L4 (P22)	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	
L5 (P23)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L5 (P22)	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	dorsal lateral retouch
L6 (P23)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L6 (P22)	Surface	Projectile Point	Ploughzone	1	Onondaga Chert	0	medial fragment with partial base; non-diagnostic; L 32 mm W 26 mm T 8 mm
L7 (P22)	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	
L7 (P23)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L8 (P22)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L8 (P23)	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	
L9 (P22)	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	ventral lateral retouch
L9 (P23)	Surface	Biface	Ploughzone	1	Onondaga Chert	0	complete; refined; L 50 mm W 25 mm T 7 mm
L10 (P22)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L10 (P23)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L11 (P22)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	ventral lateral retouch
L12 (P22)	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	dorsal lateral retouch/utilization
L13 (P22)	Surface	Biface	Ploughzone	1	Onondaga Chert	0	edge fragment; semi-refined; L 60 mm W 25 mm T 8 mm
L14 (P22)	Surface	Secondary Retouch Flake	Ploughzone	1	Onondaga Chert	0	

Cat #	Context	Type	Stratum	Qty	Material	TA	Notes
L15 (P22)	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	dorsal distal retouch
				25		1	
<b>AfGt-327</b>							
L1	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	distal utilization/retouch
L2	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L3	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	ventral and dorsal distal retouch
L4	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L5	Surface	Secondary Retouch Flake	Ploughzone	1	Onondaga Chert	0	
L6	Surface	Secondary Retouch Flake	Ploughzone	1	Onondaga Chert	0	
L7	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	
L8	Surface	Secondary Retouch Flake	Ploughzone	1	Onondaga Chert	0	
L9	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L10	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
				10		0	
<b>AfGt-328</b>							
L1	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	dorsal lateral retouch
L2	Surface	Flake Fragment	Ploughzone	1	Selkirk Chert	0	
L3	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	ventral lateral retouch
L4	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	
L5	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	dorsal lateral retouch
L6	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	ventral lateral retouch
L7	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L8	Surface	Secondary Knapping Flake	Ploughzone	1	Onondaga Chert	0	dorsal lateral retouch
L9	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	distal retouch
L10	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
				10		0	
<b>20PL-268 - P5</b>							
L1	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
L2	Surface	Flake Fragment	Ploughzone	1	Lockport Chert	0	
				2		0	
<b>20PL-268 - P7</b>							
L1	Surface	Secondary Retouch Flake	Ploughzone	1	Onondaga Chert	1	ventral lateral retouch
				1		1	

Cat #	Context	Type	Stratum	Qty	Material	TA	Notes
<b>20PL-268 - P8</b>							
L1	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	1	
				<b>1</b>		<b>1</b>	
<b>20PL-268 - P18</b>							
L1	Surface	Scraper	Ploughzone	1	Onondaga Chert	0	beveled retouched laterally; for scraper use
				<b>1</b>		<b>0</b>	
<b>20PL-268 - P19</b>							
L1	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
				<b>1</b>		<b>0</b>	
<b>20PL-268 - P20</b>							
L1	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
				<b>1</b>		<b>0</b>	
<b>20PL-268 - P21</b>							
L1	Surface	Secondary Retouch Flake	Ploughzone	1	Onondaga Chert	0	
				<b>1</b>		<b>0</b>	
<b>20PL-268 - P26</b>							
L1	Surface	Biface	Ploughzone	1	Onondaga Chert	0	tip fragment; semi-refined; L 31 mm W 20 mm T 7 mm
L2	Surface	Flake Fragment	Ploughzone	1	Onondaga Chert	0	
				<b>2</b>		<b>0</b>	
<b>20PL-268 - P27</b>							
L1	Surface	Flake Fragment	Ploughzone	1	Indeterminate	0	beveled retouched lateral margin
				<b>1</b>		<b>0</b>	