Appendix D Stage 1 Archaeological Assessment

DRAFT

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Jul 5, 2017

Arthur Figura (P083)
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RE: Review and Entry into the Ontario Public Register of Archaeological Reports: Archaeological Assessment Report Entitled, "Stage 1 Archaeological Assessment: Dawn-Enniskillen Pipeline Project: Parts of Various Lots and Concessions, Geographic Township of Dawn, now Township of Dawn-Euphemia and Township of Enniskillen, Lambton County, Ontario", Dated Jun 19, 2017, Filed with MTCS Toronto Office on Jun 29, 2017, MTCS Project Information Form Number P083-0272-2016, MTCS File Number 0004462

Dear Mr. Figura:

This office has reviewed the above-mentioned report, which has been submitted to this ministry as a condition of licensing in accordance with Part VI of the Ontario Heritage Act, R.S.O. 1990, c 0.18.[1] This review has been carried out in order to determine whether the licensed professional consultant archaeologist has met the terms and conditions of their licence, that the licensee assessed the property and documented archaeological resources using a process that accords with the 2011 Standards and Guidelines for Consultant Archaeologists set by the ministry, and that the archaeological fieldwork and report recommendations are consistent with the conservation, protection and preservation of the cultural heritage of Ontario.

The report documents the assessment of the study area as depicted in Figures 10 and 11-1 to 11-3 of the above titled report and recommends the following:

The Stage 1 archaeological assessment, involving background research and a property inspection, resulted in the determination that large portions of the study area exhibit a moderate to high potential for the identification and recovery of archaeological resources. As such, in accordance with Section 1.3 of the MTCS' 2011 Standards and Guidelines for Consultant Archaeologists (Government of Ontario 2011), a Stage 2 archaeological assessment will be required for portions of the study area which retain archaeological potential. The Stage 1 archaeological assessment further determined that the study area retains areas of no archaeological potential, including previously disturbed areas, particularly around existing Union Gas infrastructure; municipal drains; and areas that are low and permanently wet, directly associated with present-day water sources.

Based on the information contained in the report, the ministry is satisfied that the fieldwork and reporting for the archaeological assessment are consistent with the ministry's 2011 Standards and Guidelines for

Consultant Archaeologists and the terms and conditions for archaeological licences. This report has been entered into the Ontario Public Register of Archaeological Reports. Please note that the ministry makes no representation or warranty as to the completeness, accuracy or quality of reports in the register.

Should you require any further information regarding this matter, please feel free to contact me.

Sincerely,

John Dunlop
Archaeology Review Officer

cc. Archaeology Licensing Officer
Doug Schmidt,Union Gas Ltd.
tbd tbd,Ontario Energy Board

[1]In no way will the ministry be liable for any harm, damages, costs, expenses, losses, claims or actions that may result: (a) if the Report(s) or its recommendations are discovered to be inaccurate, incomplete, misleading or fraudulent; or (b) from the issuance of this letter. Further measures may need to be taken in the event that additional artifacts or archaeological sites are identified or the Report(s) is otherwise found to be inaccurate, incomplete, misleading or fraudulent.

Stage 1 Archaeological Assessment: Dawn-Enniskillen Pipeline Project

Parts of Various Lots and Concessions, Geographic Township of Dawn, now Township of Dawn-Euphemia and Township of Enniskillen, Lambton County, Ontario

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PIF #: P083-0272-2016
Project #: 160960981

REVISED REPORT

June 19, 2017

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Executive Summary

Stantec Consulting Ltd. (Stantec) was retained by Union Gas Ltd. (Union Gas) to conduct a Stage 1 archaeological assessment prior to the construction of the Dawn-Enniskillen Pipeline Project (Dawn-Enniskillen) (the Project) located on parts of various lots and concessions, Geographic Township of Dawn, now Township of Dawn-Euphemia, and Township of Enniskillen, Lambton County, Ontario. The Stage 1 assessment was conducted during the preliminary - planning phase of the Project in accordance with the provisions of the *Ontario Heritage Act* (Government of Ontario 1990a) and the requirements of Section 4.3.4 of the Ontario Energy Board's (OEB) *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario* (OEB 2011).

The alignment of the proposed pipeline is expected to follow the existing easement of the Dawn-Parkway System. Thus, the current study area for the Stage 1 assessment is large and serves to capture a broad and generalized geographic area associated with the Project. This Stage 1 archaeological assessment was conducted under archaeological consulting license P083 issued to Arthur Figura, MA, of Stantec by the Ministry of Tourism, Culture and Sport (MTCS). A property inspection was undertaken on March 30, 2016 in accordance with Section 1.2 of the *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). The property inspection included the existing pipeline alignment and the lands immediately adjacent to it to provide overview of a larger study area as noted above. The goal of the property inspection was to identify the presence or absence of any features of archaeological potential.

The Stage 1 archaeological assessment, involving background research and a property inspection, resulted in the determination that large portions of the study area exhibit a moderate to high potential for the identification and recovery of archaeological resources. As such, in accordance with Section 1.3 of the MTCS' 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), **a Stage 2 archaeological assessment will be required for portions of the study area which retain archaeological potential.** The Stage 1 archaeological assessment further determined that the study area retains areas of no archaeological potential, including previously disturbed areas, particularly around existing Union Gas infrastructure; municipal drains; and areas that are low and permanently wet, directly associated with present-day water sources.

The objective of the Stage 2 archaeological assessment will be to document archaeological resources within the study area and to determine whether these archaeological resources require further assessment or if they have already been previously documented by other known archaeological assessments within the study area. The Stage 2 archaeological assessment will include the systematic walking of open ploughed fields at five metre intervals as outlined in Section 2.1.1 of the MTCS' 2011 *Standards and Guidelines for Consultant Archaeologists*

(Government of Ontario 2011). The MTCS standards further require that all agricultural land, both active and inactive, be recently ploughed and sufficiently weathered to improve the visibility of archaeological resources. Ploughing must be deep enough to provide total topsoil exposure, but not deeper than previous ploughing, and should provide at least 80% ground surface visibility.

For areas inaccessible for ploughing, the Stage 2 archaeological assessment will include a test pit survey at a five-metre interval as outlined in Section 2.1.2 of the MTCS' 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). The MTCS standards require that each test pit be approximately 30 centimetres in diameter, excavated to at least five centimetres in to subsoil, and have all soil screened through six millimetre hardware cloth to facilitate the recovery of any cultural material that may be present. Prior to backfilling, each test pit will be examined for stratigraphy, cultural features, or evidence of fill.

Should any areas of disturbance or features indicating that archaeological potential have been removed, including municipal road ROWs and areas of ground disturbance due to landscaping, as well as permanently wet or steeply sloped areas not previously identified during the Stage 1 property inspection be encountered during the Stage 2 archaeological assessment, they will not require assessment but will be photo documented as outlined in Section 2.1.8 of the MTCS' 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011).

In addition to the above, the Stage 1 archaeological assessment determined that there are small pockets within the study area which retain low to no archaeological potential due to low and permanently wet conditions and modern disturbances (e.g., municipal drains, and Union Gas infrastructure). Thus, these portions of the study area do not retain potential for the identification or recovery of archaeological resources. In accordance with Section 1.3.2 and Section 7.7.4 of the MTCS' 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), **a Stage 2 archaeological assessment is not required for any portion of the study area with low to no archaeological potential.**

The MTCS is asked to review the results presented and to accept this report into the Ontario Public Register of Archaeological Reports. Additional archaeological assessment is still required for portions of the study area and so these portions recommended for further archaeological fieldwork remain subject to Section 48(1) of the *Ontario Heritage Act* (Government of Ontario 1990a) and may not be altered, or have artifacts removed from them, except by a person holding an archaeological license.

The Executive Summary highlights key points from the report only; for complete information and findings, the reader should examine the complete report.

Project Personnel

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Acknowledgements

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Ministry of Tourism, Culture and Sport:	Robert von Bitter
Ministry of Natural Resources and Forestry:	Lisa Casselman – Survey Records Clerk
Walpole Island Heritage Centre:	Jared Macbeth – Project Review Coordinator Dr. Dean Jacobs – Consultation Manager

1.0 PROJECT CONTEXT

1.1 DEVELOPMENT CONTEXT

Stantec Consulting Ltd. (Stantec) was retained by Union Gas Ltd. (Union Gas) to conduct a Stage 1 archaeological assessment for the Dawn-Enniskillen Pipeline Project (the Project). The study area for the Stage 1 archaeological assessment of the Project comprises parts of various lots and concessions, Geographic Township of Dawn, now Township of Dawn-Euphemia, and Township of Enniskillen, Lambton County, Ontario (Figures 1 and 2). The Stage 1 assessment was conducted during the preliminary planning phase of the Project in accordance with the provisions of the *Ontario Heritage Act* (Government of Ontario 1990a) and the requirements of Section 4.3.4 of the Ontario Energy Board's (OEB) *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario* (OEB 2011).

The proposed Project will occur between the existing Union Gas Dawn Compressor Station located at the intersection of Bentpath Line and Dawn Valley Road in the Township of Dawn-Euphemia and the existing Enniskillen Transmission Station located at Oakdale Road in the Township of Enniskillen. While the alignment for the new pipeline is expected to follow the existing easement of the Dawn-Parkway System (Figures 1 and 2), the final construction easement, or temporary land use, will be determined by Union Gas at a later date. Thus, the current study area for the Stage 1 assessment is large and serves to capture a broad and generalized geographic area associated with the Project. Table 1 provides a summary of the lots and concessions included within this Stage 1 report.

Table 1: Summary of Lots and Concessions Comprising Study Area

Lower Tier Municipality	Geographic Township	Concession	Lot
Dawn-Euphemia	Dawn	1	Part 25 to Part 34
Dawn-Euphemia	Dawn	2 to 12	Part 25, 26 to 34
Dawn-Euphemia	Dawn	13	Part 25 to Part 34
Enniskillen	Enniskillen	1 to 4	Part 2; 3 to 27; Part 28
Enniskillen	Enniskillen	5	Part 2 to Part 28

1.1.1 Objectives

The objectives of the Stage 1 assessment were to compile all available information about the known and potential archaeological heritage resources within the study area and to provide specific direction for the protection, management and/or recovery of these resources. In compliance with the provincial standards and guidelines set out in the Ministry of Tourism, Culture and Sport's (MTCS) 2011 *Standards and Guidelines for Consultant Archaeologists*

(Government of Ontario 2011), the objectives of the Stage 1 Archaeological Overview/Background Study are as follows:

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

To meet these objectives Stantec archaeologists employed the following research strategies:

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

Permission to enter the property was provided by Doug Schmidt at Union Gas Limited.

1.2 HISTORICAL CONTEXT

1.2.1 Post-Contact Aboriginal Resources

The post-contact Aboriginal occupation of Southern Ontario was heavily influenced by the dispersal of various Iroquoian-speaking communities by the New York State Iroquois and the subsequent arrival of Algonkian-speaking groups from northern Ontario at the end of the 17th century and beginning of the 18th century (Konrad 1981; Schmalz 1991). By 1690, Algonkian speakers from the north appear to have begun to repopulate Bruce County (Rogers 1978:761). This is the period in which the Mississaugas are known to have moved into southern Ontario and the lower Great Lakes watersheds (Konrad 1981). In southwestern Ontario, however, members of the Three Fires Confederacy (Chippewa, Ottawa, and Potawatomi) were immigrating from Ohio and Michigan in the late 1700s (Feest and Feest 1978:778-779).

The study area for the Project falls within the lands of the archaeologically known Western Basin tradition. It has been put forward that the Western Basin people were of the Fire Nation, an Algonkian-speaking group pushed out of Ontario by the Iroquoian-speaking Neutral people in the early 17th century (Murphy and Ferris 1990). The Neutral, in turn, ceased to exist as a corporate entity following the incursion of the New York Iroquois in 1650 (Heidenreich 1990). The First Nations people who occupied this portion of southwestern Ontario have been referred to as Anishinaabe or Anishinaabeg; Chippewa; and Ojibwa, an Algonquian-speaking people. According to traditional history, they were once one nation, but subdivisions occurred as people migrated to different areas. They were also known as the Three Fires Confederacy, and acted together in political and military affairs through the 17th to 19th centuries.

Under British administration in the 19th century, the groups were divided into separate bands. The Anishinaabe included the western Algonquian peoples, among them the Chippewa and the Odawa. Until the 18th century, the central Algonquian-speaking peoples, among them Potawatomi, were located in the Michigan Peninsula (Blackbird 1887). In the middle of 18th century, the Chippewa were located on the south shores of Lake Huron, the east shores of Georgian Bay, and on the west end of Lake Ontario. Aboriginal peoples continue to play a large role in the occupation of the study area and its environs.

Following the American Revolutionary War, Britain focused on the settlement of European immigrants into what became province of Upper Canada in 1791. To enable widespread settlement, the British government negotiated a series of treaties with the First Nations peoples. Figure 3 provides a map of southwestern Ontario illustrating early treaties and purchases (Government of Canada n.d.a). One of the earliest treaties involving lands located near the study area was made on May 19, 1790. Originally identified as the Detroit Treaty, the chiefs of the Odawa, Chippewa, Pottawatomi, and Huron Nations and representatives of the British Crown established a vast tract of land "…from the Detroit River easterly to Catfish Creek and south of the river La Tranche [now Thames River] and Chenail Ecarte [now St. Clair River], and contains Essex County except Anderdon Township and Part of West Sandwich; Kent County except Zone Township, and Gores of Camden and Chatham; Elgin County except Bayham Township and parts of South Dorchester and Malahide…[i]n Middlesex County, Del[a]ware and Westminster Township and part of North Dorchester" (Morris 1943:17). Today, this treaty is identified as Treaty Number 2, illustrated by the letter "C" on Figure 4. A plaque, erected by the Historic Sites and Monuments Board of Canada further identifies this treaty as *McKee's Purchase*. A commemorative plaque located in the Blenheim Memorial Park in Blenheim, Ontario reads (Ontario Plaques 2016a):

> *In May 1790 Alexander McKee, Deputy Agent of the British Indian Department, and the principal chiefs of the Ottawa, Potawatomi, Chippewa and Wyandot negotiated a treaty whereby the British Crown acquired title to what is now southwestern Ontario. This treaty completed the process begun with Niagara treaties of 1781 and 1784, with the result that most of the Ontario peninsula was soon opened to British and Loyalist settlement.*

Later, on September 29, 1795, McKee obtained a preliminary agreement from several Ojibwa Chiefs to set apart land at Chenail Ecarté for the purpose of establishing a Reserve for those who lost their lands and homes during the last stages of the American Revolution War (Willig 2008). A preliminary agreement was signed by which the Crown offered to pay £1,200 for these lands (Willig 2008). On September 7, 1796, the Chenail Ecarté Treaty was signed by the Ojibwa and Odawa chiefs (Lytwyn 2009). Figure 5 provides an early illustration by Abraham Iredell of the Chenail Ecarté Treaty lands (Government of Canada n.d.b; see also Curnoe 1996:166). Today, this treaty is more commonly identified as Treaty Number 7, identified by the letter "J" on Figure 4. This treaty comprises "…a tract of land near the River called Chenail Ecart[é]…[to include] the Township of Sombra in Lambton County and the Gore of Chatham Township in Kent County" (Morris 1943:21).

The study area for the Project is located within Treaty Number 21, which was an agreement made on March 9, 1819 between John Aiken, on behalf of the British Crown, and the Chippewa Nation. Treaty Number 21 is illustrated on Figure 4 by the letter "R". The lands of Treaty Number 21 commence:

> *…at the northerly side of the River Thames at the south west angle of the Township of London; thence along the western boundary of the Township of London, in a course north 21 degrees, 30 minutes west, twelve miles to the north west angle of the said Township; then on a course about south 62 degrees and 30 minutes west forty-eight miles more or less until it intersects a line on a course produced north two miles from the north east angle of the Shawnee [Sombra] Township; then along the eastern boundary line of the said Township, twelve miles and a half more or less to the northern boundary line of the Township of Chatham; then east twenty-four miles more or less to the River Thames; then along the water[']s edge of the River Thames against the stream to the place of beginning, reserving a tract of land situate[d] on the northerly side of the River Thames nearly opposite to the northerly angle of the Township of Southwold and south west angle of the Del[a]ware Township containing 15,360 acres; also reserving two miles square distant about four miles above the rapids where the Indians have their improvements and nearly parallel to the Moravian Village containing 5,120 acres.*
>
> (Morris 1943:24-25)

As demonstrated above, the nature of Aboriginal settlement size, population distribution, and material culture shifted as European settlers encroached upon Aboriginal territory. However, despite this shift, "written accounts of material life and livelihood, the correlation of historically recorded villages to their archaeological manifestations, and the similarities of those sites to more ancient sites have revealed an antiquity to documented cultural expressions that confirms a deep historical continuity to…systems of ideology and thought" (Ferris 2009:114). As a result, First Nations peoples of southern Ontario have left behind archaeologically significant resources throughout the region which show continuity with past peoples, even if they have not been explicitly recorded in Euro-Canadian documentation. Examples of documentation of Aboriginal activities (e.g., notations on early township survey plans and surveyor's field notes) are noted below.

1.2.2 Euro-Canadian Resources

In 1791, the Provinces of Upper Canada and Lower Canada were created from the former Province of Quebec by an act of British Parliament. At this time, Colonel John Graves Simcoe was appointed as the Lieutenant Governor of Upper Canada and was tasked with governing the new province, directing its settlement and establishing a constitutional government modelled after that of Britain's (Petryshyn 1985). In 1792, Simcoe divided Upper Canada into 19 counties consisting of previously-settled lands, new lands opened for settlement, and lands not yet acquired by Crown. These new counties stretched from Essex in the west, to Glengarry in the

east. Table 2 provides a summary of the former and current municipal designations for the study area.

Table 2: Summary of Historical Townships Comprising Study Area

Geographic Township	Former County	Current Lower Tier Municipality	Current Upper Tier Municipality
Dawn	Lambton	Township of Dawn-Euphemia	Lambton County
Enniskillen	Lambton	Township of Enniskillen	Lambton County

Lambton County was originally part of the District of Hesse, and in 1792 was renamed the Western District. The Western District consisted of Kent (which included Lambton) and Essex Counties. Lambton County was named after John George Lambton, first Earl of Durham. Lambton was the author of the Durham Report, which investigated the issues that led to the Upper Canada Rebellion of 1837. All of the townships in Lambton were not completely surveyed until 1835. After the *Municipal Act* of 1849, which provided a means of government for towns and counties, several counties amalgamated and separated over the next few years with the former Kent County; Lambton County finally became an independent county in 1853 (Elford 1982).

Euro-Canadian settlement in the area of Lambton County began as early as 1796 as French settlers began living along the banks of the St. Clair River. Large scale settlement, however, did not begin until the 1830s. The majority of the surveyed lots in the townships of Lambton County were assigned to children of the United Empire Loyalists, who sold their rights to early Euro-Canadian occupants. Early Euro-Canadian inhabitants were primarily tenant farmers from Britain as well as artisans and retired military men. The population of Lambton County swelled in the 1850s with the establishment of the Great Western Railway and the Great Trunk Railway. This growth remained steady until 1891, when the population peaked at 58,810 people (Elford 1982).

Dawn Township was surveyed in 1821 by Shubal Park, and Euro-Canadian settlement started in 1822. Survey records obtained from the Ministry of Natural Resources and Forestry (MNRF) were examined for evidence of Aboriginal and early Euro-Canadian settlements in Dawn Township (Government of Ontario n.d.). An early survey plan of the township, originally drawn in 1821, depicts numerous land grant recipients, and illustrates how land grants changed over time as multiple names are denoted in each lot, with many overlapping each other. The 1821 survey of Dawn Township, confirmed by an examination of the accompanying field notes, also illustrates an Aboriginal presence in the township, particularly along the banks of Bear Creek, now known as the Sydenham River (Figure 6). Two instances of an “Indian Clearing” (Insets 1 and 3 on Figure 6) and one instance of an “Indian Village” (Inset 2 on Figure 6) are noted on the map. While none of these labels fall within the study area, they do illustrate the Aboriginal presence in the vicinity.

The 1880 historical atlas of Lambton County (Belden & Co. 1880) shows the extent to which Dawn Township was settled by the late 19th century (Figure 7). Early Euro-Canadian settlement of the township was limited to the southeastern portion around the early communities of Florence and Dawn Centre. Dawn Township was originally connected with three other townships to form one municipal unit, consisting of 147 taxpayers (Lauriston 1949). The township was densely wooded and had poor drainage, which held back settlement in the 1800s. The majority of land was not cleared, and most clearings were only between five and 25 acres (Lauriston 1949).

By 1835, Dawn was its own township, although a portion of Dawn Township was lost to Kent County when Lambton and Kent Counties split in 1849. In 1850 the township still only numbered 429 people. With sawmills in use by the 1870s growth picked up; by 1881 the population was 2,026 and by 1901 grew once more to 3,659 (Elford 1982). However, even by 1901, only half of all the land in Dawn township was cultivated, and reliable roadways had not been built; most concession roads could not be traversed their entire length until the 1920s (Elford 1982). After 1901, people left the township for Western Canada with the promise of 160 free acres and since then the population has continued to decrease. However, during this time, the oil and gas resources that the area became known for were starting to be developed, which also discouraged land clearance for agricultural purposes. By 1980 only 1,796 people lived in Dawn Township (Elford 1982). Drainage continues to be an issue throughout the township and much of the poorly drained land is used as pasture for beef cattle. The remaining land is used for production of corn, soybeans, hay, tomatoes and cereal crops. As a result of municipal restructuring in 1998, the townships of Dawn and neighbouring Euphemia were amalgamated as the Township of Dawn-Euphemia.

The Township of Enniskillen was named after the Earl of Enniskillen from Ireland. Deputy Surveyor Lewis Burwell hired Eliakim Malcolm to survey Enniskillen Township in 1832. Malcolm prepared his report in January 1833. Many of the lots were assigned to the British soldiers who served in the War of 1812 (Elford 1982). Large portions of the township were known to contain forested swamps and often impassable wetland areas. Survey records obtained from the MNRF were examined for evidence of Aboriginal and early Euro-Canadian settlements in Enniskillen Township (Government of Ontario n.d.). An early survey plan of the township, originally drawn in 1833, depicts lots and concession numbers, but does not include any names of land grants. The map shows major and minor watercourses located within township boundaries (Figure 8).

The 1880 historical atlas of Lambton County (Belden & Co. 1880) shows the extent to which Enniskillen Township was settled by the late 19th century (Figure 9). Early Euro-Canadian settlement of the township was slow. In 1850 Enniskillen had a population of only 150 people. The 1861 census of Enniskillen Township states that only a few people initially settled in the township known by many as a "miserable swamp" (Canada Census 1861). According to the 1861 census there were 1,069 Enniskillen township occupants. The fortunes of the township changed in mid-1850 after the discovery of oil in Enniskillen Township. One of the first oil wells was drilled in North America on Lot 16, Concession 2 owned by James Miller Williams (Ball and Phelps 2016). The historical plaque erected in Oil Springs by the Historic Sites and Monuments Board of Canada identifies the first oil wells in Canada (Ontario Plaques 2016b):

> *The presence of oil in this locality was observed by early travelers and by the pioneer farmers who used it for medical purposes. In 1858, near Oil Springs, James M. Williams dug the first oil well in Canada and later established a refinery at Hamilton. In 1861, John Shaw, by drilling into the rock, opened the first flowing well, its situation being Lot 18, Concession 2, Enniskillen Township. From these beginnings developed one of Canada's most important industries.*

Initially the discovery of petroleum did not have a positive effect on the overall township population. Many unoccupied lots were purchased or leased by oil speculators, who kept them out of reach of the Euro-Canadian inhabitants. At the end of 1862, there were 1,000 oil wells and 10 refineries in the Enniskillen Township, and by 1866 there were estimated 1,500 wells in operation. Much of the product was refined in nearby Oil Springs until the discovery of the Petrolia oil field and the construction of the railway connecting Petrolia with the Great Western Railway at Wyoming.

The last quarter of the 19th century saw an increase in township settlement due to changes to provincial legislation allowing farmers to have ditches made along the concession lines and have them paid by the taxes levied on all adjacent lands. Once the oil boom subsided in 1870s the township became an agricultural community with improved drainage and roadways (Elford 1982).

The historical context of the Stage 1 study area for the Project includes numerous examples of Aboriginal and early Euro-Canadian resources. In discussing the late 19th century historical mapping it must be remembered that historical county atlases were produced primarily to identify factories, offices, residences and landholdings of subscribers and were funded by subscription fees. Landowners who did not subscribe were not always listed on the maps (Caston 1997:100). As such, all structures were not necessarily depicted or placed accurately (Gentilcore and Head 1984).

The majority of the region surrounding the study area has been subject to European-style agricultural practices for over 100 years, having been densely populated by Euro-Canadian farmers by the late 19th century. Moreover, much of the study area has been cleared of woodlot and had extensive drainage systems installed to reclaim swamp and marshland as agricultural fields.

1.3 ARCHAEOLOGICAL CONTEXT

1.3.1 The Natural Environment

The study area is situated within the St. Clair Clay Plain physiographic region, as identified by Chapman and Putnam 1984). The St. Clair Clay Plain is described as:

> *Adjoining Lake St. Clair in Essex and Kent County Counties and the St. Clair River in Lambton County are extensive clay plains covering 2,270 square miles. The region is one of little relief, lying between 575 and 700 feet a.s.l., except for the moraine at*

> *Ridgetown and Blenheim which rises 50 to 500 feet higher….Glacial Lake Whittlesey, which deeply covered all of these lands, and Lake Warren which subsequently covered nearly the whole area, failed to leave deep stratified beds of sediment on the underlying clay till except around Chatham, between Blenheim and the Rondeau marshes, and in a few other smaller areas. Most of Lambton and Essex Counties, therefore, are essentially till plains smoothed by shallow deposits of lacustrine clay which settled in the depressions while the knolls were being lowered by wave action.*
>
> (Chapman and Putnam 1984:147)

The study area is located primarily within Caistor Clay and Brookston Clay deposits. Generally, pre-contact Aboriginal settlement tended towards locations which contained well drained soil. However the presence of Caistor and Brookston Clays as the predominant soil types in the study area should not discount the potential for the presence of archaeological resources. Large portions of the forested tracts within and in close proximity to the study are still poorly drained, as they were when Dawn Township was first surveyed in 1821.

The major topographic feature nearest to the study area is the St. Clair River located to the west, although other sources of potable water are abundant within the Stage 1 study area. In addition to large primary water sources such as St. Clair River, there are numerous other primary and secondary sources of potable water. The study area drains towards the St. Clair River and Lake St. Clair by creeks such as Booth Creek, Crooked Creek, and Black Creek. Additional secondary and tertiary creeks and streams from these primary sources are noted throughout the study area.

1.3.2 Pre-contact Aboriginal Resources

This portion of southwestern Ontario has been occupied by First Nations peoples since the retreat of the Wisconsin glacier approximately 11,000 years ago. Local environmental conditions were significantly different from what they are today. Ontario's first peoples would have crossed the landscape in small groups in search of food, particularly migratory game species. In this area, caribou may have been a Paleo-Indian diet staple, supplemented by wild plants, small game, birds, and fish. Given the low density of populations on the landscape at this time and their mobile nature, Paleo-Indian sites are small and ephemeral. They are sometimes identified by the presence of fluted points. Sites are frequently located adjacent to the shorelines of large glacial lakes (Ellis and Deller 1990).

Archaeological records indicate subsistence changes around 8,000 B.C. at the start of the Archaic Period in southwestern Ontario. Since the large mammal species that formed the basis of the Paleo-Indian diet became extinct or moved north with the warming of the climate, Archaic populations had a more varied diet, exploiting a range of plants and bird, mammal, and fish species. Reliance on specific food resources like fish, deer, and several nut species became more noticeable through the Archaic Period and the presence of warmer, more hospitable environs led to expansion of group and family sizes. In the archaeological record, this is evident in the presence of larger sites. The coniferous forests of earlier times were replaced by

stands of mixed coniferous and deciduous trees by about 4,000 B.C. The transition to more productive environmental circumstances led to a rise in population density. As a result, Archaic sites become more abundant over time. Artifacts typical of these occupations include a variety of stemmed and notched projectile points; chipped stone scrapers; ground stone tools (e.g., celts, adzes) and ornaments (e.g., bannerstones, gorgets); bifaces or tool blanks; animal bone; and chert waste flakes, a byproduct of the tool making process (Ellis *et al*. 1990).

Significant changes in cultural and environmental patterns occurred in the Early and Middle Woodland periods (*circa* 950 B.C. to 800 A.D.). Occupations became increasingly more permanent in this period, culminating in major semi-permanent villages by roughly 1,000 years ago. Archaeologically, the most significant changes by Woodland peoples were the appearance of artifacts manufactured from modeled clay and the emergence of more sedentary villages. The earliest pottery was crudely made by the coiling method and early house structures were simple oval enclosures. The Early and Middle Woodland periods are also characterized by extensive trade in raw materials, objects and finished tools, with sites in Ontario containing trade items with origins in the Mississippi and Ohio River valleys (Spence *et al*. 1990).

By the Late Woodland period there was a distinctive cultural occupation in southwestern Ontario, including Essex, Kent, and Lambton counties. The primary Late Woodland occupants of the Windsor area were populations described by archaeologists as Western Basin Tradition. Murphy and Ferris (1990:189) indicate that these people had ties with populations in southeastern Michigan and northwestern Ohio, and represent an *in situ* cultural development from the earlier Middle Woodland groups. The Western Basin Tradition seems to have been centred in the territory comprising the eastern drainage basin of Lake Erie, Lake St. Clair, and the southern end of Lake Huron. The Western Basin Tradition is divided up into four phases based on differences in settlement and subsistence strategies and pottery attributes. Table 3 provides a general outline of the cultural chronology of the study area, summarized from Ellis and Ferris (1990).

Table 3: Generalized Cultural Chronology of the Study Area

Period	Characteristics	Time	Comments
Early Paleo-Indian	Fluted Projectiles	9,000 – 8,400 B.C.	spruce parkland/caribou hunters
Late Paleo-Indian	Hi-Lo Projectiles	8,400 – 8,000 B.C.	smaller but more numerous sites
Early Archaic	Kirk and Bifurcate Base Points	8,000 – 6,000 B.C.	slow population growth
Middle Archaic	Brewerton-like Points	6,000 – 2,500 B.C.	environment similar to present
Late Archaic	Narrow Point	2,000 – 1,800 B.C.	increasing site size
	Broad Point	1,800 – 1,500 B.C.	large chipped lithic tools
	Small Point	1,500 – 1,100 B.C.	introduction of bow hunting
Terminal Archaic	Hind Points	1,100 – 950 B.C.	emergence of true cemeteries
Early Woodland	Meadowood Points	950 – 400 B.C.	introduction of pottery

Period	Characteristics	Time	Comments
Middle Woodland	Couture Corded Pottery	400 B.C. – A.D. 500	increased sedentism
	Riviere au Vase Phase	A.D. 500 – 800	seasonal hunting and gathering
Late Woodland	Younge Phase	A.D. 800 – 1200	incipient agriculture
	Springwells Phase	A.D. 1200 – 1400	agricultural villages
	Wolf Phase	A.D. 1400 – 1550	earth worked villages, warfare
Contact Aboriginal	Various Algonkian and Iroquoian Groups	A.D. 1600 – 1875	early written records and treaties
Historic	French/Euro-Canadian	A.D. 1749 – present	European settlement

1.3.3 Previously Known Archaeological Sites and Surveys

In order to compile an inventory of archaeological resources, the registered archaeological site records kept by the MTCS were consulted. In Ontario, information concerning archaeological sites stored in the ASDB is maintained by the MTCS. This database contains archaeological sites registered according to the Borden system. Under the Borden system, Canada is divided into grid blocks based on latitude and longitude. A Borden Block is approximately 13 kilometres east to west and approximately 18.5 kilometres north to south. Each Borden Block is referenced by a four-letter designator and sites within a block are numbered sequentially as they are found. The study area under review is located within Borden Blocks AeHn and AeHm.

Information concerning specific site locations is protected by provincial policy, and is not fully subject to the *Freedom of Information and Protection of Privacy Act* (Government of Ontario 1990b). The release of such information in the past has led to looting or various forms of illegally conducted site destruction. Confidentiality extends to all media capable of conveying location, including maps, drawings, or textual descriptions of a site location. The MTCS will provide information concerning site location to the party or an agent of the party holding title to a property, or to a licensed archaeologist with relevant cultural resource management interests.

An examination of the ASDB has shown that there are 10 previously registered archaeological sites within the study area or within a one-kilometre radius of the study area (Government of Ontario 2016a). Table 4 provides a summary of the previously registered archaeological sites including whether they retain cultural heritage value or interest (CHVI), and Tile 1 in the Supplementary Documentation shows the location of these sites.

Table 4: Previously Registered Archaeological Sites

Borden #	Site Name	Site Type	Cultural Affiliation	Status
AeHm-1	-	Findspot	pre-contact Aboriginal	No Further CHVI
AeHm-19	-	Homestead	Euro-Canadian	No Further CHVI
AeHn-1	Simpson	Findspot	Middle Woodland, Saugeen Tradition	No Further CHVI

Borden #	Site Name	Site Type	Cultural Affiliation	Status
AeHn-4	Booth Creek	Campsite	Early to Middle Woodland	No Further CHVI
AeHn-6	Bentpath-Rosedale 1	Homestead	Euro-Canadian	No Further CHVI
AeHn-7	Bentpath-Rosedale 3	Homestead	Euro-Canadian	No Further CHVI
AeHn-8	Bentpath-Rosedale 4	Homestead	Euro-Canadian	No Further CHVI
AeHn-9	Bentpath-Rosedale 2	Campsite	Late Woodland	No Further CHVI
AeHn-10	-	Dump	Euro-Canadian	No Further CHVI
AeHn-11	Location 13	Dump	Euro-Canadian	No Further CHVI

Among the pre-contact Aboriginal sites noted above, the Simpson site (AeHn-1) is a findspot dating to the Middle Woodland Saugeen Tradition, identified during an assessment of the proposed Union Gas Pipeline in 1985 (Museum of Indian Archaeology [MIA] 1985). No further work is required. The Booth Creek site (AeHn-4) is an Early to Late Woodland campsite identified during an assessment of the Union Gas Pipeline by Mayer, Pihl, Poulton and Associates Incorporated (MPP) in 1985 (MPP 1985). This site has been fully documented and have no further CHVI. The site location AeHm-1 is a pre-contact Aboriginal findspot of one retouched flake, documented during a 1987 assessment of the proposed Union Gas Pipeline (MIA 1987). No further work is required. Bentpath-Rosedale 2 (AeHn-9) is a Late Woodland campsite identified during a survey of the Union Gas Pipeline by Mayer Heritage Consultants Inc. (MHCI) in 1997 (MHCI 1997). This site has been fully documented and has no further CHVI.

The six Euro-Canadian sites include four homesteads and two historic dumps. The four homesteads, Bentpath-Rosedale 1 (AeHn-6), Bentpath-Rosedale 3 (AeHn-7), Bentpath-Rosedale 4 (AeHn-8), and an unnamed site (AeHm-19) were identified during the 1997 MHCI assessment of the Union Gas Pipeline (MHCI 1997). Location AeHn-10 was a historic dump identified during an assessment for the Union Gas Dawn Parkway System and Compressor Station in 2015 by Stantec (Stantec 2015). Location 13 (AeHn-11) was a historic dump identified during the Union Gas Dawn-Dover Pipeline Project in 2016 by Stantec (Stantec 2016; Stantec 2017). All sites have been fully documented and have no further CHVI.

There are seven archaeological projects that have been conducted within 50 metres or within the study area. The reports related to these projects are summarized below in Table 5. All of the work conducted has been related to Union Gas pipeline work and all of the sites listed in Table 4 were documented during these projects, as summarized above.

Table 5: Archaeological Reports Within 50 Metres of the Study Area

Date	Report Name	Archaeologist	PIF #	Reference
1985	*An Archaeological Resource Assessment of the Proposed Union Gas NPS 10 Pipeline to Link the Enniskillen Pool Station and the Dawn Compressor Plant*	MPP	85-14	MPP

Date	Report Name	Archaeologist	PIF #	Reference
1985	*Report on Archaeological Resource Assessment of a Proposed Union Gas Pipeline Submitted to Union Gas and Ecological Services for Planning*	MIA	85-38	MIA 1985
1987	*Licence Report 87-40: Archaeological Resource Assessment of the Proposed Union Gas Pipeline Relocation on Lot 27, Concession 1 to 3, and Lot 28, Concession 1, Enniskillen Township, Lambton County., Submitted to Union Gas Ltd., Chatham*	MIA	87-40	MIA 1987
1995	*Archaeological Assessment (Stages 1 to 3), Union Gas NPS-30, Bentpath-Rosedale Pipeline, Townships of Dawn and Enniskillen, Lambton County, Ontario*	Robert Mayer	95-005	MHCI 1995
1997	*Addendum to Archaeological Resource Assessment: Survey Union Gas NPS 48 Pipeline, Dawn to Enniskillen Segment, Lambton County, Ontario*	Robert Mayer	97-035	MHCI 1997
2015	*Stage 1-2 Archaeological Assessment: Dawn Parkway System, Dawn H Compressor Station Project*	Walter McCall	P389-0215-2015	Stantec 2015
2016	*Stage 2 Archaeological Assessment: Panhandle Reinforcement Project (Dawn – Dover): Parts of Various Lots and Concessions, Geographic Township of Dawn, now Township of Dawn-Euphemia, and Geographic Township of Sombra, now Township of St. Clair, Lambton County; and Geographic Townships of Chatham and Dover, now Municipality of Chatham-Kent, Ontario*	Parker Dickson	P256-0388-2015	Stantec 2016
2017	*Stage 3 Archaeological Assessment: Location 13 (AeHn-11), Panhandle Reinforcement Project (Dawn-Dover): Part of Lot 25, Concession 1, Geographic Township of Dawn, now Township of Dawn-Euphemia, County of Lambton, Ontario*	Parker Dickson	P256-0410-2016	Stantec 2017

1.3.4 Existing Conditions

The study area for the Stage 1 assessment of the Project comprises approximately 18,276 hectares and includes various Lots and Concessions, Geographic Township of Dawn, now Township of Dawn-Euphemia, and Township of Enniskillen, Lambton County, Ontario. The proposed Project will occur between the existing Union Gas Dawn Compressor Station located

at the intersection of Bentpath Line and Dawn Valley Road, Township of Dawn-Euphemia and the existing Enniskillen Transmission Station located at Oakdale Road, Township of Enniskillen. Broadly, much of the study area consists of active agricultural field with smaller pockets of sparse woodlot. The study area is also inundated with numerous water sources, municipal road ROWs, and municipally constructed drains. Existing Union Gas infrastructure, such as metering stations, pumping stations, and storage facilities, are also located within the study area.

The study area was subject to a property inspection on March 30, 2016. Further details regarding the property inspections are provided in Section 2.0 below.

2.0 FIELD METHODS

Initial background research compiled the information concerning any known and/or potential archaeological resources within the study area. A property inspection was conducted under archaeological consulting license P083 issued to Arthur Figura, MA, of Stantec by the MTCS. The property inspection was completed on March 30, 2016 under PIF P083-0272-2016 in accordance with Section 1.2 of the MTCS' 2011 Standards and Guidelines for Consultant Archaeologists (Government of Ontario 2011). During the property inspection the weather was overcast and cool. The lighting and visibility of land features was suitable. At no time were field, lighting, or weather conditions detrimental to the identification of features of archaeological potential.

The Stage 1 study area for the Project comprises approximately 18,276 hectares in various lots and concessions in the Geographic Township of Dawn, now Township of Dawn-Euphemia, and Township of Enniskillen. While the final construction easement for the Project has yet to be determined by Union Gas, the alignment of the new pipe will follow the existing alignment. Therefore the property inspection was limited to the existing pipeline alignment and the lands immediately adjacent to it in order to identify the presence or absence of any features of archaeological potential.

The photography from the property inspection is presented in Section 7.1 and confirms that the requirements for a Stage 1 property inspection were met, as per Section 1.2 and Section 7.7.2 Standard 1 of the MTCS' 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). Photos 1 to 8 illustrate typical agricultural fields within the study area which retain archaeological potential. Typical woodlots within the study area, though sparse, are depicted in the background of these photos. A sample of the water courses throughout the study area are illustrated in Photos 9 and 10. These areas are low and permanently wet and retain low to no archaeological potential. Numerous modern disturbances were noted throughout the study area, including: municipal road rights-of-way (ROWs) (Photos 11 to 13), municipal drains (Photos 14 to 18), and existing Union Gas infrastructure (Photos 19 to 21). These areas retain low to no archaeological potential.

3.0 ANALYSIS AND CONCLUSIONS

Archaeological potential is established by determining the likelihood that archaeological resources may be present on a subject property. Stantec applied archaeological potential criteria commonly used by MTCS (Government of Ontario 2011) to determine areas of archaeological potential within the region under study. 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. However, extensive land disturbance can eradicate archaeological potential (Wilson and Horne 1995).

Potable water is the single most important resource for any extended human occupation or settlement and since water sources in southwestern Ontario have remained relatively stable over time, proximity to drinkable water is regarded as a useful index for the evaluation of archaeological site potential. In fact, distance to water is one of the most commonly used variables for predictive modeling of archaeological site location in Ontario. 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.

As discussed above, distance to water is an essential factor in archaeological potential modeling. 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 sites locations and types to varying degrees. The MTCS 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 marsh.

Primary water sources are abundant within the Stage 1 study area. Transecting the study area are creeks such as Booth Creek, Crooked Creek, and Black Creek. Additional secondary and tertiary creeks and streams from these primary sources run throughout the study area. Additional ancient and/or relic tributaries of water sources may have existed but are not identifiable today and are not indicated on historic mapping. Further examination of the study area's natural environment identified soil conditions suitable for Aboriginal and Euro-Canadian agriculture, especially in the 19th and 20th centuries following the implementation of municipal drainage systems and agricultural field tiling. Aboriginal agricultural practices are noted on the early 19th

century township surveys. An examination of the ASDB identified ten registered archaeological sites, including six Euro-Canadian sites (four homesteads and two historic dumps) and four pre-pre-contact Aboriginal sites (one findspot of indeterminate age, one Middle Woodland Saugeen Tradition findspot, one Early to Middle Woodland campsite, and one Late Woodland campsite).

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 1990a) or property that local histories or informants have identified with possible historical events, activities, or occupations. Historical mapping demonstrates that the study area follows early concession roads with structures illustrated as fronting these roads, particularly focused around major waterways. Much of the established road and rail networks and agricultural settlement from the 19th century is still visible today. Adding to these observations is the presence of the Four previously registered 19th century archaeological sites.

In summary, the pre-contact Aboriginal, post-contact Aboriginal, and Euro-Canadian archaeological potential of the study area are judged to be moderate to high. However, as noted above, extensive and deep land alteration can eradicate archaeological potential. The Stage 1 property inspection has determined that portions of the study area, particularly focused around Union Gas' existing pipeline, have been subject to extensive land disturbance which has removed archaeological potential. In addition to the existing pipeline corridor the areas of modern disturbances include municipal road ROWs, municipal drains, and existing Union Gas infrastructures. Further areas which retain low to no archaeological potential are low and permanently wet areas directly associated with present-day water sources.

4.0 RECOMMENDATIONS

The Stage 1 archaeological assessment of the study area for the Project determined that much of the area retains potential for the identification and documentation of archaeological resources. In accordance with Section 1.3.1 and Section 7.7.4 of the MTCS' 2011 Standards and Guidelines for Consultant Archaeologists (Government of Ontario 2011), **a Stage 2 archaeological assessment is required for any portion of the study area which impacts an area of archaeological potential (Figures 10 and 11).**

The objective of the Stage 2 archaeological assessment will be to document any archaeological resources within the portions of the study area still retaining archaeological potential and to determine whether these archaeological resources require further assessment or if they have already been previously documented by other known archaeological assessments within the study area. The Stage 2 archaeological assessment will include the systematic walking of open ploughed fields at five metre intervals as outlined in Section 2.1.1 of the MTCS' 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). The MTCS standards further require that all agricultural land, both active and inactive, be recently ploughed and sufficiently weathered to improve the visibility of archaeological resources. Ploughing must be deep enough to provide total topsoil exposure, but not deeper than previous ploughing, and must provide at least 80% ground surface visibility.

Moreover, for areas inaccessible for ploughing, the Stage 2 archaeological assessment will include a test pit survey at five metre intervals as outlined in Section 2.1.2 of the MTCS' 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). The MTCS standards require that each test pit be approximately 30 centimetres in diameter, excavated to at least five centimetres in to subsoil, and have all soil screened through six millimetre hardware cloth to facilitate the recovery of any cultural material that may be present. Prior to backfilling, each test pit will be examined for stratigraphy, cultural features, or evidence of fill.

If the archaeological field team determines any lands to be low and wet, steeply sloped, or disturbed (e.g. municipal road ROWs) during the Stage 2 field work, those areas will not require survey, but will be photographically documented in accordance with Section 2.1 of the MTCS' 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011).

In addition to the above, the Stage 1 archaeological assessment determined that there are small pockets within the study area which retain low to no archaeological potential due to low and permanently wet conditions and modern disturbances (e.g., municipal drains, and Union Gas infrastructure). Thus, these portions of the study area do not retain potential for the identification or recovery of archaeological resources. In accordance with Section 1.3.2 and Section 7.7.4 of the MTCS' 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), **a Stage 2 archaeological assessment is not required for any portion of the study area with low to no archaeological potential (Figures 10 and 11).**

The MTCS is asked to review the results presented and to accept this report into the Ontario Public Register of Archaeological Reports. Additional archaeological assessment is still required for portions of the study area and so these portions recommended for further archaeological fieldwork remain subject to Section 48(1) of the *Ontario Heritage Act* (Government of Ontario 1990a) and may not be altered, or have artifacts removed, except by a person holding an archaeological license.

5.0 ADVICE ON COMPLIANCE WITH LEGISLATION

This report is submitted to the Minister of Tourism, Culture and Sport as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act* (Government of Ontario 1990a), R.S.O. 1990, c 0.18. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ministry of Tourism, Culture and Sport, a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.

It is an offence under Sections 48 and 69 of the *Ontario Heritage Act* (Government of Ontario 1990a) for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed fieldwork on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the Ontario Public Register of Archaeological Reports referred to in Section 65.1 of the *Ontario Heritage Act* (Government of Ontario 1990a).

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* (Government of Ontario 1990a). 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* (Government of Ontario 1990a).

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

Archaeological sites recommended for further archaeological fieldwork or protection remain subject to Section 48 (1) of the *Ontario Heritage Act* (Government of Ontario 1990a) and may not be altered, or have artifacts removed from them, except by a person holding an archaeological licence.

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7.0 IMAGES

7.1 PHOTOGRAPHS

Photo 1: Typical Agricultural Field within Study Area Retaining Archaeological Potential, facing northeast



Photo 2: Typical Agricultural Field within Study Area Retaining Archaeological Potential, facing northeast



Photo 3: Typical Agricultural Field within Study Area Retaining Archaeological Potential, facing northeast



Photo 4: Typical Agricultural Field within Study Area Retaining Archaeological Potential, facing southwest



Images
June 19, 2017

Photo 5: Typical Agricultural Field within Study Area Retaining Archaeological Potential, facing southwest



Photo 6: Typical Agricultural Field within Study Area Retaining Archaeological Potential, facing northeast



Photo 7: Typical Agricultural Field within Study Area Retaining Archaeological Potential, facing northeast



Photo 8: Typical Agricultural Field within Study Area Retaining Archaeological Potential, facing southwest



Photo 9: Typical Low and Permanently Wet Area (Booth Creek) – Low to No Archaeological Potential, facing southeast



Photo 10: Typical Low and Permanently Wet Area (Black Creek) – Low to No Archaeological Potential, facing east



Photo 11: Typical Municipal Road ROW (Robinson Rd.) – Low to No Archaeological Potential, facing north



Photo 12: Typical Municipal Road ROW (Marthaville Rd.) – Low to No Archaeological Potential, facing south



Photo 13: Typical Municipal Road ROW (Edys Mills Line) – Low to No Archaeological Potential, facing east



Photo 14: Typical Disturbed Municipal Drain (6th Concession Road Drain) – Low to No Archaeological Potential, facing north



Photo 15: Typical Disturbed Drain Along Aberfeldy Line – Low to No Archaeological Potential, facing east



Photo 16: Typical Disturbed Drain Along Black Ash Rd. – Low to No Archaeological Potential, facing north



Photo 17: Typical Disturbed Municipal Drain (Dale Drain) – Low to No Archaeological Potential, facing north



Photo 18: Typical Disturbed Drain Along Oil Springs Line – Low to No Archaeological Potential, facing west



Photo 19: Existing Disturbed Union Gas Station (Marthaville Rd.) – Low to No Archaeological Potential, facing west



Photo 20: Existing Disturbed Union Gas Enniskillen Station - Low to No Archaeological Potential, facing west



Photo 21: Existing Disturbed Union Gas Cuthbert Station - Low to No Archaeological Potential, facing west



8.0 MAPS

All maps will follow on succeeding pages.

\\Cd1220-f02\01609\active\60960981\drawing\MXD\Archaeology\ReportFigures\Stage_1\160960981_ArchStg1_Fig01_Study_Area_Locations_Overview.mxd
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Courtright Line
Weidman Line
South Plank Road
Waterworks Road
Township Of St. Clair
Township Of Enniskillen
Fairweather Road
Plowing Match Road
Tile Yard Road
Oil Springs
Oil Springs Line
Gypsie Flats Road
Black Ash Road
Wanstead Road
Oakdale Road
Township Of Enniskillen
Municipality Of Brooke-Alvinston
Oil Heritage Road
Kelly Road
Centre Street
Bickford Line
Mandaumin Road
Marthaville Road
Township Of Enniskillen
Township Of Dawn-Euphemia
Forest Road
Inwood Road
Stanley Line
Robinson Road
Mccallum Line
Township Of St. Clair
Township Of Dawn-Euphemia
Dawn Valley Road
Cuthbert Road
Edys Mills Line
Tramway Road
Pantry School Road
Gould Road
Huffs Corners Road
Hale School Road
Naylor Road
Mcauslan Road
Burman Line
Esterville Road
Bentpath Line
Smith Line
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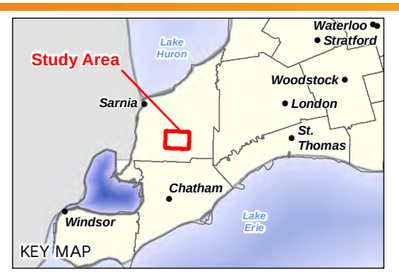
Legend
- Study Area
- Enniskillen Station
- Cuthbert Station
- Dawn Compressor Station
- Preferred Route
- Existing Dawn-Parkway System
- Road
- Municipal Boundary - Lower Tier

Notes
1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2016.
3. Orthoimagery © Mapcon, 2016. Imagery taken in 2010.



Client/Project
Union Gas Limited
Dawn-Enniskillen Pipeline Project

Figure No.
1

Title
Study Area Overview



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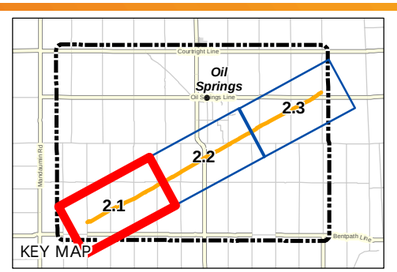
Legend
- Study Area
- Cuthbert Station
- Dawn Compressor Station
- Preferred Route
- Pipeline Easement
- Existing Dawn-Parkway System
- Road
- Constructed Drain
- Watercourse
- Waterbody
- Municipal Boundary - Lower Tier



Client/Project
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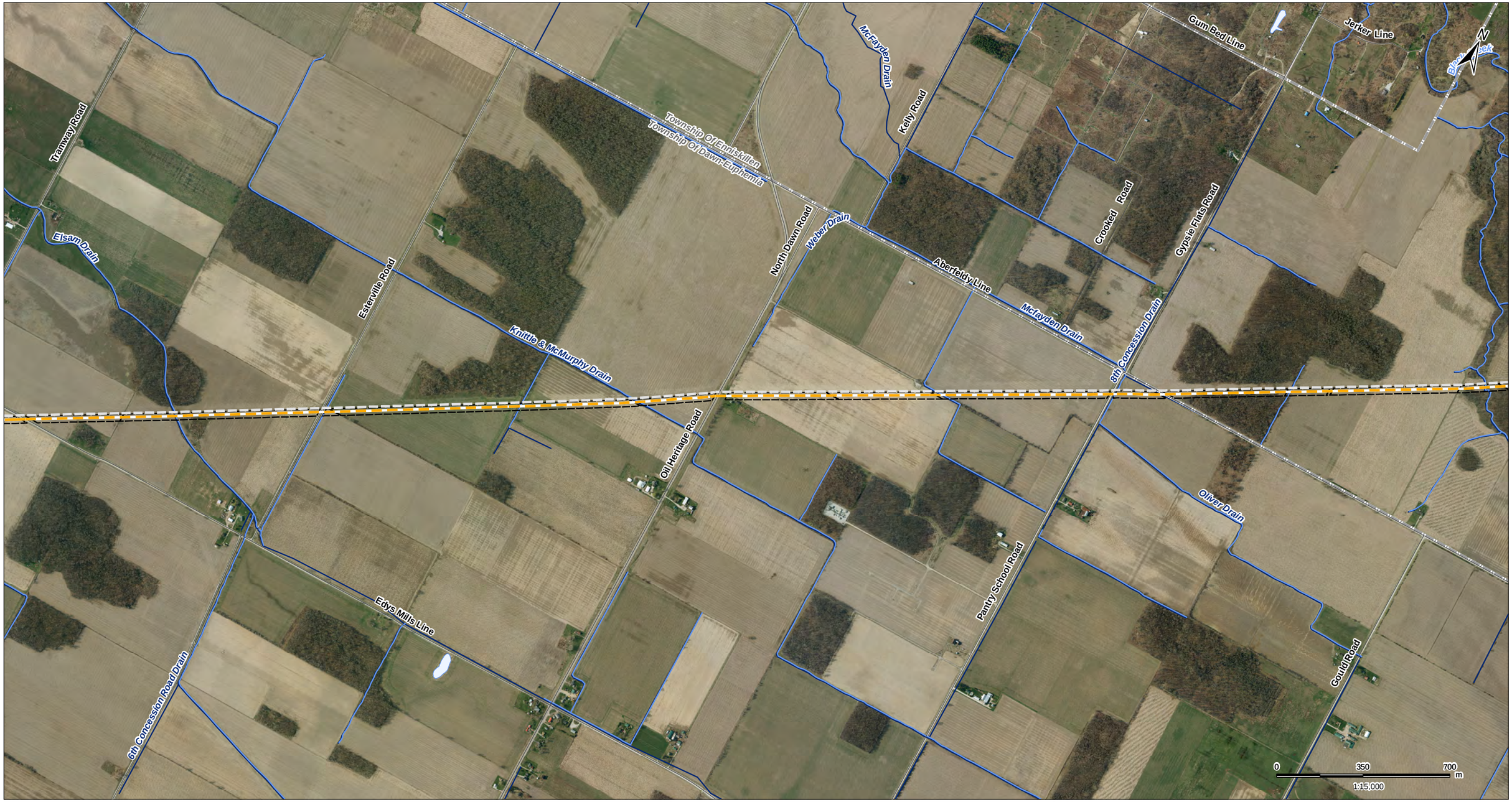
Dawn-Enniskillen Pipeline Project

Figure No.
2.1

Title
Study Area Location



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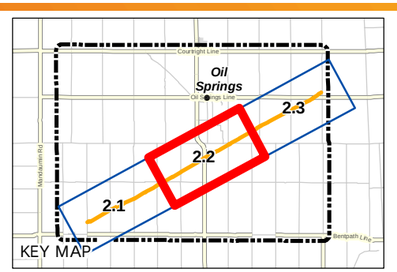
Legend
- Study Area
- Preferred Route
- Pipeline Easement
- Existing Dawn-Parkway System
- Road
- Constructed Drain
- Watercourse
- Waterbody
- Municipal Boundary - Lower Tier



Client/Project
Union Gas Limited
Dawn-Enniskillen Pipeline Project

Figure No.
2.2

Title
Study Area Location



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Legend

- Study Area
- Enniskillen Station
- Preferred Route
- Pipeline Easement
- Existing Dawn-Parkway System
- Road
- Constructed Drain
- Watercourse
- Waterbody
- Municipal Boundary - Lower Tier

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
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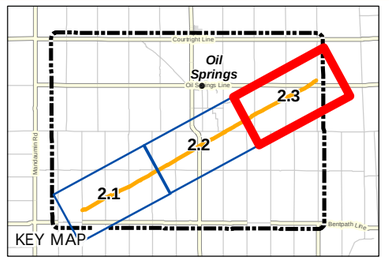

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Dawn-Enniskillen Pipeline Project

Figure No.

2.3

Title

Study Area Location



N

Legend
- Study Area
- Preferred Route

Notes
1. Map is not to scale.
2. Government of Canada. n.d.a. Map of Treaty Areas in Upper Canada. Ottawa: Department of Indian Affairs, Survey Branch.

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Client/Project
Union Gas Limited
Dawn-Enniskillen Pipeline Project

Figure No.
3

Title
Map of Treaty Areas in Upper Canada

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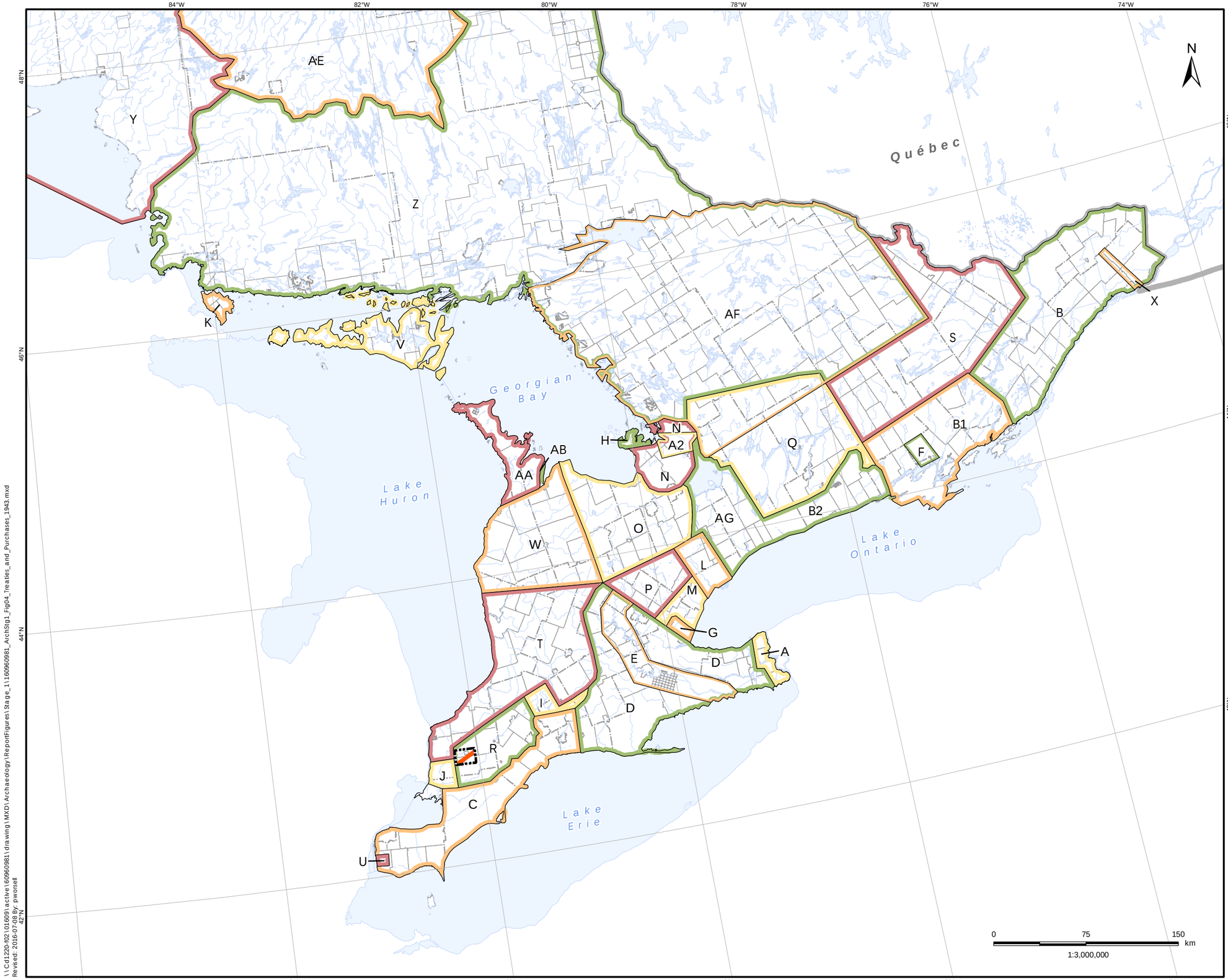
Revised: 2016-07-08 By: pworsell



Legend

- Study Area
- Preferred Route
- Municipal Boundary - Upper Tier
- Municipal Boundary - Lower or Single
- Watercourse
- Waterbody

A Treaty No. 381, May 9th, 1781 (Mississauga and Chippewa)
B Crawford's Purchase, October 9th, 1783 (Algonquin and Iroquois)
B1 Crawford's Purchase, October 9th, 1783 (Mississauga)
B2 Crawford's Purchases, 1784, 1787 And 1788 (Mississauga)
A2 John Collins' Purchase, 1785 (Chippewa)
C Treaty No. 2, May 19th, 1790 (Odawa, Chippewa, Pottawatomi, and Huron)
D Treaty No. 3, December 2nd, 1792 (Mississauga)
E Haldimand Tract:from the Crown to the Mohawk, 1793
F Tyendinaga:from the Crown to the Mohawk, 1793
G Treaty No. 3 3/4:from the Crown to Joseph Brant, October 24th, 1795
H Treaty No. 5, May 22nd, 1798 (Chippewa)
I Treaty No. 6, September 7th, 1796 (Chippewa)
J Treaty No. 7, September 7th, 1796 (Chippewa)
L Treaty No. 13, August 1st, 1805 (Mississauga)
M Treaty No. 13A, August 2nd, 1805 (Mississauga)
N Treaty No.16, November 18th, 1815 (Chippewa)
O Treaty No. 18, October 17th, 1818 (Chippewa)
P Treaty No. 19, October 28th 1818 (Chippewa)
Q Treaty No. 20, November 5th, 1818 (Chippewa)
R Treaty No. 21, March 9th, 1819 (Chippewa)
S Treaty No. 27, May 31st, 1819 (Mississauga)
T Treaty No. 27½, April 25th, 1825 (Ojibwa and Chippewa)
U Treaty No. 35, August 13th, 1833 (Wyandot or Huron)
V Treaty No. 45, August 9th, 1836 (Chippewa and Odawa, "For All Indians To Reside Thereon")
W Treaty No. 45½, August 9th, 1836 (Saugeen)
X Treaty No. 57, June 1st, 1847 (Iroquois of St. Regis)
Z Treaty No. 61, September 9th, 1850 (Robinson Treaty:Ojibwa)
AA Treaty No. 72, October 30th, 1854 (Chippewa)
AB Treaty No. 82, February 9th, 1857 (Chippewa)
AF Williams Treaty, October 31st and November 15th, 1923 (Chippewa and Mississauga)
AG Williams Treaty, October 31st, 1923 (Chippewa)

Notes

1. Coordinate System: NAD 1983 Statistics Canada Lambert
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2016.
3. Treaty boundaries adapted from Morris 1943 (1964 reprint). For cartographic representation only.

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Figure No.

4

Title

Treaties and Purchases
(Adapted from Morris 1943)

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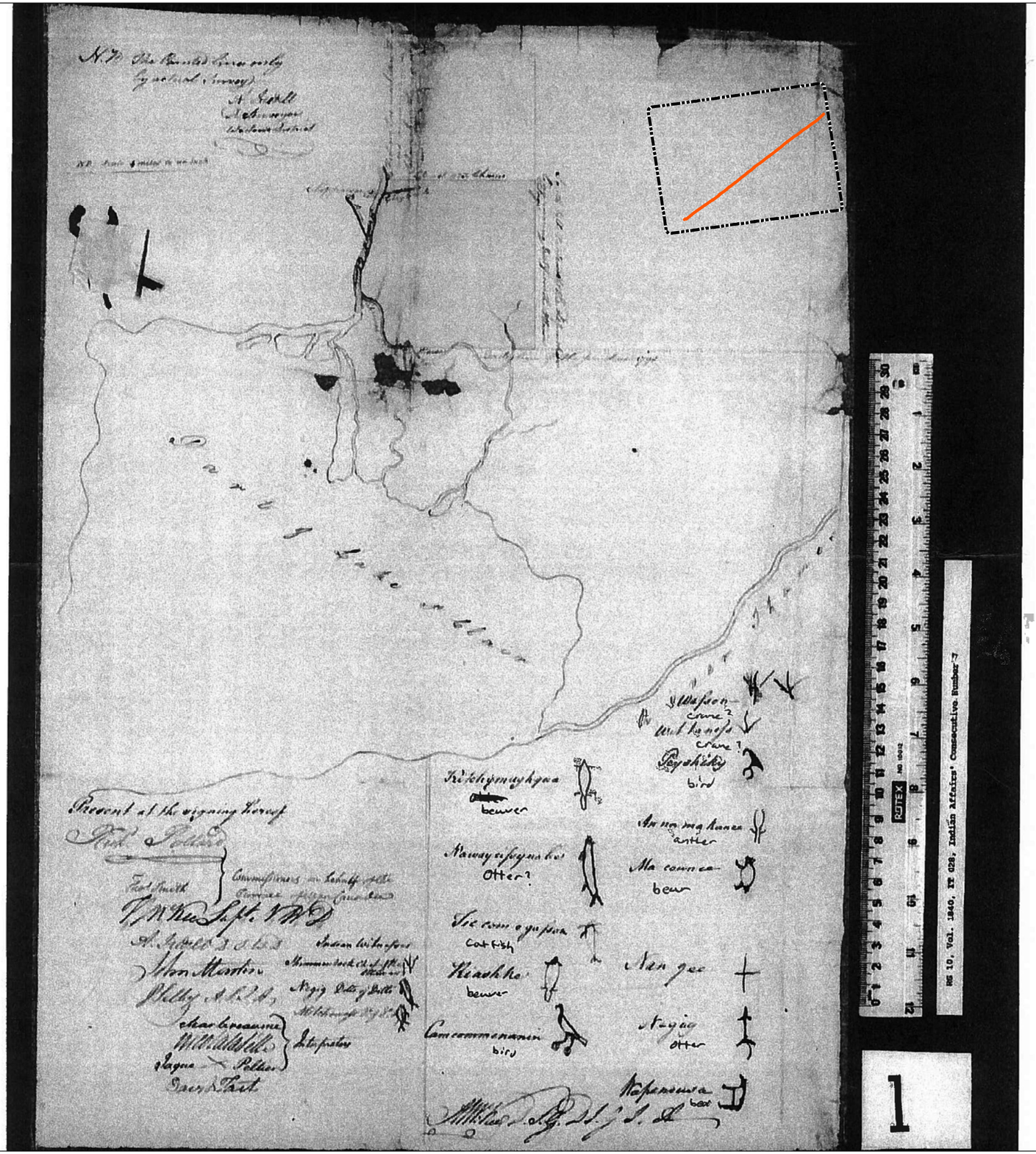

N

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Legend

- Study Area
- Preferred Route

Notes

1. Map is not to scale.
2. Government of Canada. n.d.b. Surrender #7, September 7, 1796. Ottawa: National Archives of Canada, File I7026 C-3.

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Dawn-Enniskillen Pipeline Project

Figure No.

5

Title

The 1796 Chenail Ecarté Treaty

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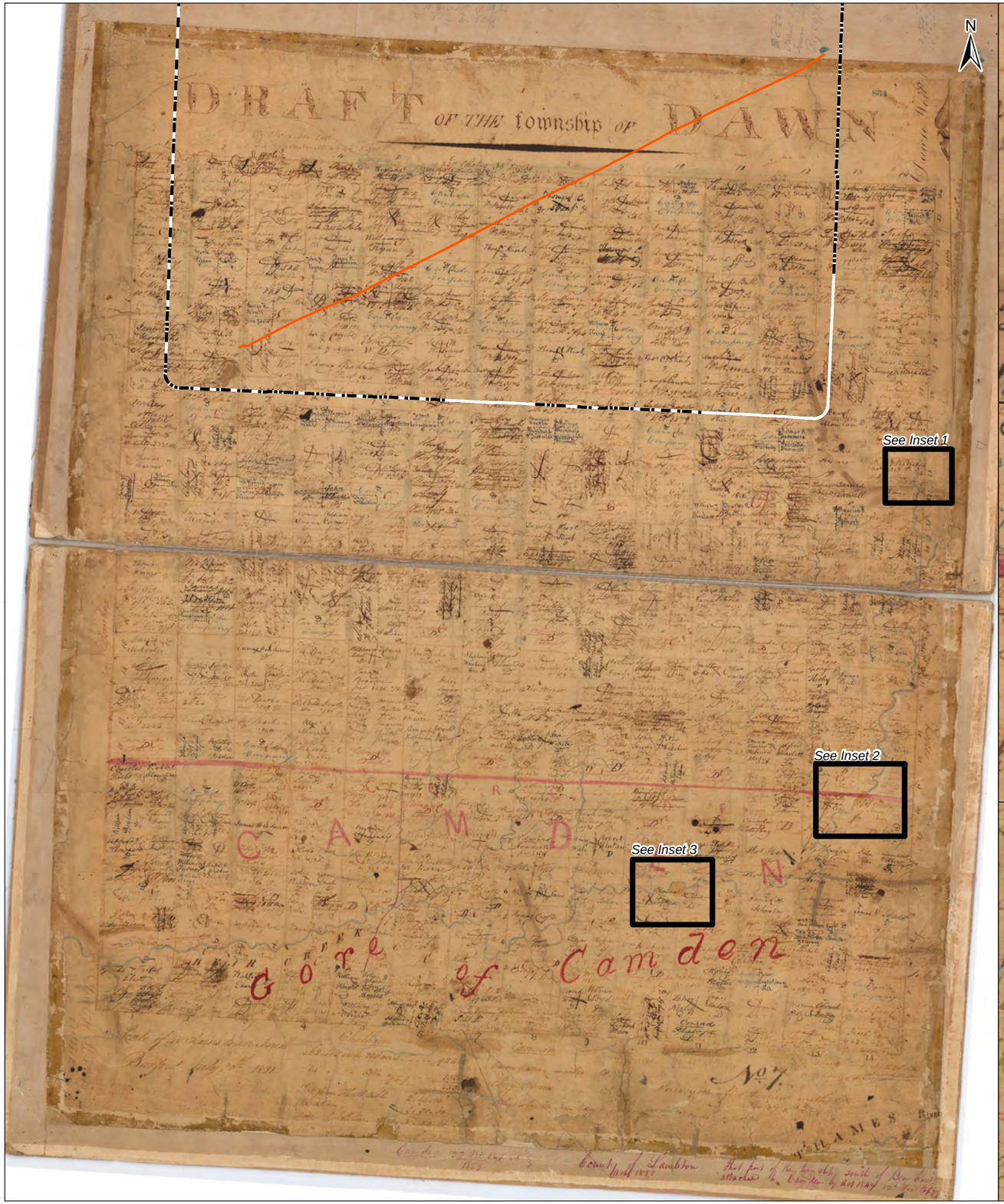

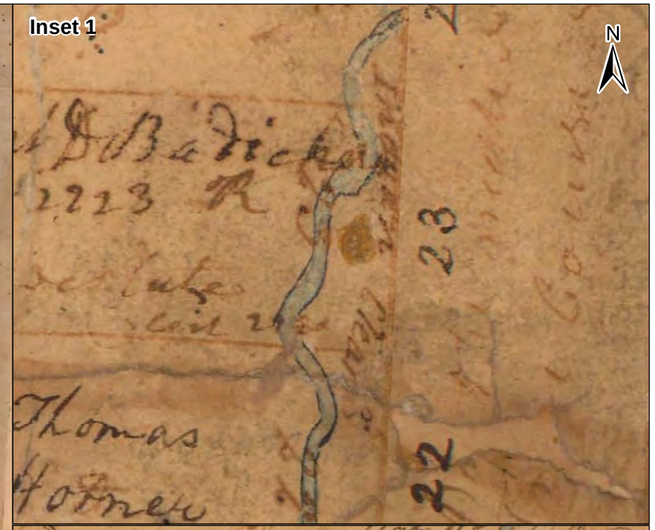

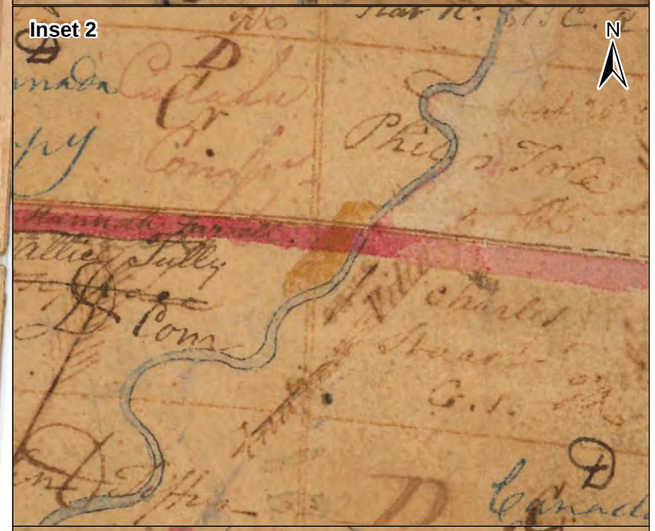

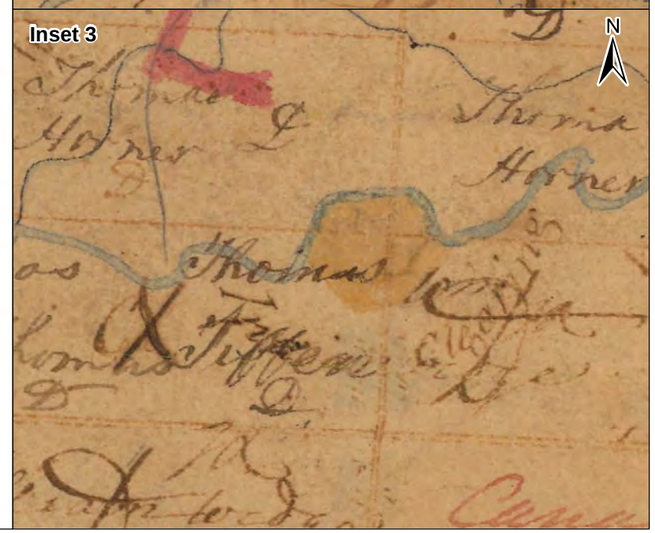

Stantec

Legend

- Study Area
- Preferred Route

Notes

1. Map is not to scale.
2. Government of Ontario. n.d.a. Crown Land Surveys. Personal communication: Lisa Casselman, Survey Records Clerk, Ministry of Natural Resources and Forestry.

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Client/Project

Union Gas Limited
Dawn-Enniskillen Pipeline Project

Figure No.

6

Title

The 1821 Surveyor's Map of the Township of Dawn

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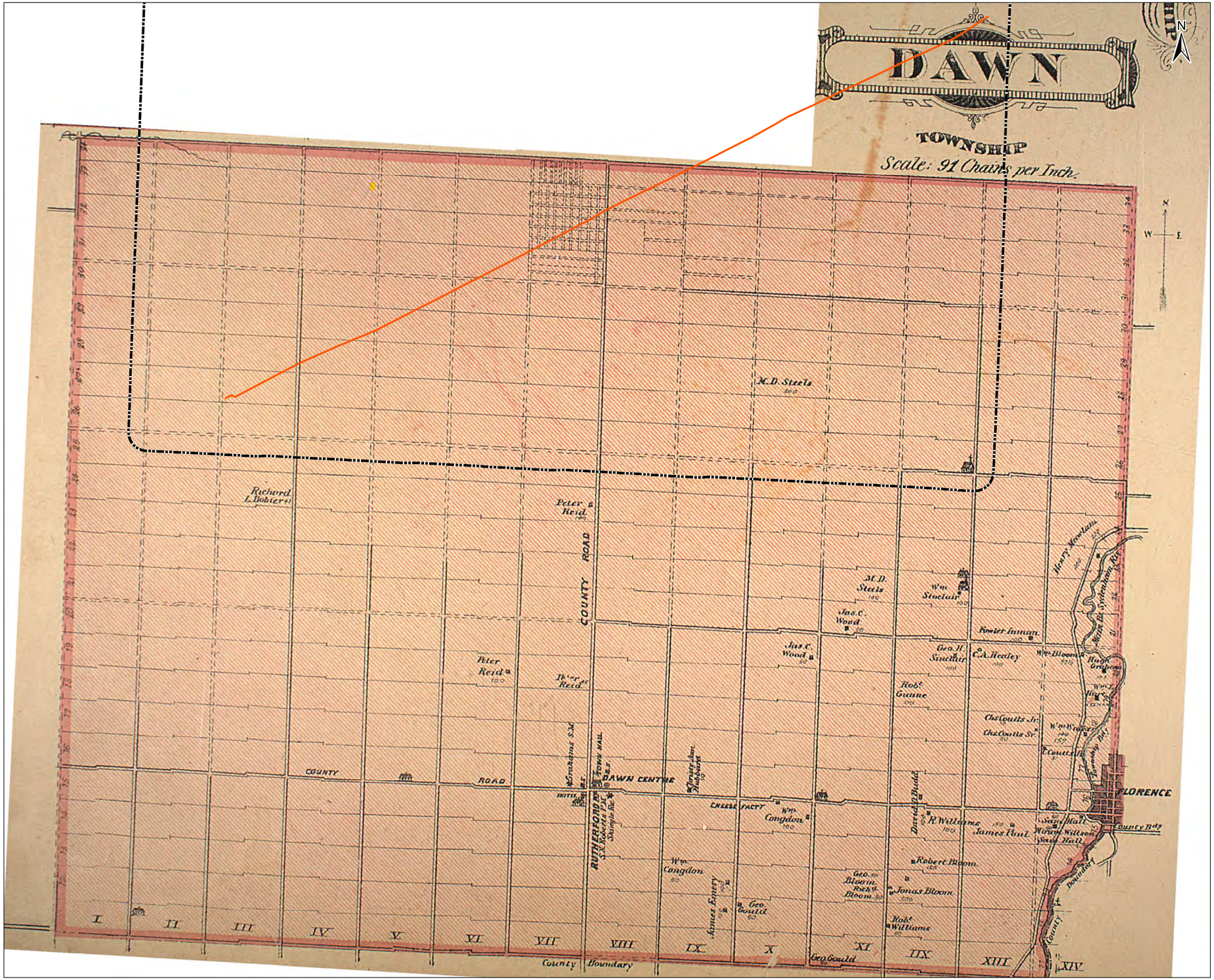

Stantec

Legend

- Study Area
- Preferred Route

Notes

1. Map is not to scale.
2. Belden & Co. 1880a. Illustrated Historical Atlas of Lambton Count, Ont. Toronto: H. Belden & Co.

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Client/Project

Union Gas Limited
Dawn-Enniskillen Pipeline Project

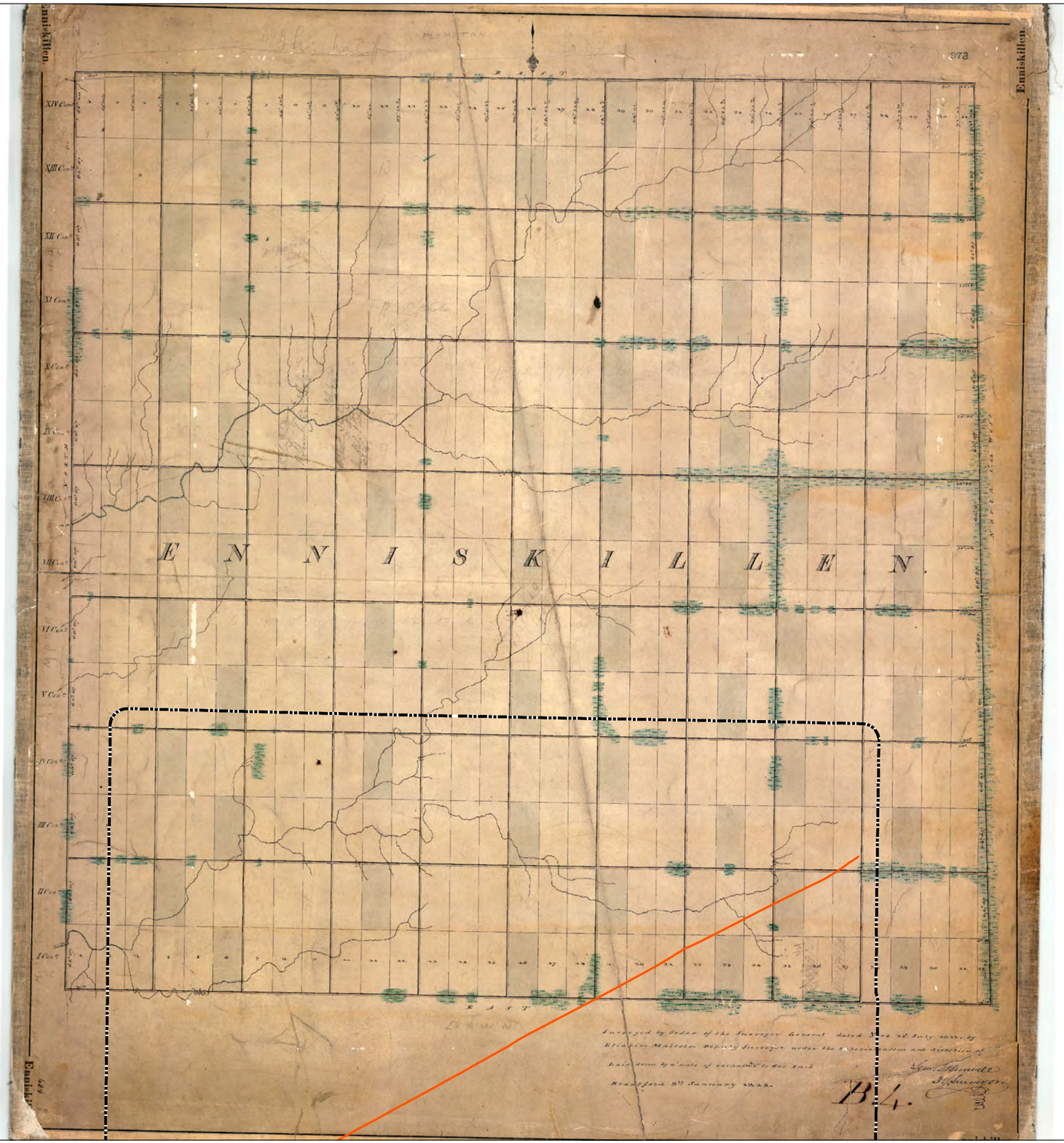
Figure No.

7

Title

The 1880 Historical Atlas Map of Dawn Township

\\Cd1220-f02\01609\active\160960981\drawing\MXD\Archaeology\ReportFigures\Stage_1\160960981_ArchStg1_Fig07_1880_Dawn_Township_Historic_Atlas.mxd
Revised: 2016-07-08 By: pworsell



N

Stantec

Legend
- Study Area
- Preferred Route

Notes
1. Map is not to scale.
2. Government of Ontario. n.d.a. Crown Land Surveys. Personal communication: Lisa Casselman, Survey Records Clerk, Ministry of Natural Resources and Forestry.

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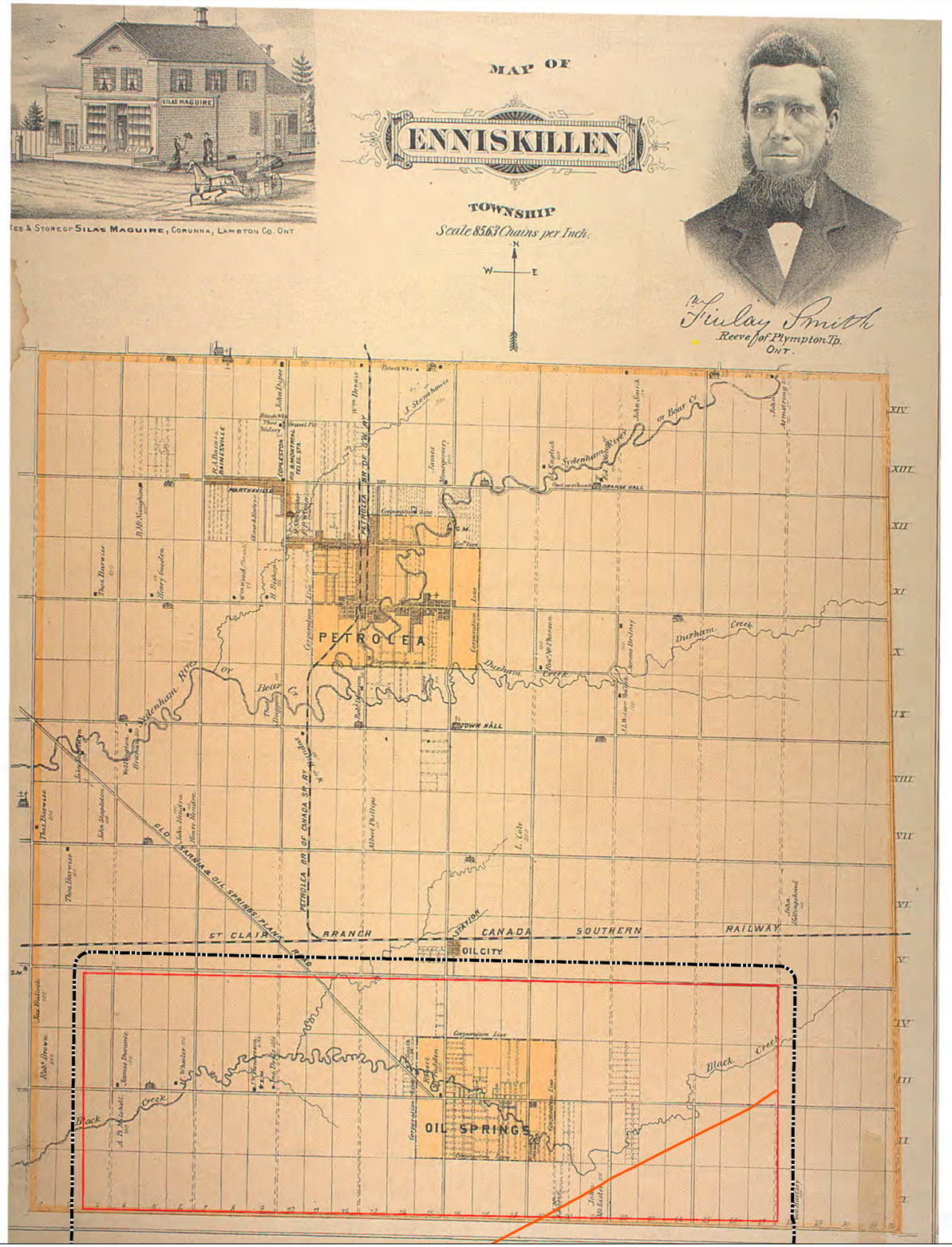
160960981

Client/Project
Union Gas Limited
Dawn-Enniskillen Pipeline Project

Figure No.
8

Title
The 1833 Surveyor's Map of the Township of Enniskillen

\\Cd1220-f02\01609\active\160960981\drawing\MXD\Archaeology\ReportFigures\Stage_1\160960981_ArchStg1_Fig08_1833_Enniskillen_Township_Survey.mxd
Revised: 2016-07-08 By: pworsell



N

Stantec

Legend
- Study Area
- Preferred Route

Notes
1. Map is not to scale.
2. Government of Ontario. n.d.a. Crown Land Surveys. Personal communication: Lisa Casselman, Survey Records Clerk, Ministry of Natural Resources and Forestry.

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160960981

Client/Project
Union Gas Limited
Dawn-Enniskillen Pipeline Project

Figure No.
9

Title
The 1880 Historical Atlas Map of Enniskillen Township

\\Cd1220-f02\01609\active\160960981\drawing\MXD\Archaeology\ReportFigures\Stage_1\160960981_ArchStg1_Fig09_1880_Enniskillen_Historic_Atlas.mxd
Revised: 2016-07-08 By: pworsell



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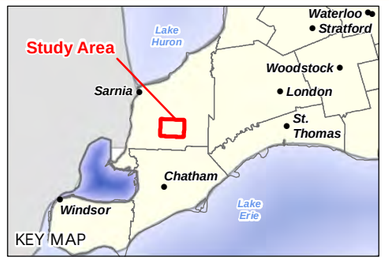
Legend
- Study Area
- Enniskillen Station
- Cuthbert Station
- Dawn Compressor Station
- Preferred Route
- Existing Dawn-Parkway System
- Road
- Municipal Boundary - Lower Tier

Archaeological Potential
- Stage 2 Archaeological Assessment Recommended
- Disturbed Municipal Drain, Low to No Archaeological Potential
- Existing Union Gas Infrastructure, Low to No Archaeological Potential
- Area of Modern Disturbance - Archaeological Potential to be Confirmed During Stage 2 Assessment
- Low and Permanently Wet Areas, Low to No Archaeological Potential



Client/Project
Union Gas Limited
Dawn-Enniskillen Pipeline Project

Figure No.
10

Title
Archaeological Potential of Study Area Overview



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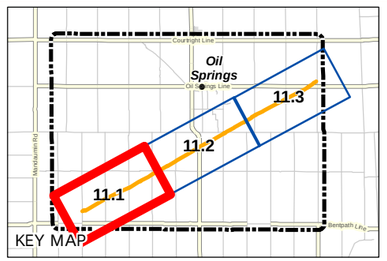
3. Orthoimagery © Mapcon, 2016. Imagery taken in 2010.

Legend
- Study Area
- Cuthbert Station
- Dawn Compressor Station
- Preferred Route
- Pipeline Easement
- Existing Dawn-Parkway System
- Road
- Municipal Boundary - Lower Tier
- Photo Location

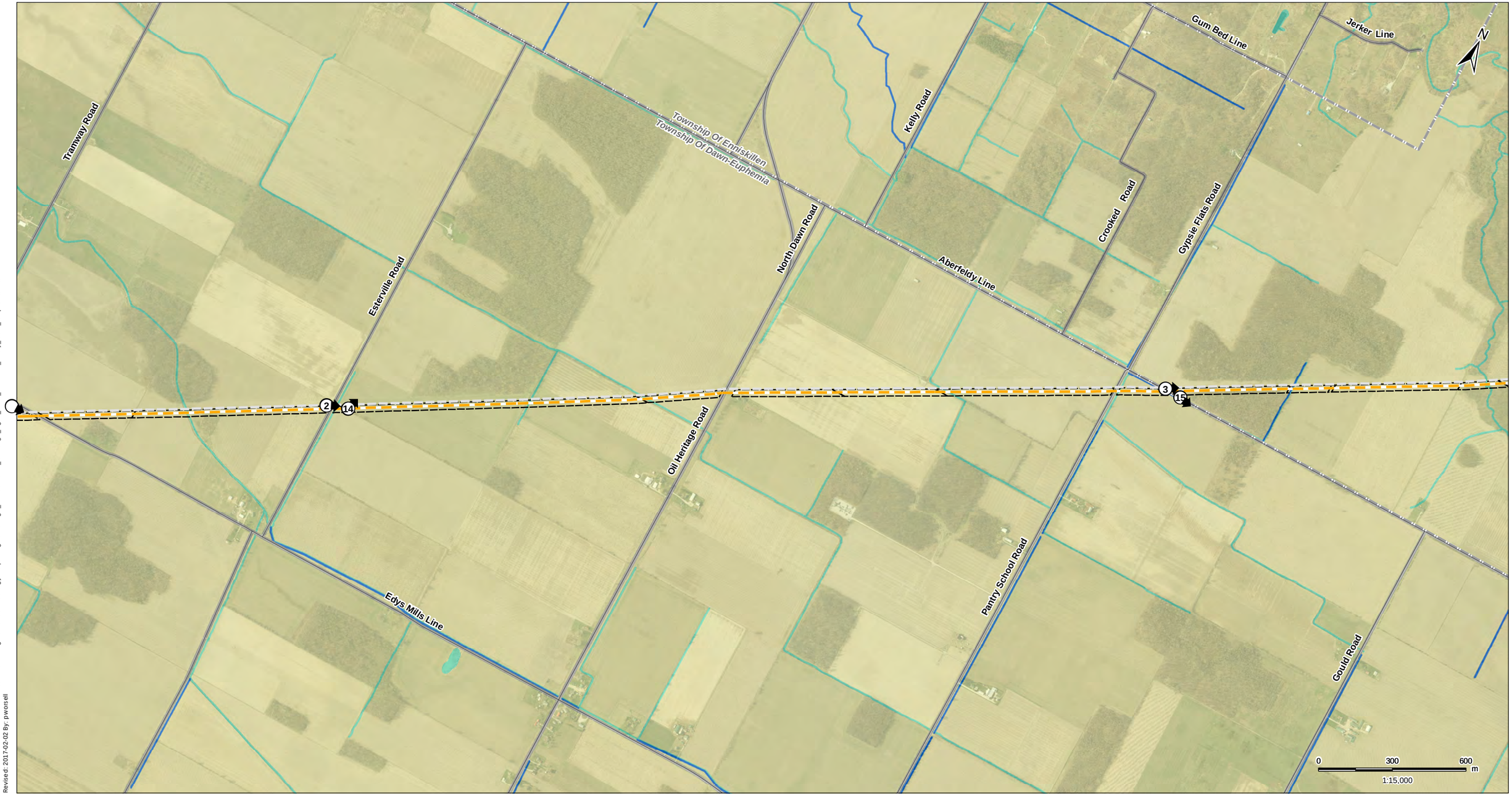
Archaeological Potential
- Stage 2 Archaeological Assessment Recommended
- Disturbed Municipal Drain, Low to No Archaeological Potential
- Existing Union Gas Infrastructure, Low to No Archaeological Potential
- Area of Modern Disturbance - Archaeological Potential to be Confirmed During Stage 2 Assessment
- Low and Permanently Wet Areas, Low to No Archaeological Potential



Client/Project
Union Gas Limited
Dawn-Enniskillen Pipeline Project

Figure No.
11.1

Title
Archaeological Potential of Study Area



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Revised: 2017-02-02 By: pworsell

February 2017
160960981

Stantec

Legend

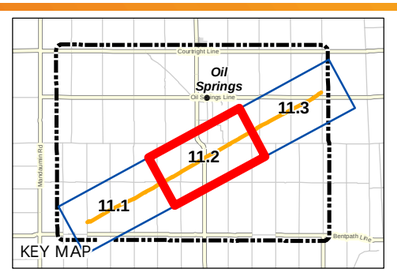
- Study Area
- Preferred Route
- Pipeline Easement
- Existing Dawn-Parkway System
- Road
- Municipal Boundary - Lower Tier
- Photo Location

Archaeological Potential

- Stage 2 Archaeological Assessment Recommended
- Disturbed Municipal Drain, Low to No Archaeological Potential
- Area of Modern Disturbance - Archaeological Potential to be Confirmed During Stage 2 Assessment
- Low and Permanently Wet Areas, Low to No Archaeological Potential

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2016.
3. Orthoimagery © Mapcon, 2016. Imagery taken in 2010.



Client/Project

Union Gas Limited
Dawn-Enniskillen Pipeline Project

Figure No.

11.2

Title

Archaeological Potential of Study Area



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160960981

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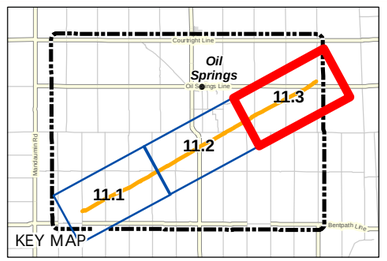
Legend
- Study Area
- Enniskillen Station
- Preferred Route
- Pipeline Easement
- Existing Dawn-Parkway System
- Road
- Municipal Boundary - Lower Tier
- Photo Location

Archaeological Potential
- Stage 2 Archaeological Assessment Recommended
- Disturbed Municipal Drain, Low to No Archaeological Potential
- Existing Union Gas Infrastructure, Low to No Archaeological Potential
- Area of Modern Disturbance - Archaeological Potential to be Confirmed During Stage 2 Assessment
- Low and Permanently Wet Areas, Low to No Archaeological Potential



Client/Project
Union Gas Limited
Dawn-Enniskillen Pipeline Project

Figure No.
11.3

Title
Archaeological Potential of Study Area

9.0 CLOSURE

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Quality Review 

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Jeffrey Muir, BA **Jeffrey Muir, BA**

Independent Review 

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