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February 27, 2015

VIA RESS, Email and COURIER

Ms. Kirsten Walli
Ontario Energy Board
P.O. Box 2319
2300 Yonge Street, 26th Floor
Toronto, ON M4P 1E4

**Re: Enbridge Gas Distribution Inc. ("Enbridge")
Ontario Energy Board ("Board") File No.: EB-2015-0033
Application for Exemption Wilkesport Gathering Lines**

Enbridge is applying to the Board for an exemption from the need to obtain leave to construct a natural gas gathering pipeline in Concession 13, Lot 15 in the Township of Sombra, in the County of Lambton.

In accordance with the Board's revised Practice Direction on Confidential Filings, effective April 24, 2014, all personal information from Enbridge's filing has been redacted. Confidential copies of the application and evidence will be provided to the Board.

The redacted application and evidence will be available on the Enbridge website under the "Other Regulatory Proceedings" tab at www.enbridgegas.com/ratecase.

Please contact me if you have any questions.

Yours truly,

(Original Signed)

Stephanie Allman
Regulatory Coordinator

Encl.

cc: Mr. Scott Stoll, Aird & Berlis

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ONTARIO ENERGY BOARD

IN THE MATTER OF the *Ontario Energy Board Act, 1998*, S.O. 1998, c. 15 (Schedule B);

AND IN THE MATTER OF an Application under section 95 of the Act for an order exempting Enbridge Gas Distribution Inc. from the requirement to obtain leave to construct a natural gas gathering pipeline in Concession 13, Lot 15 in the Township of Sombra, in the County of Lambton.

**APPLICATION FOR EXEMPTION
WILKESPORT GATHERING LINES**

1. The Applicant, Enbridge Gas Distribution Inc. ("Enbridge" or the "Company"), is an Ontario corporation with its head office in the City of Toronto. It carries on the business of selling, distributing, transmitting and storing natural gas within Ontario.
2. Enbridge is applying for an exemption from the need to obtain leave to construct from the Ontario Energy Board ("OEB" or the "Board"). This exemption application is for the effective relocation of a pipeline (the "Project") described below. Further, Enbridge would request the Board grant this exemption without the need for a hearing based upon the information provided herein as permitted by sub-section 21(4) of the *Ontario Energy Board Act, 1998*, S.O.1998, c. 15 Schedule B (the "OEB Act").

The Project

3. Enbridge plans to drill two new wells to replace the deliverability of five abandoned or to-be-abandoned wells in the Wilkesport designated storage

area ("Wilkesport DSA"). These five wells are to be abandoned as they are located within a flood plain and access to the wells is also impeded. Enbridge applied to the Ministry of Natural Resources and Forestry ("MNRF") for permission for the well work on December 17, 2014 and the MNRF has referred the application to the Board (EB-2014-0378).

4. Enbridge has to connect the existing gathering system to the two new wells and complete the abandonment of the pipeline serving the five abandoned and to-be-abandoned wells. Enbridge is proposing to replace over 500 metres of Nominal Pipe Size 10 inch (NPS 10) pipe with 220 metres of NPS 16 and 80 metres of NPS 10 pipeline with a maximum operating pressure of 1440 psig (9930 kPa).
5. The NPS 10 pipeline is a like-for-like replacement and does not meet the statutory criteria for leave to construct and is therefore exempt from the need to obtain leave to construct. (Please refer to Exhibit A, Schedule 1, Tab 3, Attachment 1). The 220 metres of NPS 16 is a larger diameter than the previous gathering pipe, thus the NPS 16 replacement technically meets the requirements for leave to construct established by Section 90 of the OEB Act.

Request for Exemption

6. Section 95 of the OEB Act permits the Board to exempt any person from the need to obtain leave to construct. The Board must be of the opinion special circumstances exist. Further, the Board may proceed in the absence of a hearing where no other party is potentially adversely impacted.

95. The Board may, if in its opinion special circumstances of a particular case so require, exempt any person from the requirements of section 90 or 92 without a hearing.

7. Enbridge would submit the combination of the following constitute special circumstances.
- (i) Although this relocation involves a change in pipe size, it is functionally a like-for-like replacement. The change from five wells to two horizontal wells necessitates the change in location and configuration of the gathering pipes. Over 500 metres of NPS10 pipe will be replaced with 220 metres of NPS 16 and 80 metres of NPS 10 pipe. The function of the replacement gathering pipe remains the same as before.
 - (ii) All the pipelines and wells are located in the Wilkesport DSA on land that is owned by Enbridge. No other landowners are involved. (Please refer to Exhibit A, Schedule 1, Tab 3, Attachment 2).
 - (iii) The cost of the Project is approximately \$770,000, well below the cost threshold for leave-to-constructs. It is contained in Enbridge's capital cost in the 2014 to 2018 rate application¹. There is no additional cost impact to the rate payer which has not been anticipated.
 - (iv) Enbridge has completed an environmental screening report and does not anticipate any concerns.
8. Enbridge has included information in respect of the Project to assist the Board in its evaluation of this request for exemption.
9. Enbridge has completed an Environmental Report (the "ER") (Exhibit B, Tab 1, Schedule 3) and a Stage 1&2 Archaeological Report (the "AR") (Exhibit B, Tab 1,

¹ EB-2012-0459 Exhibit B2 Tab 6 Schedule 1

Schedule 4). Enbridge will follow the mitigative measures recommended in the ER and AR and will obtain the necessary permits to carry out the Project. All work will be completed in accordance with applicable regulations, codes, and Enbridge's construction procedures.

10. Sub-section 21(4) of the OEB Act the Board to proceed without a hearing where no person requests a hearing or the Board determines that no person other than the Applicant will be adversely affected in a material way by the outcome of the proceeding.
11. Enbridge requests that copies of all documents filed with the Board in connection with this proceeding be served on it and on its counsel, as follows:

a) The Applicant:	Regulatory Affairs Enbridge Gas Distribution Inc.
Address:	500 Consumers Road Toronto, Ontario M2J 1P8
Mailing Address	P.O. Box 650 Scarborough, Ontario M1K 5E3
Telephone:	(416) 495-5499 or 1-888-659-0685
Fax:	(416) 495-6072
Email:	EGDRegulatoryProceedings@enbridge.com

b) The Applicant's counsel:	Scott Stoll Aird & Berlis LLP
Address:	Suite 1800, Box 754 Brookfield Place, 181 Bay Street Toronto, Ontario M5J 2T9

Telephone: (416) 865-4703
Fax: (416) 863-1515
Email: sstoll@airdberlis.com

DATED: February 27, 2015 at Toronto, Ontario

ENBRIDGE GAS DISTRIBUTION INC.
By its counsel

AIRD & BERLIS LLP

(Original Signed)

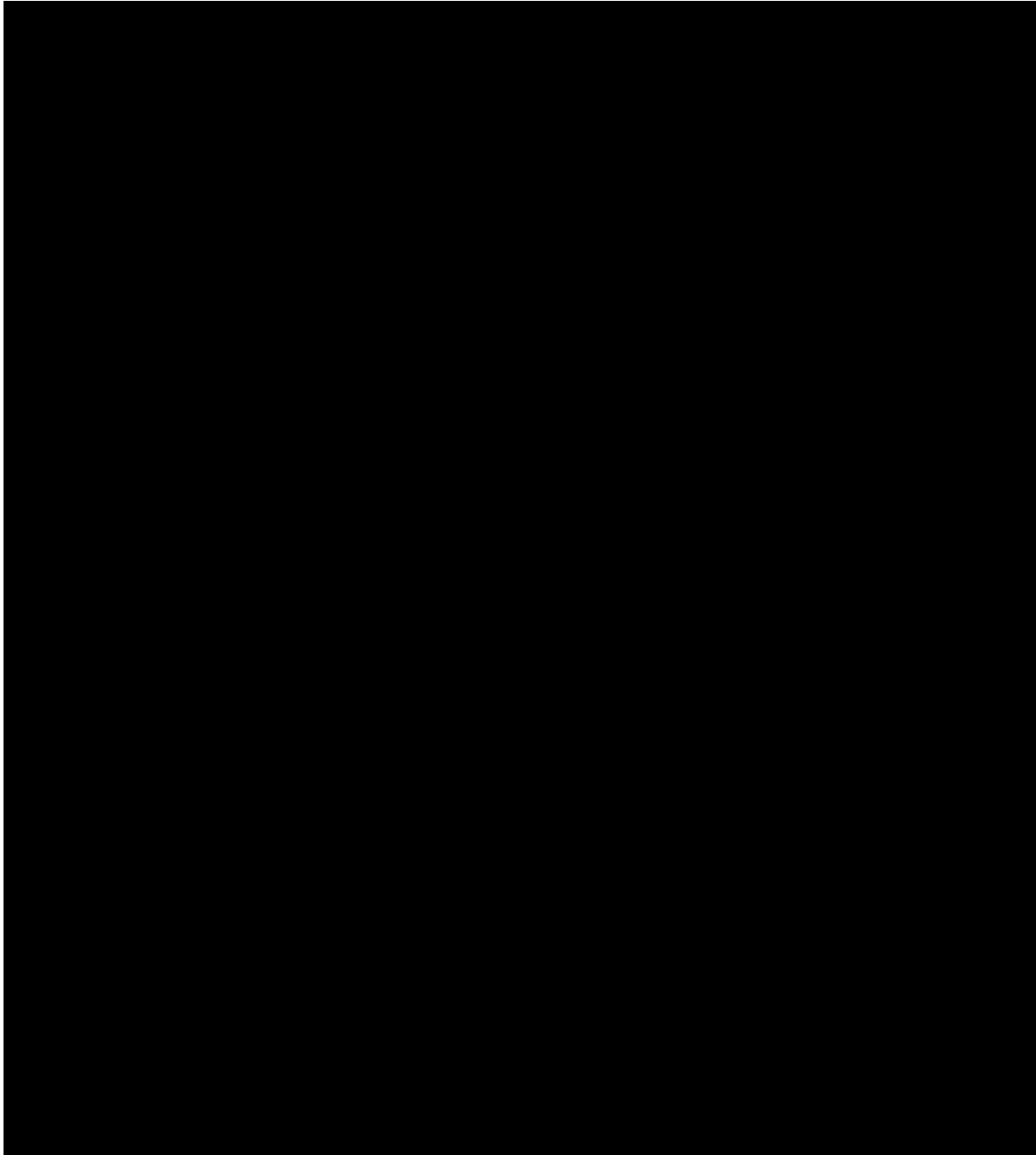
Scott Stoll

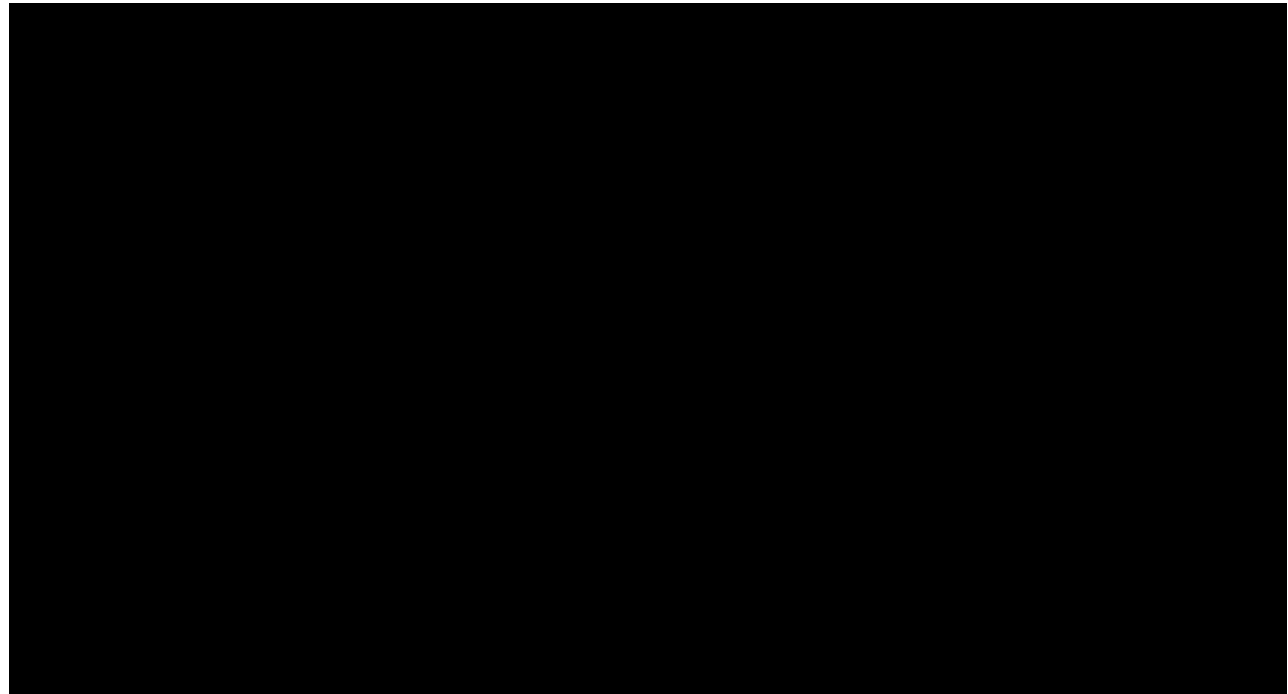
INTERESTED PARTIES, PERMITTING AUTHORITIES AND FIRST NATIONS

Permitting Authorities

<u>Address</u>	<u>Purpose</u>
The Corporation of the County of Lambton 789 Broadway St. P.O. Box 3000 Wyoming, ON N0N 1T0	Use of Municipal Roads for Access/Egress
The Corporation of the Township of St. Clair 1155 Emily St. Mooretown, ON N0N 1M0	Use of Municipal Roads for Access/Egress and Encumbrancer
St. Clair Region Conservation Authority Attn. Mr. Jeff Lawrence 205 Mill Pond Crescent Strathroy, ON N7G 3P9	Permit to work
Plains Midstream Canada 1182 Plank Rd. Sarnia, ON N7T 7H3	Encumbrancer

Wilkesport Designated Storage Area Landowners





First Nations

Aamjiwnaang First Nation Attn. Chief Christopher Plain 978 Tashmoo Ave. Sarnia, ON N7T 7H5
Chippewas of Kettle and Stony Point Attn. Chief Elizabeth J. Cloud 6247 Indian Lane RR#2 Forest, ON N0N 1J0
Walpole Island First Nation Attn. Chief Joseph B. Gilbert RR#3 Wallaceburg, ON N8A 4K9

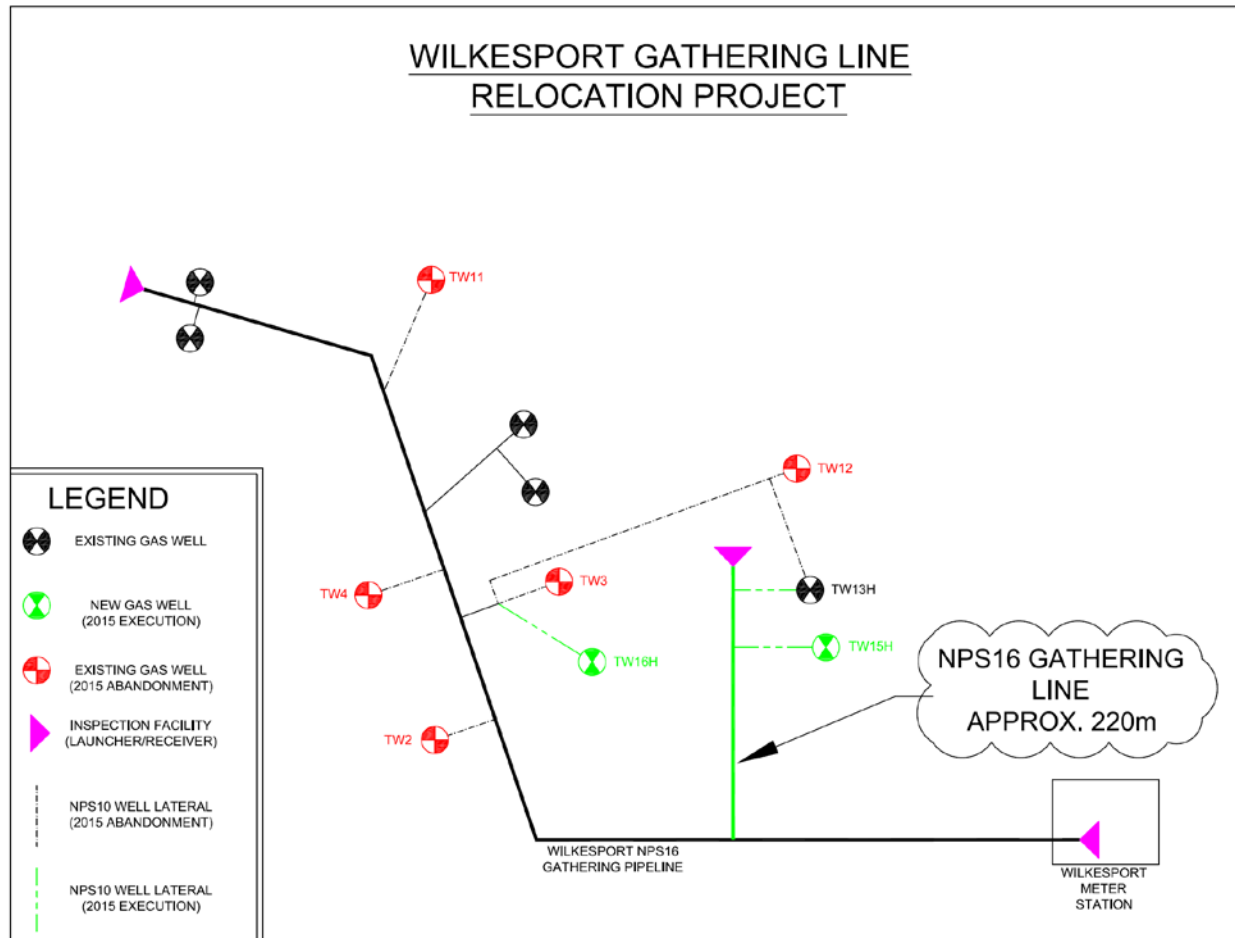
PROJECT BACKGROUND AND DESCRIPTION

1. Enbridge plans to drill two new horizontal wells to replace the deliverability of five abandoned or to-be-abandoned wells in the Wilkesport designated storage area ("Wilkesport DSA"). These five wells are in need of abandonment as they are located on a flood plain and artificially constructed hills which impede access. Enbridge applied to the Ministry of Natural Resources and Forestry ("MNRF") for permission for the well work on December 17, 2014 and the MNRF has referred the application to the Board (EB-2014-0378).
2. To access the new wells, gathering pipes have to be relocated. Enbridge is proposing to replace over 500 metres of Nominal Pipe size 10 inch (NPS 10) pipe with 220 metres of NPS 16 and 80 metres of NPS 10 pipes. (Please refer to Exhibit A, Schedule 3, Tab 1, Attachment 1.) Except for the NPS 16 pipeline, which is an upsizing, the remainder of the project is exempt from the requirement to obtain a leave to construct.
3. Although this relocation involves a change in pipe size, it is functionally a like-for-like replacement. The change from five wells to two horizontal wells necessitates the change in location and configuration of the gathering pipes. Over 500 metres of NPS 10 pipe will be replaced with 220 metres of NPS 16 and 80 metres of NPS 10 pipes. The function of the replacement gathering pipes remains the same as before.
4. The proposed NPS 16 gathering pipe will be situated in Concession 13, Lot 15 in the Township of Sombra, in the County of Lambton. It is 220 metres long and will connect a proposed new well (TW 15H) and an existing well (TW 13H) and an inspecting facility to the existing Wilkesport NPS 16 gathering line. (Please refer to Exhibit A, Schedule 3, Tab 1, Attachments 1 and 2).

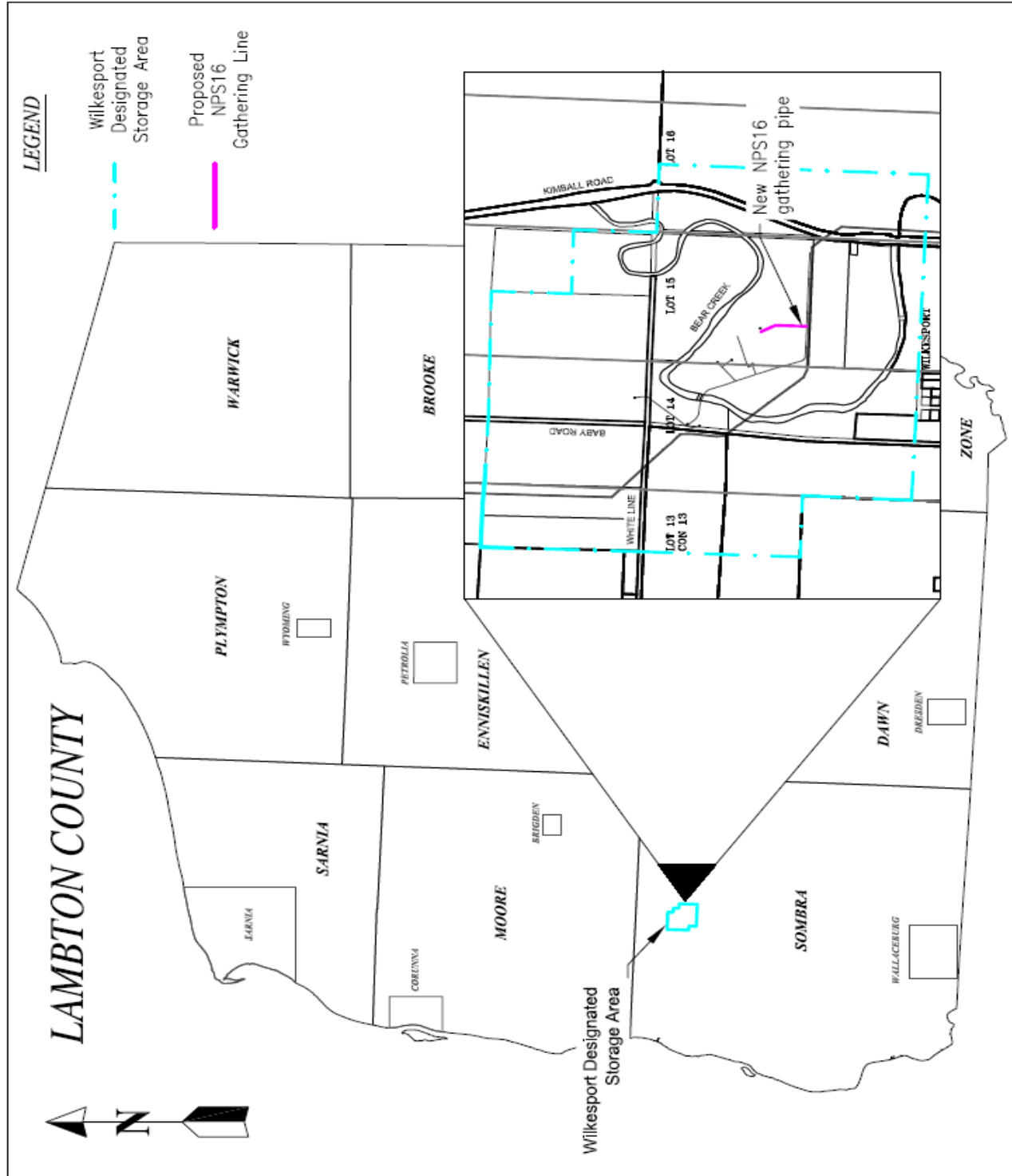
5. All the pipes and wells are located in a designated storage area and the land is owned by Enbridge Gas Distribution. No other landowners are involved.
6. The cost of the Project is approximately \$770,000. The costs of the well replacement program have been anticipated in the 2014 to 2018 rate application.¹
7. Pending approvals from the MNRF and the Board on the new wells, Enbridge plans to commence drilling of the wells and construction of the gathering lines in the spring of 2015. The construction is expected to take five months.

¹ EB-2012-0459 Exhibit B2, Tab 6, Schedule 1

**WILKESPORT WELLS AND GATHERING SYSTEM
SCHEMATIC OF EXISTING AND PLANNED SYSTEM**



WILKESPORT PROPOSED GATHERING LINE LOCATION



LAND AND ROUTING

1. The proposed NPS 16 gathering pipe will be constructed on the Wilkesport designated storage area which is located on Concession 13, Lot 15 in the Township of Sombra, County of Lambton.
2. It commences at approximately [42.734098, -82.357731 Lat./Lon. Nad83], travels approximately 220 meters northerly, and ends at approximately [42.735857, -82.358087 Lat./Lon. Nad83].
3. The map (Exhibit A, Schedule 1, Tab 3, Attachment 2) indicates the approximate location of the proposed pipe.
4. The proposed pipe will be constructed on land owned by Enbridge Gas Distribution. Neighbors and interested parties are aware of Enbridge's storage operations at this location as it has been an operating storage field, designated by the Ontario Energy Board (File No. EBO 89, July 25/1978) since 1978.
5. There is no need for temporary working easement from other landowners.

ENVIRONMENTAL PLAN & ARCHAEOLOGICAL REPORT

1. The proposed NPS 16 gathering pipeline (the "Project") will be constructed on the Wilkesport designated storage area on lands owned by Enbridge. Enbridge has done other work in recent years in the vicinity of the Project and therefore had previously completed an environmental report for such work.
2. An environmental report was completed for the area for the Wilkesport Meter Station in June, 2011. As such, an updated screening report ("ER") has been prepared in February, 2015. Please refer to Exhibit B, Schedule 1, Tab 3. The area is of an agricultural nature. There was no significant concern with wildlife habitat, soil or other impacts. The ER proposes certain mitigation requirements which Enbridge will follow .
3. Enbridge will follow the mitigative measures recommended in the ER by defining them in the scope of work bid documentation for contractor(s). These measures will be enforced by the onsite inspector during project execution.
4. An Archaeological Report ("AR") was completed for the area of the new well sites and proposed gathering lines in January, 2015. A copy of the AR is provided at Exhibit B, Schedule 1, Tab 4.
5. In the AR, the consultant concluded that "no further archaeological investigations or concerns are warranted for either the two new proposed natural gas storage wells, the four existing natural gas storage wells that are to be decommissioned, and the proposed pipeline connection between the new proposed horizontal wells and the existing NPS 16 pipeline¹."

¹ See Exhibit B, Schedule 1, Tab 4, Section 6.0

ENVIRONMENTAL SCREENING REPORT

1. Enbridge retained Stantec, an independent consulting firm, to conduct an environmental screening report ("ER") for the Project. The ER provides an update (see the attached) of a prior report prepared in 2011 for the area.
2. Enbridge will obtain the required permits from other regulatory bodies and adhere to the conditions of such approvals. The ER makes certain recommendations which Enbridge will adhere to in the completion of the construction.



Stantec Consulting Ltd.
70 Southgate Drive, Suite 1, Guelph ON N1G 4P5

February 23, 2015
File: 160950592

Attention: Sarah Kingdon-Benson
Enbridge Gas Distribution
101 Honda Blvd.
Markham, ON L6C 0M6

Dear Sarah,

Reference: Wilkesport Environmental Screening Report Update Letter

1 INTRODUCTION

This report is an update to Stantec Consulting Ltd's (Stante) study for Enbridge Gas Distribution Inc. (Enbridge) conducted in 2011 in the Wilkesport Designated Storage Area. The site is located approximately 20 km south east of the town of Corunna, Ontario on the west side of Kimball Road on Lot 15, Concession 13, St Clair Township, County of Lambton, Ontario. During the planning stage of the Wilkesport Meter station construction, Stantec Consulting Ltd. (Stantec) was engaged to complete an Environmental Screening Report (ESR) to document the potential effects to the surrounding environments and propose mitigation measures to minimize the potential effects of the planned project activities. As a result, the Wilkesport Meter Station ESR was prepared, for Enbridge, in 2011.

Enbridge is planning a new 16-inch NPS steel natural gas pipeline approximately 220 m long to be located on the Wilkesport site (**Figure 1**, Appendix A). This letter provides an update to the information presented in the original ESR and identifies any changes to the list of biophysical and socio-economic features originally identified. In addition, this letter also provides update to the potential environmental effects and updates the appropriate mitigation measures, if required. The format of this update letter follows that of the original ESR and provides references to the original Sections and Subsections.

2 SCOPE OF WORK

For the purpose of the 2011 ESR submitted to the OEB the study area was defined as being approximately 400m from the centre line of the planned station and pipeline.

2.1 SCOPE OF WORK – 2015 PROJECT ACTIVITIES

No additional lands are required for the planned 2015 project activities. All work is still confined to be within the legal boundaries of the Enbridge property. The Study Area as defined in 2011, extends 400 m from the centre line of the new NPS 16 steel natural gas pipeline as noted within **Figure 1** (Appendix A).



2.2 REGULATORY CONTEXT

Portions of the land required for the new NPS 16 steel natural gas pipeline are regulated by the St. Clair Region Conservation Authority (SCRCA). Based on the location of the 2015 project activities a permit under the *Conservation Authorities Act* (Ontario Regulation 97/04: Development, Interference with Wetlands and Alterations to Shorelines and Watercourses) will be required

No additional permitting requirements were identified due to the additional Project scope of work.

2.3 METHODOLOGY

The following sections document the baseline biophysical and socio-economic features for the additional Study Area that differ from those documented in the 2011 ESR. Potential interactions between the additional Project scope and biophysical and socio-economic environment are documented and where warranted, the potential effects of the additional Project scope on the biophysical and/or socio-economic environment are assessed and mitigation measures in addition to those previously described in the 2011 ESR are provided.

3 BASELINE ENVIRONMENTAL AND SOCIO-ECONOMIC ENVIRONMENT

The following sections describe the biophysical and socio-economic environment for the areas of the Study Area that has been expanded from those originally assessed in the 2011 ESR.

To be consistent with the Study Area definition outlined in the 2011 ESR, the Study Area boundaries were expanded by 400 m to encompass additional NPS 16 steel natural gas pipeline. Desktop assessments of lands not previously included within the limits of the Study Area assessed in the 2011 ESR were completed to determine additional environmental and/or socio-economic features and constraints.

3.1 PHYSICAL FEATURES (ESR SECTION 2.1)

In 2011, the original ESR discussed the significance and potential effects to the physical features of the study area under the following headings: geology, topography, soil, specialty crops lands, and ground water hydrology. Where the potential for effects to the features warranted, appropriate mitigation measures were identified.

3.1.1 Geology (ESR Subsection 2.1.1)

The soil of the study area was mapped as being of glaciolacustrine in 2011 ESR, with the potential for heavy clay deposits under the surface horizon. This dense, uniformly grained soil is susceptible to rutting and compaction which can severely reduce agricultural productivity if replaced near the soil surface. This has not changed for the new Study Area, therefore mitigation measures outlined in the 2011 ESR still apply.



3.1.2 Topography (ESR Subsection 2.1.2)

The study area was described as a single agricultural parcel that is level to undulating, with fine textured soil. This has not changed for the new Study Area, therefore mitigation measures outlined in the 2011 ESR still apply.

3.1.3 Soil (ESR Subsection 2.1.3)

The original ESR described the Study Area as having three soil types: Brookstone Clay, Caistor Clay and Bottom Land. The planned work is located entirely within the area mapped as Brookstone Clay (**Figure 3**, Appendix A) in which is labeled as Class 2 by the Canadian Land Inventory (CLI). Soils of this class have moderate limitations that restrict the range of crops or require moderate conservation practices. The soils types remain the same as those identified above, therefore mitigation measures outlined in the 2011 ESR still apply.

The Wilkesport site was identified as being impacted by soy bean cyst nematodes (SCN). SCN typically lives in the topsoil of impacted fields. Once the topsoil is stripped (not removed from the site), the issue of transfer is greatly reduced or eliminated. Should topsoil be removed from the site, proper disposal will be required. All vehicles should be washed thoroughly after before leaving the site. Mitigation measures outlined in the 2011 ESR for SCN should be followed for the 2015 scope of work.

The project site is not mapped as containing artificial tile drainage. For this reason, mitigation measures specific to tile drains are not developed for this project. However, the eastern portion of the property is mapped as containing systematic tile drains.

Silt fence should be installed where appropriate to protect stockpiled topsoil and to prevent soils from migrating offsite to sensitive watercourses.

3.1.4 Specialty Crop Lands (ESR Subsection 2.1.4)

The original ESR reported that the fields in the area, as mapped by the Ontario Ministry of Agriculture Food and Rural Affairs (OMAFRA), are not specialty crop fields, and that the lands within the Study Area are not among Ontario's specialty crop lands. This has not changed for the new Study Area, therefore mitigation measures outlined in the 2011 ESR still apply.

3.1.5 Groundwater Hydrology (ESR Subsection 2.1.5)

The original ESR reported that the domestic water needs of the residences in the Study Area are met by the available buried municipal water service therefore water wells were not used a source of potable water.

Based on a review of the new Study Area, there appears to be water wells in close proximity to the site. Enbridge engaged Stantec to to conduct a water well monitoring program prior to initiation

Design with community in mind



of construction efforts at the site. The results of this program indicate that all residences within 1km of the project site are on a municipal water source and that existing wells are not used for potable water.

3.1.6 Summary of Physical Features

The physical features identified in the 2011 ESR have not changed or been altered. The mitigation measures proposed in the original ESR are appropriate for the proposed Project. Provided that appropriate mitigation measures are followed, no negative impacts by the proposed Project to the physical features are anticipated.

3.2 BIOPHYSICAL FEATURES (ESR SECTION 2.2)

A review of background information pertaining to the biophysical environment was conducted for the original ESR. It identified the following natural heritage features on or within 120 m of the Study Area:

- Woodlands (Section 2.2.1, shown on **Figure 1**, Appendix A);
- Significant Woodlands (Section 2.2.1);
- Significant Natural Area #7, McKeough Lands (designated by County of Lambton OP, discussed by Stantec 2011 in Section 2.2.2);
- Watercourses (Section 2.2.3)
- Regulated Lands (Section 2.2.4, **Figure 1**, Appendix A);
- Primary Natural Heritage Corridor (Section 2.2.5, shown on Appendix Map A of Lambton County OP); and
- Locally significant wetland, impacts of which were mitigated through the creation of a new wetland onsite.

The County of Lambton's Official Plan (OP) is currently under review; however, the 1998 OP is still in effect and as such no update on policy designation is required.

The St. Clair Township Official Plan, including Schedule A that details wetlands and hazard lands, is dated 2000 and 2001, respectively. Therefore, the Township OP reviewed in 2008 by Stantec is still the current OP in effect.

3.2.1 Updated Natural Features

The Wilkesport Meter Station was constructed in 2013, as detailed by Figure 1 in the 2011 ESR. As part of that construction project, Enbridge and the Ministry of Natural Resources and Forestry (MNRF) performed a cooperative effort in the enhancement of an onsite wet area. The enhanced area is outside of the 2015 project footprint.

Design with community in mind



A recent Land Information Ontario (LIO) search was completed in January 2015, and no new natural features were identified within the Study Area.

3.2.2 Wildlife Habitat

In the original ESR, Stantec utilized the Significant Wildlife Habitat Technical Guide (SWHTG; MNR, 2000) to detail candidate significant wildlife habitat on or within 120 m of the Study Area. This document supports the Natural Heritage Reference Manual which provides technical guidance for implementing the natural heritage policies of the Provincial Policy Statement, 2005.

Results from the 2011 report in Section 2.2.5.1 identified candidate significant wildlife habitat potentially occurring in or within 120 m of the Study Area:

- Raptor Nesting Habitat;
- Animal Movement Corridor;
- Habitat for species of Conservation Concern (Pawpaw, Blue Ash, Rigid Sedge, Spreading Chervil, Lowland Brittle Fern, Red-headed Woodpecker); and
- Amphibian woodland breeding ponds.

This report also assessed habitat suitability to support Species at Risk within the Study Area, concluding that the following species may be present:

- Plants (Butternut, Kentucky Coffee-tree);
- Blue Ash;
- Turtles (Spiny Softshell); and
- Snakes (Butler's Gartersnake, Eastern Foxsnake).

3.2.3 Updated Wildlife Habitat

Additional wildlife habitat is present for reptiles and amphibians within the Study Area due to the creation of the additional wetland pocket in 2013.

Screening for potential Species at Risk potentially occurring within the Study Area were detailed in the 2011 ESR resulting. Relevant background atlases (e.g., breeding bird, mammal, and herpetofaunal) as well as the Natural Heritage Information Centre (NHIC) database were reviewed for the 2011 ESR. An updated NHIC database search was conducted for the 2015 project footprint. Four additional species were added to those assessed in 2008 and 2011 and are shown below in Table 1.



Table 1 Species at Risk Potentially Occurring within the Study Area

Species Name	S-Rank	Provincial Status (COSSARO)	National Status (COSEWIC)	Source	Description of Breeding Habitat and Known Occurrences	Assessment of Study Area	Proposed Mitigation (if applicable)
BIRDS							
Barn Swallow (Hirundo rustica)	S4B	THR	THR	OBBA	As their name suggests, Barn Swallows nest on walls or ledges of barns as well as on other human-made structures such as bridges, culverts or other buildings (Cadman et al., 2007). Where suitable nesting structures occur, Barn Swallow often forms small colonies, sometimes mixed with Cliff Swallows. Barn Swallows feed on aerial insects while foraging in open habitat (COSEWIC, 2011). Barn Swallows are generally considered grassland species, foraging over meadows, hay, pasture or even mown lawn. They will also frequently forage in woodland clearings, over	Potential nesting structures restricted to existing station. No buildings will be removed during construction. Potentially present within Study Area.	Not applicable.



Table 1 Species at Risk Potentially Occurring within the Study Area

Species Name	S-Rank	Provincial Status (COSSARO)	National Status (COSEWIC)	Source	Description of Breeding Habitat and Known Occurrences	Assessment of Study Area	Proposed Mitigation (if applicable)
Eastern Meadowlark (Sturnella magna)	S4B	THR	THR	OBBA	<p>wetland habitats or open water where insect prey is abundant.</p> <p>Meadowlarks are ground nesting birds (Harrison, 1975), which are often associated with human-modified habitats where they sing from prominent perches such as roadside wires, trees and fenceposts. As a grassland species the Eastern Meadowlark typically occurs in meadows, hayfields and pastures. However, it will utilize a wider range of habitat than most grassland species, including mown lawn (e.g. golf course, parks), wooded city ravines, young conifer plantations and orchards</p>	Grassland habitat absent. Considered absent from the Study Area.	Not applicable.



Table 1 Species at Risk Potentially Occurring within the Study Area

Species Name	S-Rank	Provincial Status (COSSARO)	National Status (COSEWIC)	Source	Description of Breeding Habitat and Known Occurrences	Assessment of Study Area	Proposed Mitigation (if applicable)
MAMMALS Little Brown Myotis (Myotis lucifugus)	S5	END	END-NS	COSEWIC 2013	(Peck and James 1983). The Eastern Meadowlark is generally tolerant of habitat with early succession of trees or shrubs. As with other grassland species, current threats are primarily the result of expanding urbanization and intensive farming practices (Cadman et al., 2007).		
					This species up until recently was considered the most common bat species in Ontario, and most frequently found bat species in North America. The recent change in status is due to significant declines in recent years attributed to a condition referred to as White-nose	Potential habitat restricted to riparian woodland. May use open areas (i.e. Bear Creek) for foraging. Potentially present within Study Area.	Not applicable, no trees slated for removal.



Table 1 Species at Risk Potentially Occurring within the Study Area

Species Name	S-Rank	Provincial Status (COSSARO)	National Status (COSEWIC)	Source	Description of Breeding Habitat and Known Occurrences	Assessment of Study Area	Proposed Mitigation (if applicable)
Northern Myotis (Myotis septentrionalis)	S3?	END	END-NS	COSEWIC 2013	<p>Syndrome (WNS). A widespread species, the Little Brown Bat is commonly found near waterbodies in buildings, attics, roof crevices and loose bark on trees or under bridges (Eder, 2002).</p> <p>The Northern Long-eared Bat is a resident bat of upland forests of eastern North America, typically foraging for aerial insects in the forest understory. Maternity roosts are located under bark or in buildings with young born in June and July while hibernating colonies typically reside in cave crevices (Reid, 2006).</p>	<p>Potential habitat restricted to riparian woodland. May use open areas (i.e. Bear Creek) for foraging.</p> <p>Potentially present within Study Area.</p>	Not applicable, no trees slated for removal.



Overall, only three wildlife species at risk and two vegetation species are anticipated to be potentially impacted by the 2015 project scope. This includes:

- Eastern Foxsnake and Butler's Gartersnake
- Spiny Softshell Turtle; and
- Butternut and Kentucky Coffee-tree (only if work proceeds within 25 m of the woodlot boundary). Blue Ash is potentially located within the riparian zone of Bear Creek.

Recommended mitigation measures for these species are detailed in Section 5 of this letter report.

3.3 SOCIO-ECONOMIC FEATURES (ESR SECTION 2.3)

The following section outlines any changes to the socio-economic environment since the 2011 ESR was completed.

3.3.1 Transportation Corridor and Easements (ESR Section 2.3.1)

The roads on the property are private and there is a gate at the entrance to the property. No impact to local transportation corridors is anticipated.

3.3.2 Utility Corridors and Facilities (ESR Section 2.3.2)

As stated in the original ESR, there is an electrical corridor running up Kimball Road, a Plains Midstream pipeline running north to south on the property east of the project footprint (**Figure 4**, Appendix A). Furthermore, Enbridge has active storage wells on the site to inject, store and withdraw natural gas from the underlying pool. No changes were identified as compared to the 2011 ESR.

3.3.3 Water Wells (ESR Section 2.3.4)

The referenced section of the ESR remains consistent with the information obtained. Stantec on behalf of Enbridge completed a water well monitoring program for the study area, which concluded that all residences within the study area are on a municipal water source and that none of the water wells in the study area are used for potable water.

3.3.4 Heritage Resources (ESR Section 2.3.5)

In 2011, the Stage 1&2 Archaeological Survey of the Wilkesport site identified the potential for significant finds and required that a Stage 3 assessment be conducted in order for the project to proceed on that location. As a result, the archaeological assessment advanced to a Stage 4 archaeological study. After extensive field efforts, the final report was submitted to the Ontario Ministry of Tourism, Culture and Sport (MTCS) in February 2013.



In 2014, Enbridge engaged a licensed archaeologist to conduct a Stage 1&2 on the areas of the planned 2015 scope of work, which were not previously assessed for archaeological potential. The conclusion of the latest Stage 1&2 assessments is that no further archaeological investigations are required for the proposed work area. These assessments were entered into the Ontario Public Register of Archaeological Reports by MRCSA (PIF# P316-1084-2014, see **Appendix B**).

4 EFFECTS ASSESSMENT AND MITIGATION MEASURES

The additional scope of work will require activities previously assessed in the 2011 ESR, including but not limited to:

- topsoil stripping;
- trenching;
- movement of vehicles and heavy machinery;
- backfilling; and
- clean-up.

Since these works will be contained within the property assessed in the 2011 ESR, the environmental mitigation measures provided in the 2011 ESR are applicable and sufficient to mitigate against potential adverse effects.

Mitigation measures in addition to those outlined in the 2011 ESR are outlined in Section 5.

Additional Project activities required on lands located outside of the fenced-in areas will not require the permanent removal of topsoil or vegetation, will not result in changes to atmospheric emissions, and will not cause the permanent alteration of wildlife or SAR and their preferred habitat.

5 MITIGATION MEASURES

Given the Project components are restricted to agricultural fields; impact to significant wildlife habitat is not anticipated. It is under current understanding that all work will remain outside the root zone of the adjacent woodlot and that the constructed wetland is not within the construction footprint.

Communication has been initiated with the Ministry of Natural Resources and Forestry (MNRF) to identify appropriate mitigation methods, potentially silt fence or snake fence installed in appropriate locations, to reduce, to the extent possible, the chances of any turtles or snakes from being harmed or harassed as a result of the project. MNRF may require alternate mitigation measures; therefore, the mitigation measures recommended here are preliminary and may be subject to change. If MNRF determines that mitigation is not available to adequately reduce risk of



harm to ESA protected species, a permit application may be required under the Endangered Species Act, 2007. Mitigation measures outlined below are in addition to those previously presented in the 2011 ESR. These are required in order to comply with the newly released MNRF Best Practices Technical Note for Reptile and Amphibian Exclusion Fencing (July 2013). This document details species-specific details on fencing options to exclude reptiles and amphibians from the construction workspace.

The Wilkesport project is within the known habitat range of the Eastern Foxsnake, a species protected under the *Endangered Species Act*. As such, exclusion fencing details (see details further below) are recommended to comply with MNRF best management practices. The extent of fencing was determined based on known behavior of the Eastern Foxsnake, as it is highly mobile species known to travel up to 1 km upon emergence from hibernation sites. During construction, the storage of equipment onsite overnight introduces the risk of foxsnakes moving into the equipment for a warm place to spend the night. In southern Ontario where farming is intensive, linear habitat strips (e.g., drainage canals, riparian zones, hedgerows, etc.) make up the primary habitat for this species – which are present on the Wilkesport site.

In consideration of the highly mobile nature, climbing abilities, and affinity for equipment stored onsite, Stantec has proposed that the workspace boundaries be fully fenced with appropriate snake exclusion fencing (see additional details below). There is still risk of snakes crossing the access road from the woodlot to the north and as such posted speed limits are recommended on the access road to avoid any potential fatalities.

From a wildlife perspective, when possible, construction should occur between November 16 and March 31 when snakes and turtles are hibernating. If this is not feasible, the following avoidance/mitigation measures are recommended:

- All onsite personnel shall be made aware of the potential of Eastern Foxsnake, Butler's Gartersnake, and Blanding's Turtle individuals and habitat, with information fact sheets will form part of the project mobilization meeting and be available to the workers;
- Continual awareness through signage and posted minimum speeds on access roads to prevent vehicular interactions with snakes or turtles that may use roadways for hunting or basking;
- Daily inspection of equipment stored on-site each morning before equipment is started including a thorough inspection including around engine, caterpillar tracts, etc. is required, as Eastern Foxsnakes and Butler's Gartersnakes may be well concealed;
- Vehicular traffic to remain on access roads and construction envelope;
- Clearing of vegetation, moving or disturbing brush/log piles or moving old farm machinery should be avoided between April 15 to June 1 and September 15 to November 1 as snakes are less active and therefore less able to flee from harm;

Design with community in mind



- Qualified onsite inspector to ensure compliance with the finalized mitigation plan;
- If any snake or turtle is observed within the workspace, all machinery and equipment shall maintain an operating distance of 30 m from the individual and allow the individual(s) reasonable time to disperse from the area on its own ability;
- If an ESA protected species persists in the work area, MNRF must be contacted to determine appropriate action;
- MNRF must be contacted as soon as possible to report any observations of SAR;
- If an injured or deceased SAR individual is found, the specimen shall be placed in a non-airtight container maintained at an appropriate temperature and MNRF SAR staff will be contacted immediately;
- Escort machinery onsite on foot to ensure no snakes are in their path prior to installation of exclusionary fencing, or if equipment is travelling over any natural vegetation or the size of machine provides low visibility;
- Protect habitat components for Butler's Gartersnake (i.e. ant mounds, crayfish burrows) and ensure they remain outside the work space as feasible; and
- Install exclusion fencing (detailed below).

Exclusion Fencing

The extent of exclusion fencing is currently in consultation with the MNRF and will be finalized prior to construction. Exclusionary fencing will be installed to the specifications recommended by the MNRF in their Species at Risk Branch Best Practices Technical Note Reptile and Amphibian Exclusion Fencing (2013) and under the direction of a qualified wildlife biologist:

- Fencing will be installed prior to construction;
- The fence should be buried 10-20 cm in the ground and at least 2 m high as Foxsnakes are excellent climbers;
- Due to the increase in fence height, it is valuable to decrease the distance between posts or install diagonal braces.
- Fencing will be comprised of a light-duty geotextile affixed to stakes that are located on the inside of the work space;
- Where root substrate does not allow fencing to be buried to a depth of 10-20 cm, fencing will be weighted through physical means such as gravel or sand placed on top of the lower portion of the fencing;
- Fencing will be maintained during summer construction (April 1- November 15, or until snakes have returned to their hibernacula, dependent on fall temperatures);



- Daily monitoring of exclusion fencing, equipment and activities during pipe fabrication; and
- Fencing will be removed after construction and cleanup is complete (by November 30).

Part of the project footprint falls within the St. Clair Region Conservation Authority regulated lands (**Figure 2**, Appendix A). A permit to work in that area will be required prior to the initiation of construction efforts in the area.

6 CONCLUSION

Potential adverse environmental effects as a result of the revised Project scope and works required on lands beyond the original 2011 ESR Study Area will be effectively mitigated through the implementation of standard mitigation measures previously outlined in the 2011 ESR.

Based on the desktop review of the expanded Study Area impacts on the biophysical and socio-economic environment will be similar to those outlined in the 2011 ESR. Mitigation measures outlined in the 2011 ESR will be implemented.

The necessary permits should be acquired from the SCRCA and approval for the project should be received from the MNRF prior to the initiation of the work. Anticipated cumulative effects related to the project are not considered to be significant. The contingency and monitoring plans presented in the original ESR should be adhered to and implemented in the case of an unplanned event.



7 CLOSURE

This report has been prepared for the sole benefit of Enbridge and may not be used by any third party without the express written consent of Enbridge. Any use which a third party makes of this report is the responsibility of such third party.

The data presented in this report are in accordance with Stantec's understanding of the Project as it was present at the time of our report. In the event that changes or alterations are made to the Project, Stantec reserves the right to review our data with respect to any such changes.

Respectfully Submitted,

STANTEC CONSULTING LTD.

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Attachment:

Appendix A Figures

Appendix B Summary of 2014 Archaeological Assessment

Cc None



8 REFERENCES

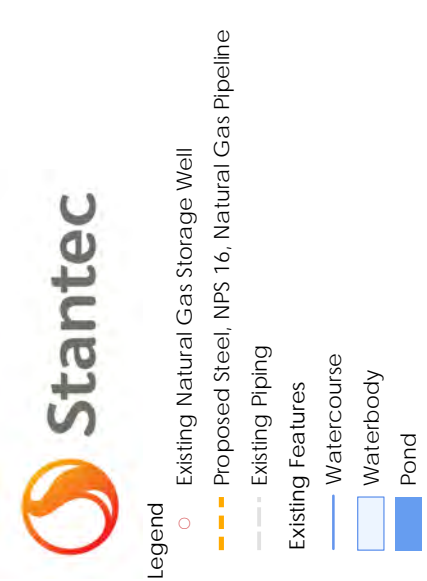
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Appendix A Figures

CONTENTS:

Figure 1	Project Location
Figure 2	Natural Environment
Figure 3	Soils
Figure 4	Socio-Economic Features





Legend

- Existing Natural Gas Storage Well
 --- Proposed Steel, NPS 16, Natural Gas Pipeline
 --- Existing Piping

Existing Features

- Watercourse
 Waterbody
 Pond
 Wooded Area
 Areas Affected



Legend

- Existing Natural Gas Storage Well
 --- Proposed Steel, NPS 16, Natural Gas Pipeline
 --- Existing Piping

Soils

- Brookston Clay
Caistor Clay Loam
Bottom Land



Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Natural Resources and Forestry © Queen's Printer

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Client/Project

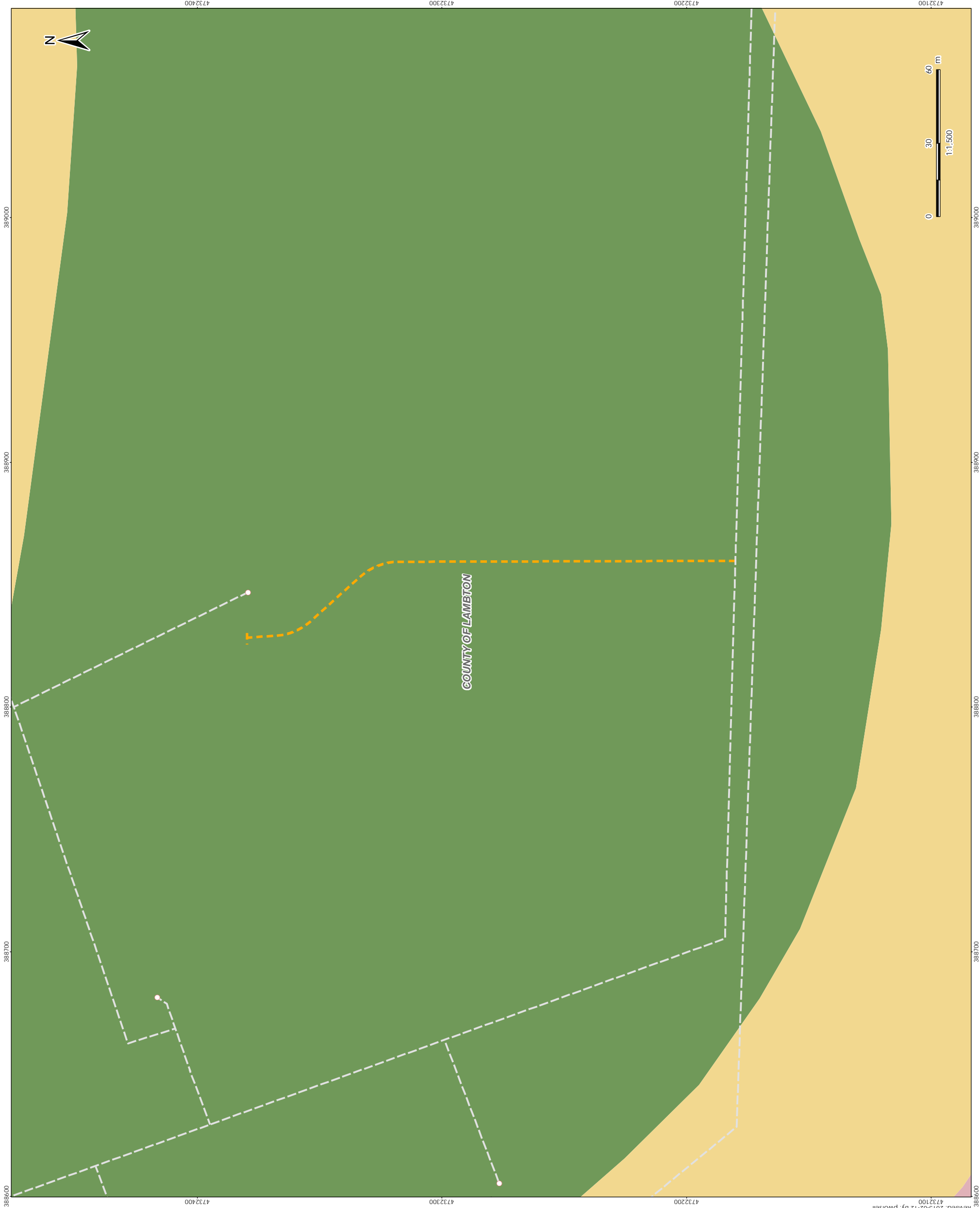
Enbridge Gas Distribution Inc.
Wilkesport Pool
Environmental Study Report

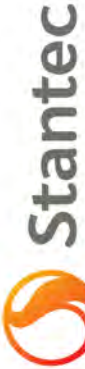
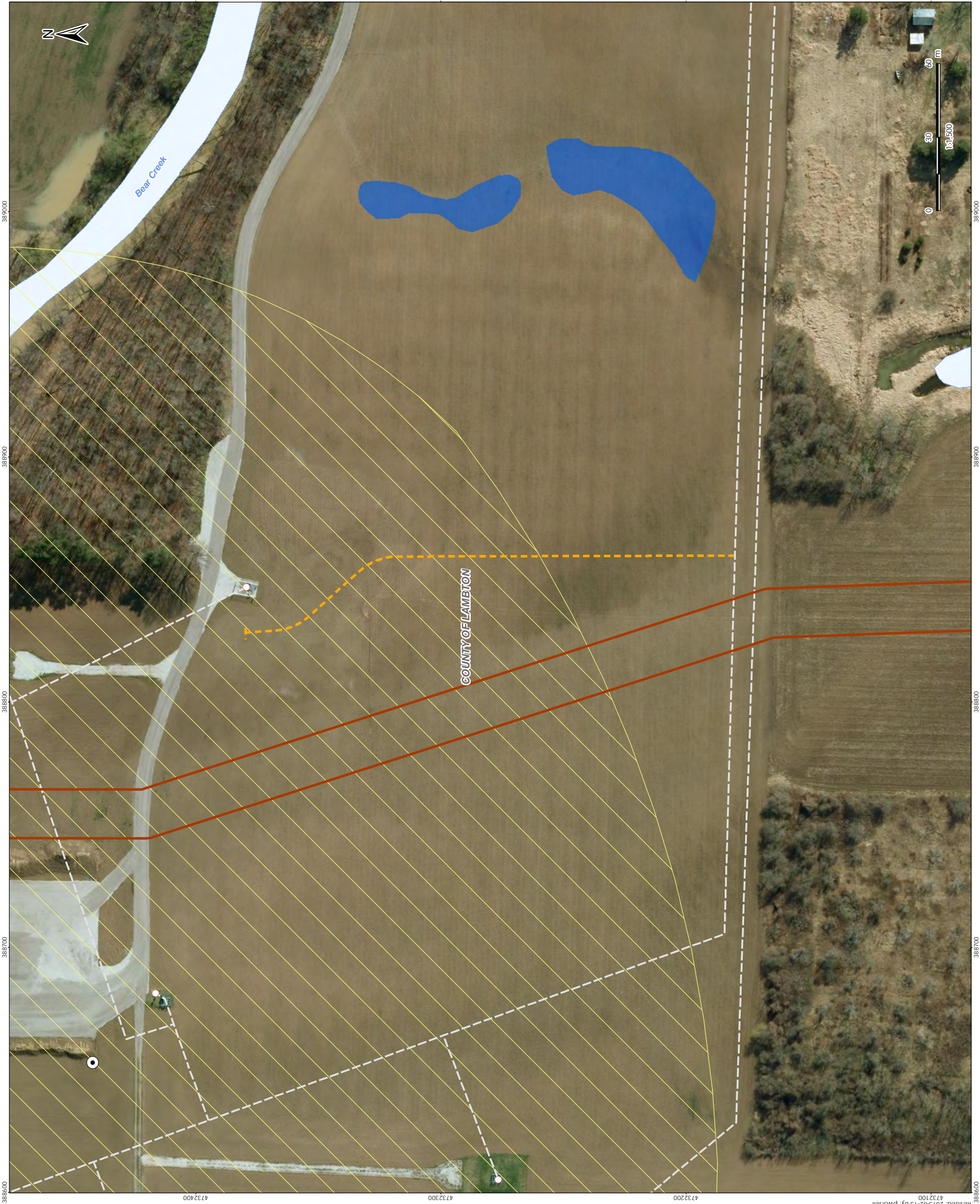
Figure No.

3

Title

Soils





- Legend**
- Existing Natural Gas Storage Well
 - Proposed Steel, NPS 16, Natural Gas Pipeline
 - Existing Piping
 - Existing Features
 - MOE Water Well Record
 - Plains Midstream Liquid Pipeline
 - Watercourse
 - Waterbody
 - Pond
 - Natural Gas Storage



Notes

- Coordinate System: NAD 1983 UTM Zone 17N
- Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2015.
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February 2015
160950592

Client/Project

Enbridge Gas Distribution Inc.
Wilkesport Pool
Environmental Study Report

Figure No.

4

Title

Socio-Economic Features



Appendix B Summary of 2014 Archaeological Assessment

CONTENTS:

Cover Page
Executive Summary
MTCS Correspondence

**The 2014 Stage 1- 2 Archaeological Assessment
of the Proposed Enbridge Gas Distribution Inc.
Wilkesport Storage Well Project,
Part of Lot 15, Concession 13,
Geographic Township of Sombra,
The Corporation of the Township of St. Clair,
Lambton County,
Ontario**

Submitted to

Dillon Consulting Limited,
Suite 800,
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Telephone – 416 229-4647
Facsimile – 416 229-4692
and

The Ministry of Tourism, Culture and Sport

Prepared by

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Licensee: Sherri H. Pearce, Licence #P316
Type of Report: Original

PIF # P316-0284-2014

January 22, 2015

Executive Summary

In the first week of May 2014 D.R. Poulton & Associates Inc. was contracted by Dillon Consulting (Dillon) to conduct a Stage 1 - 2 archaeological assessment of proposed improvements to the Wilkesport Storage Pool, which is located in the Bear Creek floodplain west of Kimball Road in the north half of Lot 15, Concession 13, Geographic Township of Sombra, Lambton County. The project entails the construction of two natural gas storage horizontal wells, pipeline segments to connect them to the existing NPS 16 pipeline, and the decommissioning of four existing natural gas storage wells. This assessment follows a 2012 Stage 1-4 archaeological assessment of the proposed Wilkesport Meter Station and a related 700-metre long NPS 16 pipeline (DPA 2013a, 2013b).

The Ministry assigned the project PIF # P316-0284-2014 issued to Sherri Pearce of D. R. Poulton & Associates. The Stage 1 study identified one site that was located on the property, the Zhashgaa Wiiskbing site (AeHo-147); however, it is more than 225 m to the southeast. The Stage 1 study further determined that the property had moderate to high potential for the discovery of archaeological remains (*cf.* page 15).

The Stage 2 archaeological assessment involved pedestrian survey of the locations for the two new gas storage horizontal wells. It also included the visual assessment of the four existing wells that are to be decommissioned. Fieldwork conducted on May 8 was directed by Sherri Pearce (P316). Fieldwork conducted on December 9 2014 was directed by Lorelyn Giese (R433) and involved the pedestrian survey of the area of the proposed NPS 16 pipeline that will connect the new horizontal wells to the existing NPS 16 pipeline surveyed by D. R. Poulton & Associates in 2012 (*ibid*).

The pedestrian survey of the proposed undertaking was conducted at a 5m interval and included all lands considered to retain archaeological potential (*cf.* page 18). No archaeological remains were discovered (*cf.* page 20). In the absence of any archaeological remains, this report has only one recommendation. It is that no further archaeological investigations or concerns are warranted for the proposed improvements to the Wilkesport Storage Pool (*cf.* page 22).

Ministry of Tourism, Culture and Sport

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Jan 27, 2015

Sherri Pearce (P316)
D. R. Poulton & Associates Inc.
69 Langarth London ON N6J 1P5

**RE: RE: Entry into the Ontario Public Register of Archaeological Reports:
Archaeological Assessment Report Entitled, "The 2014 Stage 1- 2 Archaeological
Assessment of the Proposed Enbridge Gas Distribution Inc. Wilkesport Storage
Well Project, Part of Lot 15, Concession 13, Geographic Township of Sombra, The
Corporation of the Township of St. Clair, Lambton County, Ontario ", Dated Jan 22,
2015, Filed with MTCS Toronto Office on N/A, MTCS Project Information Form
Number P316-0284-2014**

Dear Ms. Pearce:

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 has been entered into the Ontario Public Register of Archaeological Reports without technical review.¹

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 further information, please do not hesitate to send your inquiry to ArchaeologyReports@Ontario.ca.

cc. Archaeology Licensing Officer
Erin Nolan, Enbridge Gas Distribution Inc.
Zora Crnojacki, Ontario Energy Board

¹In 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.

ARCHAEOLOGICAL REPORT

1. D.R. Poulton & Associates was retained to conduct a Stage 1 - 2 archaeological assessment of proposed improvements to the Wilkesport Storage Pool. Attached is the report dated January 22, 2015.
2. In the report, the consultant concluded that “no further archaeological investigations or concerns are warranted for either the two new proposed natural gas storage wells, the four existing natural gas storage wells that are to be decommissioned, and the proposed pipeline connection between the new proposed horizontal wells and the existing NPS 16 pipeline.”

**The 2014 Stage 1- 2 Archaeological Assessment
of the Proposed Enbridge Gas Distribution Inc.
Wilkesport Storage Well Project,
Part of Lot 15, Concession 13,
Geographic Township of Sombra,
The Corporation of the Township of St. Clair,
Lambton County,
Ontario**

Submitted to

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Type of Report: Original

PIF # P316-0284-2014

January 22, 2015

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Project Personnel

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Field Assistants	Christine F. Dodd Daniella Horley
Report Preparation	Dana R. Poulton Christine Dodd Lorelyn Giese
Draughting	Christine F. Dodd
Photography	Christine F. Dodd Lorelyn Giese

Acknowledgments

The archaeological assessment of the present archaeological assessment was facilitated by the following individuals and their agencies:

- ***Erin Nolan***, EHS Specialist, Environmental Health and Safety, Enbridge Gas Distribution Inc.,
- ***Julian Dias***, Project Leader, Enbridge Gas Distribution Inc., and;
- ***Giuseppe Muraca***, Associate; Dillon Consulting Limited.

Executive Summary

In the first week of May 2014 D.R. Poulton & Associates Inc. was contracted by Dillon Consulting (Dillon) to conduct a Stage 1 - 2 archaeological assessment of proposed improvements to the Wilkesport Storage Pool, which is located in the Bear Creek floodplain west of Kimball Road in the north half of Lot 15, Concession 13, Geographic Township of Sombra, Lambton County. The project entails the construction of two natural gas storage horizontal wells, pipeline segments to connect them to the existing NPS 16 pipeline, and the decommissioning of four existing natural gas storage wells. This assessment follows a 2012 Stage 1-4 archaeological assessment of the proposed Wilkesport Meter Station and a related 700-metre long NPS 16 pipeline (DPA 2013a, 2013b).

The Ministry assigned the project PIF # P316-0284-2014 issued to Sherri Pearce of D. R. Poulton & Associates. The Stage 1 study identified one site that was located on the property, the Zhashgaa Wiiskbing site (AeHo-147); however, it is more than 225 m to the southeast. The Stage 1 study further determined that the property had moderate to high potential for the discovery of archaeological remains (*cf.* page 15).

The Stage 2 archaeological assessment involved pedestrian survey of the locations for the two new gas storage horizontal wells. It also included the visual assessment of the four existing wells that are to be decommissioned. Fieldwork conducted on May 8 was directed by Sherri Pearce (P316). Fieldwork conducted on December 9 2014 was directed by Lorelyn Giese (R433) and involved the pedestrian survey of the area of the proposed NPS 16 pipeline that will connect the new horizontal wells to the existing NPS 16 pipeline surveyed by D. R. Poulton & Associates in 2012 (*ibid*).

The pedestrian survey of the proposed undertaking was conducted at a 5m interval and included all lands considered to retain archaeological potential (*cf.* page 18). No archaeological remains were discovered (*cf.* page 20). In the absence of any archaeological remains, this report has only one recommendation. It is that no further archaeological investigations or concerns are warranted for the proposed improvements to the Wilkesport Storage Pool (*cf.* page 22).

1.0 PROJECT CONTEXT

Standard 3 of Section 7.2 of the Standards and Guidelines formulated by the Ministry of Tourism and Culture (2011: 115) states the following standard with respect to the reporting requirements for archaeological assessments: *“The final report must be filed in the form and manner as specified by the ministry in Section 7.5.”* Standard 1 of Section 7.5 of the Standards and Guidelines (Ministry of Tourism and Culture 2011: 121) further states the following standard with respect to the reporting requirements for archaeological assessments: *“All project reports must contain the sections listed in the first column of Table 7.1.”* The present report is intended to conform in all respects to the reporting requirements of the 2011 Standards and Guidelines.

Section 7.5.5 of the Standards and Guidelines formulated by the Ministry of Tourism and Culture (2011: 124) requires that the Project Context section of each report include the context for the archaeological investigations and that it cover three basic topics: development context; historical context; and archaeological context. They are covered in the following three subsections presented below.

1.1 Development Context

The information contained in this section of the report is being presented to satisfy Standards 1-3 of Section 7.5.6 of the Standards and Guidelines formulated by the Ministry of Tourism and Culture (2011: 124-125).

The Standards and Guidelines formulated by the Ministry of Tourism and Culture (2011) define up to four sequential stages in an archaeological assessment. Stage 1 consists of background research to identify any past archaeological investigations or known sites. The background study also identifies the potential for as-yet undiscovered sites. Stage 2 consists of a field survey to confirm the presence or absence of archaeological sites. Stage 3 consists of a more detailed assessment of any sites that are of demonstrable or potential significance as heritage resources and planning concerns. Finally, Stage 4 consists of the mitigation of significant sites either by avoidance and preservation or by the implementation of salvage excavations.

Enbridge Gas Distribution Inc. is planning to undertake improvements to the Wilkesport Storage Pool. It is located in the Bear Creek floodplain west of Kimball Road and northeast of the village of Wilkesport, in the north half of Lot 15, Concession 13, Sombra Geographic Township, The Corporation of the Township of St. Clair, Lambton County, Ontario.

One element of the proposed undertaking will involve the construction of two new natural gas storage horizontal wells. Each will require a drilling site with an associated gravel pad. The soil will have to be stripped from these areas to facilitate the construction of the gravel pads. One of the two new proposed natural gas storage wells is located south of an existing well TW 3. An area 30.5 m (100 feet) by 68.6 m (225 feet) was ploughed and fenced for this western survey segment. This area also contains the space needed to construct its connecting pipeline construction. The eastern survey segment was larger and contained the other storage well, located south of another existing well TW 13H. This survey area covered an area roughly 79 m (260 feet) by 76 m (250 feet).

The second element of the proposed undertaking will involve the abandonment and removal of four existing natural gas storage wells which are located atop grass-covered artificial hills. They are TW 2, TW 4, TW 5 and TW 11. They are to be decommissioned as they are prone to seasonal flooding and are inaccessible when the Bear Creek floodplain floods.

Information on the four existing natural gas storage wells was provided in an e-mail of April 9, 2014 from Erin Nolan of Enbridge to Giuseppe Muraca of Dillon Consulting Limited (Dillon). It includes data on their construction over three decades ago. Briefly, when they were drilled between 1978 and 1983 dirt ramps were installed to allow the rig to access and drill the wells. Upon completion of the drilling activities, the ramps were removed, but the hills remained to protect the wells from flood waters, ice and other debris. The hills range in height from approximately 10 feet (3.1 metres) to 20 feet (6.2 metres). The soils that was used to build these hills several decades ago was brought in from another location. The plan is to abandon these four wells over the next few years, and the hills must be dismantled to allow access for the rig to decommission the wells.

A third related component will be the construction of a new section of NPS 16 pipeline to connect the horizontal well with the existing pipeline system. An area measuring 30 metres wide by 100 m long was ploughed for the pedestrian survey. As mentioned previously, the southern terminus of the proposed pipeline was surveyed in 2012 (DPA 2013a, 2013b) as part of the roughly 700 metres long NPS 16 pipeline that extends west from the metre station, then northwest, terminating at an existing buried pipeline that was constructed prior to 2012.

In the first week of May 2014 D.R. Poulton & Associates Inc. was contracted by Dillon to conduct a Stage 1-2 archaeological assessment the first two components of the proposed undertaking. The assessment follows a 2012 Stage 1-4 archaeological assessment of the proposed Wilkesport Meter Station and a related 700-metre long NPS 16 natural gas pipeline, which are situated within the same natural gas storage pool (DPA 2013a, 2013b). The facilities that are involved in the proposed undertaking are all located within a major bend in Bear Creek, south and east of the creek.

The initial portion of the Stage 2 archaeological survey was carried out on May 8, 2014. The final portion of the Stage 2 archaeological survey was carried out on December 9, 2014. Figure 1 shows the location of the Wilkesport Storage Well Project. Figure 2 is a detail of the proposed development. The standard concerning permission for access that is specified in the Standards and Guidelines is as follows: *“Provide statements that the landowner or landowner’s representative (e.g. planner, engineer, lawyer) gave permission for the licensee to access the property to conduct all required archaeological fieldwork activities, including the recovery of artifacts, and state any limits places on access (e.g. time limits, refusal of access to portion of property)”* (Ministry of Tourism and Culture 2011, Standard 3 of Section 7.5.6, page 125). In the present case, permission to proceed with the survey and for access to the property was granted by Enbridge Gas Distribution Inc., the landowner.

The Ontario Ministry of Tourism, Culture and Sport designated the Stage 1-2 assessment of the proposed undertaking as PIF #P316-0284-2014. The assessment was directed by Sherri H. Pearce and Lorelyn Giese of D.R. Poulton & Associates Inc. under Licence P316 and R433, respectively. It was carried out in accordance with the provisions of the *Ontario Heritage Act* (Government of Ontario RSO 1990a), and the requirements of the *Ontario Energy Board Act* (Government of Ontario RSO 1995). Finally, the assessment conformed to the Standards and Guidelines for Consultant Archaeologists (Ontario Ministry of Tourism and Culture 2011).

Further to the above, the assessment was conducted in accordance with the 2005 Provincial Policy Statement 2.6.2, which has provisions for the conservation of archaeological resources, a definition of the same, and provisions for archaeological assessments. Finally, it was conducted in accordance with the Ontario Ministry of Culture's 2006 Heritage Tool Kit, most particularly with respect to Infosheet #3 and Infosheet #6; they detail provisions for the conservation of archaeological resources and provisions for heritage impact statements, respectively.

The records pertaining to this project are currently housed in the corporate offices of D.R. Poulton and Associates Inc. If the opportunity permits, however, the project archive will be transferred to a suitable long term repository.

1.2 Historical Context

Under the Standards and Guidelines, a required standard for the Historical Context section of a report is that it must include a statement concerning the rationale for fieldwork strategy (Ministry of Tourism and Culture 2011: Standard 2 of Section 7.5.7, page 125). In the present case, the proposed natural gas storage wells are contained within an agricultural field. In consequence, the field-based assessment was conducted by systematic pedestrian survey at an interval of five metres or less between surveyors. The purpose of the Stage 2 assessment was to confirm the presence or absence of archaeological remains and, if archaeological remains were determined to be present, to determine if they had cultural heritage value and interest as defined in Table 3.2 of the Standards and Guidelines (Ministry of Tourism and Culture 2011: 60-61).

This section of the report also provides the historic context for the First Nations and Euro-Canadian settlement of the area, as required by Standard 1 of Section 7.5.7 of the Standards and Guidelines (Ministry of Tourism and Culture 2011: 125). For reference purposes, a cultural chronology of the region is presented as Table 1. In the interest of context, this section of the report includes brief summaries on the major environmental changes of the region through time. It also includes summary data on the characteristics of settlement and subsistence patterns for the relevant time periods and cultures that are represented.

The Paleo-Indian Period (9500-7900 B.C.)

The first known human occupation of the province took place ca. 9500 B.C., following the retreat of the Wisconsin glacier. During this period, the environment in southern Ontario was characterized by a cool climate. The vegetation, in transition from spruce to pine dominated forests, would have resembled the modern sub-arctic.

The initial occupation of southern Ontario by Paleo-Indian peoples took place toward the end of a period of high water levels in the Great Lakes, including Lake Algonquin in the Lake Huron Basin and early Lake Erie to the south. That ended when the North Bay outlet opened ca. 8500-8000 B.C., draining Lake Algonquin eastward. The result created Lake Stanley in the Lake Huron Basin, Lake Hough in the Georgian Bay Basin and what were in effect a series of large ponds in the Lake Erie Basin. What are now Pelee Island and Middle Island were hills in the dry west end of the Lake Erie Basin.

Paleo-Indian sites in the Great Lakes region are presumed to relate to a focal adaptation based primarily upon the communal hunting of seasonally migrating herds of woodland caribou. In

general, favourite Paleo-Indian site locations include areas adjacent to glacial spillways and kettle lakes, often near present-day swamps on loam soils proximal to muck soils representing the margins of relic pro-glacial or post-glacial lakes. The most diagnostic Paleo-Indian artifacts consist of various types of Early Paleo-Indian fluted projectile points (ca. 9500 - 8500 B.C.) and of projectile points of the Late Paleo-Indian Hi-Lo type (ca. 8300 - 7900 B.C.) and Holcombe type (ca. 8400 B.C.).

Table 1 Cultural Chronology for Southwestern Ontario

PERIOD	GROUP	TIME RANGE	COMMENT
PALEO-INDIAN	Fluted Point Hi-Lo	9500 - 8500 B.C. 8300 - 7900 B.C.	Big game hunters; small nomadic groups
ARCHAIC			
Early	Side Notched	8050-7750 B.C.	Nomadic hunters and gatherers.
	Nettling	7900-6900 B.C.	
	Bifurcate Base	6800 - 6000 B.C.	
Middle	Laurentian	3500 - 2500 B.C.	Transition to territorial settlements.
Late	Lamoka	2500 - 1800 B.C.	Polished/ground stone tools
	Broad Point	1800 - 1400 B.C.	
	Crawford Knoll	1500 – 500 B.C.	
	Glacial Kame	ca. 1000 B.C.	Burial ceremonialism
WOODLAND			
Early	Meadowood Red Ochre	1000 - 400 B.C. 1000 – 500 B.C.	Introduction of pottery
Middle	Saugeen Princess Point	400 B.C. - 500 A.D. 500 – 800 A.D.	Long distance trade networks. Incipient horticulture
Middle: Western Basin	Couture	300 B.C. –500 A.D.	Long distance trade networks
	Rivière au Vase	500-900 A.D.	Incipient horticulture
Late: Iroquoian	Early Iroquoian	800 – 1280 A.D.	Transition to village life and agriculture
	Uren	1280 - 1330 A.D.	Large village sites
	Middleport	1330 - 1400 A.D.	Widespread stylistic horizon
	Neutral	1400 - 1650 A.D.	Tribal differentiation and warfare
Late: Western Basin	Yonge Phase	900 – 1300 A.D.	Transition to village life and agriculture
	Springwells Phase	1300 – 1400 A.D.	Large village sites
	Wolf Phase	1400 – 1550 A.D.	Tribal differentiation and warfare
HISTORIC			
Early	Odawa, Ojibwa, Potawatomi	1700 - 1875 A.D.	Social displacement
Late	Odawa, Ojibwa, Potawatomi, Six Nations, Euro-Canadian	1800 A.D. - present	European settlement

The Archaic Period (7900-500 B.C.)

Archaeologists divide the Archaic period into three sequential sub-periods: the Early Archaic (ca. 7900 – 6000 B.C.), the Middle Archaic (ca. 6000 – 2500 B.C.) and the Late Archaic (ca. 2500 – 900 B.C.).

The Archaic period was characterized by gradually warming temperatures and by the northward migration of modern flora and fauna that were established throughout their current range by around 4000 B.C. Water levels continued to rise throughout this period, but in the earlier millennia vast areas in the Lake Erie and Lake Huron basins were dry and habitable. Indeed, research suggests that these lake plains would have represented the richest environment for pre-contact hunters and gatherers in the entire Lower Great Lakes region, and that they probably contained a wealth of early camp sites and other archaeological resources that were later flooded.

The Terminal Archaic offers the first evidence in this region of mortuary ceremonialism. It is expressed by the inclusion of elaborate grave goods in burials in cemeteries of the Glacial Kame Culture.

The Woodland Period (1000 B.C. – 1650 A.D.)

The Woodland Period, which follows the Archaic in the Lower Great Lakes Region, spans a series of important changes in culture and adaptation. This period is most commonly divided into three chronological sub-periods: Early, Middle and Late. Descriptions follow.

Early Woodland (ca. 900 to 400 B.C.)

The Woodland Period is marked by the introduction into Ontario of pottery, the earliest of which dates to the Early Woodland sub-period. Beyond this, there appear to have been no substantial changes in the hunting, fishing and gathering settlement and subsistence patterns followed during the preceding Late Archaic period. This period in southern Ontario is represented by the Meadowood Complex.

Mortuary ceremonialism is expressed by the inclusion of elaborate grave goods in burials, and it represents the florescence of a pattern recorded for the slightly earlier Glacial Kame Culture of the Terminal Archaic. The evidence for the Early Woodland period suggests that it represents an increased social or territorial identity with a particular resource area such as a drainage system.

Middle Woodland (ca. 300 B.C. to 500 A.D.)

The Couture Complex, which occupied this region during the Middle Woodland period, is the poorest known of the Middle Woodland cultural complexes of southern Ontario. This complex occupied the area drained by rivers flowing into Lake St. Clair and the northwest shore of Lake Erie.

The Couture Complex subsistence included the hunting of deer as well as the gathering of black walnut, hickory and acorn. There are some indications that mortuary practices of this complex included the use of burial mounds, and burial mounds have certainly been recorded on Pelee Island and on the mainland north of Point Pelee. Another characteristic of this time period is the presence of large caches of exotic artifacts that provide evidence of long distance contacts with peoples of

the Hopewellian Interaction Sphere. One example from the Bothwell sand plain of Kent County is a cache of over 200 bifaces of Flint Ridge Chalcedony; the source for that material is in central Ohio.

Late Woodland (ca. A.D. 800-1650)

The Late Woodland sub-period in the Western Basin Tradition has been divided into four sequential phases: the Rivière au Vase Phase (ca. 500-900 A.D.); the Younge Phase (ca. 900-1300 A.D.); the Springwells Phase (ca. 1300-1400 A.D.); and the Wolf Phase (ca. 1400-1550 A.D.).

The Rivière au Vase Phase is best known from sites on Point Pelee. Sites of this phase include small camps as well as longer term occupations by larger populations exploiting the rich marsh and lakeshore environment. These sites were occupied during the warm seasons. It is believed that in the winter the population dispersed into a number of small groups to hunt elsewhere within their territory.

Our knowledge of the Rivière au Vase Phase is limited, as sites of that phase are generally rare. In contrast, the succeeding Younge Phase is represented by numerous well documented sites. Subsistence during that phase represented a continuation of the Rivière au Vase Phase, with a seasonal round that included the exploitation of seasonally abundant resources. Corn was grown by Younge Phase peoples, but it only occurs in small quantities on sites of this phase and it is evident that it only represented a supplementary food source. That is in sharp contrast to contemporary Iroquoian sites, where cultigens represented an ever increasingly important part of the diet. It has been hypothesized that the larger number of Younge Phase sites reflects an increase in population during the period ca. 900-1300 A.D; it has further been hypothesized that the people of this region expanded into previously uninhabited areas during this period (Murphy and Ferris 1990:262). The Younge Phase settlements included villages on the Thames River east of Thamesville.

Settlement and subsistence during the succeeding Springwells Phase represented a continuation of earlier patterns, but with an increased emphasis on warm season village sites located in areas with a diversity of natural resources. That pattern evidently reflects an increased reliance of agriculture to supplement the diet of Springwells Phase peoples. Winter camps occur on the Thames River during this period, but not village sites. At the same time, Springwells Phase peoples expanded into the East Dover Plain on the east side of Lake St. Clair. These moves may have been in response to a westward expansion of contemporary Iroquoian peoples into the Western Basin Tradition territory of the Bothwell sand plain during the 13th century.

The transition between the Springwells and Wolf Phases and the Wolf Phase itself are both marked by the use of village sites surrounded by protective earthworks. Contemporary villages of the pre-contact Neutral Iroquoians are also protected by earthworks with palisades, providing evidence of continued warfare and tension between the Iroquoians and Western Basin peoples of southwestern Ontario.

Although the study area fell within the limits of the Western Basin Tradition throughout most of the Late Woodland period, it was in reality part of the frontier that separated Western Basin peoples in extreme southwestern Ontario from the contemporary Iroquoian peoples of the Neutral tribal confederacy in the central and eastern parts of southwestern Ontario. In the late 15th century, during the Wolf Phase of the Western Basin Tradition, there was a westward expansion of Neutral (or

Attawandaron) peoples into the Bothwell sand plain and a small number of Iroquoian villages were established in what is now Kent County, as far west as Chatham.

This westward expansion reflects warfare between the Iroquoian Neutral peoples and their Algonquian-speaking Western Basin contemporaries. It was a conflict that extended back into the 15th century and that eventually led to the withdrawal of the Neutral to east of the Grand River by the late 16th century. By the time of the European fur trade in the first half of the 17th century, the conflict between the Neutral and the Algonquian Fire Nation who lived around the west end of Lake Erie was still ongoing.

The Neutral and the other Ontario Iroquoian tribal confederacies all met the same fate in the mid-17th century: first devastated in the 1630s by a series of plagues accidentally introduced by the Europeans; and finally dispersed and driven from their homelands by raids from the Iroquois of New York State in 1649-1651 A.D.

Each of the Iroquoian villages in the Bothwell sand plain had a population of up to several hundred individuals and was protected by earthworks. The Iroquoian way of life was largely based on a subsistence pattern that involved the cultivation of corn, beans and squash, supplemented by hunting, fishing and the gathering of wild plant foods. Iroquoian villages were typically occupied year-round for some 12-20 years. They moved when the local supply of firewood had been exhausted and the soils in the surrounding agricultural fields were no longer fertile. Villages may cover from one to several hectares in size and included numerous dwellings known as longhouses. In addition to villages, satellite settlements consisting of smaller, more temporary habitations such as agricultural cabin sites and fishing and hunting camps may occur in the area surrounding the village.

The Historic Period (A.D. 1650 to Present)

The history of the First Nations peoples during the second half of the 17th century and the succeeding 18th century was one of wide-scale cultural displacement. The displacement of the Iroquoians from southern Ontario in 1649-51 and the Algonquin people from adjacent Michigan and Ohio resulted in a re-organization of the cultural landscape of southern Ontario towards the end of the 17th century.

From the 18th century down to the present the First Nations peoples who occupied this region from time immemorial have variously been referred to as Anishinabek or Anishinabeg, Chippewa and Ojibwa. These terms have all been used for the Algonquian-speaking peoples of the region. The Anishinabeg included the western Algonquian-speaking peoples, among them the Chippewa and the Odawa; they also included the central Algonquian-speaking peoples, among them the Potawatomi. Until the 18th century, the Potawatomi Nation was located in the Michigan Peninsula. The Chippewa were historically (ca. 1740) located on the south shore of Lake Huron, the east shore of Georgian Bay and the west end of Lake Ontario. The available natural resources of the area made it attractive for hunting, fishing and foraging for plant foods. Maple sugar was also an important product for First Nations subsistence in this region.

Following the fall of New France, the loss of the Thirteen Colonies in the American Revolution provided the British Crown with an incentive to expand settlement north and east into what became Upper Canada in 1791. This process began in 1784 with the first settlement by United Empire Loyalists. To enable widespread Euro-Canadian settlement, the British Crown negotiated a series

of treaties with the resident First Nations peoples, but not all treaties involved First Nations surrendering lands to the British Crown, only to be settled on newly-established reserves. Treaty #7, the Chenail Ecarté Treaty of September 7, 1796, recognized the rights of the Ojibway of the Western Confederacy, the eldest of the Anishinabeg nations of the Council of Three Fires, to an extensive tract of lands that was later surveyed as the Township of Sombra and the adjacent Gore of Chatham. Over time, most of the lands that were included in the Chenail Ecarté Treaty were appropriated by Euro-Canadian settlers. What remains is Walpole Island, a series of islands in the St. Clair River Delta. Walpole Island covers approximately 10,000 acres and is the home of Walpole Island First Nation, also known as Bkejwanong First Nation. It is located about 17 kilometres southwest of the Wilkesport Storage Well Project.

The townships of Dawn and Euphemia and the southeast portions of Brooke and Enniskillen townships were surrendered in a treaty of March 9, 1819. Except for the lands that were covered by the Chenail Ecarté Treaty, the rest of Lambton County was surrendered in a treaty of April 26, 1825 and confirmed by a detailed survey of July 10, 1827. This survey covered 2,200,000 acres. It also created four Native reserves, all of which were situated within the western part of Lambton County. They were the Kettle Point and Stony Point reserves in Bosanquet Geographic Township, the Sarnia Reserve in Sarnia Geographic Township and the Moore Reserve in Moore Geographic Township. The latter two reserves are in reasonable proximity to the proposed Wilkesport Storage Well Project.

The Sarnia (or St. Clair) Indian Reserve #45 is located about 17 kilometres northwest of the proposed Wilkesport Storage Well Project. As stated in the Historic Atlas, it originally contained 10,280 acres, but through numerous surrenders to accommodate the southward industrial and residential expansion of Sarnia it had been reduced in size to 4,130 acres by 1973 (Phelps 1973: 63). The original reserve fronted on the St. Clair River; the lands fronting on the river were among those that were eventually surrendered.

The only 19th century Euro-Canadian community that was situated in the area of the Wilkesport Storage Well Project was Wilkesport (Figure 3). The 1880 Historic Atlas describes Wilkesport as follows:

It is a straggling village, or rather two distinct villages at some distance apart, scattered along the 12th and 13th concession lines. The Post Office is in the west village, and is kept by Wm. Kimball (a resident since 1844)...who also keeps a large general store. This place is head of river navigation, and in former years has been the centre of an immense trade in forest products. It now contains 3 general stores, 2 groceries and several small shops, 2 steam saw-mills, a grist mill, 1 blacksmith and 2 wagon shops, 2 hotels, 2 telegraph offices, a school, Orange Hall and Baptist and Methodist churches. (Phelps 1973: 17)

The above source also states that Wilkesport was first settled in 1831 and that in the early years there were no other settlers for several miles around. It further states that the “*stream*” that flows through the village was a significant point of attraction for settlers to this locale, as “*it was their only highway of communications for years with the outside world*” (Phelps 1973: 17).

According to Elford (1982: 90), Wilkesport was first settled by Paul Sturdevant and Hiram Hales in 1830. About 1836 a grist mill was established by John Wilkes of Brantford with two brothers by the name of Ramsey. By 1847 the settlement was known as Wilkes Mill and by 1852, when the

post office was established there, it was called Wilkesburg. The present name, Wilkesport, came into use in 1856. Business in Wilkesport thrived as long as there was timber to be milled, but it declined as the area was gradually cleared of the original forest. The 1877 Lambton Directory states that the village had two general stores, two hotels, an Orange Hall and both Baptist and Methodist churches.

Most of Sombra Geographic Township, within which the study area is located, was poorly drained at the time of the initial pioneer settlement in the 19th century, and the 1880 Historic Atlas states the following with respect to that problem:

...much of the area of the township is and for many years must continue to be a comparative swamp, though much is being done, and with effect too, to redeem the hitherto useless lands and increase the value of those already occupied by a system of drain which has already begun to bear good fruit, and will someday transform the whole of Sombra into a continuous expanse of valuable and fertile lands. (Phelps 1972: 17)

The post office and general store were located in the west village. River navigation was also centred in the west village, which saw extensive trade in forest products during the early period of land clearing. The Lambton County Directory 1877 identifies Wilkesport as a post village in the Township of Sombra at the confluence of the Sydenham River and Black Creek. Distant from Sarnia 20 miles (32 kilometres), and 12 miles (19.5 kilometres) from Wallaceburg, the population of 100 could expect mail delivery tri-weekly. The village was home to five farmers (Saml & Oria Bishop, Robert Heyland, R Houton, Charles James), a Baptist minister (Rev Richard Hooper), a postmaster (William Kimball), a merchant (William Kimball Jr.), a shoemaker (James McNorton), a sawyer (James Logan), several wagon makers (McCrea & Stubbs, Thomas Ayres) and an innkeeper (T. Redpath) (Phelps 1973: 57). In describing townships and counties, historic atlases are invariably given to hyperbole. In this case, the Historic Atlas for Lambton County described the state of development in this township as follows:

From the foregoing remarks it will have been gathered that Sombra, if not standing at the head of the list of Lambton County townships in regard to material wealth and physical development, at least possesses the elements of future success in a good class of settlers, an unsurpassed geographical position, and a soil which wants nothing but drainage and cultivation to transform it to a veritable garden – the wealth of its people, and the delight of the traveller.” (Phelps 1973: 17)

1.3 Archaeological Context

This section of the report consists of several distinct elements as defined in Section 7.5.8 of the Standards and Guidelines (Ministry of Tourism and Culture 2011: 125-126). They are described below.

Registered Archaeological Sites

Consistent with the Standard 1 of Section 7.5.8 of the Standards and Guidelines (Ministry of Tourism and Culture 2011: 125), this report provides data for a study area that encompassed a one kilometre buffer surrounding the proposed undertaking. The Archaeological Sites Database of the

Ministry of Tourism, Culture and Sport houses site record forms for registered sites as well as published and unpublished reports on past surveys, assessments and excavations. In Ontario, archaeological sites are registered under the Borden System. It was introduced in 1967 and is based on a geographic grid of major and minor units based on latitude and longitude. The major units measure 2° latitude by 4° longitude and are identified by the upper case letters “A” to “V”. The minor units are defined within these larger units at intervals of 10 minutes latitude and longitude and are identified by the lower case letters “a” to “x”. The smaller units are termed Borden blocks. In Wallaceburg and vicinity, they measure about 15.6 km north-south by 9.5 km east-west, for an approximate surface area of 148 square kilometres. The study area for the proposed new Wilkesport natural gas storage wells and the existing wells that are to be decommissioned are contained within a single Borden block; it is AeHo.

A check of the Archaeological Sites Database of the Ministry determined that as of January 22 2015 seven sites have been registered within the study area that contains the proposed undertaking. Data on the individual sites are presented in Table 2. Summary data on the registered site inventory are presented in Table 3. Three of the sites have more than one cultural component. In consequence, 14 separate components are represented in the inventory of seven registered sites.

Only one of the First Nations components is of unknown age and cultural affiliation. The oldest component in the inventory is a fragment of an Early Paleo-Indian Barnes point that was recovered from the multi-component Zhashgaa Wiiskabing site; it dates ca. 9500-9000 B.C. Sites of the Late Archaic period include two isolated finds that date to the Late Archaic period, ca. 2500-1000 B.C., an isolated Genesee projectile point of the Broad Point Late Archaic ca. 1800-1400 B.C., a Crawford Knoll projectile point of the Small Point Late Archaic ca. 1400-1000 B.C. and a Terminal Archaic lithic scatter that dates ca. 1000 B.C. to 800 A.D. The final component could not be assigned to a specific period; it is a First Nations of unknown age and cultural affiliation.

Table 2 Registered Archaeological Sites in the Study Area

Site Name	Borden #	Site Type & Cultural Affiliation
Albert Perkins	AeHo-23	Middle Woodland Camp
		19 th Century Euro-Canadian Refuse Scatter
Richard Coughlin	AeHo-25	Middle Woodland Camp
James Cameron	AeHo-26	Middle Woodland Camp
Black Creek Line	AeHo-31	Indeterminate First Nations Camp
Kimball Road	AeHo-32	Middle Woodland Camp
Wilkesport	AeHo-35	Late Archaic Isolated Find (Broad Point – Genesee)
		Late Archaic Isolated Find (Crawford Knoll)
		Woodland (Middle or Late) Camp (Ceramic, Levanna)
		19 th Century Euro-Canadian Refuse Scatter
Zhashgaa Wiiskabing	AeHo-147	Early Paleo-Indian
		Late Archaic
		Terminal Archaic
		Early Woodland

Previous Archaeological Fieldwork

Standard 4 of Section 7.5.8 of the Standards and Guidelines (Ministry of Tourism and Culture 2011: 125) requires that assessment reports include information on any past archaeological investigations within or immediately adjacent to the property that is being assessed, and on any sites that have been documented within 50 metres of the property. In the present case, none of the previously registered sites is in close proximity to the lands that are subject to impact from the proposed undertaking.

The closest registered site to the subject area is the Zhashgaa Wiiskabing site (AeHo-147). Another site in reasonable proximity to the proposed undertaking is the Albert Perkins site (AeHo-23). Both are more than 225 metres from the proposed undertaking.

Table 3 Summary Data on Registered Archaeological Sites in the Study Area

Age & Cultural Affiliation			Site Type	Total
First Nations	Paleo-Indian	Early	Isolated Find	1
	Archaic	Late	Isolated Find	2
		Terminal	Lithic scatter	1
		Subtotal		3
	Woodland	Early	Lithic scatter	2
		Middle	Camp or lithic scatter	4
		Middle to Late	Camp or lithic scatter	1
		Subtotal		7
	Indeterminate First Nations		Camp or lithic scatter	1
	Subtotal – First Nations Components			12
Euro-Canadian	Euro-Canadian		Refuse Deposit	2
	Subtotal – Euro-Canadian Components			2
Total				14

Archaeological fieldwork is generally conducted either as part of pure research or as part of archaeological resource assessments. In the present case, no pure research has been conducted within the study area. Five past archaeological assessments have included fieldwork. They are described below.

The first archaeological assessment in this area was conducted in 1995 by Mayer Heritage Consultants Inc. (1995a). It involved an assessment of the proposed replacement of the Wilkesport and Selman Bridges on County Road 31, Township of Sombra, Lambton County, Ontario. The survey resulted in the discovery of three sites: Albert Perkins (AeHo-23); Richard Coghlin (AeHo-25); and James Cameron (AeHo-26). Based on the title of the report, the assessment also involved more detailed Stage 3 investigations. They are not described in the registered sites data that were provided. The Stage 3 assessment may have been limited to the intensive surface examination of the sites; if not, and test excavations were conducted, they were probably limited to the Albert

Perkins site. Forty artifacts were recovered from that site, whereas the collections from the Richard Coghlin and James Cameron sites were limited to eight specimens and six specimens, respectively.

Another 1995 assessment in the study area by Mayer Heritage Consultants Inc. (1995b) involved the proposed Bear Creek Bridge Reconstruction and Road Modifications. It resulted in the discovery of two sites: Black Creek Line (AeHo-31); and Kimball Road (AeHo-32). This assessment involved a Stage 2 survey and more detailed Stage 3 investigations, but the nature of the latter are not described in the registered sites data that were provided by the Ministry.

In 1996, Archaeological Research Ltd. conducted a Stage 1 background study for the 3 km study area that encompassed the proposed Coveny Pool and Pipeline Project (ARA 1996). A Stage 2 survey followed (ARA 1997). The survey discovered two sites but they were not registered during the course of the assessment. Both are 19th century Euro-Canadian sites and both are located in the eastern of the two discrete 19th century villages that were named Wilkesport (Figure 3). A letter of review of the Stage 2 survey report by Neal Ferris of the Ministry of Culture requested additional information on the age and potential significance of the two sites; it also requested that they be registered (Shari Prowse, Ministry of Culture, personal communication to Dana Poulton, February 3, 2009).

The 1996 assessment by ARA was followed by a 1999 Stage 1-2 archaeological assessment of the proposed Enbridge Consumers Gas Wilkesport/Convey Connection Project. It was conducted on behalf of Enbridge Consumers Gas by D.R. Poulton & Associates Inc. The proposed undertaking involved the construction of a natural gas transmission pipeline connecting the existing Wilkesport NPS 16 pipeline in Lot 14, Concession 13 to the existing Coveny NPS 16 Pipeline in Lot 15, Concession 12 of Sombra Geographic Township. The total length of the alignment was approximately 2.08 kilometres and a segment of the proposed pipeline was located directly south of the Wilkesport Meter Station and the NPS 16 pipeline that were constructed in 2012. The proposed pipeline that was assessed in 1999 had an 18-metre wide easement consisting of a 10-metre wide permanent easement and a temporary eight metre wide working easement (D.R. Poulton & Associates 1999: 2). The survey was conducted by Shari Prowse of D.R. Poulton & Associates Inc. from May 25 to 28, 1999.

The report on the 1999 assessment noted that the segment of the proposed pipeline that extended west from Kimball Road (directly south of the pipeline that was constructed in 2012) was in “*corn stubble and had been planted a few days prior to the survey. However, visibility was excellent.*” (*Ibid*: 9). No sites were found in this portion of the survey. Further to the southeast, the survey did result in the discovery a multi-component site: it was registered as the Wilkesport site (AeHo-35). The site was found on May 25 and a controlled surface collection (CSC) of the site was conducted on June 9, 1999. It recorded 190 artifacts, of which 34 First Nations artifacts were collected. The bulk of the material was not collected; it included chipping detritus (n=95), pieces of fire-cracked rock (n=24), indeterminate faunal remains (n=4) and Euro-Canadian material (n=33). Collected material was limited to diagnostic artifacts; they included pre-contact First Nations ceramics (n=8), formal and informal chipped lithic tools (n=19) rough and ground stone tools (n=3) and chipping detritus (n=4). (*Ibid*: 15).

The above investigations confirmed that the Wilkesport site was a significant archaeological planning concern and that it warranted further Stage 3 and 4 investigations. A second CSC of the site was conducted. It was followed by Stage 3 manual test excavations and by Stage 4 salvage excavations. The latter included the archaeological monitoring of topsoil stripping so that any

settlement patterns that might be present could be exposed, recorded and excavated. During the Stage 3 excavations and the formulation for the Stage 4 salvage excavations the personnel consulted Dean Jacobs and Walpole Island First Nation. In all, 39 one-metre units were excavated, an area measuring 1280 square metres was exposed, and four cultural features and two post moulds were recorded and excavated. The Stage 3 assessment of the site spanned the period from July 15-22, 1999 and the Stage 4 salvage excavations were conducted from July 22 to 26, 1999. The results are documented in a separate report by D.R. Poulton & Associates (2000). The Stage 3-4 investigations recovered 1520 specimens, including 163 Euro-Canadian artifacts and 1357 First Nations artifacts.

A Stage 1-4 investigation was conducted in 2012 by DR Poulton and Associates Inc for the proposed Wilkesport Meter Station project. These investigations led to the discovery of a site, later named Zhashgaa Wiiskabing and designated Borden number AeHo-147. The proposed Wilkesport Meter Station was part of the ongoing expansion of the natural gas storage system that is required to meet increasing demand for natural gas service in the area and to refine the Enbridge transmission network. As a component of the refinements, Enbridge constructed the Wilkesport Meter Station including 700 metres of 16 inch nominal pipe size (NPS) buried steel pipe to connect to the existing Wilkesport infrastructure. (D.R. Poulton & Associates 2012: vii). The Stage 2 survey was conducted by Christopher Neill of D.R. Poulton & Associates Inc. with a crew of two on May 8 and 9, 2012. A Stage 3 controlled surface collection (CSC) was conducted on the Zhashgaa Wiiskabing site on May 10th, 2012. Stage 3 test excavations were carried out over a period of four days: May 16, 17, 22, and 23, 2012 with a crew of seven, including a First Nations monitor from Walpole Island First Nation. A further seven infill test units were later excavated on June 6 to 7 and July 17 to 18, in conjunction with the Stage 4 block excavations. The Stage 4 excavations (PIF #P242-029-2012) were conducted over the course of seven weeks, from June 5 to July 19 and also included monitors from Walpole Island First Nation. These investigations confirmed that the portion of the site that fell within the proposed development had two discrete loci. The East Locus produced 3461 artifacts and the West Locus produced 1343 artifacts.

The salvage excavations totally mitigated the East Locus, which was entirely located within of the proposed Wilkesport Meter Station. They also mitigated the southern portion of the West Locus, which is located within the northern portion of the corridor for the proposed pipeline for the Wilkesport Meter Station. It is unknown how far the West Locus extends north beyond the limits of the excavations, as the only portion of this locus that was subject to Stage 4 investigations was the south edge of it, which was to be impacted by the pipeline construction. It is defined as a linear strip approximately 10 metres in width on a north-south axis. The remainder of the West Locus of the site to the north lies within lands the St. Clair Region Conservation Authority reforested in 2011, in lands that are to remain untouched. It is worth emphasizing that the northern edge of the West Locus excavations is defined by 22 one-metre square units. Of those, 12 units contained artifacts numbering 10 or more specimens per unit.

The cultural remains from the Zhashgaa Wiiskabing site confirm the presence in the area of First Nations peoples on at least an intermittent basis during the Early Paleo-Indian period and the Early Archaic Period, and occupations of the site during the Terminal Archaic and Early Woodland periods. There is no evidence of any First Nations presence at the site during the Late Paleo-Indian period, the Middle Archaic, the early portion of the Late Archaic, or at any time during the Middle and Late Woodland periods. Nor is there is no evidence of any First Nations presence at the site during the historically documented period of the 18th and 19th centuries, when the Lake St. Clair / St. Clair River Ojibway community occupied this region. That said, without a thorough survey of the surrounding landscape, this kind of negative evidence is meaningless. It is entirely possible

that there could be any number of sites of these time periods in the adjacent lands to the north of the Zhashgaa Wiiskabing site, which were reforested by the St. Clair Region Conservation Authority in 2011, or to the south of the narrow confines of the lands that were surveyed in 1999 for the Wilkesport/Coveny Connection Project (D.R. Poulton & Associates Inc. 1999).

Dates of the Archaeological Fieldwork

The archaeological fieldwork that forms the subject of this report was completed with the Stage 2 survey was conducted on May 8 and December 9, 2014. This information is being included herein to satisfy Standard 3 of Section 7.5.8 of the Standards and Guidelines (Ministry of Tourism and Culture 2011: 125).

Conditions in the Subject Lands

As stated previously, the lands that were of concern to the 2014 assessment are located west of Kimball Road, in a large bend in Bear Creek. Figure 2 illustrates the existing and proposed facilities that were of concern to the assessment.

The subject lands are located within the St Clair Clay Plain physiographic region (Chapman and Putnam 1984: 147-151). As described by Chapman and Putnam, this region is an extensive clay plain with little relief but contains four related areas, the Essex Clay Plain, the Lambton Clay Plain, the Chatham Flat and the St. Clair Delta. The Wilkesport Storage Wells Project is within the Lambton Clay Plain portion, which is a bevelled till plain that frequently has a shallow veneer of lacustrine clay deposits over the underlying till.

The Soils of Lambton County Map (University of Guelph 1979) identifies Brookston clay as the soil. This is a clay soil that is part of the Dark Grey Gleisolic Great Group. It is a clayey till that high in lime but with poor drainage. It is very gently sloping and essentially stone free.

2.0 STAGE 1 ANALYSIS AND CONCLUSIONS

There are two basic categories of possible archaeological planning concerns for any proposed development. The first consists of known sites that are of demonstrable or potential significance as cultural resources and planning concerns. The second consists of the potential for as-yet undiscovered sites. These are considered in turn, below.

2.1 Known Sites of Demonstrable or Potential Significance

As stated in Section 1.3, prior to the 2014 assessment six archaeological sites had been registered within the one-kilometre study area surrounding the Wilkesport Storage Pool property. None is located directly adjacent to the proposed improvements, although one (the Zhashgaa Wiiskbing site, AeHo-147) is located more than 250 metres to the southeast. Accordingly, possible archaeological planning concerns for the proposed facilities were limited to the potential for as-yet undiscovered archaeological remains. That potential is discussed below.

2.2 Potential for as-yet Undiscovered Sites

Criteria for evaluating the archaeological potential of a property or proposed development are detailed in the 2011 Standards and Guidelines for Consultant Archaeologists (Ministry of Tourism and Culture 2011: Section 1.3.1, pages 17-18). The positive archaeological site potential criteria are as follows:

- Previously identified archaeological sites;
- Water sources (it is important to distinguish types of water and shoreline, and to distinguish natural from artificial water sources, as these features affect site locations and types to varying degrees.):
 - primary water sources (lakes, rivers, streams, creeks),
 - secondary water sources (intermittent streams and creeks, springs, marshes, swamps),
 - features indicating past water sources (e.g. glacial lake shorelines indicated by the presence of raised 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),
 - accessible or inaccessible shorelines (e.g., high bluffs, swamp or marsh fields by the edge of a lake, sandbars stretching into marsh);
- Elevated topography (e.g., eskers, drumlins, large knolls, plateaux);
- Pockets of well-drained sandy soil, especially near areas of heavy soil or rocky ground;
- Distinctive landforms 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 medical plants (e.g., migratory routes, spawning areas, prairie),
 - scarce raw materials (e.g. quartz, copper, ochre or outcrops of chert),
 - early Euro-Canadian industry (e.g. fur trade, logging, prospecting, mining);
- Areas of early Euro-Canadian settlement. These include places of military or pioneer settlement (e.g. pioneer homesteads, isolated cabins, farmstead complexes), early wharf or dock complexes, pioneer churches and cemeteries. There may be commemorative markers of their history, such as local, provincial, or federal monuments or heritage parks.
- Early historical transportation routes (e.g. trails, passes, roads, railways, portage routes);
- Property is listed on a municipal register or designated under the *Ontario Heritage Act*, or that is a federal, provincial or local landmark or site;
- Property that local histories or informants have identified with possible archaeological sites, historic events, activities or occupations.

The Standards and Guidelines for Consultant Archaeologists also identify features that indicate the archaeological potential of a property or area has been removed (Ministry of Tourism and Culture 2011a: Section 1.3.2, page 18). They consist of the following: quarrying; major landscaping involving grading below topsoil, building footprints, and sewage and infrastructure development. Only major landscaping involving grading below topsoil are issues for the proposed improvements to the Wilkesport Storage Pool property. The construction of the previous pipelines resulted in some disturbance along the southern edge of the area where the proposed NPS 16 is to connect to the existing NPS 16 pipeline. Furthermore, the area around the four well sites that are to be decommissioned are disturbed by previous construction activities. These areas have no potential for extant archaeological remains (Figure 4).

Finally, while Section 1.3 of the Standards and Guidelines identifies features that indicate archaeological potential and features that indicate the archaeological potential of a property or area has been removed (as cited above), it does not include explicit statements on criteria that indicate a property or area never had any archaeological potential in the first place. Granting that, Standard 2a of Section 2.1 of the Standards and Guidelines, which deals in part with property survey requirements, does identify some of the conditions in which an archaeological survey is not required. They are as follows:

- a lands are evaluated as having low or no potential based on the Stage 2 identification of physical features of no or low potential, including but not limited to:

- i permanently wet areas;
- ii exposed bedrock;
- iii steep slopes (greater than 20°) except in locations likely to contain pictographs or petroglyphs.

Exposed bedrock and permanently wet areas are not issues for the archaeological potential of the lands that are involved in the proposed development. Following the site potential criteria that are set out in the 2011 Standards and Guidelines (Ministry of Tourism and Culture, Section 1.3.1, pages 17-18), several factors indicated the lands that are involved in the proposed improvement to the Wilkesport Storage Pool property have a moderate to high potential for as-yet undiscovered archaeological remains.

One factor in evaluating the potential for as-yet undiscovered archaeological remains in this property is the proximity of reliable sources of potable water, as drinking water is a basic requirement of human existence through time. In the present case, the subject property is located within a major loop of Bear Creek. The closer of the two well sites is 113 m southwest of Bear Creek and the other well site is roughly 200 m southwest of Bear Creek.

Two other positive criteria are that the lands are well drained and suitable for both pre-contact and historic habitation, and that the soils are suitable for agriculture. As such, the lands of concern to the proposed development were inferred to have a moderate to high inherent potential for associated First Nations and Euro-Canadian settlement and land uses, and for related archaeological remains.

3.0 STAGE 2 FIELD METHODS

As previously described, the first element of the proposed undertaking will involve the construction of two new natural gas storage wells and a new horizontal well. The second element of the proposed undertaking will involve the abandonment and removal of four existing natural gas storage wells which are located atop artificial hills. They are TW 2, TW 4, TW 5 and TW 11. The third element involves construction of sections of pipeline to link the new horizontal wells with the existing pipeline system. Figure 4 depicts the archaeological survey coverage for the 2014 assessment. It also shows the location and direction of the six photographic plates that illustrate the fieldwork on both May 8 and December 9, 2014.

Standard 2a of Section 7.8.1 of the Standards and Guidelines (Ministry of Tourism and Culture 2011: 137) requires that this section of Stage 2 reports provide detailed and explicit descriptions of how each standard was addressed for survey. The standard that is specified in Standard 2b of Section 7.8.1 of the Standards and Guidelines formulated by the Ministry of Tourism and Culture (2011: 137) requires that this section of Stage 2 reports provide detailed and explicit descriptions of how each standard was addressed for both pedestrian and test pit survey. The information required for these two standards is provided below.

Standard 2c of Section 7.8.1 of the Standards and Guidelines (Ministry of Tourism and Culture 2011: 30) requires that this section of the Stage 2 report provide detailed and explicit descriptions to address any differences in approach for areas possessing different conditions. In the case of this survey, the lands of concern to the survey formed part of an agricultural field. Consequently, the lands of concern were ploughed to facilitate a pedestrian survey, then the survey was deferred until sufficient rainfall had occurred to ensure that conditions for the observation of cultural remains were optimal.

The pedestrian survey was conducted at a five-metre interval. The ploughed lands were well weathered and ground visibility was between 95 to 100%. Standard 1 of Section 2.1 of the Standards and Guidelines (*Ibid*: 28) requires that the entire property be included in the survey. The Stage 2 survey covered 100% of lands that retained potential and that will be subject to impact from the proposed undertaking. The investigations of the four existing natural gas storage wells that are to be abandoned and removed was limited to a visual examination and photo-documentation, as all of the lands that will be involved in those activities were impacted by the past construction between 1978 and 1983. In consequence, those lands do not retain a potential for extant archaeological remains.

Plates 1-3 inclusive illustrate existing conditions at three of the four existing natural gas storage wells as of May 8, 2014, when the Stage 2 archaeological survey was conducted. Plates 4 and 5 are two views of the new proposed well locations at the time of the May 8 2014 survey. As mentioned previously, the survey was conducted by Sherri Pearce (P316) and one field assistant. Plate 6 illustrates the area of pedestrian survey conducted on December 9 2014. The fall survey was conducted by Lorelyn Giese (R433) and one field assistant.

The weather on May 8, 2014 was initially overcast but it cleared to mainly sunny by the time the pedestrian survey was completed. On December 9, the weather was cold and cloudy with intermittent drizzle. Lighting conditions for the observation of cultural remains on both days were excellent. The weather and lighting conditions that pertained during the survey satisfied Standard 3

of Section 2.1 of the Standards and Guidelines (Ministry of Tourism and Culture 2011: 29).

Standard 1 of Section 2.1.1 of the Standards and Guidelines (Ministry of Tourism and Culture 2011: 30) requires that cultivated agricultural lands must be subject to pedestrian survey. Standard 2 of Section 2.1.1 of the Standards and Guidelines (MTC 2011: 30) also requires that lands to be surveyed must be recently ploughed and that the use of chisel ploughs is not acceptable. Standard 3 of Section 2.1.1 of the Standards and Guidelines (MTC 2011: 30) also requires that lands to be assessed by pedestrian survey must be weathered by one heavy rainfall or several light rains to improve visibility of archaeological resources. In addition, Standard 5 of Section 2.1.1 of the Standards and Guidelines (MTC 2011: 30) requires that lands to be assessed by pedestrian survey have at least 80% ground visibility. Finally, Standard 6 of Section 2.1.1 (MTC 2011: 30) requires that survey transects should be spaced at a five metre interval. In the present case, the May 8 and December 9, 2014 survey of proposed improvements to the Wilkesport Storage Pool satisfied all of the above standards.

Standard 5 of Section 2.1 of the Standards and Guidelines (Ministry of Tourism and Culture: 2011: 29) requires that assessment reports map all field activities (e.g. extent and location of field methods, survey intervals) in reference to fixed landmarks, survey stakes and development markers. The standard also requires that mapping must be accurate to five metres or to the best scale available. The mapping in this report satisfies this standard. Standard 6 of Section 2.1 of the Standards and Guidelines (Ministry of Tourism and Culture (2011: 30) requires that surveyors photo-document examples of all field conditions encountered (e.g. ploughed field, pasture or woodlot, disturbances). The text, photographs and figures that are included in this report satisfy this standard.

4.0 RECORDS OF FINDS

Standard 2 of Section 7.8.2 of the Standards and Guidelines (Ministry of Tourism and Culture 2011: 138) requires that the Record of Finds section of archaeological assessment reports include an inventory of the documentary record that was generated by the fieldwork for Stage 2. The documentary record that has been generated by the fieldwork documented in this report includes hand-made notation on a printout of a digital aerial photograph of the proposed development. It also includes two pages of bound field notes and 31 digital photographs of the fieldwork for the assessment on May 8, 2014. The assessment on December 9, 2014 resulted in another two pages of field notes and 23 digital photographs of the fieldwork.

Further, Section 7.8.2 of the Standards and Guidelines (*Ibid*: 137-138) requires that Stage 2 assessment reports provide specific types of information on all archaeological discoveries. As stated in Section 3.0 above, the Stage 2 archaeological survey of the proposed undertaking did not result in the discovery of any archaeological remains.

5.0 ANALYSIS AND CONCLUSIONS

Standard 1 of Section 7.8.3 of the Standards and Guidelines formulated by the Ministry of Tourism and Culture (2011: 138) requires that the Analysis and Conclusions section of reports on Stage 2 fieldwork addresses the following statement: “*Summarize all findings from the Stage 2 survey, or state that no archaeological sites were identified.*” The information that is presented herein is intended to satisfy the requirement that is specified in Standard 1 of Section 7.8.3 of the 2011 Standards and Guidelines.

In the present case, and as stated in Section 4.0, no archaeological sites were discovered by the 2014 assessment of the proposed improvements to the Wilkesport Storage Pool.

6.0 RECOMMENDATIONS

As stated previously, no archaeological sites were discovered by the 2014 assessment of proposed Wilkesport Storage Wells project. In the absence of any archaeological remains, this report has only one recommendation. It is that no further archaeological investigations or concerns are warranted for either the two new proposed natural gas storage wells, the four existing natural gas storage wells that are to be decommissioned, and the proposed pipeline connection between the new proposed horizontal wells and the existing NPS 16 pipeline.

7.0 ADVICE ON COMPLIANCE WITH LEGISLATION

The Standards and Guidelines formulated by the Ministry of Tourism and Culture (2011) have requirements that archaeological assessment reports must include statements that concern compliance with pertinent legislation. The pertinent standards in the Standards and Guidelines are as follows:

1. Advice on compliance with legislation is not part of the archaeological record. However, for the benefit of the proponent and approval authority in the land use planning and development process, the report must include the following standard statements.
 - a. This report is submitted to the Minister of Tourism and Culture as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c 0.18. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ministry of Tourism and Culture, 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.
 - b. 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 complete archaeological fieldwork on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the Ontario Public Register of Archaeological Reports referred to in Section 65.1 of the *Ontario Heritage Act*.
 - c. Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48 (1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48 (1) of the *Ontario Heritage Act*.
 - d. The *Cemeteries Act*, R.S.O. 1990 c. C.4 and the *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33 (when proclaimed in force) require that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the Ministry of Consumer Services.
2. Reports recommending further archaeological fieldwork or protection for one or more archaeological sites must include the following statement: "Archaeological sites recommended for further archaeological fieldwork or protection remain subject to Section 48 (1) of the Ontario Heritage Act and may not be altered, or have artifacts removed from them, except by a person holding an archaeological licence."

The above standards are quoted verbatim from Section 7.5.9 of the Standards and Guidelines (Ministry of Tourism and Culture 2011: 126-127). All of them apply to the present report. However, it should be noted that effective July 1, 2012 matters relating to cemeteries and human remains are subject to the provisions of the Funeral, Burials and Cremations Act (Government of Ontario 2002; the Cemeteries Act (RSO 1990c), which is cited in Standard 1d (above), is no longer in effect.

In the event that any deeply buried cultural remains should be discovered during future earthmoving or construction relating to the proposed new natural gas storage wells, the decommissioning of four of the existing wells, or the proposed pipeline connection, it is recommended that the discovery be reported immediately to archaeological staff of the Ministry of Tourism, Culture and Sport by telephone (416 212-8886) or by e-mail (Archaeology@ontario.ca.). Staff will then allocate an Archaeological Review Officer to respond to the reported discovery.

Also, in the event that any human remains should be discovered during future earthmoving or construction relating to the proposed new natural gas storage wells or the decommissioning of four of the existing wells, it is similarly recommended that the discovery be reported immediately to archaeological staff of the Ministry of Tourism, Culture and Sport and to the police, the coroner and Michael D'Mello. Mr. D'Mello is the Registrar of the Cemeteries Regulation Unit of the Ontario Ministry of Consumer Services. His telephone number is 416 326-8404 and his e-mail address is Michael.D'Mello@ontario.ca.

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FIGURES

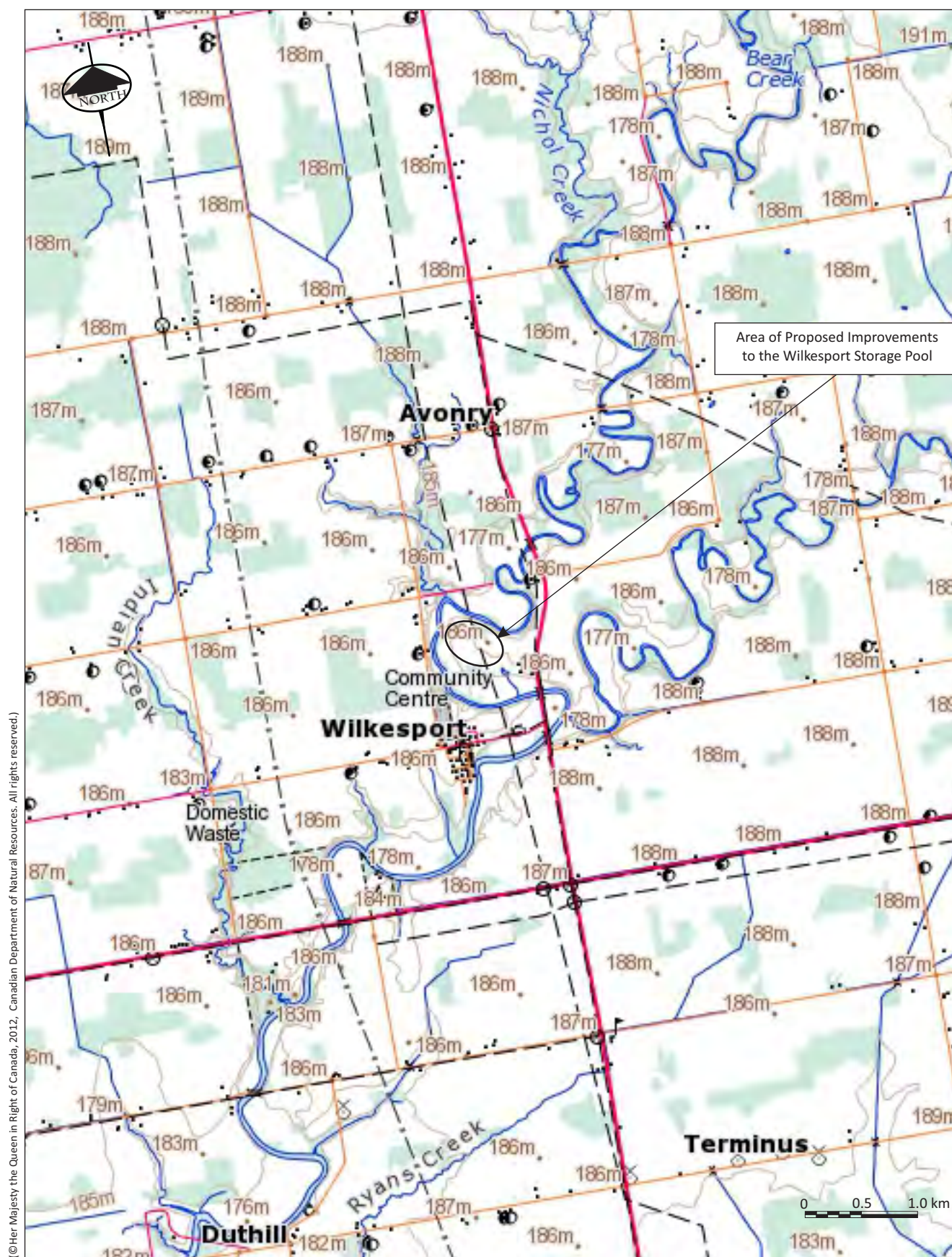


Figure 1 Location of the Proposed Wilkesport Storage Wells

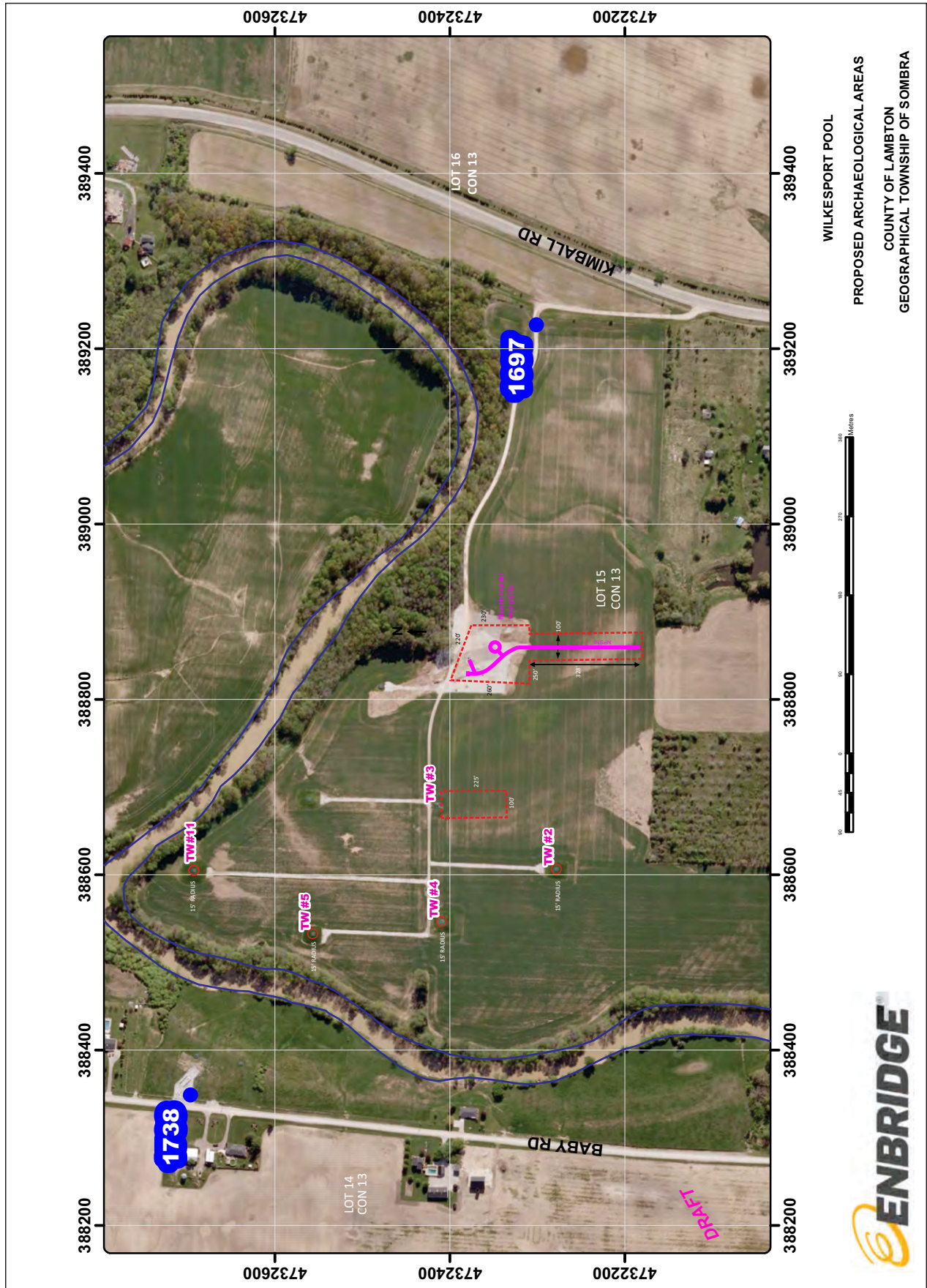


Figure 1 Plan of Proposed Changes to the Wilkesport Storage Pool



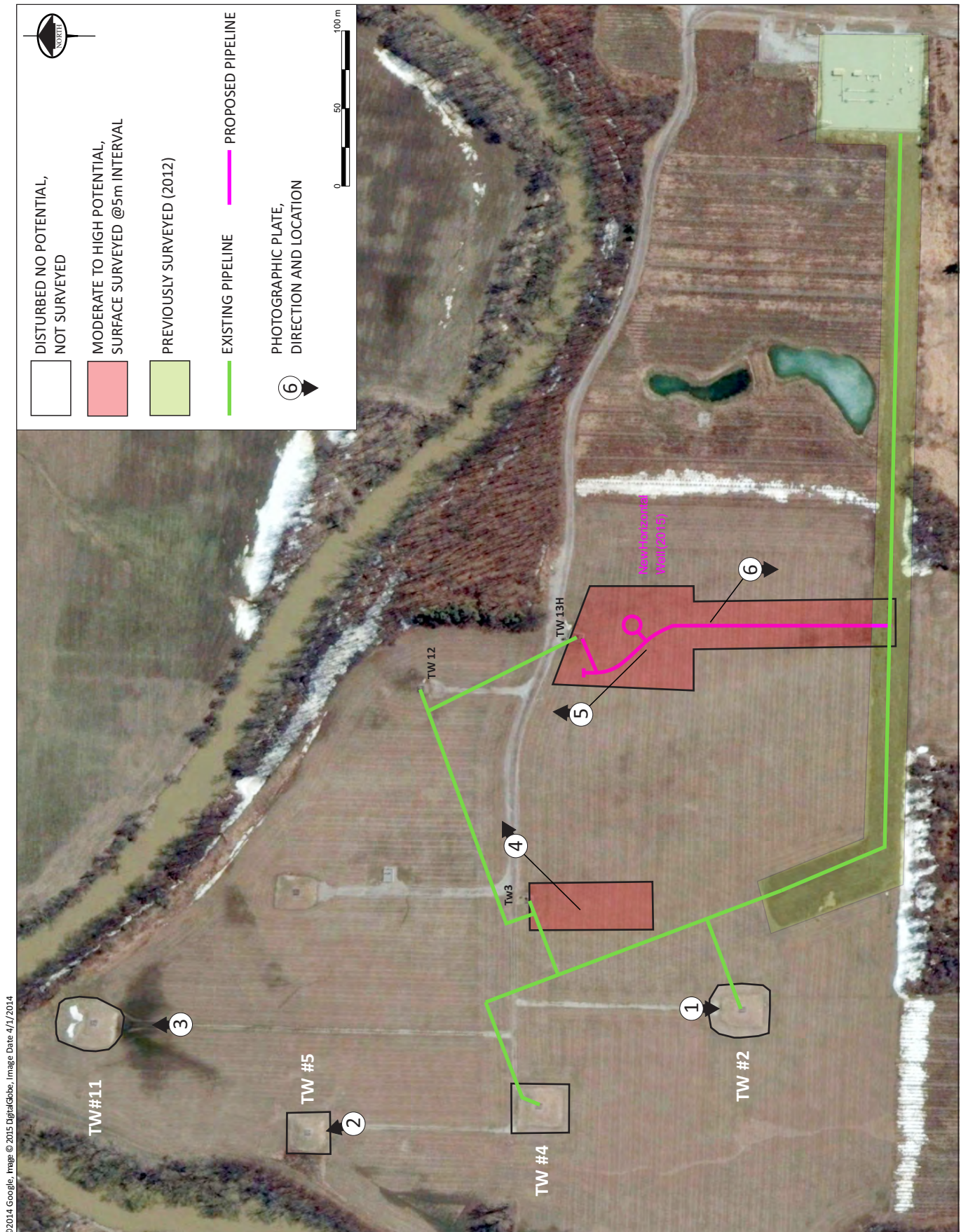


Figure 4 Archaeological Potential, Survey Coverage and Key to Photographic Plates

PLATES



Plate 1 Existing Natural Storage Well TW 2, View South



Plate 2 Existing Natural Storage Well TW 5, View Northwest



Plate 3 Existing Natural Storage Well TW 11, View North



Plate 4 The Western Survey Segment, View Northeast



Plate 5 The Eastern Survey Segment, View North



Plate 6 Area Surveyed for Connecting Pipeline, View South

DESIGN SPECIFICATIONS

1. The pipeline will be designed, constructed, and operated in compliance with O. Reg 210/01 *Oil and Gas Pipeline Systems* and EGD's design, construction and operating standards. The primary design standard adopted by O. Reg. 210/01 is CSA Z662-11 *Oil and Gas Pipeline Systems*.

Materials

2. All pipeline material will meet the requirements of the applicable CSA standards:
 - Z245.1-14, Steel Pipe
 - Z245.11-13, Steel Fittings
 - Z245.12-13, Steel Flanges
 - Z245.15-13, Steel Valves
 - Z245.20-14, External Fusion Bond Epoxy Coating
 - Z245.21-14, External Polyethylene Coating for Pipe

Corrosion Protection

3. External corrosion protection will be provided by a combination of external coating and cathodic protection. No special internal corrosion protection is required since the natural gas will be of transmission quality (i.e., sweet).

Design Criteria

Description	Application CSA Z662-11 Table 4.1
	Location Class 2 General
Combined Design & Location Factor	.72
Nominal Pipe Diameter (mm)	406.4
Design Pressure (kPa)	9,930
Maximum Operating Pressure (kPa)	9,930
Operating Pressure Range (kPa)	0-9,930
Grade (MPa)	359
Minimum Wall Thickness (mm)	9.5
Fracture Category	II
Minimum Design Temperature (degC) Above Grade / Buried	-30
Maximum Design Temperature (degC)	120
Hydrostatic Test Pressure (kPa)	12,410
Estimated Length (m)	220

HYDROSTATIC TEST PROCEDURES

1. The pipelines will be hydrostatically pressure tested according to CSA Z662-11.
2. Enbridge is proposing to use municipal water for the test medium, and dispose of test medium using a qualified industrial disposal contractor

ESTIMATED COST of NPS 16 gathering line

<u>Item No.</u>	<u>Description</u>	<u>Cost (\$)</u>
1.0	Material Costs	145,000
2.0	Labour Costs	481,000
3.0	Land Costs	n/a
4.0	Overhead Costs	82,000
5.0	Contingency Costs	63,000
6.0	Total Project Cost	771,000