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July 23, 2008

**VIA COURIER**

Ms. Kristen Walli  
Board Secretary  
Ontario Energy Board  
2300 Yonge Street  
27<sup>th</sup> Floor  
Toronto, Ontario  
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Dear Ms. Walli:

Re: Enbridge Gas Distribution Inc. ("Enbridge")  
Tecumseh Storage Enhancement Project  
EB-2007-0891 - Storage Infill Drilling  
Stage 1 and 2 Archeological Assessment

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On April 2<sup>nd</sup>, 2008, Enbridge filed an application for well drilling licenses with the Minister of Natural Resources and these have been referred to the Ontario Energy Board, (the "Board"). Enbridge is seeking licences to drill 5 wells in the Kimball Colinville Pool, the Wilkesport Pool and the Coveny Pool. This application by Enbridge is part of its ongoing enhancement of its storage system.

Included in the application, at Attachment 10, was the environmental report prepared by Stantec Consulting LTD ("Stantec") titled, "*Environmental Report: Tecumseh Storage Enhancement Project - Storage Infill Drilling*". Appendix B of the environmental report contains correspondence from the Ministry of Culture to Stantec notifying them that an archeological assessment that conforms to the Ministry of Culture's *Standards and Guidelines for Consultant Archeologists* would be required for this study area (*Tecumseh Storage Enhancement Project*).

Enclosed please find 2 copies of the assessment, title "*2008 Stage 1 and 2 Archeological Assessment of the Kimbal-Colinville Infill Drilling Project, Township of St.*

**The 2008 Stage 1-2 Archaeological Assessment  
of the Kimball-Colinville  
Infill Drilling Project,  
Township of St. Clair,  
Lambton County,  
Ontario**

Submitted to

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**The Ontario Ministry of Culture**

Prepared by

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## TABLE OF CONTENTS

<i>Project Personnel</i>	<i>iv</i>
<i>Acknowledgments</i>	<i>iv</i>
<i>Executive Summary</i>	<i>v</i>
<b>1.0 INTRODUCTION</b>	<b>1</b>
<b>2.0 LOCATION AND DESCRIPTION</b>	<b>4</b>
<b>3.0 STAGE 1 ARCHAEOLOGICAL ASSESSMENT</b>	<b>6</b>
3.1 Methods	6
3.2 Results	8
<b>4.0 STAGE 2 ARCHAEOLOGICAL ASSESSMENT</b>	<b>11</b>
4.1 Methods	11
4.2 Results	13
<b>5.0 RECOMMENDATIONS</b>	<b>14</b>
<b>6.0 REFERENCES CITED</b>	<b>15</b>

### List of Tables

Table 1	Cultural Chronology of Southwestern Ontario	7
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## List of Figures

Figure 1	Location of the Tecumseh Storage Enhancement Project	17
Figure 2	Detail of the Kimball-Colinville Infill Drilling Project	18
Figure 3	Aerial Photograph of the Proposed Well Sites	19
Figure 4	Facsimile of the 1880 Historic Atlas Map of the Study Area	20

## List of Plates

Plate 1	TKC 62H: view south of proposed well pad looking toward Moore Line	22
Plate 2	TKC 62H: close-up of surface conditions in mown winter wheat	22
Plate 3	Revised location of TKC 61H: view west from existing well	22
Plate 4	Revised location of TKC 61H: close-up of survey conditions	22
Plate 5	Select historic artifacts from TKC 62H	22

## Appendix

2008 Stage 2 Artifact Catalogue for TKC 62H

## Project Personnel

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## Acknowledgments

This assessment was facilitated by the following individuals and their agencies:

- **Paul Druet**, Manager, Reservoir Development, Enbridge Gas Distribution Inc.;
- **Kathy McConnell**, Senior Project Geologist, Enbridge Gas Distribution Inc.;
- **Jim McDonald**, Enbridge Field Supervisor, Enbridge Gas Distribution Inc.;
- **Melanie Adamson**, Project Manager, Stantec Consulting Ltd.;
- **Dave Wesenger**, Project Director, Stantec Consulting Ltd.; and
- **Robert Von Bitter**, Archaeological Data Coordinator, Culture Services Unit, Ontario Ministry of Culture.

## EXECUTIVE SUMMARY

In order to help meet the growing demand for natural gas storage services in the Province of Ontario, Enbridge Gas Distribution Inc. (“Enbridge”) is proposing the drilling of two new wells in their Kimball-Colinville Storage Pool in the Town of St. Clair, Lambton County, Ontario. D.R. Poulton & Associates Inc. (DPA) conducted the archaeological assessment of the proposed undertaking. The Tecumseh Compressor Station, which formed northern terminus of the recently-assessed Ladysmith Pipeline (DPA 2008), is located on the west edge of the Kimball-Colinville Storage Pool.

The Kimball-Colinville DSA comprises approximately 1,780 hectares in area and was approved in November, 1963 under EBO 5. Currently the Kimball-Colinville Pool contains 43 injection/withdrawal wells and seven observation wells; it has a total capacity of 1,340.3  $10^6$ m<sup>3</sup> and a working capacity of 950.8  $10^6$ m<sup>3</sup>.

The present assessment follows an Environmental Report prepared for Enbridge in March 2008 by Stantec Consulting Ltd. Both studies were prepared with consideration of the Ontario Energy Board’s (“OEB”) *Environmental Guidelines for Location, Construction, and Operation of Hydrocarbon Pipelines, Fifth Edition* (OEB 2003). This report details the rationale, methods and results of the 2008 Stage 1-2 archaeological assessment of the proposed facilities.

As stated in Section 3.0 of this report, the Stage 1 background study confirmed that no archaeological remains had been recorded in proximity to the Kimball-Colinville Storage Pool. Accordingly, possible archaeological planning concerns for the proposed well sites were limited to the potential for as-yet undiscovered sites. The background study indicated that the area of the proposed wells had a low inherent potential for archaeological remains. In addition, past impacts from the construction of existing wells, gathering lines and access roads has degraded whatever potential there might once have been in the lands that are subject to impact from the construction of the two new wells. Regardless, an archaeological survey of the two well sites was conducted in order to address any potential that might be inferred to exist.

As described in Section 4.2 of this report, the survey techniques for the proposed well sites varied. The Stage 2 survey of the proposed well site designated TKC 62H and the original location for the proposed well site designated TKC 61H, which were in winter wheat, were both surveyed by systematic shovel test pitting at a five-metre interval. The test pit survey of TKC 62H was supplemented by a surface examination as the wheat had been mown by the time the survey of that proposed well site was conducted. The Stage 2 survey of the revised location for the proposed well site designated TKC 61H, which was in corn, was surveyed by a systematic surface examination.

With the exception of late historic Euro-Canadian refuse associated with the demolished farmstead in the area of the proposed well pad for TKC 62H, no archaeological remains whatsoever were discovered in the course of the 2008 Stage 2 survey of the proposed well sites. The late historic scatter of Euro-Canadian refuse associated with the demolished farmstead is not considered to represent a significant archaeological resource or planning constraint. Given the negative results of the Stage 1-2 assessment, it is recommended that the Ministry of Culture issue a letter of clearance for the construction of the well sites in the Kimball-Colinville Storage Pool.

## 1.0 INTRODUCTION

In order to help meet the growing demand for natural gas storage services in the Province of Ontario, Enbridge Gas Distribution Inc. (“Enbridge”) is proposing the drilling of two new wells in their Kimball-Colinville Storage Pool in the Town of St. Clair, Lambton County, Ontario. D.R. Poulton & Associates Inc. (DPA) conducted the archaeological assessment of the proposed undertaking. The Tecumseh Compressor Station, which formed northern terminus of the recently-assessed Ladysmith Pipeline (DPA 2008), is located on the west edge of the Kimball-Colinville Storage Pool.

The present assessment follows an Environmental Report prepared for Enbridge in March 2008 by Stantec Consulting Ltd. Both studies were prepared with consideration of the Ontario Energy Board’s (“OEB”) *Environmental Guidelines for Location, Construction, and Operation of Hydrocarbon Pipelines, Fifth Edition* (OEB 2003).

The requirements of the archaeological assessment and the environmental assessment evolved over a period of time in the spring and early summer of 2008. Enbridge Gas Distribution Inc. originally planned to construct a total of five new wells in three separate storage pools: the Kimball-Colinville Storage Pool; the Coveny Storage Pool; and the Wilkesport Storage Pool (Figure 1). That proposed undertaking was entitled the Tecumseh Storage Enhancement Project – Storage Infilling Drilling. Stantec’s report of March 2008 on the proposed undertaking included two separate study areas for the overall project: a Northern Section that encompassed the Kimball-Colinville Storage Pool; and a Southern Section that encompassed both the Coveny and Wilkesport Storage Pools.

The Environmental Report concluded that the proposed undertaking would not represent an impact to cultural heritage resources (Stantec 2008: 40). However, a review of the proposed undertaking by Heather Thomson of the Ministry of Culture determined that the lands involved did have archaeological potential by virtue of the presence of known archaeological sites and proximity to water courses (e-mail of March 26, 2008 to Julia Cushing, Ministry of Culture, in Stantec 2008: Appendix B).

To provide context to the proposed undertaking, it should be noted that a significant portion of the Province's natural gas and oil is produced in Lambton and Middlesex counties. The reserves are scattered throughout the area in small pools in the subsurface strata. The aforementioned Kimball-Colinville Pool underlies Lots 17, 18, and 19 and Concessions V, VI, VII. The Coveny Pool underlies Lots 14, 15 and 16 of Concessions XI and XII. The Wilkesport Pool underlies Lots 14 and 15 of Concession XIII. All three pools have been developed for the storage of natural gas by Enbridge and are currently in operation and each of these pools contains existing wells and associated gathering lines and access roads.

It is understood that the existing wells in the Coveny storage pool were constructed in 1997 and that they were the subject of a Stage 1-2 archaeological assessment by Archaeological Research Associates (ARA) at that time. The report on that assessment is not currently available. That said, it is understood that the only potentially significant archaeological sites identified by the 1997 assessment were two 19<sup>th</sup> century Euro-Canadian components (Shari Prowse, personal communication to Dana Poulton, June 2008). They were located in the Wilkesport Pool, just west of the intersection of Burman Line and Kimball Road (County Road 31). These two sites are located 13 kilometres south of the two proposed wells of concern to the present assessment.

A 1997 letter from Neal Ferris of the Ministry of Culture to Dean Knight of ARA stated that the two Euro-Canadian sites in question should be registered by ARA. It also stated that further information on the sites should be provided to support the assertion that they should not be considered to be significant heritage resources. However, it is understood that there was no further communication from ARA to the Ministry of Culture in advance of the 1997 construction of the wells and ancillary facilities in the Wilkesport Storage Pool and the other two storage pools (Ibid).

On March 27, 2008 Paul Druet of Enbridge contacted Dana Poulton of D.R. Poulton & Associates and requested a work plan and budget for a Stage 1 archaeological assessment of the five proposed well sites in aforementioned three storage pools. Enbridge awarded the contract for the Stage 1 assessment of the five proposed well sites on April 22, 2008. Subsequent to that, the Stage 1 assessment was initiated.

On May 23, 2008 James Caldwell of D.R. Poulton & Associates conducted a site visit. The results confirmed that the lands involved in the five proposed well sites had some potential for as-yet undiscovered archaeological remains and warranted a Stage 2 archaeological survey. That finding was conveyed to Enbridge on May 27, 2008. The proposed wells in the Wilkesport Storage Pool had the highest degree of archaeological potential by far, due to their proximity to the confluence of Bear Creek and the North Sydenham River, the two largest stream courses in the interior of Lambton County, and to the proximity of the 19<sup>th</sup> century settlement of Wilkesport.

The visual examination of May 23, 2008 also determined that the fields in which the five proposed well sites were located were all planted in crops and that the crops were too dense to permit a survey by surface examination. Accordingly, it was determined that contract ploughing would be required if the proposed facilities were to be surveyed by surface examination.

In terms of scheduling, the first priorities for the Stage 2 survey were the two proposed well sites in the Kimball-Colinville Storage Pool: TKC 61; and TKC 62. The Kimball-Colinville DSA comprises approximately 1,780 hectares in area and was approved in November, 1963 under EBO 5. Currently the Kimball-Colinville Pool contains 43 injection/withdrawal wells and seven observation wells; it has a total capacity of 1,340.3 10<sup>6</sup>m<sup>3</sup> and a working capacity of 950.8 10<sup>6</sup>m<sup>3</sup>.

The operation of the two new wells in the Kimball-Colinville Storage Pool is scheduled to begin as soon after drilling is complete as possible. In order to coordinate well drilling at low pressure with the injection schedule, Enbridge informed D.R. Poulton & Associates in May 2008 that it would need to commence drilling by June 2008.

As the assessment proceeded into the survey phase the pad for the first of these two well sites was scheduled to be constructed June 9, 2008. Both well sites were located in fields planted in winter wheat. On June 9, 2008 Enbridge confirmed that the proposed well sites in the Coveny Storage Pool and the Wilkesport Storage Pool had been eliminated and that the new construction would be limited to the TKC 61 and TKC 62 well sites in the Kimball-Colinville Storage Pool. This report details the rationale, methods and results of the 2008 Stage 1-2 archaeological assessment of the proposed facilities.

The archaeological assessment of the proposed well sites was carried out under Archaeological Consulting Licence # P053, issued by the Ontario Ministry of Culture to Christine Dodd of DPA.

The firm submitted a Contract Information Form for the assessment to the Ministry of Culture on April 25, 2008. Confirmation of receipt of the form was received from the Ministry on April 28, 2008. It designated the project as CIF # P053-139-2008.

The 2008 assessment was carried out in accordance with the provisions of the Ontario Heritage Act (Government of Ontario 1990), and with the technical guidelines for archaeological assessments formulated by the Ministry of Culture, Tourism, and Recreation (now the Ontario Ministry of Culture) (MCTR 1993).

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

## 2.0 LOCATION AND DESCRIPTION

The proposed construction includes drill pads and access laneways; they will be constructed to allow all weather access for the drilling activity. The drill pads and access laneways will be constructed by first removing and conserving topsoil followed by the laying of a geotextile blanket, which will be overlain by granular fill. The use of drill pads and above ground drilling tanks will minimize any impact to agricultural soils. Once the construction is complete, the drill pads will be removed and the land restored except for the permanent well site area.

Originally, it was considered that each of the drill pads would measure 60 metres by 60 metres (Stantec 2008). As it evolved, however, a larger dimension was required. The actual footprint for each of the two drill pads involved in the new well sites in the Kimball-Colinville Storage Pool measures 108 metres east-west by 98 metres north-south, for a total surface area of 1.06 hectares (2.6 acres) per well pad. These dimensions include temporary storage space for the displaced topsoil/ploughzone.

The fields that contain the two proposed well sites are in agriculture use. At the time the survey was implemented in June 2008, the fields containing the proposed TKC 61 and TKC 62 well sites were both in winter wheat. On July 2, 2008, however, it was determined that the site for TKC 61, the northern of the two proposed well sites, had to be moved 150 metres east in order to address landowner concerns. The new site for TKC 61 is located in a corn field. Figure 2 shows a detail of the Kimball-Colinville Storage Pool, including the proposed well sites. Figure 3 shows the proposed facilities relative to an aerial photograph of the area, including the location of the three potential well sites covered by the 2008 Stage 2 survey.

The report of March 2008 by Stantec included a description of the environment containing the proposed facilities. The following is a précis of the environmental data from that report.

The Study Area containing the proposed facilities occurs in the Lambton Clay Plain physiographic region, a sub-region of the St. Clair Clay Plains (Chapman and Putnam, 1984). The Lambton Clay Plain is characterized as a bevelled till plain and often a thin veneer of lacustrine clay overlies the till. Over extensive areas the clay plain has the faint knoll-and-sage relief, typical of ground moraines. The St. Clair Clay Plains are characterized by relatively level topography that varies between 175 and 213 metres above sea level (a.s.l.) (Chapman and Putnam, 1984).

The Study Area is approximately 181.9 to 193.0 metres a.s.l., the only exceptions being the creeks, rivers and drains that flow through the Study Area. The land in the Study Area slopes slightly to the south and west. This area was once covered by the glacial lakes of Whittlesey and Warren, which deposited the thin layer of lacustrine clay. The clay has filled most of the natural depressions and this, coupled with wave action wearing down the knolls, has contributed to the development of the nearly level topography that is common to this area of southern Ontario.

Reference to the 1:50,000-scale National Topographic Service mapping (Sarnia 40 J/16) shows that the closest stream courses to either of the two proposed well sites is a tributary of Bear Creek named Nichol Creek. The headwaters of Nichol Creek are located east of Moore Centre, 2.5 kilometres east of the proposed well site designated TKC 62H. The second closest mapped stream course is another tributary of Bear Creek, named Burton Drain. It is located north and northwest of Colinville.

Surficial geological deposits within the Study Area containing the proposed well sites have been mapped as glaciolacustrine deepwater silt and clay deposits. Poorly-drained Brookston clay soils have developed on these glaciolacustrine deposits, with some Caistor clay occurring near creeks and rivers. The Study Area is located within the Deciduous (Carolinian) Forest Region and the Lake Erie Counties Climatic Region.

The proposed well site designated TKC 61H is located in an area of Brookston Clay soils. Brookston Clay is the poorly-drained member of the Huron Catena and occurs on nearly 60% of the lands within the Study Area. This soil has developed on level to slightly sloping terrain that exhibits poor drainage characteristics both internally and externally. It belongs to the Great Soil Group of Dark Grey Gleisolic section (OMAFRA, 1957).

Agricultural yields on Brookston Clay soils are hindered by drainage problems and, where artificial drainage has not been installed, crops are generally limited to hay, pasture, and some cereal grains. On lands that have been improved with artificial drainage systems the crop productivity is increased and typical crops include winter wheat, cereal grains, alfalfa, corn, soybeans, and sugar beets.

The proposed well site designated TKC 62H is located in an area of Caistor Clay soils. In the Study Area, Caistor Clay soils are situated immediately adjacent to Bottom Land. Bottom Land is situated in the valleys of the North Sydenham River and Bear Creek. Typically, Caistor Clay occurs on slightly undulating topography. This soil belongs to the Grey-Brown Podzolic Great Soil Group and represents the transition area between the Brookston Clay and the Bottom Land. The internal drainage of Caistor Clay soils is restricted by compact subsoil and the external drainage is classed as imperfect due in part to many saucer-like depressions (OMAFRA 1957). These soils are best utilized for livestock farming, legume crops, and rotations that include some row crops.

### 3.0 STAGE 1 BACKGROUND RESEARCH

#### 3.1 Methods

The first stage of the assessment consisted of background research. This was conducted in order to:

- *amass all of the readily available information on any previous archaeological surveys in the area;*
- *determine the locations of any registered and unregistered sites within and adjacent to the property;*
- *identify areas of archaeological potential which represented concerns for Stage 2 field survey; and*
- *develop an historical framework for assigning levels of potential significance to any new sites discovered during fieldwork.*

The framework for assigning levels of potential archaeological significance is drawn from provincial environmental assessment guidelines (Weiler 1980). It includes the identification and evaluation of any feature that has one or more of the following attributes:

*it has the potential through archaeological exploration, survey, or fieldwork to provide answers to substantive questions (i.e. relate to particular times and places) about events and processes that occurred in the past and therefore add to our knowledge and appreciation of history;*

*it has the potential through archaeological exploration, survey and fieldwork to contribute to testing the validity of general anthropological principles, cultural change and ecological adaptation, and therefore to the understanding and appreciation of our man-made heritage; or*

*it is probable that various technical, methodological, and theoretical advances are likely to occur during archaeological investigation of a feature, alone or in association with other features, and therefore contribute to the development of better scientific means of understanding and appreciating our man-made heritage (Weiler 1980:8).*

For purposes of context, D.R. Poulton & Associates submitted a site data request to the Ministry of Culture for a study area that incorporated a 2-kilometre buffer surrounding the Kimball-Colinville Storage Pool. Two collective sources were examined during the Stage 1 assessment. The first was the Archaeological Sites Database of the Ministry of Culture. It houses site record forms for registered sites as well as published and unpublished reports on past surveys, assessments and excavations.

The second collective source for the Stage 1 research was the library/archives of D.R. Poulton & Associates Inc. It includes an extensive inventory of published and unpublished reports, as well as inventories of registered and unregistered archaeological sites in the area.

In addition to the above, other sources were examined to identify the potential for Euro-Canadian sites. They included the reprint of the 1880 Illustrated Historic Atlas of Lambton County (Phelps 1973) and the history of Lambton County by Elford (1982).

For reference purposes, a segment of the 1880 Historic Atlas map of Moore Township is reproduced as Figure 4. A cultural chronology of the region is presented in Table 1.

**Table 1 Cultural Chronology for Southwestern Ontario**

PERIOD	GROUP	TIME RANGE	COMMENT
PALEO-INDIAN			
	Fluted Point	9500 - 8500 B.C.	Big game hunters small nomadic groups
	Hi-Lo	8500 - 7800 B.C.	
ARCHAIC			
Early	Nettling	7800 - 7000 B.C.	Nomadic hunters and gatherers
	Bifurcate Base	6800 - 6000 B.C.	
Middle	Laurentian	6000 - 2000 B.C.	Transition to territorial settlements
Late	Lamoka	2500 - 1700 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	1000 - 400 B.C.	Introduction of pottery
	Red Ochre	1000 - 500 B.C.	
Middle	Couture	300 B.C. - A.D. 500	Long distance trade networks
Late	Rivière au Vase	A.D. 500 – 900	Incipient horticulture
	Younge Tradition	A.D. 900 – 1300	Transition to village life and agriculture
	Springwells	A.D. 1300 – 1400	Large village sites
	Wolf	A.D. 1400 – 1550	Tribal differentiation and warfare
HISTORIC			
Early	Historic Native	A.D. 1700 – 1875	Social displacement
Late	Euro-Canadian	A.D. 1800 - present	European settlement

## 3.2 Results

The results of the Stage 1 study may be divided into three separate but related categories: information on past archaeological investigations and known sites in the study area; information on the history of 19<sup>th</sup> century land use in the area; and data on the known or potential archaeological concerns within or close to the proposed well sites.

### *Past Archaeological Investigations and Known Sites*

The Ministry of Culture does not maintain a database of properties that have had past archaeological investigations. In consequence, the only way a consulting archaeologist will know that a past assessment has been conducted in a given area is if he or she has personal knowledge of it, or if the assessment resulted in the discovery and registration of one or more archaeological sites that were then entered into the Ministry's Archaeological Sites Database.

In the present case, the only documented past investigation that included the present study area was the 1997 assessment by Archaeological Research Associates of previous well construction within the Kimball-Colinville Storage Pool, the Coveny Storage Pool and the Wilkesport Storage Pool. As stated in Section 1.0 of this report, the report by ARA is not currently available. That said, the previous assessment did not result in the registration of any archaeological sites within the Kimball-Colinville Storage Pool, or in close proximity. Accordingly to Robert von Bitter, the Archaeological Data Coordinator of the Ministry of Culture, the closest registered archaeological sites to the Kimball-Colinville Storage Pool are located four kilometres to the southwest.

### *History of Land Use in the Study Area*

Moore Township was settled at least as early as 1804, but some of the settlers proved to be transient. The township was surveyed in 1829. As of that date, it had five English-speaking families and 15 French-speaking families. All were settled along the St. Clair River (Elford 1982: 54). Most of the interior of the township was an immense swamp, passable only in the winter. There was no settlement in the interior until 1836, when a settlement named Bear Creek was formed in the vicinity of what is now Bridgen. That settlement was located approximately six kilometres southeast of the Kimball-Colinville Storage Pool.

The concerted efforts to drain the swamp and transform it into productive farmland in the decades that followed 1836 can be seen in the fact that by 1880, when the Historic Atlas was published, there was almost \$20,000 in outstanding drainage debentures (Phelps 1973: 16). The Historic Atlas states the following on that subject:

From the fact that there are nearly \$20,000 of outstanding debentures against the township, it is but fair to suppose that energetic efforts have been commenced to convert the former impenetrable swamp, covering the central portion of the township, into a valuable and fertile section; and such is actually the case, the effects of the drainage system already being patent to the most casual observer...

At present, the closest named settlement to the Kimball-Colinville Storage Pool is Moore Centre. It is located at the intersection of Moore Line and Kimball Road, at the southeast corner of the storage pool.

Figure 4 shows existing conditions within the study area and vicinity as of 1880. As illustrated in this figure, the crossroads community of Moore Centre is represented by a single structure on the 1880 Historic Atlas map of Moore Township. It is the Town Hall, which was located at the northeast corner of the crossroads.

The land ownership maps in the 1880 Historic Atlas maps only depict subscribers. Granting that limitation, the 1880 Historic Atlas map of Moore Township only depicts one structure within what is now the Kimball-Colinville Storage Pool. It is the farmstead of a Jno. Eyre. The structure that represents this farmstead is located in the southwest part of the storage pool, in the southern part of Lot 18, Concession 7, Moore Geographic Township.

### ***Archaeological Potential of the Kimball-Colinville Storage Pool***

The potential for pre-contact and post-contact archaeological resources is generally evaluated on the basis of known sites in the area and on the nature of the human adaptations to the physiography, soils and drainage of the area. Yet another consideration is the extent to which past impacts may have degraded or eradicated the potential for extant archaeological remains.

The potential for pre-contact First Nations archaeological sites in the vicinity of the proposed well sites in the Kimball-Colinville Storage Pool is considered to be very low. That assessment is based on the fact that the area that contains the proposed wells formed part of an uninhabitable swamp until it was drained in the mid to late 19<sup>th</sup> century.

Further to the above, the potential for post-contact First Nations archaeological sites and for historic Euro-Canadian archaeological remains in the vicinity of the proposed wells is essentially limited to the decades following the drainage of the swamp. As stated previously, the only structure the 1880 Historic Atlas depicts within the Kimball-Colinville Storage Pool is the farmstead of a Jno. Eyre. Historic Atlas maps do not depict the locations of structures with accuracy. That said, the location depicted for the Eyre farmstead generally corresponds to the location of the proposed well site designated TKC 62H.

Further to the above, and as noted in Environmental Report by Stantec (2008), Enbridge recently demolished a house and barn complex that had been situated on the east edge of the area of impact involved in the proposed well site designated TKC 62H. According to Mr. McDonald, Enbridge removed these features by excavating a hole and bulldozing the structures into the hole. This hole is now a slight mound situated just east of the proposed pad area. Mr. McDonald suggests the age of the occupation to postdate 1920. However, if the demolished farmstead is indeed related to the Eyre farmstead depicted on the 1880 Historic Atlas map, it likely would have had its genesis sometime in the last quarter of the 19<sup>th</sup> century.

In general, the potential for as-yet undiscovered historic First Nations and Euro-Canadian archaeological remains in the areas involved in the proposed well construction is considered to be moderate at best. That assessment is based in part on the fact that the lands involved were habitable and suitable for agriculture after the drainage was improved in the mid to late 19<sup>th</sup> century, and that the proposed well site designated TKC 62H is located in reasonable proximity to Moore Line, which formed part of the historic transportation network in the area. Further comments on the inferred potential for the proposed well site designated TKC 62H are presented in Section 4.2 of this report, below.

As a footnote to the above discussion, it should be mentioned that an assessment of archaeological potential has already been provided by the Ministry of Culture. As stated in Section 1.0 of this report, a review of the proposed undertaking by Heather Thomson of the Ministry of Culture determined that the lands involved had archaeological potential by virtue of the presence of known archaeological sites and proximity to water courses (e-mail of March 26, 2008 to Julia Cushing, Ministry of Culture, in Stantec 2008: Appendix B). However, that assessment applied to the original Tecumseh Storage Enhancement Project – Storage Infilling Drilling, which included all three storage pools in this part of the county - the Coveny Storage Pool, the Wilkesport Storage Pool and the Kimball-Colinville Storage Pool (Figure 1). In reality, and as described in Section 2.0 of this report, the nearest water course is 2.5 kilometres from the closest of the two proposed well sites in the Kimball-Colinville Storage Pool. In addition, and as described in Section 2.0 of this report, the nearest registered sites are four kilometres from the closest of the two proposed well sites in the Kimball-Colinville Storage Pool.

Given the above, the application of the archaeological potential criteria considered by Heather Thomson of the Ministry of Culture would tend to indicate that the two proposed well sites in the Kimball-Colinville Storage Pool did not have a potential for as-yet undiscovered archaeological potential by virtue of the fact that they are located a considerable distance from water courses and known archaeological sites. In effect, Thomson's assessment of the potential for archaeological remains was only positive in the case of the Tecumseh Storage Enhancement Project because it happened to include the Coveny Storage Pool and the Wilkesport Storage Pool.

In summary, the background study indicated that the area of the proposed wells had a low inherent potential for archaeological remains. In addition, past impacts from the construction of existing wells, gathering lines and access roads has degraded whatever potential there might once have been in the lands that are subject to impact from the construction of the two new wells. That can best be seen by an examination of the locations of the numerous existing well locations illustrated in Figure 2 of this report. Regardless, an archaeological survey of the new well sites was conducted in order to address any remaining potential that might be inferred to exist. The methods and results of the survey are described in Section 4.0 of the report.

## **4.0 STAGE 2: FIELD ASSESSMENT**

### **4.1 Methods**

As stated in Section 2.0 of this report, the archaeological survey examined two separate locations for the proposed well designated TKC 61H and one location for the proposed well designated TKC 62H. Each of the pads involved in the new well sites in the Kimball-Colinville Storage Pool measures 108 metres east-west by 98 metres north-south, for a total surface area of 1.06 hectares (2.6 acres) per well pad. These dimensions include temporary storage space for the displaced topsoil/ploughzone. Figure 3 shows the location of the potential well sites covered by the 2008 Stage 2 survey.

On June 9, 2008 the project personnel visited the two proposed well sites and met with Enbridge's Field Supervisor Jim McDonald. The survey followed over the course of three separate days beginning on June 9, 2008. The weather on all three days was hot and humid. The survey was limited to the well pads as the access roads and gathering lines had already been constructed or construction was in progress by the time the survey was carried out. Data on the survey of the respective well sites are detailed below.

#### ***TKC #62H***

This well site is located within a randomly tiled field. As stated previously, the field that contains it is planted in winter wheat.

The proposed site for TKC #62H is located 30 metres east of an existing well site. If the well pad for the existing well construction was in the order of 60 metres by 60 metres in size, the western 30 metres or so of the proposed pad for TKC #62H would have overlapped the area disturbed by the existing well pad construction, with the topsoil removed, then replaced. . The previous construction of the well to the west of TKC #62H impacted the western portion of the lands of concern to the 2008 survey of the new well site.

Further to the above, information provided by Jim McDonald, Enbridge Field Supervisor, determined that lands in the immediate vicinity of the proposed site for TKC #62H had until recently contained a house and barn complex. The house was located just east of the proposed pad for the well. The barn straddled the eastern edge of the lands involved in the proposed well pad. Enbridge removed these structures by excavating a hole and bulldozing the demolished structures into the hole. This hole is now a slight mound situated just east of the proposed pad area. Mr. McDonald suggests the age of the occupation of this site to postdate 1920. However, as detailed in Section 3.2 of this report, the results of the background study indicate that the genesis of the farmstead may date to the last quarter of the 19<sup>th</sup> century. Regardless of the specifics, the area involved in the excavation of the hole and the subsequent demolition of the farmstead and the burial of its remains impacted the eastern portion of the lands of potential concern for archaeological survey at the proposed site of TKC #62H.

The archaeological survey of TKC #62H was conducted on June 10, 2008. By that date, the area of the proposed pad had been defined by mowing of the winter wheat. In the process of the construction of the gathering line on June 9, 2008, an area measuring 10 x 10 metres had been stripped to subsoil for the excavation of an access pit to the gathering line. The fill from the stripping and excavation of this hole had been placed to the side of the pit; it covered an area of 15 x 8 metres.

As with the June 9 survey of the original site selected for TKC #61H, the presence of the dense wheat crop and the schedule for the proposed construction both precluded a survey by surface examination of TKC #62H. Accordingly, the June 10 survey of the proposed pad containing TKC 62H was conducted by systematic shovel test pitting. The shovel test pits were approximately 30 cm in diameter. Each pit was excavated to subsoil and the soils were screened through 6mm mesh screen.

Notwithstanding the above, it should be stated that the mowing of the winter wheat did permit a partial examination of the ground surface in the proposed 1.06-hectare well pad. Accordingly, where the ground surface was visible during the course of the test pit survey the surface was examined for cultural remains.

Plate 1 shows a view of the proposed well pad for TKC 61H looking south toward Moore Line. The locations of test pits are marked by coloured survey flags in this photograph. Plate 2 shows a view of surface conditions in the mown wheat; one of the Euro-Canadian ceramic sherds is visible in this view.

### ***TKC #61H***

Given the proposed construction schedule, the first priority for the survey was the proposed well designated TKC 62H. Due to a conflict in planning the well site, however, TKC#62H, was inaccessible on June 9<sup>th</sup> as construction had already started on the gathering line designed to tie the new well into the existing system. Because of this conflict, TKC 61H was surveyed first.

The proposed well site for TKC 61H was located in a field planted in winter wheat. The survey of the proposed pad that contained the limit of impacts for this well was conducted on June 9, 2008. The presence of the dense wheat crop and the schedule for the proposed construction both precluded a survey by surface examination. Accordingly, the June 9 survey of the proposed pad containing TKC 61H was conducted by systematic shovel test pitting. The shovel test pits were approximately 30 cm in diameter. Each pit was excavated to subsoil and the soils were screened through 6mm mesh screen. No archaeological remains whatsoever were found.

As stated in Section 2.0 of this report, on July 2, 2008 it was determined that the proposed site for TKC 61 had to be moved 150 metres east in order to address landowner concerns. Both the original site and the new site for this well pad were located within systematically tiled fields. The new site for TKC 61 is located in a corn field. It was surveyed on July 3, 2008.

The survey of the revised location for the TKC 61 well pad was conducted by a systematic surface examination. In order to maximize survey coverage, every second row of corn was walked, and the corn was parted by hand so that all of the exposed soils in each row could be examined throughout

the length of each row. As illustrated in Plate 4, the soils were well-weathered and the conditions for the survey were very good. The survey provided 100% visibility of each row being walked and visibility of most of each of the two rows either side. In addition, the rows either side were essentially examined twice – once by the surveyor of that row, looking left and right, and again by the surveyor walking the second row over, again looking left and right. Given that, the surface visibility in the pedestrian survey of the 1.06-hectare surface area covered by the proposed well pad for TKC 61H was in the order of 90%. This factor mitigated against the presence of the crop, which otherwise would to some degree have inhibited the surface survey of TKC 61H.

Plate 3 shows a view of the revised location for TKC #61H, with one of the existing wells in the foreground. Plate 4 shows a close-up of survey conditions in the corn field within which the proposed well pad for TKC #61H is located.

## 4.2 Results

The only cultural remains discovered during the course of the survey of TKC #62H were several late historic Euro-Canadian artifacts. When the specimens were found on the surface or in excavating shovel test pits, their locations were marked by survey flags.

In all, the survey of TKC #62H recovered 23 artifacts. Eighteen of the artifacts (78%) were recovered as surface finds; the five exceptions came from test pits. The sample includes 10 pieces of ironstone (five transfer-printed, one moulded, three plain and one foot). It also includes one piece of brown copper tea leaf ironstone, one piece of semi-porcelain, one piece of salt-glazed red earthenware, seven pieces of bottle glass (one solarized), one piece of green stamped whiteware, one shard from a glass cup and an iron axe. A representative sample of the collection is illustrated in Plate 5.

All of the remains recovered by the survey of TKC #62H pertain to the farmstead recently demolished by Enbridge. In addition, all of them could date to the 20<sup>th</sup> century, although it is possible that some of them (such as the ironstone) could date to the late 19<sup>th</sup> century. Regardless, the occupation responsible for these remains is considered to be too late to represent a significant archaeological resource or planning concern.

## 5.0 RECOMMENDATIONS

As stated in Section 3.0 of this report, the Stage 1 background study confirmed that no archaeological remains had been recorded in proximity to the Kimball-Colinville Storage Pool. Accordingly, possible archaeological planning concerns for the proposed well sites were limited to the potential for as-yet undiscovered sites.

As described in Section 4.2 of this report, the survey techniques for the proposed well sites varied. The Stage 2 survey of the proposed well site designated TKC 62H and the original location for the proposed well site designated TKC 61H, which were in winter wheat, were both surveyed by systematic shovel test pitting at a five-metre interval. The test pit survey of TKC 62H was supplemented by a surface examination as the wheat had been mown by the time the survey of that proposed well site was conducted. The Stage 2 survey of the revised location for the proposed well site designated TKC 61H, which was in corn, was surveyed by a systematic surface examination.

With the exception of late historic Euro-Canadian refuse associated with the demolished farmstead in the area of the proposed well pad for TKC 62H, no archaeological remains whatsoever were discovered in the course of the 2008 Stage 2 survey of the proposed well sites. The late historic scatter of Euro-Canadian refuse associated with the demolished farmstead is not considered to represent a significant archaeological resource or planning constraint. Given the negative results of the Stage 1-2 assessment, it is recommended that the Ministry of Culture issue a letter of clearance for the construction of the well sites in the Kimball-Colinville Storage Pool.

The above concludes the general and site-specific recommendations of this report. Nevertheless, it should be emphasized that no archaeological survey can be considered to totally negate the potential for deeply buried cultural remains, including human burials. In recognition of that fact, the archaeological assessment technical guidelines formulated by the Province of Ontario require that all reports on archaeological assessments include recommendations to address the possibility that deeply buried remains may be encountered during construction (MCTR 1993:12).

In accordance with the above, it is recommended that archaeological staff of the Ontario Ministry of Culture be notified immediately if any deeply buried archaeological remains should be discovered during future earthmoving or other impacts associated with the construction of the proposed well sites. In the event that human remains should be encountered, it is similarly recommended that the development proponent immediately contact Shari Prowse, Archaeological Review Officer of the London office of the Culture Programs Unit of the Ontario Ministry of Culture (519 675-6898) and Michael D'Mello, the Registrar of the Cemeteries Regulation Unit of the Ontario Ministry of Government Services (416 326-8404).

## 6.0 REFERENCES CITED

Chapman, L.J. and D.F. and Putnam

1984 **The Physiography of Southern Ontario.** 3<sup>rd</sup> Edition. Ministry of Natural Resources, Toronto.

Elford, Jean Turnbull

1982 **Canada West's Last Frontier: a History of Lambton.** Lambton County Historical Society.

Government of Ontario

1990 **The Heritage Act RSO 1990.** Queen's Printer, Toronto.

Ministry of Citizenship, Culture and Recreation (MCzCR)

1997 **Conserving a Future for Our Past: Archaeology, Land Use Planning & Development In Ontario. An Educational Primer and Comprehensive Guide for Non-Specialists. 1997 (Revised March 1998).** Ministry of Citizenship, Culture and Recreation, Cultural Programs Branch, Archaeology and Heritage Planning Unit.

Ontario Energy Board (OEB)

2003 Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario. Fifth Edition. Ontario

Phelps, Ed

1973 **Belden's Illustrated Historic Atlas of the County of Lambton, Ontario, 1880.** The Hunter Rose Company, Toronto, Ontario.

Stantec Consulting Ltd.

2008 Environmental Report: Tecumseh Storage Enhancement Project – Storage Infilling Drilling. March 2008.

Weiler, John

1980 **Guidelines on the Man-Made Heritage Component of Environmental Assessments.** Historical Planning and Research Branch, Ministry of Culture, Tourism and Recreation, Toronto.

## **FIGURES**

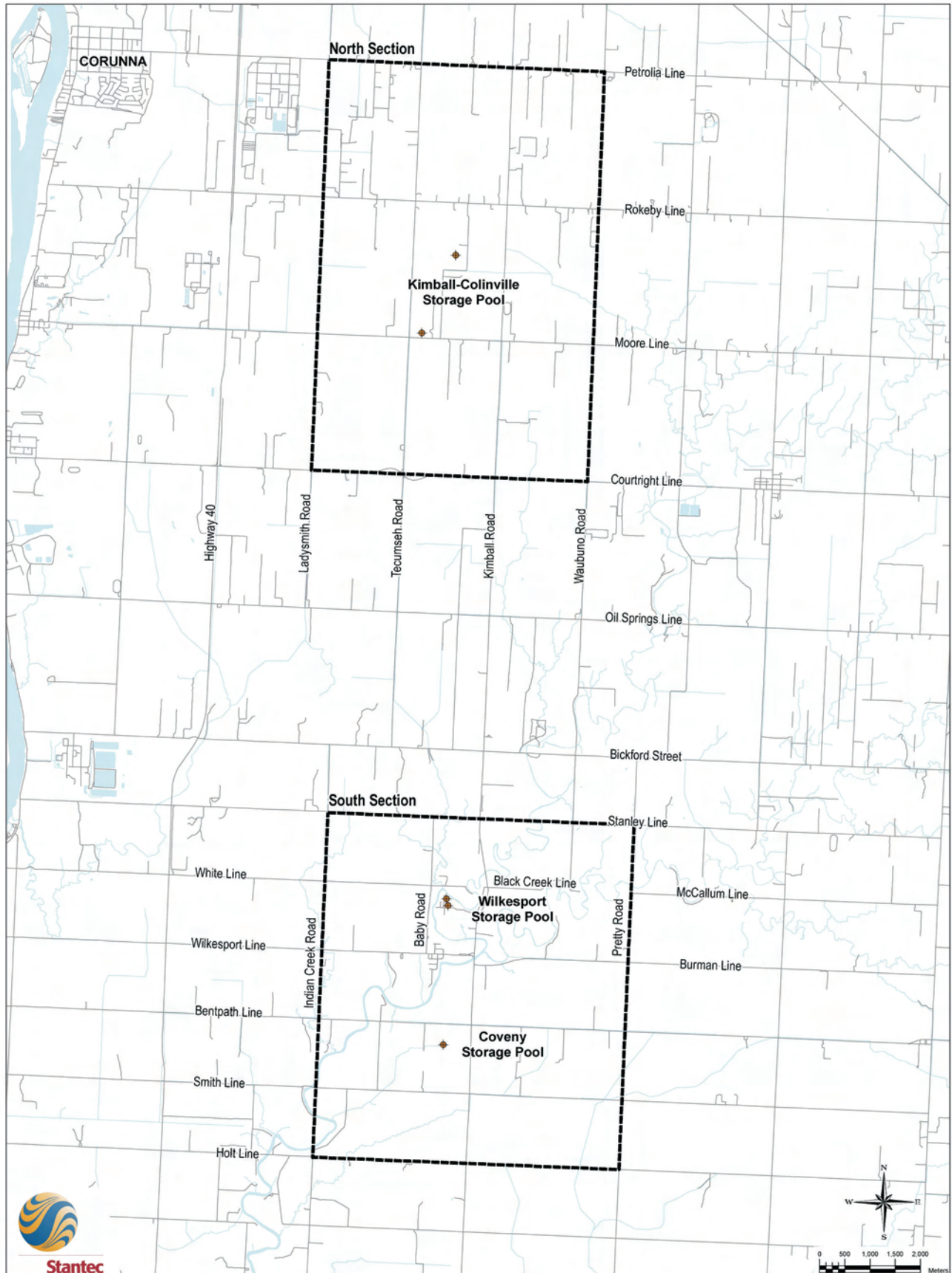


Figure 1 Location of the Tecumseh Storage Enhancement Project

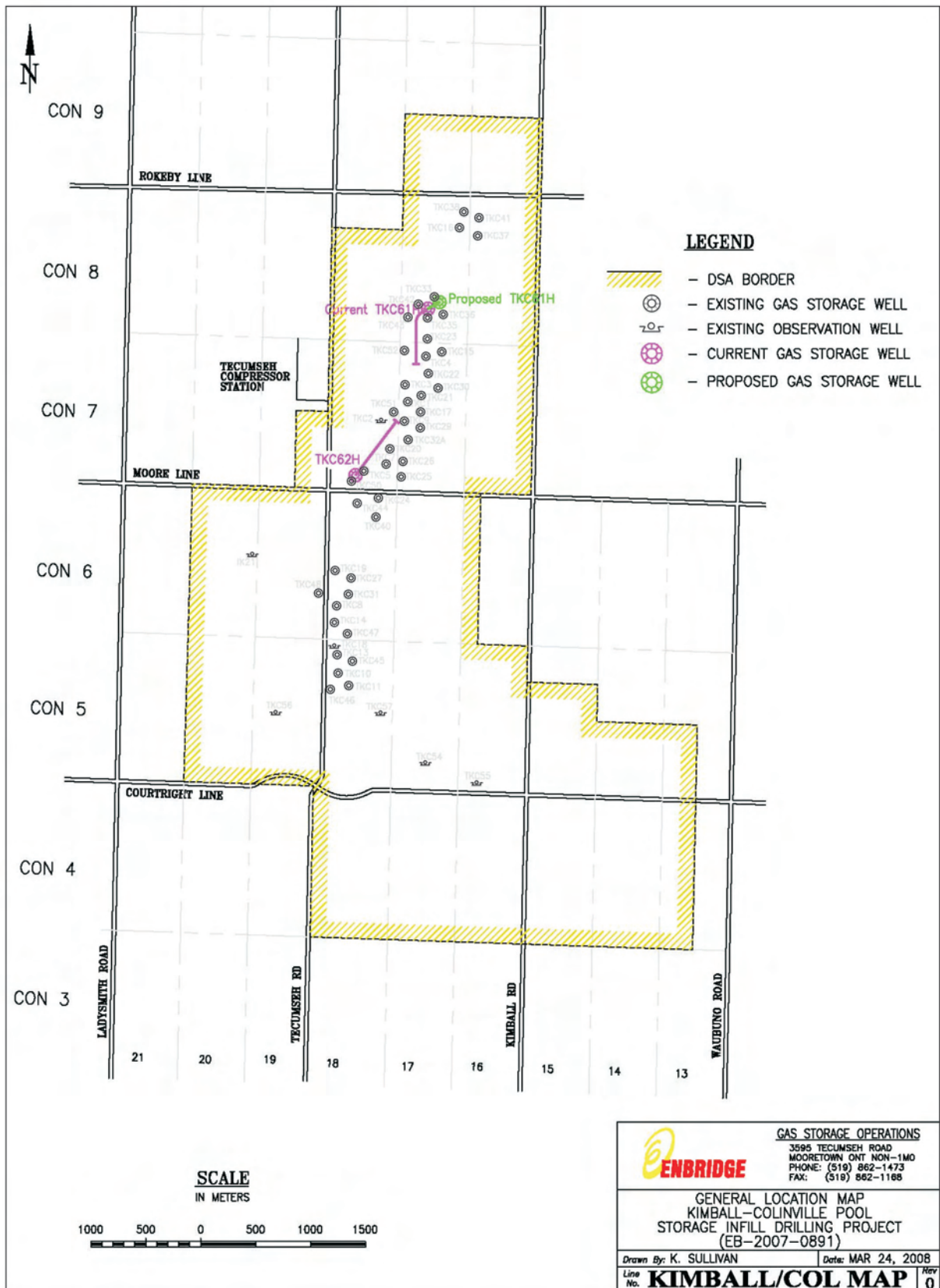


Figure 2 Detail of the Kimball-Colinville Infill Drilling Project



**Figure 3** Aerial Photograph of the Proposed Well Sites

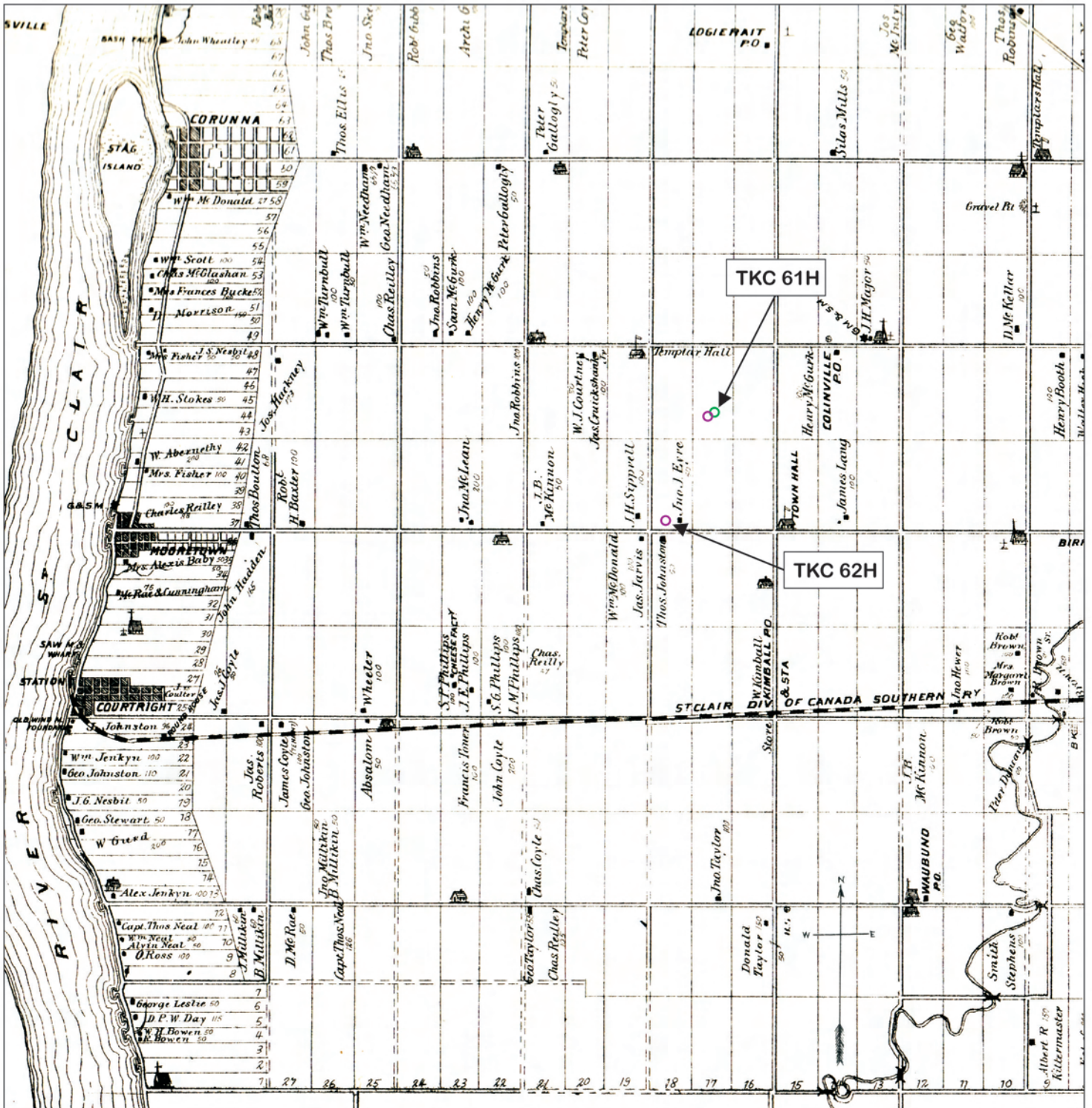


Figure 4 Facsimile of the 1880 Historic Atlas Map of the Study Area

## **PLATES**



**Plate 1** TKC 62H: view south of proposed well pad looking toward Moore Line



**Plate 2** TKC 62H: close-up of surface conditions in mown winter wheat



**Plate 3** Revised location of TKC 61h: view west from existing well



**Plate 4** Revised location of TKC 61H: close-up of survey conditions



**Plate 5** Select Historic Artifacts from TKC 62H

## **APPENDIX**

## Surface and Test Pit Collection 2008 Lambton Wells Site

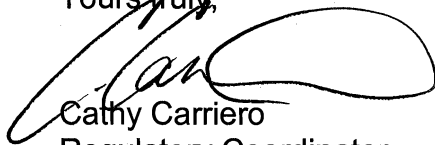
Provenance	Cat #	Category	Class	Type	Description	Colour	f	Portion
Test Pit	2	Tableware	Ceramic	Ironstone	plain	white	2	sherd
Test Pit	7	Tableware	Glass	Press Moulded	ribbed	colourless	1	base
Test Pit	8	Tableware	Ceramic	Ironstone	plain	white	1	sherd
Test Pit	9	Tableware	Ceramic	Ironstone	plain	white	2	sherd
Surface	1	Tableware	Ceramic	Ironstone	plain	white	1	base
Surface	3	Utilitarian Ware	Ceramic	Red Earthenware	glazed	green	1	sherd
Surface	4	Tableware	Ceramic	Ironstone	plain	white	1	lid
Surface	5	Tableware	Ceramic	Ironstone	plain	white	1	sherd
Surface	6	Farm Equipment	Axe	Head	caste iron	white	1	complete
Surface	10	Utilitarian Ware	Glass			solarized	1	sherd
Surface	11	Tableware	Ceramic	Ironstone	copper tea leaf	brown	1	plate
Surface	12	Tableware	Ceramic	Semi-Porcelain	plain	white	1	sherd
Surface	13	Tableware	Ceramic	Ironstone	plain	white	1	sherd
Surface	14	Tableware	Ceramic	Ironstone	moulded	white	1	base
Surface	15	Utilitarian Ware	Glass	bottle		aqua	1	sherd
Surface	16	Tableware	Ceramic	Whiteware	stamped	polychrome	1	bowl
Surface	17	Utilitarian Ware	Glass	bottle	embossed letterir	aqua	1	sherd
Surface	18	Utilitarian Ware	Glass	bottle	plain	aqua	1	sherd
Surface	19	Utilitarian Ware	Glass	bottle	plain	aqua	3	sherd

July 23, 2008  
Ms. Walli  
Page 2 of 2

*Clair, Lambton County, Ontario.*" The assessment can be included with Attachment 10 in the EB-2007-0891 evidence binder.

Please contact the undersigned if you have any questions.

Yours truly,

A handwritten signature in black ink, appearing to read 'Cathy Carriero', is written over the typed name. The signature is fluid and cursive, with a large loop at the end.

Cathy Carriero  
Regulatory Coordinator

cc: Zora Cronjacki, OPCC  
Oscar Alonso, TSSA  
Scott Stoll, Aird & Berlis  
Rob Rowe, Enbridge Gas Distribution