ENBRIDGE GAS DISTRIBUTION INC.
POST-CONSTRUCTION
ENVIRONMENTAL MONITORING REPORT NO.1

GEORGIAN BAY REINFORCEMENT PIPELINE
EB-2007-0782

Prepared by
Enbridge Gas Distribution Inc.
June 9, 2009

Table of Contents

Appendices

1.0 Introduction

In the spring of 2008 the Ontario Energy Board ("OEB") under docket number EB-2007-0782 granted Enbridge Gas Distribution Inc. ("Enbridge") Leave to construct and operate an NPS 12 (12 inch diameter) natural gas pipeline to support load growth in the Georgian Bay area. Prior to obtaining approval, Enbridge conducted the following studies to select a pipeline route, identify potential impacts resulting from construction, and prepare mitigative measures to minimize environmental and socio-economic impacts.

Report Title	**Conducted by**:	**Date**
The Stage 1 Archaeological Assessment of the Enbridge Consumers Gas Collingwood Reinforcement Pipeline, Springwater Township, Simcoe County	Archaeological Assessments Limited	August 2002
Environmental and Socio-Economic Impact Assessment Georgian Bay Reinforcement Pipeline Project	SENES Consultants Limited	September 2002
Update Study Environmental and Socio-Economic Impact Assessment Georgian Bay Reinforcement	Dillon Consulting Limited	March 2007
Report On Geotechnical Investigation Horizontal Directional Drill Crossings Proposed NPS 12 Gas Pipeline, Township of Springwater, Ontario	Golder Associates	September 2007
The 2007 Stage II Archaeological Assessment of the Proposed Enbridge Gas Collingwood Reinforcement Pipeline, Vespra & Springwater Townships, Simcoe County, Ontario	D.R. Poulton & Associates Inc.	November 2007

Construction of this pipeline began on June 16, 2008 and was completed on December 9, 2008. The pipeline was commissioned on December 9, 2009.

This report has been prepared in accordance with OEB EB-2007-0782 Board Staff Proposed Conditions of Approval as described below:

3.1 Both during and after construction, Enbridge shall monitor the impacts of construction, and shall file four copies of both an interim and a final monitoring report with the Board. The interim monitoring report shall be

filed within six months of the in-service date, and the final monitoring report shall be filed within fifteen months of the in-service date. Enbridge shall attach a log of all complaints that have been received to the interim and final monitoring reports. The log shall record the times of all complaints received, the substance of each complaint, the actions taken in response, and the reasons underlying each action.

3.2 The interim monitoring report shall confirm Enbridge adherence to Condition 1.1 and shall include a description of the impacts noted during construction and the actions taken or to be taken to prevent or mitigate the long-term effects of the impacts of construction. This report shall describe any outstanding concerns identified during construction.

3.3 The final monitoring report shall describe the condition of any rehabilitated land and the effectiveness of the mitigation measures undertaken. The results of the monitoring programs and analysis shall be included and any recommendations made as appropriate. Any deficiency in compliance with any of the Conditions of Approval shall be explained.

This report is limited to items that have been identified prior to June 2, 2009. Items addressed after this date will be identified in the final Post-Construction Environmental Monitoring Report. This report will summarize actual construction procedures and identify any significant deviations from proposed construction activities.

2.0 Project Description

The pipeline project was constructed to reinforce the supply of natural gas to the existing distribution network in the Georgian Bay area, Ontario. The reinforcement is necessary to meet the needs of residential, commercial and industrial customers in the Towns of Collingwood and Wasaga Beach.

The pipeline originates at the Enbridge Barrie Gate Station located on Anne Street North in the City of Barrie. It terminates at an existing NPS 8 located at the intersection Crossland Road and Flos Road 4. The pipeline is approximately 20 kilometers (km) in length. Appendix A shows the constructed pipeline within a regional context.

3.0 Environmental Inspection

In order to ensure that environmental commitments were honoured and that the best industry practices were used, a full time Chief Inspector was onsite. In general, the duties of the Chief Inspector included the following items:

- provide advice to the Project Manager, Construction Inspectors, and all construction personnel regarding compliance with environmental legislation, regulations and industry standards;
- provide advice regarding adherence to environmental specifications and commitments made in the previously mentioned documents and to regulatory agencies, including the OEB;
- provide advice on erosion protection measures to be taken in sensitive locations in vicinity of watercourse crossing;
- act as a liaison with environmental regulators, government agencies and interest groups;
- provide immediate advice regarding spill prevention and contingency; and,
- ensure appropriate waste disposal of any hazardous construction wastes.

4.0 Construction Effects and Mitigation Measures

Construction effects and mitigation measures which were implemented to minimize the potential effects the construction of the Georgian Bay Reinforcement Project are summarized in Table 1. All activities were conducted in adherence to the contract documentation and Enbridge Construction Policies and Procedures.

Table 1.

Construction Effects and Mitigation Measures

Activity	Duration	Potential Effect	Mitigation Measures
Vegetation Cover	Throughout Construction (June 16, 2008– December 9, 2008)	Permanent removal of vegetation. Aesthetic degradation. Changes in surface drainage patterns affecting amount of water available. Changes to sunlight or wind exposure regimes.	Specimen trees adjacent to roadways (i.e. bottom of Vespra Valley Road and 1 km section of Crossland Road north of Flos Road 2) were identified prior to construction and preserved using directional drill. Professional branch trimming was completed prior to construction where required to prevent damage. Manicured turf adjacent to roadways (i.e. Highway 26 and Crossland Road) was restored by reseeding. Further restoration will be completed by Enbridge.
Topsoil Handling	Throughout Construction	Disruption of surface and subsurface soils. Soil mixing may result in loss of productivity.	Care was taken to minimize mixing of subsoils. Topsoil was replaced on surface during restoration.
Watercourse Crossing	Throughout Construction (June 16, 2008– December 9, 2008)	Disruption of watercourse through siltation and sedimentation. Erosion of channel banks and loss of vegetation cover. Contamination of surface water. Interruption of subsurface drainage along pipeline trench.	Crossings of tributaries to the Black Creek, Nottawasaga River and Marl Creek, as well as the Willow Creek and Swaley Drain were completed by directional drill. Watercourse crossing permits were obtained from the Nottawasaga Valley Conservation Authority. Sediment fencing installed to prevent sedimentation and siltation.
Traffic Control	Throughout Construction	Exposure of construction crews to vehicular traffic.	Contractor to ensure MTO Book 7 traffic control plan has been completed and has been set up in accordance with the prescribed Traffic Layout.

Table 1.

Construction Effects and Mitigation Measures

Activity	Duration	Potential Effect	Mitigation Measures
Road Crossings	Throughout Construction	Restricted access to businesses and residences.	Nine road crossings (Snow Valley Road, Wilson Road, Highway 26, Golf Course Road, Hendrie Road, Vespra Valley Road, Horseshoe Valley Road West, Rainbow Valley Road East, Flos Road 3 West.) were completed by directional drill. All other road crossing were open cut as authorized by the permitting authority. Warning signs and barricades set up to increase visibility and prevent public access.
Noise	Throughout Construction	Disturbances to sensitive receptors (i.e. residents, seniors' homes, schools).	Construction equipment conformed to guidelines for sound and emission levels.
Archaeological Monitoring	Throughout Construction	Disturbance and potential destruction of archaeological artifacts.	Archaeological Assessments Limited and D.R. Poulton & Associates Limited conducted Stage 1 and 2 Archaeological Assessments, respectively, prior to construction to identify areas of high potential for artifacts. Construction within limits of ROW will minimize potential for encountering archaeological artifacts. No artifacts were encountered.
Trenching and Excavation	Throughout Construction	Open trenches present a hazard to vehicular and pedestrian traffic. Restricts access. Sedimentation into roadside ditches.	Protective barricades (i.e., snow fence, sediment fence, jersey barriers, and straw bales) were erected around trenches and excavations during construction activities.
Utility Crossings	Throughout Construction	Minimum distance separation from buried or above-ground services may not provide sufficient room within a road right-of-way (R.O.W.) for the installation of a gas pipeline; damage to utilities may inconvenience landowners	In accordance with the Enbridge Policies and Procedures, locates were obtained prior to any excavation work. Warning signs posted in vicinity of overhead power lines. Crossing permits obtained from Canadian Pacific Railways (CPR).

Table 1.

Construction Effects and Mitigation Measures

Activity	Duration	Potential Effect	Mitigation Measures
Spills	Throughout Construction	Contamination of air, soil, surface water or ground water. Inconvenience to landowners and public	As required, contractor had spill containment kits at the project site.
Hydrostatic Testing	November 2008	Disruption of water supply to landowners or emergency services. Uncontrolled discharge of water could cause erosion, sedimentation and contamination of surface water supplies.	Permission from the City of Barrie was obtained to take water from a municipal fire hydrant; and discharge water to the sanitary sewer were obtained from the City of Barrie[1]. No significant adverse environmental effects resulted from the hydrostatic testing and dewatering procedures.
Pipe Energizing	December 9, 2008	Inconvenience and/or negative health effects to nearby landowners and the public.	Energizing was completed in accordance with Enbridge Policies and Procedures.
Clean-Up	Throughout Construction	Restores the pipeline easement to pre-construction conditions.	Clean up activities were conducted in accordance with the Enbridge Construction Manual. Remaining restoration of the road allowance along the route to be completed by Enbridge. Results of the clean-up program will be examined again in the spring of 2010.

[1] City of Barrie originally provided approval to discharge into storm sewer, but resident complaints resulted in revision to permit and hydrostatic test water redirected to sanitary sewer. Spill report made to Spills Action Centre and City of Barrie.

5.0 Residual Issues

Overall, construction activities were carried out with a high level of respect for the environment.

Since portions of the pipeline Right-Of-Way (R.O.W) are located within the road allowance, there may, in the future, be some degradation caused by vehicular traffic and littering that is not a result of construction.

There are three unresolved issues that remain at the time of completion of this report (June 2009) for the Georgian Bay Reinforcement Pipeline. These issues will need to be addressed prior to the final monitoring of the pipeline route.

5.1 Vegetation

There were several specimen trees along Vespra Valley Road and Crossland Road within the road allowance where the pipeline was installed. Portions of these road allowances were directionally drilled. The specimen trees were monitored and appear to be in good health. Enbridge will continue to periodically monitor these trees but it does not foresee future problems.

5.2 Re-vegetation

Vegetation has re-established along portions of the road allowance where it was disturbed due to construction. However, numerous sections will require additional restoration and re-vegetation, these include:

- Wilson Drive;
- Highway 26;
- Vespra Valley Road;
- Horseshoe Valley Road West; and,
- Crossland Road.

These sections will require monitoring over the next year to identify the success of re-vegetation efforts and to identify areas that will require further efforts.

NOTE: Due to the season of project completion (December 2008) restoration efforts were not completed along the entirety of the route. Enbridge has initiated continued restoration along the road allowance beginning in May 2009.

5.3 Watercourse Crossing

Erosion control devices such as silt fences, sand bags and straw bale check dams have been installed where required to control any erosion and sedimentation concerns identified. These devices should be removed from the east and west banks of the crossing of Willow Creek and tributaries to the Black Creek on Wilson Drive.

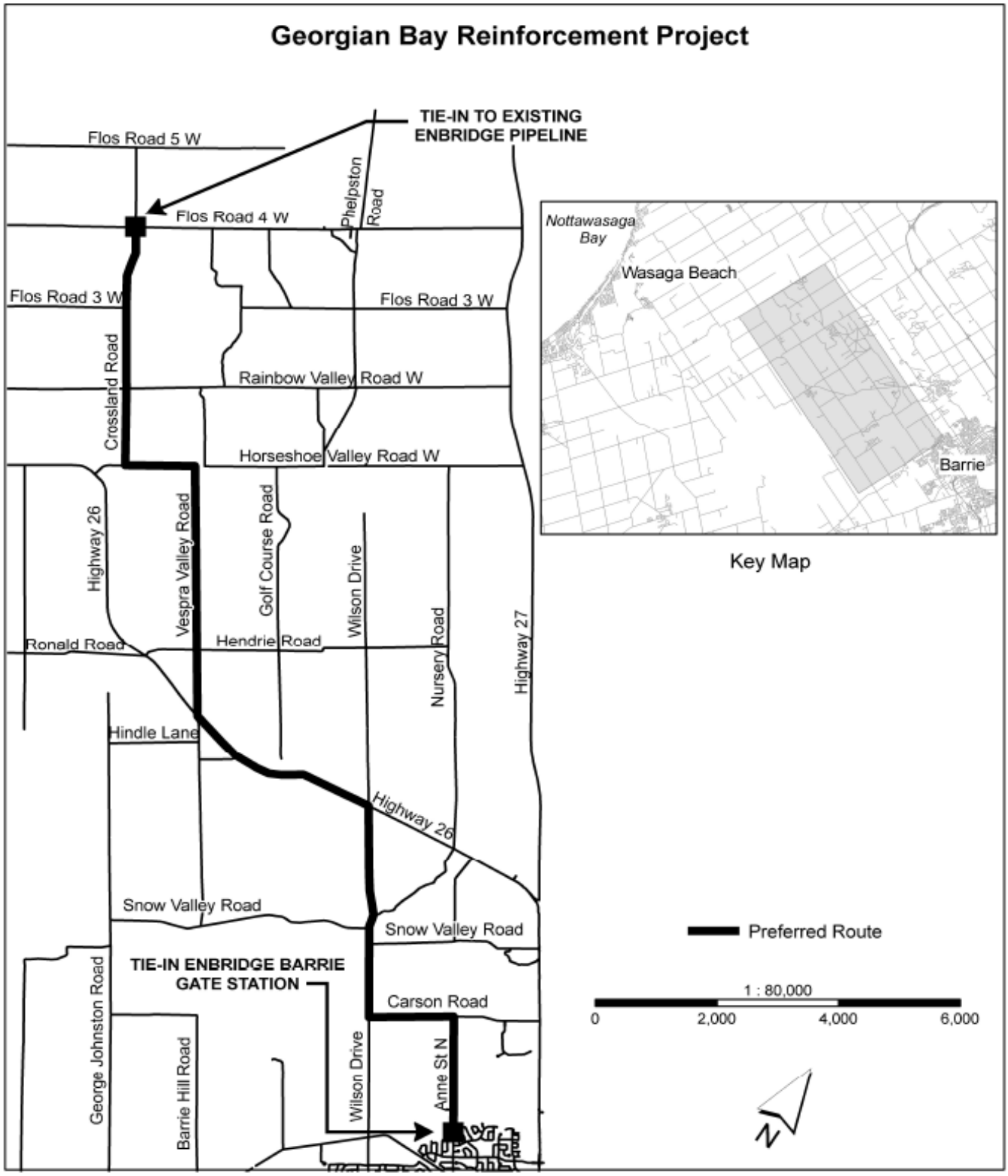
NOTE: The Township of Springwater has requested that erosion control devices remain in place until re-vegetation efforts have been successful on disturbed areas in the vicinity of the respective watercourses (i.e. summer 2009).

6.0 Summary

This Interim Post-Construction Environmental Monitoring Report has been prepared in accordance with the OEB Decision EB-2007-0782. It documents construction and clean-up activities conducted between the winter (2008) and spring (2009). In general, measures implemented during construction and clean-up have been moderately successful. Three outstanding issues will be addressed in the Final Post-Construction Environmental Monitoring Report that will be prepared in the spring of 2010. This report will document continued remediation activities if needed, and address additional issues that may arise.

APPENDIX A

PIPELINE ROUTE MAP


Georgian Bay Reinforcement Project
TIE-IN TO EXISTING ENBRIDGE PIPELINE
Flos Road 5 W
Flos Road 4 W
Phelpston Road
Flos Road 3 W
Flos Road 3 W
Crossland Road
Rainbow Valley Road W
Horseshoe Valley Road W
Highway 26
Vespra Valley Road
Golf Course Road
Wilson Drive
Nursery Road
Highway 27
Ronald Road
Hendrie Road
Hindle Lane
Highway 26
Snow Valley Road
Snow Valley Road
TIE-IN ENBRIDGE BARRIE GATE STATION
Carson Road
George Johnston Road
Barrie Hill Road
Wilson Drive
Anne St N
Nottawasaga Bay
Wasaga Beach
Barrie
Key Map
Preferred Route
1 : 80,000
0
2,000
4,000
6,000
N

APPENDIX B

PHOTO LOG

Photo 1 – Anne Street North; looking south toward Barrie Gate Station

Photo 2 – Anne Street North; looking north from TransCanada Metering Station

Photo 3: Carson Road; looking east towards Anne Street North

Photo 4: Carson Road; looking west towards crossing of Black Creek Tributary

Photo 5 – Wilson Drive; looking south towards Carson Road

Photo 6 – Wilson Drive; looking south across from Vespra Hills Golf Club

Photo 7 – Wilson Drive; south of crossing of Black Creek Tributary

Photo 8 – Wilson Drive; looking north from Snow Valley Road

Photo 9 – Wilson Drive; CPR crossing (north side)

Photo 10 – Wilson Drive; looking north from CPR crossing adjacent to Springwater Provincial Park

Photo 11 – Wilson Drive; looking north adjacent to Springwater Provincial Park

Photo 12 – Wilson Drive; looking south towards Springwater Provincial Park

Photo 13 – Wilson Drive; headwater stream with straw bale and sediment fencing

Photo 14 – Wilson Drive; headwater stream crossing

Photo 15 – Wilson Drive; looking north towards Highway 26

Photo 16 – Highway 26; looking west from Wilson Drive

Photo 17 – Highway 26; looking west towards Golf Course Road

Photo 18 – Highway 26; looking west at crossing of Willow Creek

Photo 19 – Highway 26; east side of Willow Creek; sediment control devices to be removed

Photo 20 – Highway 26; looking east, across from Mayer Road

Photo 21 – Vespra Valley Road; looking south towards Highway 26

Photo 22 – Vespra Valley Road; looking north towards Hendrie Road

Photo 23 – Vespra Valley Road; looking north towards Horseshoe Valley Road West

Photo 24 – Vespra Valley Road; looking north, crossing of Marl Creek Tributaries

Photo 25 – Horseshoe Valley Road West; looking east towards Vespra Valley Road

Photo 26 – Horseshoe Valley Road West; looking east, adjacent to Crossland Road

Photo 27 – Crossland Road; looking north from Horseshoe Valley Road West

Photo 28 – Crossland Road; looking north at crossing of Nottawasaga River Tributary

Photo 29 – Crossland Road; looking north from crossing of second Nottawasaga River Tributary

Photo 28 – Crossland Road; looking south at crossing of second Nottawasaga River Tributary

Photo 29 – Crossland Road; looking south from Flos Road 4

Photo 30 – Flos Road 4 at Crossland Road; looking at southwest corner