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December 17, 2020

**VIA EMAIL and RESS**

Ms. Christine E. Long  
Registrar  
Ontario Energy Board  
2300 Yonge Street, 27th Floor  
Toronto, ON M4P 1E4

Dear Ms. Long:

**Re: Enbridge Gas Inc. (Enbridge Gas)  
Ontario Energy Board (OEB) File No.: EB-2020-0256  
2021/2022 Storage Enhancement Project  
Application and Evidence – Updated Evidence**

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Further to the application and evidence filed on November 13, 2020 in the above noted proceeding, Enbridge Gas is filing updates to the following exhibits:

<b>Exhibit</b>	<b>Update</b>
A-1-1	Updated to include Attachment 17 for Exhibit B, Tab 1, Schedule 1
B-1-1	Page 2, paragraph 3 – updated to include the letter of support from the Sarnia Lambton Chamber of Commerce which has been filed as Attachment 17

Should you have any questions concerning this submission please contact the undersigned.

Yours truly,

Asha Patel  
Technical Manager, Regulatory Applications

A – General

<u>Exhibit</u>	<u>Tab</u>	<u>Schedule</u>	<u>Contents of Schedule</u>
A	1	1	Exhibit List / Table of Contents
	2	1	Application & Approvals Requested

B – Purpose, Need, Proposed Facilities & Timing

B	1	1	Purpose, Need, Proposed Facilities & Timing  Attachment 1 – Summary Table of Current Delta Pressure  Attachment 2 – Location map Ladysmith Pool  Attachment 3 – Map Ladysmith DSA  Attachment 4 – Ladysmith Pool Reef Structure Cross-Section  Attachment 5 – Location Map Corunna Pool  Attachment 6 – Map Corunna DSA  Attachment 7 – Corunna Pool Reef Structure Cross-Section  Attachment 8 – Location Map Seckerton Pool  Attachment 9 – Map Seckerton DSA  Attachment 10 – Seckerton Pool Reef Structure Cross-Section  Attachment 11 – OEB Act Ladysmith DSA
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B – Purpose, Need, Proposed Facilities & Timing

<u>Exhibit</u>	<u>Tab</u>	<u>Schedule</u>	<u>Contents of Schedule</u>
B	1	1	Attachment 13 – Ladysmith Proposed Gathering Line  Attachment 14 – Ladysmith Diagram of Proposed Work  Attachment 15 – Ladysmith Station Diagram  Attachment 16 – Construction Schedule  Attachment 17 - Letter of Support – Sarnia Lambton Chamber of Commerce

C – Environmental Matters

C	1	1	Environmental Matters  Attachment 1 - Environmental Report  Attachment 2 - OPCC Review
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D – Facilities and Project Costs

D	1	1	Design and Construction
	2	1	Rates and Project Financing

E – Land Matters

E	1	1	Land Requirements  Attachment 1 – Affidavit of Title Search of Affected Parties (Redacted)
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E – Land Matters

<u>Exhibit</u>	<u>Tab</u>	<u>Schedule</u>	<u>Contents of Schedule</u>
E	1	1	Attachment 2 – Directly Affected Parties from Affidavit of Title Search (Redacted)
	2	1	Form of Temporary Land Use Agreement
		2	Form of Easement Agreement

F – Indigenous Consultation

F	1	1	Indigenous Consultation  Attachment 1 – Duty to Consult (Redacted)  Attachment 2 – Sufficiency Letter  Attachment 3 – Indigenous People Policy
	2	1	Indigenous Consultation Report: Summary Tables
		2	Indigenous Consultation Report: Log and Correspondence (Redacted)

G – Risk Assessment

G	1	1	Risk Assessment
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H – MNRF Requirements

H	1	1	Ministry of Natural Resource and Forestry (MNRF) Requirements  Attachment 1 - Cover Letter and Drill License Application (Redacted)  Attachment 2 – Correspondence with MNRF (Redacted)
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H – MNRF Requirements

<u>Exhibit</u>	<u>Tab</u>	<u>Schedule</u>	<u>Contents of Schedule</u>
H	1	1	Attachment 3 - Corunna Executive Summary
			Attachment 4 - Ladysmith Executive Summary
			Attachment 5 - Seckerton Executive Summary

## PURPOSE, NEED, PROPOSED FACILITIES & TIMING

### Purpose, Need & Proposed Facilities

1. Enbridge Gas Inc. (“Enbridge Gas”) is proposing to conduct the activities set out in the application at Exhibit A-2-1 (“Application”) as part of its 2021/22 Storage Enhancement Project (“Project) in order to meet growing market demand for incremental storage space. The Project is the second phase of a larger project to increase deliverability and storage capacity at Enbridge Gas’ storage facilities. The larger project involves the delta pressuring of certain pools and providing incremental storage capacity. The additional 8,100 10<sup>3</sup>m<sup>3</sup> per day of deliverability and storage capacity will be sold as part of Enbridge Gas’ unregulated storage portfolio. In its EB-2020-0074 interrogatory response at Exhibit 1. STAFF.3, Enbridge Gas described the larger project and its two phases, including the type of work to be completed, pool names and locations and proposed timing of the work to be completed.
  
2. The Project involves:
  - A. Increasing the maximum operating pressure (“MOP”) of three existing storage pools;
  - B. Drilling one injection/withdrawal well in an existing storage pool;
  - C. Installation of natural gas pipelines to connect an existing storage pool to a main compressor station, modifying an existing transmission pipeline to connect with another existing transmission pipeline at an existing station, replacing and upgrading an existing gathering line and connecting an injection/withdrawal well to the main gathering line; and
  - D. Upgrading and installing new equipment and pipelines at existing station

3. Enbridge received a letter of support on December 6, 2020 for this Project from the Sarnia Lambton Chamber of Commerce which can be found in Attachment 17 to this Exhibit. /U

**A. Maximum Operating Pressure Increase – Leave to Vary**

*a. Description of Activities*

4. The Project will include increasing the MOP in the Ladysmith Storage Pool to a maximum pressure gradient of 16.5 kPa/m (0.73 psi/ft) and increasing the MOP in the Corunna Storage Pool and the Seckerton Storage Pool (“Pools”) to a maximum pressure gradient of 17.2 kPa/m (0.76 psi/ft) during the 2021 injection season. This is permitted under Canadian Standards Association Standard Z341.1-18 Storage of Hydrocarbons in Underground Formations (“CSA Z341.1-18”) and Enbridge Gas confirms that it will comply with the requirements of CSA Z341.1-18, as amended from time to time.
5. Enbridge Gas has conducted engineering and geological studies to verify the ability to safely increase the MOP of the Pools. The results are discussed in Exhibit H, Tab 1, Schedule 1 of the evidence.
6. Attachment 1 is a table summarizing the current delta pressure of the Enbridge Gas pools with pressure gradients of 16.5 kPa/m (0.73 psi/ft) or greater.
7. In the past, the Ontario Energy Board (“OEB” or “Board”) has imposed conditions of approval limiting the MOP on certain storage pools operated by Enbridge Gas.

8. Enbridge Gas is applying for leave to vary the conditions of approval in relation to delta pressuring the Ladysmith Storage Pool. The original condition (imposed upon Enbridge Gas' predecessor) states:

*“Consumers Gas shall not operate the Ladysmith Pool above a pressure representing a pressure gradient of 0.7 psi per ft. depth (15.9 kPa/m) without the leave of the Board.”<sup>1</sup>*

The Corunna and Seckerton Pools do not have conditions of approval limiting the pressure similar to the Ladysmith Pool. However, in E.B.R.M. 91, the Board found in limiting the pressure gradient of the Dawn 156 pool to 0.7 psi/ft (15.9 kPa/m) that while it can apply such conditions on a pool-by-pool basis, it is more appropriate for the Ministry of Natural Resources (now the MNRF) to consider the problems associated with ever increasing pressures in gas storage pools throughout Ontario and to determine the maximum safe limit to be permitted.<sup>2</sup>

9. The current and future proposed gradients in the pools are summarized below.

Pool	Current Gradient	Proposed Gradient
Ladysmith	15.6 kPa/m 0.69 psi/ft	16.5 kPa/m 0.73 psi/ft
Corunna	15.8 kPa/m 0.7 psi/ft	17.2 kPa/m 0.76 psi/ft
Seckerton	15.8 kPa/m 0.7 psi/ft	17.2 kPa/m 0.76 psi/ft

10. As a condition to any approval or favourable report from the Board, Enbridge Gas will accept a similar condition for the Ladysmith, Corunna and Seckerton Pools that

<sup>1</sup> E.B.L.O. 269, E.B.O. 212, 213, and E.B.R.M. 112, Appendix B.

<sup>2</sup> E.B.R.M. 91, page 6

was attached to the Board's approval in the EB-2020-0074 proceeding. The condition in the EB-2020-0074 proceeding is as follows, recognizing that Enbridge Gas is proposing to increase the operating pressure at Ladysmith to 16.5 kPa/m (0.73 psi/ft) and at Corunna and Seckerton Pools to 17.2 kPa/m (0.76 psi/ft):

Enbridge Gas Inc. shall not operate the Black Creek, Coveny and Wilkesport natural gas storage pools above operating pressures representing a pressure gradient of 17.2 kPa/m (0.76 psi/ft) of depth without leave of the OEB.

11. Enbridge Gas' request translates into an increase in pool pressure of approximately 530 kPa for Ladysmith, 820 kPa for the Corunna Pool and 810 kPa for the Seckerton Pool. These increases are within the limits prescribed by CSA Z341.1-18.
12. The proposed pressure increase in the Pools will create an additional working capacity of 99,000 10<sup>3</sup>m<sup>3</sup>. Enbridge Gas will use this capacity to meet the requirements of its unregulated storage service customers and will sell the capacity at market-based prices.
13. As with prior approvals for delta pressuring, it is Enbridge Gas' understanding that the Board will condition its approval with a requirement to comply with CSA Z341.1-18 to the satisfaction of the Ministry of Natural Resources and Forestry ("MNRF"). Further information about consultations with the MNRF is provided in Exhibit H, Tab 1, Schedule 1.
14. If the Application is approved, Enbridge Gas will begin operating the pools at higher pressure gradients during the 2021 injection season.

15. Enbridge Gas will review and update operating procedures and emergency response plans prior to operating the pools at the increased pressure levels.
16. Control valves capable of isolating the storage facility from the transmission pipeline are currently in place at the Corunna and Seckerton Pools, with remote operation from the Enbridge Control Room, located at the Corunna Compressor Station, in accordance with CSA Z341.1-18, Section 9.3. As part of the Project, Enbridge Gas is planning to install a control valve in the Ladysmith Station.
17. Enbridge Gas proposes to install emergency shut down (“ESD”) valves on each natural gas storage well at the Corunna and Seckerton pools. All wells at Ladysmith currently have ESD valves installed. All ESDs installed on the wells will have the capability to be shut-in remotely from the Enbridge Control Room, either individually or on a per pool basis.
18. All above ground piping and pipelines are being reviewed to ensure compliance, with the CSA Z662-15 Standard, as adopted by the Technical Standards & Safety Authority through Ontario Regulation 210/01, at the proposed increased operating pressure. The pools will not be operated at the proposed higher operating pressures until the suitability of the above ground piping and pipelines has been confirmed.

*b. Proposed Wellhead Upgrades*

19. As part of the larger project Enbridge Gas will be performing the following work at the Corunna and Seckerton Storage Pools in 2021, from approximately March to October:
  - A. New master valves on 18 wells;

- B. New wellheads on 18 wells; and
- C. The installation of ESD valves on 14 wells

The wellheads are being upgraded to meet CSA Z341.1-18. The ESD valves, while not being required by CSA Z341.1-18, are being added to improve the operational safety of the storage injection/withdrawal wells. The three wells located within the Ladysmith Storage Pool have been previously upgraded and ESD valves have also been installed.

- 20. All of the wellhead and ESD valves work will take place on previously disturbed lands either owned by Enbridge Gas or for which Enbridge Gas has the right to enter for the purposes of its natural gas storage operations.

c. Geology and Reservoir Engineering

Ladysmith Pool

- 21. The Ladysmith Pool was discovered in 1969 with the drilling of McClure Moore 3-20-IV (MM.3-20-4) and was converted to natural gas storage in 1999. A location map showing the Ladysmith Pool is shown in Attachment 2. Currently the pool is operated and monitored using two natural gas storage wells and one observation well. The Ladysmith Pool has a total capacity of 246,400  $10^3\text{m}^3$  and a working capacity of 187,600  $10^3\text{m}^3$ . The pool currently operates between a cushion pressure of 2,512 kPaa and a maximum pressure of 9,200 kPaa.
- 22. A map showing the Ladysmith designated storage area (“DSA”), Guelph structure and depth-to-crest can be found in Attachment 3. The geological interpretation was completed using 3D seismic data and well information. The map is contoured in

10 metre intervals and shows the reef reaching approximately 95 metres above the regional Guelph surface. The minimum depth-to-crest is 621.8 metres.

23. A cross section illustrating the reef structure of the Ladysmith Pool can be found in Attachment 4. The cross section illustrates the relationship of the pinnacle reef to the surrounding formations. The A2 Salt, A1 Carbonate and A1 Anhydrite units pinch out against the flank of the reef providing lateral seals. The A2 Anhydrite, A2 Shale, and A2 Carbonate drape over the reef forming an effective caprock seal ranging in thickness from 32.7 to 41.5 metres. The A2 Anhydrite is continuous over the reef and ranges in thickness from 4.5 to 11.9 metres.
24. Enbridge Gas is proposing to operate the Ladysmith Pool at 9,730 kPaa. This equates to a pressure gradient of 16.5 kPa/m (0.73 psi/ft). This will increase the working capacity from 187,600  $10^3\text{m}^3$  to 204,100  $10^3\text{m}^3$ , which is an incremental capacity gain of 16,500  $10^3\text{m}^3$ .
25. The MOP of the gathering lines in the pool is 9,653 kPag (1,400 psig). As part of this Project, Enbridge Gas is proposing to replace and upgrade the Ladysmith gathering line to 9,929 kPag (1,440 psig) and increase the size from NPS 16 to NPS 20.
26. In order to ensure the proposed maximum pressure gradient complies with CSA Z341.1-18, an engineering study was conducted by Geofirma Engineering Ltd. for the Ladysmith Pool. This engineering study incorporated data from geomechanical and regional in-situ tests completed on the reservoir and caprock formations. An executive summary of the Geofirma study is located in Section H, Tab 1, Schedule 1.

27. In addition, a review of well casings and wellheads was completed for the Ladysmith Storage Pool. As a result of this review it was determined that upgrades to the wells are not required. The three existing wells meet CSA Z341.1-18 and have ESD valves installed.

## ii. Corunna Pool

28. The Corunna Pool was discovered in 1950 with the drilling of Imperial 259 Corunna 4 (IC.4) and was converted to natural gas storage in 1964. A location map showing the Corunna Pool is shown in Attachment 5. Currently the pool is operated and monitored using five natural gas storage wells and one Guelph observation well. The Corunna Pool has a total capacity of 239,200  $10^3\text{m}^3$  and a working capacity of 185,400  $10^3\text{m}^3$ . The pool currently operates between a cushion pressure of 2,512 kPaa and a maximum pressure of 9,690 kPaa.

29. A map showing the Corunna DSA, Guelph structure and depth-to-crest can be found in Attachment 6. The geological interpretation was completed using 3D seismic data and well information. The map is contoured in 10 metre intervals and shows the reef reaching approximately 120 metres above the regional Guelph surface. The minimum depth-to-crest is 647.3 metres.

30. A cross section illustrating the reef structure of the Corunna Pool is shown in Attachment 7. The cross section illustrates the relationship of the reef to the surrounding formations. The A2 Salt, A1 Carbonate and A1 Anhydrite units pinch out against the flank of the reef providing lateral seals. The A2 Anhydrite, A2 Shale, and A2 Carbonate drape over the reef forming an effective caprock seal ranging in thickness from 29.9 to 58.6 metres. The A2 Anhydrite is thin but continuous over the reef and ranges in thickness from 1.1 to 10.6 metres.

31. Enbridge Gas is proposing to operate the Corunna Pool at 10,520 kPaa. This equates to a pressure gradient of 17.2 kPa/m (0.76 psi/ft). This will increase the working capacity from 185,400  $10^3\text{m}^3$  to 209,200  $10^3\text{m}^3$ , which is an incremental capacity gain of 23,800  $10^3\text{m}^3$ .
32. The MOP of the gathering lines in the pool is 11,722 kPag (1,700 psig).
33. In order to ensure the proposed maximum pressure gradient complies with CSA Z341.1-18, an engineering study was conducted by Geofirma Engineering Ltd. for the Corunna Pool. This engineering study incorporated data from geomechanical and regional in-situ tests completed on the reservoir and caprock formations. An executive summary of the Geofirma study is located in Section H, Tab 1, Schedule 1 of this Application.
34. In addition, a review of well casings, wellheads, gathering pipelines and other related surface facilities was completed. As a result of this review, five wells in the Corunna Pool will receive new master valves and new wellheads. Four of these are natural gas storage wells and will also have ESD valves installed. One well does not require any upgrades. This work is scheduled to be completed prior to delta pressuring. No other upgrades are required.

### iii. Seckerton Pool

35. The Seckerton Pool was discovered in 1952 with the drilling of Imperial 344 (I.344) and was converted to natural gas storage in 1964. A location map showing the Seckerton Pool is shown in Attachment 8. Currently the pool is operated and monitored using ten natural gas storage wells and four observation wells. The Seckerton Pool has a total capacity of 592,400  $10^3\text{m}^3$  and a working capacity of

456,200  $10^3\text{m}^3$ . The pool currently operates between a cushion pressure of 2,512 kPaa and a maximum pressure of 9,500 kPaa.

36. A map showing the Seckerton DSA, Guelph structure and depth-to-crest can be found in Attachment 9. The geological interpretation was completed using 3D seismic data and well information. The map is contoured in 10 metre intervals and shows the reef reaching approximately 100-110 metres above the regional Guelph surface. The minimum depth-to-crest is 633.4 metres.
37. A cross section illustrating the reef structure of the Seckerton Pool can be found in Attachment 10. The cross section illustrates the relationship of the pinnacle reef to the surrounding formations. The A2 Salt, A1 Carbonate and A1 Anhydrite units pinch out against the flank of the reef providing lateral seals. The A2 Anhydrite, A2 Shale, and A2 Carbonate drape over the reef forming an effective caprock seal ranging in thickness from 27.5 to 56.7 metres. The A2 Anhydrite is continuous over the reef and ranges in thickness from 1.2 to 17.0 metres.
38. Enbridge Gas is proposing to operate the Seckerton Pool at 10,310 kPaa. This equates to a pressure gradient of 17.2 kPa/m (0.76 psi/ft). This will increase the working capacity from 456,200  $10^3\text{m}^3$  to 514,900  $10^3\text{m}^3$ , which is an incremental capacity gain of 58,700  $10^3\text{m}^3$ .
39. The MOP of the gathering lines in the pool is 11,722 kPag (1,700 psig).
40. In order to ensure the proposed maximum pressure gradient complies with CSA Z341.1-18, an engineering study was conducted by Geofirma Engineering Ltd. for the Seckerton Pool. This engineering study incorporated data from geomechanical and regional in-situ tests completed on the reservoir and caprock formations. An

Executive Summary of the Geofirma Study is located in Section H, Tab 1, Schedule 1. of this Application.

41. In addition, a review of well casings, wellheads, gathering pipelines and other related surface facilities was completed. As a result of this review, thirteen wells in the Seckerton Pool will receive new master valves and new wellheads and ten of these wells are natural gas storage wells and will have ESD valves installed. This work is scheduled to be completed prior to delta pressuring. No other upgrades are required.

***B. Well Drilling – Favourable Report for a Licence to Drill***

42. Enbridge Gas is proposing to drill one horizontal gas storage well [TL 9H (Horiz.#1) Moore 8-20-V (TL 9H)] in the Ladysmith Storage Pool in St. Clair Township, in the County of Lambton, Ontario. Attachment 11 to this Exhibit shows the location of the well and the DSAs. In the Application, Enbridge Gas is requesting that the Board issue a favourable report to the MNRF for the drilling of well TL 9H.

*Horizontal Well – TL 9H*

43. The drilling of the TL 9H well is required to increase the deliverability from the Ladysmith Storage Pool. As noted above, the drilling of the well is part of a larger project to increase the maximum operating pressure in certain pools and to provide incremental storage capacity. The additional deliverability and storage capacity will be sold as part of Enbridge Gas' unregulated storage portfolio.
44. The TL 9H well will be drilled within the same wellbore as TL 9, Moore 8-20-V (TL 9) stratigraphic test well. The drilling of the TL 9 well was approved by by the Board

in EB-2019-0012 and Well Licence T012612 was issued by the MNRF on July 30, 2019.

45. The TL 9 well was drilled in accordance with the drilling program that was submitted to both the Board and the MNRF in EB-2019-0012 and drilling operations were completed on September 26, 2019. The well reached a total depth of 616.5m in the A-2 Shale Formation and did not penetrate the Guelph (reef) storage formation.
46. Enbridge Gas plans to re-enter and plug back the TL 9 stratigraphic test well in March and April of 2021, once withdrawal operations have ceased and the reservoir is below 3,500kPa.
47. Drilling of the TL 9H well will occur from May to July 2021 when there will be no injection or withdrawal operations in the Ladysmith Storage Pool. The drilling work must be done when the reservoir pressure is less than 3,500kPa. This will allow the well to be safely drilled.
48. Upon completion of the drilling of the horizontal well, approximately 70 metres of Nominal Pipe Size (“NPS”) 10-inch steel pipeline will be installed to connect the new well to the Ladysmith gathering pipeline. The drilling pad will be reduced in size to approximately 11m x 5.5m, a permanent access laneway will remain, and the balance of the land will be restored along with the repair of any drainage tile. Attachment 12 to this Exhibit shows the location of the proposed well and lateral pipeline.
49. The drilling of TL 9H will not cause any disruption to service from the Ladysmith Pool.
50. The well will be drilled on previously disturbed lands. The TL 9H well will be drilled on land owned by Enbridge Gas, on an existing gravel pad that was constructed in

2019 for the drilling of the TL 9 well. Upon completion of drilling operations, the drill pad will be reduced in size to approximately 11m x 5.5m, a permanent access laneway will remain, and the balance of the land will be restored along with the repair of any drainage tile.

### ***C. Pipeline – Leave to Construct***

#### *a. Ladysmith Storage Pool*

##### *TL 9H Lateral Pipeline*

51. Enbridge Gas is proposing to install approximately 70 metres of NPS 10-inch steel pipeline, with a pressure rating of 9,930 kPa, from the proposed TL 9H well to the main Ladysmith gathering pipeline. The pipeline will be installed in Lot 20, Concession 5 in St. Clair Township on previously disturbed lands owned by Enbridge Gas. The pipeline installation will occur upon completion of drilling operations in Summer and Fall of 2021 and will not cause any disruption of service to the Ladysmith Storage Pool. The planned in-service date is Fall 2021.

##### *Upgrade of Existing Ladysmith Gathering Line*

52. Enbridge Gas is proposing to upgrade the existing Ladysmith NPS 16 gathering pipeline to NPS 20 steel pipeline. Approximately 200m of NPS 20 will be installed with 160m to connect the three existing wells and the proposed horizontal storage well and 40m of NPS 20 within the Ladysmith Station. The pressure rating of the NPS 20 pipeline will be 9,930 kPa (1440 psig).

53. The NPS 20 pipeline will be installed in Lot 20, Concession 5 in St. Clair Township on previously disturbed lands owned by Enbridge Gas. The NPS 16 pipeline will be

removed and the NPS 20 pipeline will be installed in the same trench. Attachment 13 shows the location of the pipeline in the Ladysmith Storage Pool.

54. Alternate routes for this pipeline were not considered as this is a replacement of an existing pipeline in an established pipeline corridor. The existing pipeline route provides the most direct path and is located on lands owned by Enbridge Gas and therefore provides minimum disruption to adjacent landowners.

55. The NPS 20 pipeline will have an outside diameter of 508 millimeters, Category II notch toughness at design temperature of M5C and minimum specified yield strength of %SMYS of 72%. The MOP of the pipeline will be 9,930 kPa (1440 psig). The pipe will be manufactured to CSA Z245.1 Steel Line Pipe Standard for Pipeline Systems and Materials (latest edition). Figure 9-1 below illustrates minimum design and pipe parameters.

**Figure 9-1**

**Minimum Pipeline Design Specifications**

<b>NPS 20 (508 mm)</b>	<b>Class 2 General Location</b>
<b>Location Factor</b>	0.9
<b>Design Factor</b>	0.8
<b>Maximum Operating Pressure (MOP)</b>	9,930 kPa
<b>Mainline Test Medium</b>	Water
<b>Mainline Minimum Test Pressure</b>	MOP x 1.25 (12,413 kPa)
<b>Grade (minimum)</b>	*
<b>Wall Thickness (minimum)</b>	*
<b>%SMYS</b>	72%
<b>Category</b>	II

- a. Grade and wall thickness will be selected to keep %SMYS below 72% in accordance with Location and Design Factor for Class 2

*Modification to Ladysmith Transmission Pipeline for the Ladysmith and Payne Connection*

56. Enbridge Gas is proposing to re-route the NPS 20 Ladysmith Transmission pipeline to connect the Payne pipeline and the Ladysmith pipeline, within the existing Kimball-Payne Station.
57. A section of the existing NPS 20 Ladysmith Transmission pipeline will be removed and two short segments of NPS 20 pipeline, totaling 79 metres, will be installed in Lot 20, Concession 7 in St. Clair Township. A diagram of the proposed work can be found in Attachment 14.
58. The proposed pipeline will be located on private property and an easement will have to be negotiated with the landowner. See Exhibit E, Tab 1, Schedule 1 for more details on land use requirements.
59. The proposed in-service date for the pipeline is in the Fall of 2022.
60. The NPS 20 pipeline will have an outside diameter of 508 millimeters, Category II notch toughness at design temperature of M5C and minimum specified yield strength of %SMYS of 72%. Maximum Operating Pressure ("MOP") of the pipeline will be 9,930 kPa. The pipe will be manufactured to CSA Z245.1 Steel Line Pipe Standard for Pipeline Systems and Materials (latest edition). Figure 9-1 below illustrates minimum design and pipe parameters.

**Figure 9-1**

**Minimum Pipeline Design Specifications**

<b>NPS 20 (508 mm)</b>	<b>Class 2 General Location</b>
<b>Location Factor</b>	0.9
<b>Design Factor</b>	0.8
<b>Maximum Operating Pressure (MOP)</b>	9,930 kPa
<b>Mainline Test Medium</b>	Water
<b>Mainline Minimum Test Pressure</b>	MOP x 1.25 (12,413 kPa)
<b>Grade (minimum)</b>	*
<b>Wall Thickness (minimum)</b>	*
<b>%SMYS</b>	72%
<b>Category</b>	II

- a. Grade and wall thickness will be selected to keep %SMYS below 72% in accordance with Location and Design Factor for Class 2

*b. Payne Storage Pool*

61. Enbridge Gas is proposing to install 2.2 km of NPS 24 steel pipeline to connect the Payne Storage Pool Compressor Station, located in Lot 21, Concession 7 (3524 Ladysmith Road), to the Corunna Compressor Station located in Lot 19, Concession 7 (3501 Tecumseh Road), both in St. Clair Township.
62. The preferred route for this pipeline commences at the Payne Storage Pool Compressor Station where it interconnects with existing facilities. From there, it travels north along Ladysmith Road to the intersection of Ladysmith Road and an existing Enbridge Gas natural gas pipeline corridor to the Corunna Compressor Station yard on Tecumseh Road, where it will tie into existing facilities.
63. Enbridge Gas has considered alternative routes for the new pipeline and the routes are discussed in the Environmental Report contained in Exhibit C, Tab 1, Schedule 1 of the evidence.

64. Enbridge Gas must order pipe in 2021 to meet the in-service date of Fall 2022. Construction of the proposed pipeline is scheduled to occur in Spring 2022. The construction schedule takes advantage of drier summer months, thereby minimizing the impact of construction on agricultural lands and other features, such as watercourses. The planned in-service date is Fall 2022.
65. The NPS 24 pipeline will have an outside diameter of 609 millimeters, a minimum wall thickness of 12.7 millimeters, Category II notch toughness at design temperature of M5C and minimum specified yield strength of 448 MPa. Maximum Operating Pressure (“MOP”) of the pipeline will be 10,686 kPa. The pipe will be manufactured to CSA Z245.1 Steel Line Pipe Standard for Pipeline Systems and Materials (latest edition). Figure 9-2 below illustrates minimum design and pipe parameters.

**Figure 9-2**

**Minimum Pipeline Design Specifications**

<b>NPS 24 (609 mm)</b>	<b>Class 2 General Location</b>
<b>Location Factor</b>	0.9
<b>Design Factor</b>	0.8
<b>Maximum Operating Pressure (MOP)</b>	10,686 kPa
<b>Mainline Test Medium</b>	Water
<b>Mainline Minimum Test Pressure</b>	MOP x 1.25 (13,358 kPa)
<b>Grade (minimum)</b>	448 MPa
<b>Wall Thickness (minimum)</b>	12.7 mm
<b>%SMYS</b>	57.2%
<b>Category</b>	II

#### ***D. Facilities and Stations Modifications***

##### *a. Ladysmith and Payne Connection*

66. Modifications to the existing Payne-Kimball Station are proposed to provide a connection between the Payne Storage Pool pipeline and the Ladysmith Storage Pool pipeline. The existing Payne-Kimball Station is in Lot 19, Concession 7, Moore Township, Lambton County, Province of Ontario. The modifications will route and control gas from the Ladysmith Storage Pool to the Dawn Compressor Station via the Payne Storage Pool pipeline. Control valves will be installed to allow the higher pressure gas (1440 psig) from the Ladysmith Storage Pool to be reduced to the maximum operating pressure (1000 psig) of the Payne Storage Pool pipeline and will allow the flow of gas from the Ladysmith Storage Pool to the Dawn Compressor Station via the Payne Storage Pool pipeline. The proposed crossover will also have the function of routing gas between the Dawn Compressor Station, the Corunna Compressor Station, the Payne Storage Pool and the Ladysmith Storage Pool. The crossover installation will involve the installation of piping and valving between the two pipelines and the re-routing of approximately 150m of the existing Ladysmith NPS 20-inch steel pipeline. A diagram of the proposed station modifications is included as Attachment 14.
67. The work will require 0.0647 hectares of additional land to be acquired to the north of the existing station measuring approximately 20 metres by 31.8 metres. The Payne-Kimball Station is located on lands owned by Enbridge and the expansion area is located on privately owned lands which Enbridge Gas will be negotiating to purchase. At this time negotiations are still pending however Enbridge Gas does not foresee a risk in being able to purchase the required land as the landowner has indicated he is willing to sell the land.

*b. Ladysmith Station*

68. A 16-inch bi-directional control valve, new NPS 20 pipeline (to replace existing NPS 16 pipeline), isolation valves and associated pipe and fittings will be installed within the Ladysmith Station. There will also be a NPS 20 filter/separator installed and a new NPS 16 receiver, along with associated pipe and fittings.
69. The station work will be completed primarily within the current footprint of the Ladysmith Station. The fence will be extended 5 metres to the south and a driveway will be installed adjacent to the new fence. The extension will be placed on lands owned by Enbridge Gas.
70. A diagram of the proposed station modifications is included in Attachment 15.

Timing

71. A construction schedule for the project set out in this Exhibit can be found at Attachment 16.



December 6, 2020

Enbridge Gas Inc.  
Steven Jelich  
Director, Southwest Region Operations  
Enbridge Gas Inc.  
109 Commissioners Rd W,  
London, ON N6A 4P1  
[steven.jelich@enbridge.com](mailto:steven.jelich@enbridge.com)

RE: Enbridge Gas 2021-22 Storage Enhancement Project

Dear Mr. Jelich:

On behalf of the Sarnia Lambton Chamber of Commerce I am writing to indicate our support for the aforementioned Enbridge Gas 2021-22 Storage Enhancement Project.

The Chamber in Sarnia and Lambton County has a membership of approximately 700 members representing all sectors of business and agriculture. Our members range from innovative entrepreneurs to leaders of corporations and industry associations. Collectively they collaborate with the Chamber in sharing a unified voice for business.

The 2021-22 Storage Enhancement Project will provide multiple benefits for Sarnia and Lambton County. First, it will serve a growing demand for natural gas by allowing Enbridge Gas to store additional natural gas and will increase the deliverability of Enbridge Gas' storage operations. Access to affordable and reliable natural gas energy is critical for businesses and industry in Sarnia and Lambton County to keep costs low. Second, the project will provide an economic boost to the area via an increase in local employment from temporary construction jobs, and via the local sourcing of goods and services for the project.

The Chamber is strongly in support of this project and looks forward to an ongoing positive relationship with Enbridge Gas.

Yours Truly,

A handwritten signature in blue ink, appearing to read "Allan Calvert".

Allan Calvert  
CEO  
Sarnia Lambton Chamber of Commerce