

Executive Summary of the Emission Summary and Dispersion Modelling Report for the Parkway West Compressor Station Dated March 13, 2014

Union Gas Limited retained ORTECH Consulting Inc. to update the Emission Summary and Dispersion Modelling (ESDM) Report for their proposed Parkway West Compressor Station. The facility is located at 6679 Eighth Line in Milton, Ontario. This ESDM report was updated to reflect modifications to the proposed site plan and emergency generator sizes.

The proposed Parkway West Compressor Station is intended to compress natural gas for transmission purposes. The NAICS Code applicable to the facility is '486210 – Pipeline Transportation of Natural Gas'. Facilities described by this NAICS Code are not listed on Schedules 4 or 5 of Ontario Regulation 419/05 and are therefore not required to demonstrate air compliance using advanced modelling with Schedule 3 standards under section 20(4) of O.Reg. 419/05 until February 1, 2020. However, Union Gas has applied for and received a s.20 speed-up notice for nitrogen oxides (NO_x) emitted from their compressor stations (#7353-7G6LPK, issued November 28, 2008) and therefore, Schedule 3 standards have been used to assess NO_x emissions from the facility.

This ESDM Report follows the requirements of the Ontario Regulation 419/05 Air Pollution – Local Air Quality and the Ontario Ministry of the Environment (MOE) "Procedure for Preparing an Emission Summary and Dispersion Modelling Report Version 3.0" dated March 2009 (the Procedure).

The ESDM report includes the quantification of emission rates for all significant sources of contaminants, specifically oxides of nitrogen (NO_x) at the facility, and an estimation of the aggregate maximum 1-hour and 24-hour point-of-impingement (POI) concentrations for NO_x.

The emission rates that have been calculated in this report are for maximum 1-hour and 24-hour operating scenarios as per O.Reg. 419/05 Schedule 3 regulatory requirements. Due to the underlying assumptions used for this scenario, the emission rates cannot be realistically extrapolated to other time periods and should not be used for such purposes.

As shown on Table 1, the predicted maximum NO_x POI concentrations resulting from the maximum emission scenario of both the turbines operating at full load are below the corresponding MOE NO_x POI limits. The maximum 1-hour NO_x POI concentration resulting from a maximum emission scenario of all equipment operating at full load, including the turbines, as well as testing all emergency generators and the firewater pump simultaneously, is also below the relevant MOE NO_x POI limits.

This ESDM Report also includes an assessment of compliance with MOE Guideline A-5: Atmospheric Emissions from Stationary Combustion Turbines for the proposed new turbine units. The primary requirement of Guideline A-5 is achieving designated maximum concentrations of NO_x, CO and SO₂ in the exhaust flow. The design specifications indicate that the units will exceed the requirements. All turbines subject to Guideline A-5 emission limits must be tested to confirm compliance with the limits.

Table 1: Emission Summary Table

Contaminant Name	CAS#	Total Facility Maximum Emission Rate (g/s)	Air Dispersion Model Used	Maximum POI Concentration (µg/m ³)	Averaging Period (hr)	POI Limit (µg/m ³)	Limiting Effect	Regulation Schedule # or Alternate	Maximum % of POI Limit (%)
Nitrogen Oxides (as NO ₂)	10102-44-0	9.2	AERMOD	120	1-hour	400	Health	3	30%
				52	24-hour	200	Health	3	26%
Nitrogen Oxides (as NO ₂)	10102-44-0	1.2	AERMOD	835	1-hour	1,570	Health	Emergency Generator Data Sheet ^[1]	53%

[1] MOE ½-hour NO_x POI Limit of 1,880 µg/m³, specific to natural gas-fired emergency generators at non-sensitive receptors, converted from ½-hour to 1-hour averaging period (1,880 µg/m³ / 1.2 = 1,570 µg/m³) as per the Procedure.