

**Executive Summary of the
Emission Summary and Dispersion Modelling Report
for the Sandwich Compressor Station
dated June 27, 2008**

Union Gas Limited (Union Gas) retained ORTECH Environmental (ORTECH), a division of ORTECH Consulting Inc., to prepare an Emission Summary and Dispersion Modelling (ESDM) Report for their Sandwich Compressor Station, located at 2105 8th Concession in Sandwich South Township, Ontario. This report is part of a Basic Comprehensive (Air) Certificate of Approval (CofA) application for all Union Gas facilities in Ontario. The Application is for all sources of air emissions at the site including all existing combustion equipment.

The Sandwich Compressor Station is used to compress natural gas for transmission and storage 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 until February 1, 2020. However, for this facility Union Gas is requesting for the facility the application of Schedule 3 standards under section 20(4) of O. Reg. 419/05 and advanced modelling (AERMOD) prior to the regulatory time frames.

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 2.0" dated July 2005 (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 NO_x emission rates that have been estimated 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 annual values and should not be used for such purposes.

The Emission Summary Table (Table 1) shows all of the significant sources and associated air contaminants; the maximum source and site-wide NO_x emission rates and maximum NO_x 1-hour and 24-hour POI concentrations calculated by air dispersion modelling (AERMOD); the POI limits used to evaluate NO_x concentrations (1-hour and 24-hour) and the maximum percentages of the NO_x POI limits. As shown on Table 1, the predicted maximum NO_x POI concentrations resulting from the maximum emission scenario for all natural gas-fired combustion equipment operating at full load is 89 µg/m³ or approximately 22% of the 1-hour MOE NO_x Schedule 3 POI limit of 400 µg/m³, and approximately 44 µg/m³ or 22% of the 24-hour NO_x POI of 200 µg/m³.

Table 1: Emission Summary Table

Contaminant Name	CAS#	Total Facility Maximum Emission Rate (g/s)	Air Dispersion Model Used	Maximum POI Concentration ($\mu\text{g}/\text{m}^3$)	Averaging Period (hr)	POI Limit ($\mu\text{g}/\text{m}^3$)	Limiting Effect	Regulation Schedule # or Alternate	Maximum % of POI Limit (%)
Nitrogen Oxides (as NO ₂)	10102-44-0	2.0	AERMOD	89	1	400	Health	3	22%
Nitrogen Oxides (as NO ₂)	10102-44-0	2.0	AERMOD	44	24	200	Health	3	22%