

## EXECUTIVE SUMMARY

HGC Engineering was retained by Union Gas Limited to undertake an Acoustic Assessment of the Enniskillen Pool Station in Enniskillen Township, Ontario. The study is required in support of an application for a Comprehensive Certificate of Approval (C of A) to the Ministry of Environment (MOE). The assessment considers all existing operable sound sources at the facility.

Source sound level measurements of existing sources were conducted at the facility on June 21, 2007. The measured source sound levels were used as input to a predictive acoustical model to quantify the environmental sound emissions associated with the facility. Acoustic assessment criteria were established in accordance with the sound level limits in MOE guideline NPC-232.

The acoustical measurements and analysis indicate that, with the compressor building overhead door closed, noise emissions from the Enniskillen Pool Station are within the applicable limits, as set out in MOE publication NPC-232, at all points of reception during daytime hours, and could be up to 2 dBA greater than the applicable limit at one point of reception during evening/nighttime hours. This situation is best classified as marginal compliance with the applicable limits and may be considered acceptable by the MOE for the following reasons:

- 1) The facility sources to which the sound level excess is attributable, the gas aftercooler fans, operate independently and only as required: they do not operate continuously and would likely operate less often during evening/nighttime hours due to lower ambient temperatures;
- 2) The accuracy of the state-of-the-art measurement and prediction methods for outdoor sound propagation is generally in the range of 2 to 3 dBA. Therefore, a predicted excess of 2 dBA is less than the modelling uncertainty; and
- 3) An increase or decrease in sound levels of less than 3 dBA is typically considered to be imperceptible to the human ear. Therefore, an excess of 2 dBA is generally deemed to be minor or insignificant.

**Table A2: Point of Reception Noise Impact Table**

Source ID	Source Name	Point of Reception					
		R1		R2		R3	
		Dist [m]	L <sub>EQ</sub> [dBA]	Dist [m]	L <sub>EQ</sub> [dBA]	Dist [m]	L <sub>EQ</sub> [dBA]
U1	Recip. Combustion Exhaust	360	32	369	33	598	28
NS-01	Recip. Combustion Intake	360	32	370	34	598	25
NS-02	Recip. Radiator	367	23	379	26	592	33
NS-03	Gas Aftercooler Fan 1 (West)	362	33	366	37	595	29
NS-04	Gas Aftercooler Fan 2 (East)	363	33	368	37	596	30
NS-05	Compressor Building Roof Vent (North)	364	11	377	13	595	8
NS-06	Compressor Building Roof Vent (South)	357	7	372	9	602	4
NS-07	Compressor Building West Ventilation Louvre (North)	363	28	373	29	595	18
NS-08	Compressor Building West Ventilation Louvre (South)	356	25	368	26	603	15
NS-09	Compressor Building East Ventilation Louvre (North)	365	14	381	9	595	22
NS-10	Compressor Building East Ventilation Louvre (South)	358	20	377	25	602	19
NS-11	Compressor Building Open Overhead Door	354	35	370	36	605	14

**Table A3: Acoustic Assessment Summary Table**

Point of Reception	Point of Reception Description	Sound Level at Point of Reception, L <sub>EQ</sub> [dBA]		Verified by Acoustic Audit	Performance Limit, L <sub>EQ</sub> [dBA]		Compliance with Performance Limit
		Day	Evening/Night		Day	Evening/Night	
R1	30 metres from single storey dwelling (in direction of station) approximately 360 metres S of station	39	39	N	45	40	Y
R2	Upper storey window of two storey home approx. 375 metres SW of station	42	42	N	45	40	Y*
R3	Upper storey window of two storey home approx. 600 metres N of station	37	37	N	45	40	Y

\* Within margin of certainty for outdoor acoustical predictions; compressor building overhead door assumed to be closed.