

EXECUTIVE SUMMARY

HGC Engineering was retained by Union Gas Limited to prepare an updated Acoustic Assessment of their Liquid Natural Gas (LNG) Plant in Hagar, Ontario. Previously, HGC Engineering prepared Acoustic Assessment Reports (“AARs”) in 2008, 2013 and 2015 [1, 2, 3]. This updated AAR includes the benefit of noise control measures implemented as part of the Union Gas Emissions Action Plan, and serves to satisfy condition 4.1(b) of Environmental Compliance Approval 3468-9DUJMT, issued by the Ontario Ministry of Environment and Climate Change (“MOECC”), which requires that a current AAR be maintained.

Source sound level measurements were conducted at the facility on April 22, 2008, November 2, 2011 and December 3, 2012. Sound emissions from an LNG pump were predicted using acoustical engineering formulae from reference texts; onsite trucking sound levels were taken from the files of HGC Engineering for past projects. The source sound levels were used as inputs 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 MOECC guideline NPC-232.

The measurements and analysis indicate that the sound levels of the Hagar LNG Plant meet the sound level criteria of MOECC publication NPC-232 during a predictable worst case hour of operation at the station. Given the absence of any sources of ground-borne vibration at the site, the facility also complies with the applicable vibration limits of the MOECC.

Table A3: Acoustic Assessment Summary Table

Point of Reception	Point of Reception Description	Sound Level at Point of Reception, L_{Eq} [dBA]						Performance Limit, L_{Eq} [dBA]		Compliance with Performance Limit					
		Liquification		Storage		Vaporization		Day	Night	Liquification Day	Liquification Night	Storage Day	Storage Night	Vaporization Day	Vaporization Night
R1	Single storey home approx. 300 metres north of station	40	39	37	32	39	38	45	40	Yes	Yes	Yes	Yes	Yes	Yes



ACOUSTICS



NOISE



VIBRATION