

EXECUTIVE SUMMARY

HGC Engineering was retained by Enbridge Gas Inc. operating as Union Gas (“Union Gas”) to update the Acoustic Assessment Report (“AAR”) for their Liquid Natural Gas (“LNG”) Plant in Hagar, Ontario. This report includes a number of updates, largely administrative, as summarized in Section 1.2, and has been prepared to satisfy condition 5.1(b) of Environmental Compliance Approval 4459-BJGQQY, issued by the Ontario Ministry of Environment, Conservation and Parks (“MECP”), which requires that a current AAR be maintained.

Sound levels were measured at the facility on several occasions between 2008 and 2019, near each stationary source and at neighbouring points of reception. The source sound levels were used as inputs to a computational 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 MECP guideline NPC-300.

The measurements and analysis indicate that the sound levels of the Hagar LNG Plant remain within the criteria of MECP publication NPC-300. Given the absence of any sources of ground-borne vibration at the site, the facility also complies with the applicable vibration limits of MECP guideline NPC-207.

Table A3.1: Acoustic Assessment Summary Table, Non-Emergency Equipment

| Point of Reception | Point of Reception Description | Sound Level at Point of Reception, L_{EQ} [dBA] | | | Verified by Acoustic Audit | Performance Limit, L_{EQ} [dBA] | | | Compliance with Performance Limit | | |
|--------------------|--|---|---------|--------------|----------------------------|-----------------------------------|-----|-------|-----------------------------------|-------------|--------------|
| | | Liquefaction | Storage | Vaporization | | Day | Eve | Night | Liquefaction | Storage | Vaporization |
| R1 | Single storey home approx. 300 metres north of plant | 39 | 32 | 34 | No | 45 | 40 | 40 | Yes/Yes/Yes | Yes/Yes/Yes | Yes/Yes/Yes |
| R1a | Outdoor amenity space of R1 | 40 | 33 | 35 | No | 45 | 40 | -- | Yes/Yes/Yes | Yes/Yes/Yes | Yes/Yes/Yes |
| R2 | Single storey home approx. 510 metres northeast of plant | 29 | 22 | 24 | No | 45 | 40 | 40 | Yes/Yes/Yes | Yes/Yes/Yes | Yes/Yes/Yes |
| R2a | Outdoor amenity space of R2 | 30 | 22 | 24 | No | 45 | 40 | -- | Yes/Yes/Yes | Yes/Yes/Yes | Yes/Yes/Yes |
| VL1 | Vacant lot approx. 370 metres northwest of plant | 37 | 22 | 27 | No | 45 | 40 | 40 | Yes/Yes/Yes | Yes/Yes/Yes | Yes/Yes/Yes |
| VL2 | Vacant lot approx. 415 metres northwest of plant | 38 | 27 | 29 | No | 45 | 40 | 40 | Yes/Yes/Yes | Yes/Yes/Yes | Yes/Yes/Yes |
| VL3 | Vacant lot approx. 575 metres northeast of plant | 34 | 25 | 27 | No | 45 | 40 | 40 | Yes/Yes/Yes | Yes/Yes/Yes | Yes/Yes/Yes |

Table A3.2: Acoustic Assessment Summary Table, Emergency Equipment

| Point of Reception | Point of Reception Description | Sound Level at Point of Reception, L_{EQ} [dBA] | Verified by Acoustic Audit | Performance Limit, L_{EQ} [dBA] | Compliance with Performance Limit |
|--------------------|--|---|----------------------------|-----------------------------------|-----------------------------------|
| R1 | Single storey home approx. 300 metres north of plant | 34 | No | 50 | Yes |
| R1a | Outdoor amenity space of R1 | 35 | No | 50 | Yes |
| R2 | Single storey home approx. 510 metres northeast of plant | 21 | No | 50 | Yes |
| R2a | Outdoor amenity space of R2 | 21 | No | 50 | Yes |
| VL1 | Vacant lot approx. 370 metres northwest of plant | 33 | No | 50 | Yes |
| VL2 | Vacant lot approx. 415 metres northwest of plant | 33 | No | 50 | Yes |
| VL3 | Vacant lot approx. 575 metres northeast of plant | 22 | No | 50 | Yes |



ACOUSTICS



NOISE



VIBRATION