

Appendix 4.8a – Gunshot Noise Measurement Results

According to the approved EIA report for the “North East New Territories New Development Areas”, noise tests were conducted on 18 May 2011 at Lo Wu Classification Range (including one rifle range and one firing range) to measure noise levels generated by gunshots. Different types of weapons including MP5, AR15, glock, sniper, revolver and shotgun were employed in the noise test. The measurement results for gunshot noise are summarized in the following **Table A.1**.

Table A.1: Measurement Results for Gunshot Noise in Previous EIA

Weapon	Sound Power Level (SWL) for single mode shooting*, dB(A)	Correction factor to a 30 mins period [^] , dB(A)	SWL (30 mins), dB(A)
MP5	117.4	-32.6	84.9
AR15	120.5	-32.6	88.0
Glock	120.6	-32.6	88.1
Sniper	116.7	-32.6	84.1
Revolver	122.4	-32.6	89.9
Shotgun	121.3	-32.6	88.7

Notes:

(*) Measured in continuous 1 second sound pressure level in 1/3 octave bands. In addition, tonality check has been carried out at far-field noise measurement location (i.e. 150m away from the shooting location) and there is no tonality characteristic on the firing noise. Hence, no tonality correction is required to be applied.

([^]) Based on standard acoustic principle, $-10 \cdot \log(1/1800s)$.

Additional noise test were conducted on 23 July 2015 at Lo Wu Firing Range and Ma Tso Lung Firing Range to verify noise levels generated by gunshots. Different types of weapons including AR15, 9mm pistol and shotgun were employed in the noise test. The measurement results for gunshot noise are summarized in the following **Table A.2**. Maximum measured noise level of each type of weapon will be adopted in the fixed noise impact assessment for conservative approach.

Table A.2: Measurement Results for Gunshot Noise

Weapon	Sound Power Level (SWL) for single mode shooting*, dB(A)	Correction factor to a 30 mins period [^] , dB(A)	SWL (30 mins), dB(A)
AR15 [#]	120.9	-32.6	88.3
9mm Pistol [#]	117.1	-32.6	85.5
Shotgun ^{##}	121.1	-32.6	88.5
9mm Pistol ^{##}	116.9	-32.6	84.3

Notes:

(*) Measured in continuous 1 second sound pressure level in 1/3 octave bands. In addition, tonality check has been carried out at far-field noise measurement location (i.e. 150m away from the shooting location) and there is no tonality characteristic on the firing noise. Hence, no tonality correction is required to be applied.

([^]) Based on standard acoustic principle, $-10 \cdot \log(1/1800s)$.

([#]) Measured in Lo Wu Firing Range.

(^{##}) Measured in Ma Tso Lung Firing Range.

Sound Power Level (SWL) for single mode shooting as shown in **Table A.1** and **Table A.2** will be adopted as

the noise source data for the same (or similar) type of weapon used in the proposed firing ranges. Based on the information provided by HKPF (see **Appendix 4.7**), .38 revolver, 9mm pistol, MP5, AR15, 12 gauge shotgun are used in the Lo Wu firing range and .38 revolver, 9mm pistol, MP5, 12 gauge shotgun are used in the Ma Tso Lung firing range. In addition, HKPF confirmed that no new weapon would be planned to use in the planned firing ranges.