



4 June 2018

MAC160257LR1

Attention: Lisa Thomson
VGT Laboratories Pty Ltd
PO Box 2335
Greenhills NSW 2322

Dear Lisa,

Sound Power Testing

Hodgson Quarries and Plant Pty Ltd, Maroota, NSW

1 Introduction

Muller Acoustic Consulting Pty Ltd (MAC) has been commissioned by VGT on behalf of Hodgson Quarries and Plant Pty Ltd to quantify via direct measurement the sound emission levels of the new plant currently operating at the Roberts Road Maroota Sand Quarry, Maroota, NSW.

The assessment has been undertaken in general accordance with the following policies and guidelines:

- Australian Standard 1055, 1997 'Description and Measurement of Environmental Noise' Parts 1, 2 and 3; and
- ISO 6395 'Acoustics – Measurement of exterior noise emitted by earth-moving machinery – Dynamic test conditions'.

2 Measurement Methodology

Direct noise measurements were conducted on Wednesday 23 May 2018 and were carried out using one Svantek Type 1, 971 noise analyser. The acoustic instrumentation used carries current NATA calibration and complies with AS IEC 61672.1-2004-Electroacoustics - Sound level meters - Specifications. Calibration of all instrumentation was checked prior to and following measurements. Drift in calibration did not exceed ± 0.5 dBA.

Measurements were conducted in-situ in the quarry during normal quarrying operations. Mobile plant were tested in high idle mode of operation with the sand plant and stacker tested during normal processing operations.

2.1 Plant Measured

The following plant and equipment were measured as part of the noise assessment.

- PC350 Komatsu Excavator;
- L180G Volvo Loader; and
- CDE plant (sand plant) including conveyors, log wash and Ezystak 70 stacker

3 Results

The maximum A-weighted octave band and overall A weighted sound power levels (SWLs) of each item of plant monitored are presented in Table 1.

Plant	Octave Band Centre Frequency (Hz), dBA								Overall Sound Power dBA
	63	125	250	500	1000	2000	4000	8000	
PC350 Komatsu Excavator	78	98	89	93	92	91	84	76	101
L180G Volvo Loader	91	91	90	94	99	97	86	79	103
Sand Plant, conveyors, log wash and Stacker	86	86	88	93	94	94	92	86	100

In addition, a pre-commissioning test of a new item of plant to site was completed. The item was a PC400 Komatsu Excavator, results of the test are presented in Table 2.

Table 2 Sound Power Level and Spectrum dBA									
Plant	Octave Band Centre Frequency (Hz), dBA								Overall Sound Power dBA
	63	125	250	500	1000	2000	4000	8000	
PC400 Komatsu Excavator	86	100	97	96	98	94	90	80	105

Measurements identify that the sound power level of the PC400 Komatsu is 105dBA. This is 4dB higher than the level specified in Condition 47a of the Development Consent which states :

'The excavator to be used is to be fitted with acoustic mufflers to achieve a noise level of approximately 76dBA when measured at 7m.' (This equates to a sound power level of 101dBA.)

Notwithstanding, the total fleet sound power level operating on-site during the noise measurements on 23 May 2018 was 109dBA. The total fleet sound power level for a 'Typical Scenario and Plant Numbers' assessed in the Mod 2 Acoustic Assessment was 113dBA.

Hence, offsite exceedances are unlikely when the PC400 is used within the extraction area when used in conjunction with a fleet configuration similar to that used on 23 May 2018.

Notwithstanding, it is recommended that offsite audible checks are completed by quarry management to confirm that operations remain inaudible and compliance validation of the PC400 Excavator will be completed during the next round of noise monitoring.

4 Summary

The results of the sound power testing show that the new plant currently operating on Maroota quarry are in keeping with equivalent sized plant that have operated historically onsite.

We trust the above information is satisfactory and if you have any further question regarding the certification, please contact the undersigned.

Yours sincerely



Robin Heaton
Acoustic Engineer
BEng (Hons)
rheaton@mulleracoustic.com



Oliver Muller
Principal Acoustic Scientist
BSc(REM & HGeog)|MAAS
omuller@mulleracoustic.com