

4 February 2013

WM Project Number: 01127-AA
Our Ref: RM020413RH Ltr

Paul Slough
Rocla Materials Pty Ltd
72 Orchardleigh Street
GUILDFORD NSW 2161

Dear Paul

Re: Attended Noise Monitoring - Australia Walkabout Wildlife Park

Introduction

Wilkinson Murray Pty Limited (WM) has been commissioned to conduct attended noise monitoring in response to recent concerns expressed by the resident of a dwelling located within the Australia Walkabout Wildlife Park, located at 2375 Peats Ridge Road, Calga, regarding noise generated by the nearby Calga Sand Quarry.

Monitoring

Two 15 minute measurements were conducted on the afternoon of Thursday, 31 January 2013.

All measurements were conducted using a Bruel and Kjaer Type 2260 Sound Level Meter. This sound level meter conforms to Australian Standard 1259 *Acoustics - Sound Level Meters* as a Type 1 Precision Sound Level Meter which has an accuracy suitable for field and laboratory use. The A-Weighting filter of the meter was selected and the time weighting was set to "Fast". The calibration of the meter was checked before and after the measurements with a Bruel and Kjaer Type 4231 sound level calibrator and no significant drift was noted.

The Bruel and Kjaer Type 2260 and Type 4231 have been laboratory calibrated within the previous two years in accordance with WM in-house Quality Assurance Procedures.

During the measurements, meteorological conditions were suitable for environmental noise monitoring.

Measures were taken to ensure the quarry operations were representative of the operations when concerns were expressed.

Monitoring was conducted at a location representative of the Australia Walkabout Wildlife Park residence as shown in Figure 1.

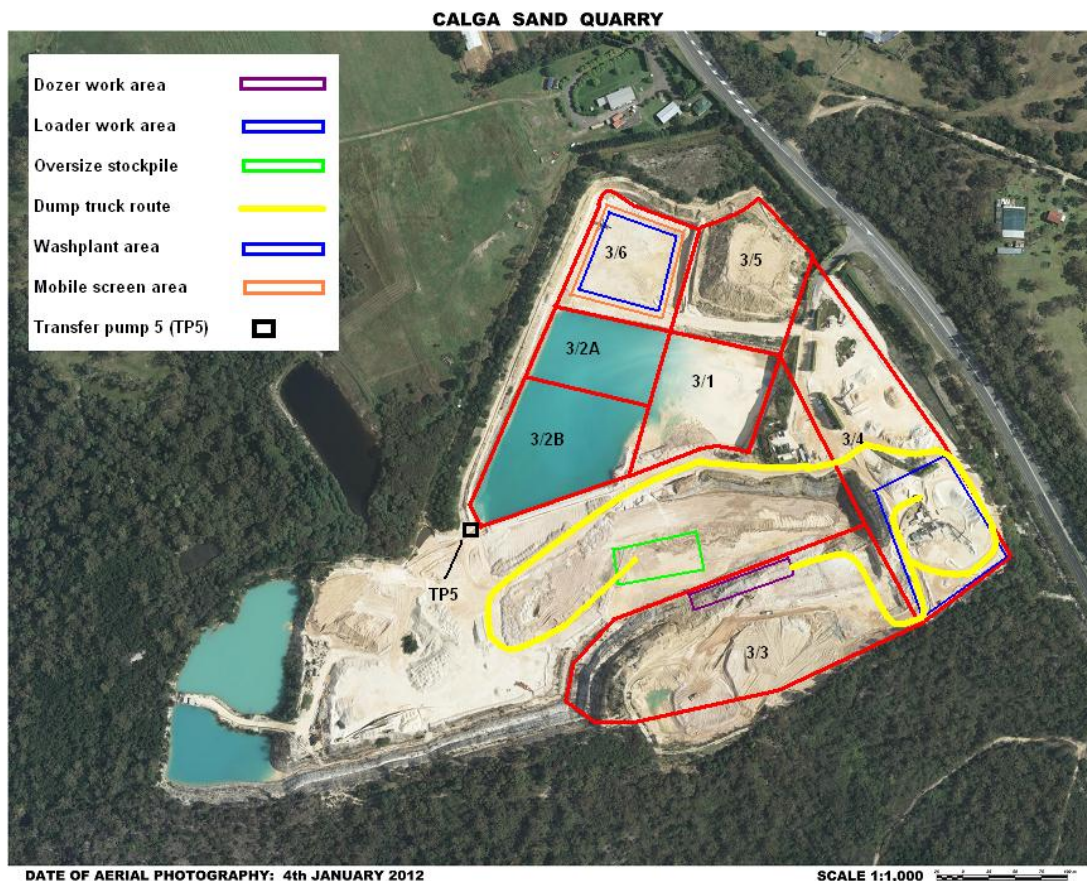
Figure 1 Monitoring Location**Description of Site Operations**

Figure 2 presents an aerial of the quarry site.

The following mobile plant and equipment were in operation during the time of the survey:

- Dozer ripping and pushing sandstone in Stage 3/3.
- Excavator loading dump trucks with raw feed from Stage 3/3 to go to washplant.
- Dump truck taking raw feed from Stage 3/3 to washplant and brickies raw feed stockpile.
- Front-end-loaders feeding washplant from surge pile, loading oversize from washplant onto dump truck and loading sales trucks.
- Dump truck taking oversize from washplant to oversize stockpile on Stage 2.
- Eccentric ripper, ripping in Stage 3/3.
- Transfer pump 5 (TP5) was in constant operation.
- Washplant was in full production.

Figure 2 Quarry Site Layout and Operational Areas



Noise Limit

In accordance with the Calga Sand Quarry Development Consent (DA 94-4-2004), the Australia Walkabout Wildlife Park residence is subject to an $L_{eq,15min}$ noise limit of 35dBA.

Monitoring Results & Assessment

Table 1 summarises the attended noise monitoring results.

Table 1 Measurement Results

Start Time	$L_{Aeq,15min}$ due to Quarry	$L_{Aeq,15min}$ Noise Limit	Observations
2.19pm	36	35	Excavator with ripping attachment when clearly audible 41-57dBA (for duration of approx. 45 seconds). Dump truck on site when clearly audible 40-46dBA (for duration of approx. 35 seconds). General quarry noise audible during lulls in traffic and estimated at 30dBA (assumed for duration of measurement). Typical Freeway traffic 40-41dBA. Peats Ridge Road traffic typically 38-39dBA and occasionally up to 42-51dBA. Insect noise 30-32dBA.

Start Time	L_{Aeq,15min} due to Quarry	L_{Aeq,15min} Noise Limit	Observations
2.40pm	33	35	<p>Aeroplanes L_{Amax} 46-47dBA. Birds nearby L_{Amax} 46-47dBA.</p> <p>Excavator with ripping attachment when clearly audible 38-50dBA (for duration of approx. 20 seconds). General quarry noise audible during lulls in traffic and estimated at 30dBA (assumed for duration of measurement).</p> <p>Typical Freeway traffic 40-41dBA. Peats Ridge Road traffic typically 38-39dBA and occasionally up to 42-51dBA. Insect noise 30-32dBA.</p> <p>Aeroplanes L_{Amax} 47-48dBA. Birds nearby L_{Amax} 47-50dBA.</p>

Based on the measurement results, L_{eq,15min} noise levels due to quarry operational noise were established at 36dBA and 33dBA. It was considered that less ripping events occurred during the second 15 minute measurement period which explains the lower L_{eq,15min} noise level.

While the second measurement demonstrates compliance, the first measurement shows a negligible exceedance of 1dB. Such a small exceedance is generally considered as acceptable by the regulators for compliance purposes. It should also be noted that most people cannot perceive an increase in noise level of 1dB.

Compliance can therefore be assumed and as such no noise mitigation measures would be considered necessary.

I trust this information is sufficient. Please contact us if you have any further queries.

Yours faithfully

WILKINSON MURRAY



Roman Haverkamp

Project Engineer