



3 August 2016

10-1340R0

Hanson Construction Materials Pty Ltd
Level 5, 75 George Street
PARRAMATTA NSW 2150

Attention: Ms Pip Cox

Dear Pip

Noise Compliance Monitoring – July 2016 Bass Point Quarry Project

1 Introduction

VMS Australia Pty Ltd has been appointed by Hanson Construction Materials Pty Ltd to conduct noise compliance monitoring for the Bass Point Quarry Project located at Bass Point Quarry Road, Shellharbour (the Project), in order to assess noise emission levels from the Project. This report presents the findings of the evening and night-time measurements conducted at the nearest residential receivers during site activities on 14 July and 15 July 2016.

The noise compliance monitoring was conducted in accordance with the requirements of the *Bass Point Quarry Project Noise and Blasting Management Plans* dated 17 December 2015.

2 Hours of Operation

Bass Point Quarry operates 24 hours a day, 7 days a week.

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3 Operational Noise Impact Criteria

The Project was granted Project Approval (PA 08_0143) on 28 January 2014 by the Minister for Planning and Infrastructure.

Operational noise criteria for the Project are nominated in Schedule 3, Condition 3 of PA 08_0143 and are replicated in **Table 1**.

Table 1 Noise Criteria

Location	Day/Evening	Night	
	$L_{Aeq(15\ min)}$	$L_{Aeq(15\ min)}$	$L_{A1(1\ min)}$
R4	44	44	54
R5	45	45	55
R6	42	42	52
R7	41	41	51
R8	35	35	45
R9	35	35	45
R11	45	45	55
R12	45	45	55
<i>Any residential property within the Shell Harbour Marina Precinct</i>	48	48	58
<i>Shell Cove Primary School (when in use)</i>	$L_{Aeq(1\ hour)} 40$ (internal)	<i>Not applicable</i>	

4 Monitoring Locations

Noise monitoring was conducted at the nearest residential receivers at locations at R6, R7, R8, R9, R11 and R12 during the evening and night-time period.

The monitoring locations are shown in **Figure 1**.

Figure 1 Noise Monitoring Locations



5 Instrumentation and Measurement Procedure

Noise monitoring was conducted in accordance with the procedures specified in the *Bass Point Quarry Project Noise Management Plans* dated 17 December 2015.

The acoustic instrumentation employed during the monitoring programme complied with the requirements of AS 1259.1-1990 “*Acoustics - Sound Level Meter - Non-Integrating*” and IEC 61672.1-2004 “*Electroacoustics - Sound Level Meters - Specifications*” and carried current NATA or manufacturer calibration certificates. The schedule of noise monitoring equipment deployed during the programme is presented in **Table 2**.

Table 2 Noise Monitoring Equipment

Instrumentation	Type	Serial Number
B&K 2250 SLM	Type 1	3008618
SVAN SV30A Acoustic Calibrator	Type 1	39481

In order to determine compliance with the noise limits nominated in **Table 1**, operator-attended 15-minute noise surveys were conducted on Thursday 14 July and Friday 15 July 2016 at the nominated residential receivers.

The measurements were conducted in accordance with Australian Standard AS 1055-1997 “*Acoustics - Description and measurement of environmental noise*”.

A level calibration check was undertaken using a SVAN SV30A Acoustic Calibrator which emitted a 94 dB calibration tone at 1 KHz. The calibration check was conducted prior and after the survey with no shift noted during the calibration process.

6 Operational Noise Compliance Monitoring Results

The measured contributed noise emission levels from the Project are presented in **Table 3** and **Table 4**, for evening and night-time quarrying activities, respectively.

Table 3 Noise Monitoring Results – Evening Period

Location/ Description	Date/ Start time/ Weather	Primary Noise Descriptor (dB re 20 µPa)					Description of Noise Emission, Typical Maximum Levels LAmax (dB)	Estimated Project LAeq (15minute)	Assessment
		LAmax	LA1	LA10	LA90	LAeq			
R6 1 Makaha Way	14/07/2016 19:39 Wind: 1 m/s W Temp: 10 °C	75	65	51	41	53	Local Traffic: 72-74 Distant Traffic: 44-56 Quarry: Not audible	<31	Complies
R7 44 Mystics Drive	14/07/2015 19:18 Wind: Calm Temp: 10 °C	69	54	47	42	46	Distant Traffic: 42-47 Local Traffic: 54 Dog Bark: 42-63 Hall Road Trucks: 69 Quarry: Not audible	<32	Complies
R8 29 Hinchinbrook Drive	14/07/2015 18:48 Wind: Calm Temp: 11 °C	68	58	46	41	47	Hall Road Trucks: 45-57 Dog Bark: 68 Local Traffic: 53 Distant Traffic: 41-43 Quarry: Not audible	<31	Complies
R9 23 Magnetic Ridge	14/07/2015 18:19 Wind: 1m/s W Temp: 11 °C	70	58	50	42	48	Local Traffic: 50-60 Plane: 43 Hall Road Truck: 58 Trees: 39-44 Quarry: Not audible	<32	Complies
R11 7 Joondalup Parkway	14/07/2016 17:57 Wind: 1m/s W Temp: 11 °C	77	66	48	38	53	Frogs: 37-41 Dog Bark: 49 Highway Traffic: 39-42 Local Traffic: 46-77 Plane: 41-46 Quarry: Not audible	<28	Complies
R12 3 Ranfurly Parkway	14/07/2016 17:25 Wind: 1m/s W Temp: 11 °C	66	60	52	40	49	Local Traffic: 60-66 Dog Bark: 42-44 Highway Traffic: 41-44 Quarry: Not audible	<30	Complies

Table 4 Noise Monitoring Results - Night-time Period

Location/ Description	Date/ Start time/ Weather	Primary Noise Descriptor (dB re 20 µPa)					Description of Noise Emission, Typical Maximum Levels (dB)	Estimated Project LAeq (15minute) LA1 (15minute)	Assessment
		L _{Amax}	L _{A1}	L _{A10}	L _{A90}	L _{Aeq}			
R6 1 Makaha Way	14/07/2016 23:13 Wind: Calm Temp: 0 °C	49	47	43	37	41	Distant Traffic:42-47 Quarry: Not audible	<27 <33	Complies Complies
R7 44 Mystics Drive	14/07/2016 22:44 Wind: 1m/s W Temp: 0 °C	54	48	43	36	40	Distant Traffic:40-42 Quarry: Not audible	<26 <33	Complies Complies
R8 29 Hinchinbrook Drive	14/07/2015 23:46 Wind: Calm Temp: 0 °C	49	47	43	39	41	Trucks: 56-74 Distant Traffic: 36-47.5 Quarry: Not audible	<29 <33	Complies Complies
R9 23 Magnetic Ridge	15/07/2015 00:19 Wind: Calm Temp: 0 °C	58	57	49	39	46	Hall Road Trucks: 50-66 Distant Traffic: 42-43 Quarry: Not audible	<29 <39	Complies Complies
R11 7 Joondalup Parkway	15/07/2016 01:36 Wind: Calm Temp: 0 °C	49	43	41	38	39	Frogs: 38 Quarry Hum: 31-33	31 33	Complies Complies
R12 3 Ranfurlie Parkway	15/07/2016 01:08 Wind: 1m/s W Temp: -1 °C	56	46	42	37	40	Hallway Trucks: 39 Quarry Hum: 31-33	31 33	Complies Complies

7 Assessment and Findings

Noise monitoring for the Bass Point Quarry Project were conducted during the evening and night-time periods on 14 July and 15 July 2016. The monitoring found that the noise emissions from the Project were in compliance with the evening and night-time LAeq(15minute) and LA1(15minute) night-time Noise Criteria nominated within Schedule 3, Condition 3 of the Project Approval at the surrounding representative residences.

Noise contributions from quarry operations were found to be barely perceptible at 7 Joondalup Parkway and 3 Ranfurly Parkway due to the slightly higher elevations and absence of any extraneous noise. Project noise emissions at all other residential locations were found to be inaudible.

Yours sincerely



ZUL KHASHMURI
Technical Director – Acoustics and Vibration