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# **ANNUAL NOISE MONITORING ASSESSMENT 2023 JANDRA QUARRY, POSSUM BRUSH, NSW**

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## ABBREVIATIONS AND DEFINITIONS

<b>Ambient Noise</b>	The all-encompassing noise within a given environment. It is the composite of sounds from many sources, both near and far.
<b>Background noise</b>	The underlying level of noise present in the ambient noise, excluding the noise source under investigation, when extraneous noise is removed. This is described using the LA90 descriptor (see below).
<b>dB</b>	Abbreviation for decibel, a measure of sound equivalent to 20 times the logarithm (to base 10) of the ratio of a given sound pressure to a reference pressure, and 10 times the logarithm of a given sound power to a reference power.
<b>dB(A)</b>	A measure of A-weighted sound levels. A Weighting is an adjustment made to the sound level measurement to approximate the response of the human ear.
<b>Extraneous noise</b>	Noise resulting from activities that are not typical of the area. Atypical activities may include construction, and traffic generated by holiday periods. Normal daily traffic is not extraneous noise.
<b>LA1</b>	The noise level, measured in dB(A), which is exceeded for 1 per cent of the measurement period.
<b>LA1(1min)</b>	The noise level, measured in dB(A), which is exceeded for 1 per cent of the time over a 1-minute measurement period, i.e., is exceeded for 0.6 seconds. This measure can approximate to the maximum noise level but may be less if there is more than 1 noise event during this 0.6 second period.
<b>LA10</b>	The noise level, measured in dB(A), which is exceeded for 10 per cent of the time.
<b>LA90</b>	The noise level, measured in dB(A), which is exceeded for 90 per cent of the time, referred to as the background noise level. This is considered to represent the background noise (see above).
<b>LAeq</b>	The level of noise equivalent to the energy average of noise levels occurring over a defined measurement period.
<b>LAeq (period)</b>	The average equivalent noise level, measured in dB(A), during a measurement period (e.g., 15-minute, day, evening, or night).
<b>LAm<sub>ax</sub></b>	The A-weighted sound pressure level that represents the maximum noise level measured over the time that a given sound is measured.
<b>NMA</b>	Noise Monitoring Assessment
<b>NMP</b>	Noise Management Plan
<b>RDC</b>	Regional Distribution Centre

Source: Noise Guide for Local Government (NSW EPA, 2013)

# 1. OVERVIEW

Ramboll Australia Pty Ltd (Ramboll) has been commissioned by Holcim (Australia) Pty Ltd (Holcim) to complete a Noise Monitoring Assessment (NMA) for Jandra Quarry ("the quarry") at Rooty Hill, NSW.

This NMA was done in accordance with the following documents:

- Noise Policy for Industry (NPI) (NSW EPA, 2017);
- Environment Protection Licence (EPL) 2796 (NSW EPA, 2021);
- Jandra Quarry Noise and Blast Management Plan (NBMP) (Holcim (Australia) Pty Ltd, 2018);
- Development Consent DA 213-10-99, Notice of Modification 2015 (Delegate of the Minister for Planning, 2015); and
- Australian Standard AS 1055:2018 Acoustics—Description and measurement of environmental noise (Standards Australia, 2018).

This NMA is part of the annual monitoring requirement set out in the Development Consent and the NBMP.

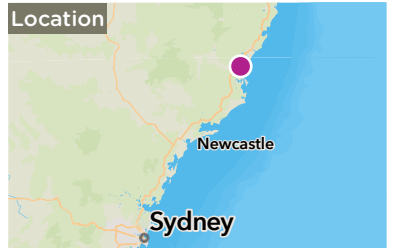
## 1.1 Site Location and Sensitive Receptors

The quarry is located on the Pacific Highway at Possum Brush, approximately 17 km south of Taree, on the mid north coast of NSW. Receivers in the locality surrounding the quarry are primarily rural/residential. The Pacific Highway is situated to the west of the site, with highway traffic a dominant noise source at receivers within its proximity. To the east, the quarry is bounded by rural properties with road noise from The Lakes Way dominating the acoustic environment. The monitoring locations with respect to the quarry and assessed receivers are presented in **Figure 1**.



**Legend**

- Noise monitoring location



**Figure 1: Noise monitoring locations at Jandra Quarry**

## 2. NOISE CRITERIA

The applicable noise criteria for this NMA according to the EPL, the NBMP and the Development Consent are shown in **Table 2-1** for both quarry operations only, and **Table 2-2** for quarry operations and asphalt production combined. It is noted that asphalt campaigns at Jandra Quarry are sporadic, however when the asphalt plant does operate it can operate for 24 hours a day.

M8.1 of EPL 2796 requires:

*"to assess compliance with the noise limits of this licence, attend noise monitoring must be undertaken:*

- a) during a period of normal quarry operations.*
- b) at each one of the noise monitoring locations listed in the noise limits table of this licence.*
- c) occur once annually in the reporting period.*
- d) occur during the night period as defined in the NSW Industrial Noise Policy, and in conjunction with an asphalt campaign if any such campaign occurs within the quarterly monitoring period."*

**Table 2-1: Quarry operations noise criteria**

Location	EPA ID	Quarry Operations	
		Shoulder <sup>1</sup> , Day <sup>2</sup> and Evening <sup>3</sup>	
		LAeq (15min)	
		dB(A)	
R4	14	36	
R5	15	40	
R6	16	36	
R7	17	35	

<sup>1</sup> 6 am–7 am Monday to Saturday  
<sup>2</sup> 7 am–6 pm Monday to Saturday  
<sup>3</sup> 6 pm–10 pm Monday to Saturday

**Table 2-2: Quarry operations and asphalt plant production noise criteria**

Location	EPA ID	Quarry Operations and Asphalt Plant Production		
		Shoulder <sup>1</sup> , Day <sup>2</sup> and Evening <sup>3</sup>	Night <sup>4</sup>	
		LAeq (15min)	LAeq (15min)	LA1 (1min)
		dB(A)		
R4	14	40	39	51
R5	15	41	39	51
R6	16	40	35	48
R7	17	36	35	48

<sup>1</sup> 6 am–7 am Monday to Saturday  
<sup>2</sup> 7 am–6 pm Monday to Saturday  
<sup>3</sup> 6 pm–10 pm Monday to Saturday  
<sup>4</sup> 10 pm–6 am Monday to Saturday



### 3. METHODOLOGY

The monitoring program was designed in accordance with the procedures described in Australian Standard AS 1055:2018 and the Approval Documents referenced in **Section 1**. The measurements were carried out using a RION Sound Level Meter NL-52 on Wednesday 17 May 2023 and Thursday 18 May 2023. The acoustic instrumentation used carries current NATA calibration and complies with AS/NZS IEC 61672-1:2013/2002 class 1. Calibration of all instrumentation was checked prior to and following measurements using a Pulsar Acoustic Calibrator 105 which carried a current NATA calibration and complies with IEC 60942:2003. Drift in calibration did not exceed  $\pm 0.3$  dBA.

Attended noise monitoring was conducted for 15-minutes in duration during the morning shoulder and day periods over two days. The operator also observed and recorded the audible contributing noise sources for the duration of the 15-minute monitoring periods. Attended noise monitoring was not conducted during the night period as no asphalt campaigns were conducted by the quarry during this period.

Where Jandra Quarry was not distinctly audible during the attended monitoring, the quarry contribution is estimated to be at least 10 dBA below the ambient noise level, as determined by the LA90.



## 4. RESULTS AND DISCUSSION

### 4.1 Location EPA13

Noise monitoring at location EPA13 was not completed as access approval was not able to be obtained from the resident.

### 4.2 Location EPA14

Noise monitoring at location EPA14 was completed on Wednesday 17 May 2023. The quarry was not audible during any monitored period during the day and morning shoulder. These results indicate that noise emissions from Jandra Quarry did not contribute to noise nuisance. The results and observations taken during the monitoring event at Location EPA14 are presented in **Table 4-1**.

Noise sources included wind, motorway traffic and birds.

**Table 4-3-1: Noise survey results and observations for Location EPA14**

Date	Start Time	Descriptor (dBA)			Meteorology	Apparent Noise Source, Description and LAeq (dBA)	Jandra Quarry LAeq(15min) Contribution	LAeq(15min) Criteria (dBA)
		LAmx	LAeq	LA90				
17-05-23	6:09 (Morning Shoulder)	66.1	47.9	43.8	WD: 40° WS: 2.8 m/s Rain: Nil	Background 40-53 Bird 59 Wind/leaves 46 Quarry inaudible	<34	36
17-05-23	7:01 (Day)	72.2	49.4	46.2	WD: 50° WS: 2.9 m/s Rain: Nil	Background 43-52 Bird 50-68 Quarry inaudible	<36	36

### 4.3 Location EPA15

Noise monitoring at location EPA15 was completed on Wednesday 17 May 2023. The quarry was not audible during any monitored period during the day and morning. These results indicate that noise emissions from Jandra Quarry did not contribute to noise nuisance. The results and observations taken during the monitoring event at Location EPA15 are presented in **Table 4-2**.

Noise sources included motorway traffic, wind, rustling leaves and birds.

**Table 4-3-2: Noise survey results and observations for Location EPA15**

Date	Start Time	Descriptor (dBA)			Meteorology	Apparent Noise Source, Description and LAeq (dBA)	Jandra Quarry LAeq(15min) Contribution	LAeq(15min) Criteria (dBA)
		LAmx	LAeq	LA90				
17-05-23	6:29 (Morning Shoulder)	63.4	46.8	45.9	WD: 60° WS: 2.2 m/s Rain: Nil	Background motorway traffic 43-48 Wind 45-47 Quarry inaudible	<36	40
17-05-23	7:21 (Day)	59.1	48.2	45.6	WD: 50° WS: 2.6 m/s Rain: Nil	Background motorway traffic 46-51 Wind/leaves 45-46 Bird 47-49 Quarry inaudible	<36	40

#### 4.4 Location EPA16

Noise monitoring at location EPA16 was completed on Wednesday 17 May 2023 and Thursday 18 May 2023. The quarry was not audible during any monitored period during the day and morning. These results indicate that noise emissions from Jandra Quarry did not contribute to noise nuisance. The results and observations taken during the monitoring event at Location EPA16 are presented in **Table 4-3**.

Noise sources included motorway traffic and birds.

**Table 4-3-3: Noise survey results and observations for Location EPA16**

Date	Start Time	Descriptor (dBA)			Meteorology	Apparent Noise Source, Description and LAeq (dBA)	Jandra Quarry LAeq(15min) Contribution	LAeq(15min) Criteria (dBA)
		LAmx	LAeq	LA90				
18-05-23	6:38 (Morning Shoulder)	61.2	45.9	40.9	WD: 300° WS: 0.3 m/s Rain: Nil	Background motorway traffic 40-49 Birds 42-59 Quarry inaudible	<31	36
17-05-23	8:59 (Day)	67.7	44.3	38.6	WD: 300° WS: 2.8 m/s Rain: Nil	Background motorway traffic 40-44 Birds 42-63 Quarry inaudible	<29	36

#### 4.5 Location EPA17

Noise monitoring at location EPA17 was completed on Wednesday 17 May 2023 and Thursday 18 May 2023. The quarry was not audible during any monitored period during the day and evening. These results indicate that noise emissions from Jandra Quarry did not contribute to noise nuisance. The results and observations taken during the monitoring event at Location EPA17 are presented in **Table 4-4**.

Noise sources included motorway traffic, birds, roosters, and goats.

**Table 4-3-4: Noise survey results and observations for Location EPA17**

Date	Start Time	Descriptor (dBA)			Meteorology	Apparent Noise Source, Description and LAeq (dBA)	Jandra Quarry LAeq(15min) Contribution	LAeq(15min) Criteria (dBA)
		LAmx	LAeq	LA90				
18-05-23	6:10 (Morning Shoulder)	59.9	42.1	37.4	WD: 300° WS: 1.1 m/s Rain: Nil	Background motorway traffic <43 Birds 49 Roosters and goats 42-55 Quarry inaudible	<27	35
17-05-23	9:34 (Day)	65.9	42.1	38.3	WD:N/A WS: 0 m/s Rain: Nil	Background motorway traffic 38-39 Birds 39-43 Quarry inaudible	<28	35

## 5. CONCLUSION

Monitoring was carried out on Wednesday 17 May 2023 and Thursday 18 May 2023 at four locations selected as representative to the sensitive receptor's surroundings the Jandra Quarry. All locations monitored showed that the contribution from Jandra Quarry were below the noise criteria.

The results presented in this NMA show compliance with the relevant noise criteria at the Holcim Jandra Quarry, NSW.

## 6. REFERENCES

Delegate of the Minister for Planning (2015) 'Development Consent DA 213-10-99, Jandra quarry, Notice of Modification 13/3/2015'.

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