Environmental Monitoring Report –
Blast Monitoring Data

Bombo Quarry

June 2025

Date Published: 3 July 2025

This monitoring report is to satisfy the requirements of Section 66 (6) of the Protection of the Environment and Operations Act 1997, to make available, within 14 days of obtaining any monitoring data that relates to pollution under an Environment Protection Licence.

The monitoring of pollutants provided in this report is undertaken as per the requirements of Environment Protection Licence 313 (EPL 313 – Boral Bombo Quarry).

This report provides environmental monitoring data for Bombo Quarry for April 2016 to present day. If there is a gap in data presented in the report this is because there was no monitoring data to present for the relevant period.

Bombo Quarry Information	
Premise Details	Boral – Bombo Quarry
Address	Panama Street, Bombo, NSW 2533
Licensee	Boral Resources Pty Ltd
EPL No	313
EPL Location	http://www.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=31001&SYSUID=1&LICID=313
Date of dataset update	03/07/2025

Monitoring data in this report relates to the monitoring undertaken in the reporting period for the following environmental pollutants:

- Blasting

Blasting

Blast monitoring is conducted as per condition M4.1 of EPL 313.

Qualifications related to blasting:
Extracted from EPL: 313

L2.1 The overpressure level from blasting operations at the premises must not exceed 120dB (Lin Peak) at any time. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.

L2.2 The overpressure level from blasting operations at the premises must not exceed 115dB (Lin Peak) for more than five per cent of the total number of blasts over each reporting period. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.

L2.3 Ground vibration peak particle velocity from the blasting operations at the premises must not exceed 10mm/sec at any time. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.

L2.4 Ground vibration peak particle velocity from the blasting operations at the premises must not exceed 5mm/sec for more than five per cent of the total number of blasts over each reporting period. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.

L2.5 Blasting operations at the premises may only take place between 08:30 hours and 17:00 hours, Monday to Friday. (Where compelling safety reasons exist, the Authority may permit a blast to occur outside the abovementioned hours. Prior written (or facsimile) notification of any such blast must be made to the Authority).

M4.1 Each blast conducted at the premises must be monitored and recorded at the points E, G and K set out on the premises map titled "Figure 1 Boral Kiama (Bombo) Quarry - monitoring points" as displayed at Condition A2.2.

M4.2 To determine compliance with Conditions L2.1, L2.2, L2.3 and L2.4:

(a) Airblast overpressure and ground vibration levels must be measured for all production blasts carried out in or on the premises; and

(b) The written record must include:

i) the time and date of each blast;
ii) the station(s) at which the noise was measured;
iii) the ground vibration for each blast;
iv) the airblast overpressure for each blast;
v) evidence that during the past 12 month period, a calibration check had been carried out on each blast monitor to ensure accuracy of the reported data; and

vi) the waveform for the ground vibration and overpressure for each blast that exceeds a ground vibration of 5mm/second (peak particle velocity) or an airblast overpressure of 115 dB(L).

(c) Instrumentation used to measure the airblast overpressure and ground vibration levels must meet the requirements of Australian Standard 2187.2 of 2006.

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Blast Monitoring Results

EPA ID (Shot Number)	Monitoring Frequency	Date Sampled	Date Results Obtained	Date Results Published	Blast Results		Trigger Level (dB)	Trigger Level (mm/s)	Most affected residence	Sample Compliant ? (YES/NO)	Comments
					Over Pressure	Peak Vibration	Over Pressure	Peak Vibration			
					(dB)	(mm/s)	(dB)	(mm/s)			
					115	**5**					
					120	**10**					
Prior to 2023 there was No blasting onsite since 2012											
E	Per Blast	4/12/2023	5/12/2023*		104.2	0.89	120	10		Yes	
G	Per Blast	4/12/2023	5/12/2023*		100	0.51	120	10		Yes	
K	Per Blast	4/12/2023	5/12/2023*		104.9	6.98**	120	10		Likely	Only 5% of blasts are permitted to exceed 5mm/s. Given likely blasts scheduled until Sept 2024 this will likely lead to a non-compliance being triggered.
E	Per blast	30/6/2025	30/6/2025	4/7/2025	No trigger	No trigger	120	10		Yes	
G	Per blast	30/6/2025	30/6/2025	4/7/2025	No trigger	No trigger	120	10		Yes	
K .1	Per blast	30/6/2025	30/6/2025	4/7/2025	98.8	3.415	120	10		Yes	
K .2	Per blast	30/6/2025	30/6/2025	4/7/2025	95.9	1.157	120	10		Yes	

*Due to the elevated vibration record received, an investigation into the cause was conducted by Orica, this report was received from Orica on 7 December 2023.

** Summary of investigation into elevated vibration at point K on 4 December 2023

Blast BQ23-01 at Bombo Quarry resulted in an unexpected Peak Particle Velocity (PPV) of 6.98mm/s at the K monitor located at 20 Dido Street Kiama, exceeding the standard 5mm/s limit for 95% of blasts, though still below the maximum limit of 10mm/s as per environmental guidelines. This outcome was not anticipated, as predictions for other monitors (G and E) were accurate, but significantly differed at the K monitor. A comprehensive review of historical data and regression analysis indicates that the recorded PPV for the K monitor was outside the 95% confidence prediction range.

Key Observations:

- The Maximum Instantaneous Charge was appropriately controlled, and the blast design aimed for larger fragment sizes.

- Despite the blast progression towards the K monitor, the separated blast wave arrival times should not have resulted in such high PPV readings.

- Notable resonances were observed, possibly related to the monitor's placement or nearby infrastructure, although this remains inconclusive without further evidence.

The precise cause of the heightened blast vibration at the K monitor location remains indeterminate without additional speculative analysis.

Bombo Quarry- Blast Monitoring Location

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Blast Monitoring Results - Corrections Log

Details of corrections made to published data due to incorrect or misleading data[3.7.7]

Date of data (sample date)	Old published data	Correct updated data	Reason for Update/Correction	Update Person	Date corrected data published	Comments