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15 June 2021

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Environmental Planning and Compliance Coordinator  
Hanson Construction Materials Pty Ltd  
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Dear Belinda

**Re: 2021 Compliance Noise Monitoring at Hanson Brandy Hill Quarry**

Hanson Construction Materials Pty Ltd (Hanson) engaged Umwelt (Australia) Pty Limited (Umwelt) to monitor the noise emissions from its Brandy Hill Quarry (the Site), located off Seaham Road, in Seaham NSW.

This Noise Monitoring Report has been prepared by Umwelt on behalf of Hanson to satisfy the noise monitoring and reporting requirements stated in the Environment Protection Licence (EPL) 1879 for the Site.

The noise limits for the Site, are specified in Condition L4.1 of the EPL 1879 and are reproduced in **Table 1**. The noise limits relate only to the noise emissions from the Site.

**Table 1 Noise Limits from EPL 1879 for the Site, dB(A)**

Location as described in EPL 1879	Day/Evening/Night <sup>1</sup> LAeq,15minute	Night time <sup>1</sup> LA1,1minute
R1 – 13B Giles Road, Seaham (identified as N1 in the Noise Management Plan)	36	45
R2 – 115 Brandy Hill Drive, Seaham (identified as N2 in the Noise Management Plan)	36	45
R3 – 13 Mooghin Road, Seaham (identified as N3 in the Noise Management Plan)	36	45
All other noise receiver locations	36	45

<sup>1</sup> Day time period is defined as 7.00 am to 6.00 pm Monday to Saturday and 8.00 am to 6.00 pm Sundays and Public Holidays. Evening period is defined as 6.00 pm to 10.00 pm. Night time period is defined as 10.00 pm to 7.00 am Monday to Saturday and 10.00 pm to 8.00 am Sundays and Public Holidays.

The meteorological conditions under which the noise limits apply are specified in Conditions L4.3 and L4.4 of the EPL 1879 and are summarised in **Table 2**.

**Table 2 Meteorological Conditions under which the Noise Limits apply**

Parameter	EPL 1879
Rain	Not during rain or hail
Wind speed at microphone	≤ 5 m/s
Wind speed at 10 m	≤ 3 m/s
Temperature inversion and/or atmospheric stability	Stability category F and wind speed ≤ 2 m/s at 10 m height Stability category G (no wind specified)
Meteorological Data	Data recorded by the Bureau of Meteorology (BoM) Total Automatic Weather Station

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The 2021 compliance assessment methodology applied the following staged approach to determine compliance with the applicable noise criteria for each monitoring location and time:

- As the Tocal Automatic Weather Station does not record sigma theta data, temperature inversion and/or atmospheric stability cannot be calculated. A conservative approach has therefore been adopted which assumes that complying temperature inversion and/or atmospheric stability conditions are present during all measurements.
- It has also been assumed that where the wind speed at the microphone is less than 5m/s the wind speed at 10 m is also compliant (i.e. less than 3 m/s) and therefore analysis of the Tocal weather station has not been undertaken.
- If the Brandy Hill estimated contribution to the total noise level is less than the criteria, the location will be determined to be compliant irrespective of the meteorological conditions (i.e. wind speed at the microphone) at the time of monitoring.
- If the Brandy Hill estimated contribution to the total noise level is greater than the criteria and the wind speed is greater than 5 m/s at the microphone the location will be determined to be compliant but it will be noted that the meteorological conditions are outside the applicable conditions in **Table 2**.
- If the Brandy Hill estimated contribution to the total noise level is greater than the criteria and the wind speed is less than 5 m/s at the microphone the location will be determined to be non-compliant. Umwelt will undertake a more complex and detailed analysis of the data.

The attended noise monitoring for the site was conducted in general accordance with the NSW Environment Protection Authority (EPA) *Industrial Noise Policy* (INP) (2000) and *Noise Policy for Industry* (NPfI) (2017) guidelines and the *Australian Standard AS1055-2018, Acoustics – Description and Measurement of Environmental Noise*. During the attended monitoring sessions, noise measurements were undertaken with a SVAN 958A Precision Integrating Sound Level Meter (Serial Numbers 59838) which was calibrated using a Type SV-36, Svantek Sound Level Calibrator, (Serial number 90124). Calibration certificates can be provided on request.

Attended noise monitoring was undertaken at locations R1, R2 and R3 as shown in **Figure 1.1**.





Image Source: Nearmap (Feb 2018)

0 0.5 1.0 1.25 km  
1:25 000

## Legend

● Noise Monitoring Location

FIGURE 1.1

Noise Monitoring Locations



Monitoring results for June 2021 are shown in **Table 3**.

**Table 3 2021 Compliance Noise Monitoring Results**

Location (period)	Start date and time	Avg. Wind Speed @ Mic (m/s) <sup>1</sup>	Noise Limits in dB(A) <sup>2</sup>		Brandy Hill Quarry in dB(A)		Compliant with EPL 1879 Noise Limits (Yes/No)
			LAeq, 15minute	LA1, 1minute	LAeq, 15minute	LA1, 1minute	
R1 (day)	8/06/2021 8:03	0.1	36	N/A	< 30	N/A	Yes
R1 (eve)	7/06/2021 19:31	0.0	36	N/A	Inaudible	N/A	Yes
R1 (night)	8/06/2021 5:00	0.0	36	45	Inaudible	Inaudible	Yes
R2 (day)	8/06/2021 7:34	0.1	36	N/A	Inaudible	N/A	Yes
R2 (eve)	7/06/2021 18:59	0.0	36	N/A	Inaudible	N/A	Yes
R2 (night)	8/06/2021 5:36	0.2	36	45	Inaudible	Inaudible	Yes
R3 (day)	8/06/2021 7:00	0.6	36	N/A	< 30	N/A	Yes
R3 (eve)	7/06/2021 18:19	0.3	36	N/A	Inaudible	N/A	Yes
R3 (night)	8/06/2021 6:11	0.5	36	45	Inaudible	Inaudible	Yes

<sup>1</sup> Wind speed at microphone height was measured using a weather monitor (Kestrel 5500, serial number 2420169) positioned within 5 m and at a corresponding height of the noise monitoring microphone (except where otherwise noted).

<sup>2</sup> N/A indicates that this criterion is not applicable during the day and evening periods.

### Statement of Compliance

The results of the June 2021 noise monitoring program have been assessed against the noise limits and the meteorological conditions identified in EPL 1879. This assessment shows the Site was compliant with the relevant day, evening and night time noise limits at R1, R2 and R3 during June 2021 noise monitoring.

We trust this information meets with your current requirements. Please do not hesitate to contact the undersigned on 1300 793 267 should you require clarification or further information.

Yours sincerely



**Tim Procter**

Practice Lead - Acoustic Environment