

28 April 2020

Belinda Pignone
Environmental Planning and Compliance Coordinator
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Dear Belinda

Re: 2020 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 (refer to **Figure 1.1**).

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 ¹ LAeq, 15 min	Night time ¹ LA1, 1 min
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

¹ 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	≤ 5m/s
Wind speed at 10 m	≤ 3 m/s
Temperature inversion and/or atmospheric stability ¹	Stability category F and wind speed ≤ 2m/s at 10 m height Stability category G (no wind specified)
Meteorological Data ¹	Data recorded by the Bureau of Meteorology (BoM) Total Automatic Weather Station

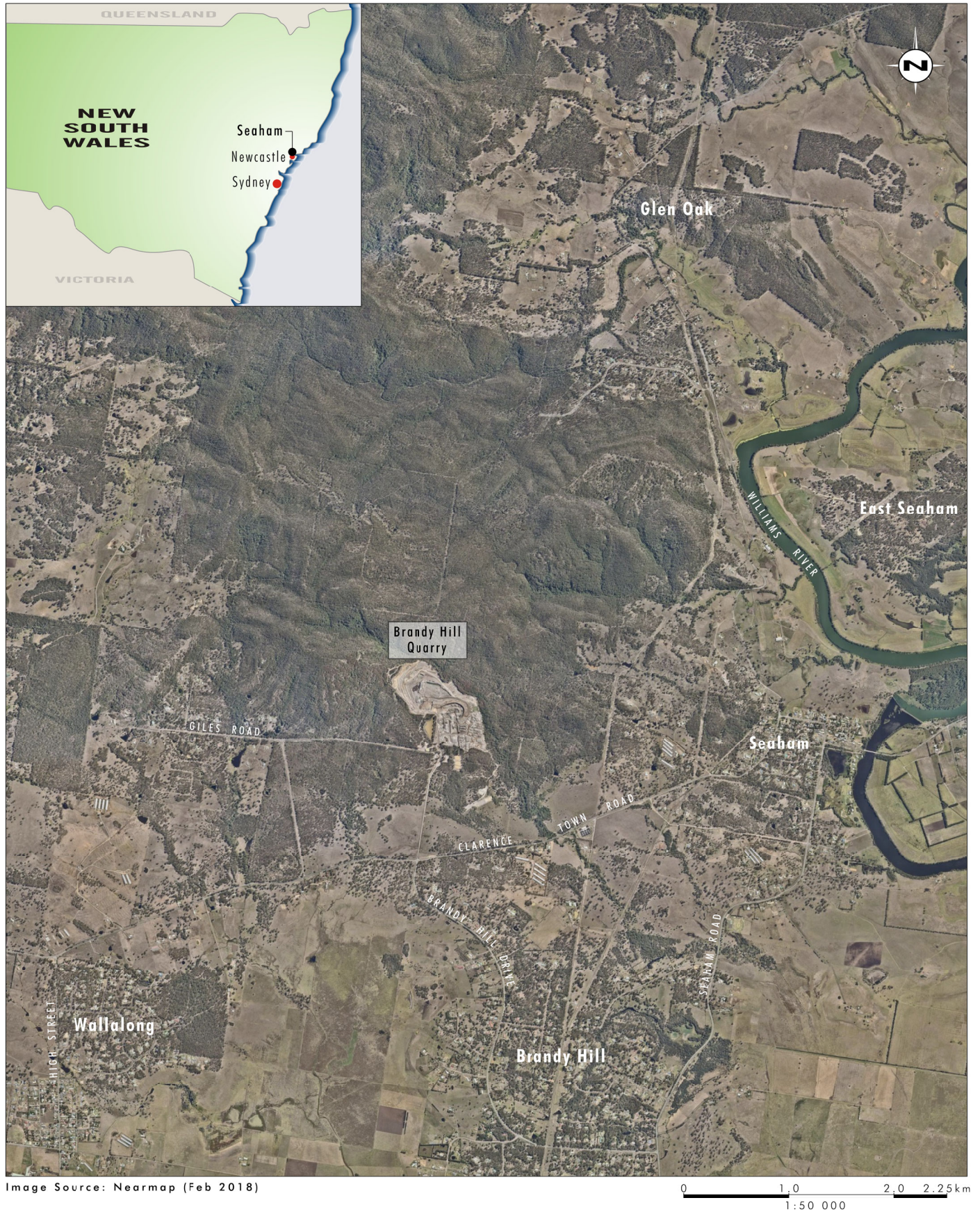


FIGURE 1.1
Locality Plan

As the Total 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. Meteorological conditions rule out the applicability of criteria only when wind speeds exceed 3 m/s at Total Automatic Weather Station.

The 2020 compliance assessment methodology applied the following staged approach to determine compliance with the applicable noise criteria for each monitoring location and time:

- Complete attended noise monitoring at locations R1, R2 and R3, during the day, evening and night-time periods to assess the site contributions to the measured noise levels.
- If the Brandy Hill estimated contribution to the total noise level is less than the noise 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 location and the wind speed is > 5m/s at microphone the location will be determined to be compliant.
- If the Brandy Hill estimated contribution to the total noise level is greater than the criteria and the wind speed is <5m/s at microphone the location will be determined to be non compliant.

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*. Noise monitoring equipment used in this assessment was calibrated at the time of monitoring. Calibration certificates can be provided on request.

Attended noise monitoring was undertaken at locations R1, R2 and R3 as shown in **Figure 1.2**.

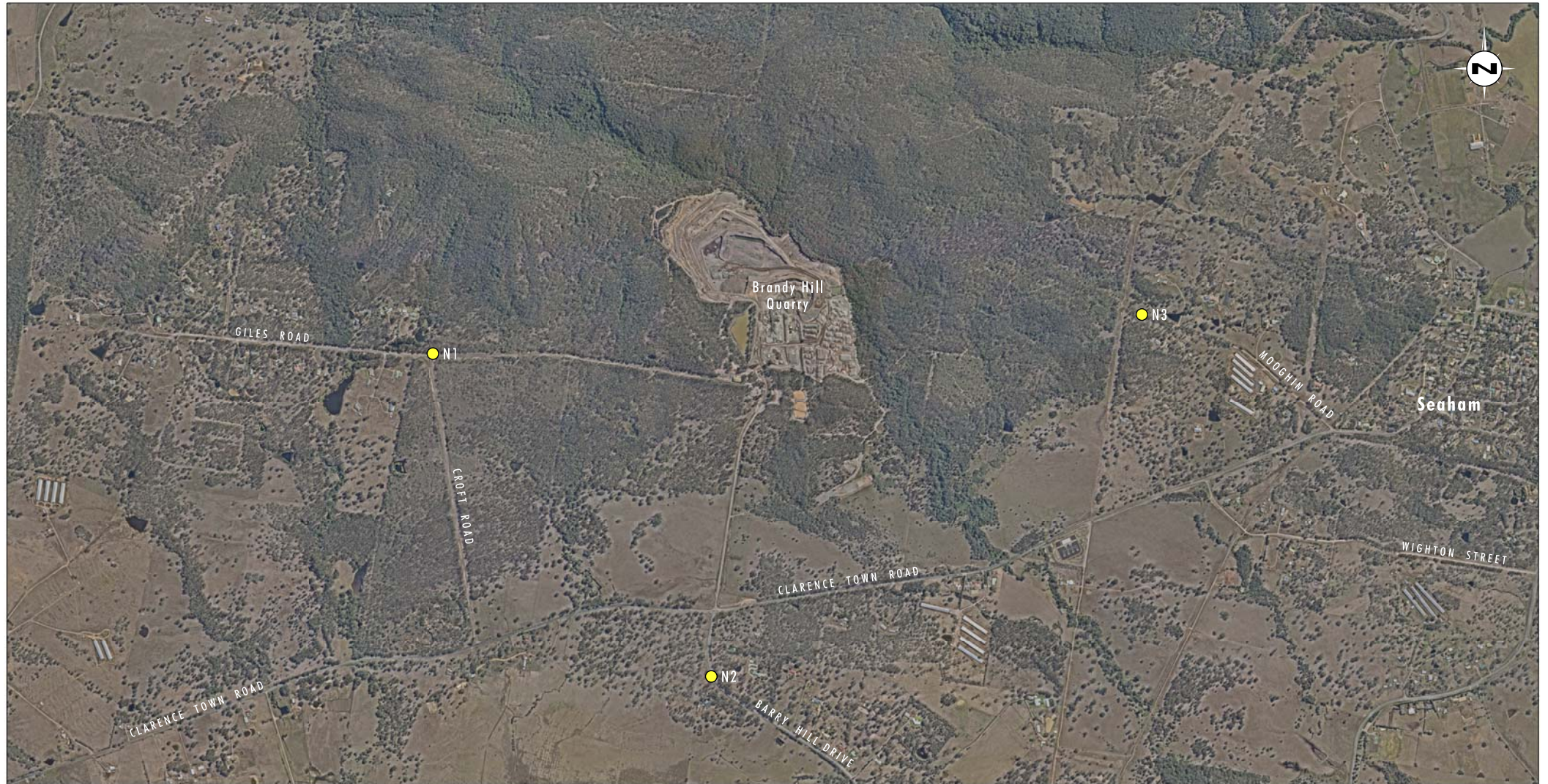


Image Source: Nearmap (Feb 2018)

0 0.5 1.0 1.25 km
1:25 000

Legend

- Noise Monitoring Location

FIGURE 1.2

Noise Monitoring Locations

Monitoring results for 2020 are shown in **Table 3**.

Hanson advised that stockpiling activities were occurring during evening monitoring on 1 April 2020. Hanson also advised that load and haul activities as well as crushing plants 1 and 2 were operational during night and day monitoring, while external truck and trailer sales were occurring from 6:30 am on 2 April 2020.

Table 3 2020 Compliance Noise Monitoring Results

Location (period)	Start date and time	Noise Limits in dB(A)		Brandy Hill Quarry in dB(A)		Compliant
		LAeq, 15min	LA1,1min	LAeq, 15min	LA1,1min	
R1 (day)	2/4/2020 7:46	36	N/A	<35	N/A	Yes
R1 (eve)	1/4/2020 19:50	36	N/A	<35	N/A	Yes
R1 (night)	2/4/2020 6:45	36	45	35	<45	Yes
R2 (day)	2/4/2020 8:52	36	N/A	Inaudible	N/A	Yes
R2 (eve)	1/4/2020 18:37	36	N/A	Inaudible	N/A	Yes
R2 (night)	2/4/2020 5:30	36	45	Inaudible	Inaudible	Yes
R3 (day)	2/4/2020 8:20	36	N/A	Inaudible	N/A	Yes
R3 (eve)	1/4/2020 19:10	36	N/A	Inaudible	N/A	Yes
R3 (night)	2/4/2020 5:57	36	45	Inaudible	Inaudible	Yes

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

The results of the April 2020 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 April 2020 noise monitoring.

Specifically, we note that the site was inaudible at R2 and R3 during all monitoring periods. The site was however audible at R1 during each monitoring period. The audible noise sources observed during the night time monitoring period included truck engine noise, quackers/reverse alarms and impact noise.

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



Rod Williams
Principal Environmental Scientist