



Hall Quarry

Environmental Monitoring Report

Date Published: 21 July 2021



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 4082 (EPL 4082 – Boral Hall Quarry)

This report provides environmental monitoring data for Hall Quarry for the period November 2017 to Present day. This report is reviewed monthly during each reporting period and updated if required.

| Hall Quarry Information | |
|-------------------------|---|
| Premise Details | Boral – Hall Quarry |
| Address | Kaveney Rd, Murrumbateman NSW 2582 |
| Licensee | Boral Resources (Country) Pty Ltd |
| EPL No | 4082 |
| EPL Location | https://apps.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=183732&SYSUID=1&LICID=4082 |

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

- Blasting
- Noise

Blasting

Blast monitoring is conducted as per condition L6.3 of EPL 4082. The blasting monitoring results are summarised below.

Monitoring Period: July 2021
 Licensee: Hall Quarry
 Licensee Address: Kaveney's Rd, Murrumbateman NSW 2582
 EPL No: 4082

Qualifications related to blasting:

The airblast overpressure level from blasting operations in or on the premises must not exceed:

- a) 115 dB (Lin Peak) for more than 5% of the total number of blasts during each reporting period; and
- b) 120 dB (Lin Peak) at any time.

The ground vibration peak particle velocity from blasting operations carried out in or on the premises must not exceed:

- a) 5mm/s for more than 5% of the total number of blasts carried out on the premises during each reporting period; and
- b) 10 mm/s at any time.

Airblast overpressure and ground vibration levels must be measured at most affected residence or noise sensitive location that is not owned by the licensee or subject to a private agreement between the owner of the residence or noise sensitive location and the licensee as to an alternative overpressure level.

Results

| Location | Blast Date | Results Received | Blast Time | Ground Vibration Result** | GV Compliant | Overpressure Result** | OP Compliant |
|--------------|------------|------------------|------------|---------------------------|--------------|-----------------------|--------------|
| Quarry Hill | 19/07/2021 | 21/07/2021 | 14:25 | 2.304 | Yes | No trigger | Yes |
| Silverwattle | 19/07/2021 | 21/07/2021 | 14:25 | 1.047 | Yes | 104.2 | Yes |
| Quarry Hill | 21/6/2021 | 21/6/2021 | 14:08 | No trigger | Yes | No trigger | Yes |
| Silverwattle | 21/6/2021 | 21/6/2021 | 14:08 | No trigger | Yes | No trigger | Yes |
| Quarry Hill | 7/5/2021 | 7/5/2021 | 13:59 | 0.38 mm/s | Yes | 110.6 dBL | Yes |
| Silverwattle | 7/5/2021 | 7/5/2021 | 13:59 | 0.51 mm/s | Yes | 110 dBL | Yes |
| Quarry Hill | 22/2/21 | 22/2/21 | 14:58 | 1.4 mm/s | Yes | 100 dBL | Yes |
| Silverwattle | 22/2/21 | 22/2/21 | 14:58 | 0.51 mm/s | Yes | 98.8 dBL | Yes |
| Quarry Hill | 14/12/20 | 14/12/20 | 15:22 | No Trigger | Yes | No Trigger | Yes |
| Silverwattle | 14/12/20 | 14/12/20 | 15:22 | 0.52 mm/s | Yes | No Trigger | Yes |
| Quarry Hill | 09/11/20 | 09/11/20 | 13:06 | 1.257 mm/s | Yes | 97.5 dBL | Yes |
| Silverwattle | 09/11/20 | 09/11/20 | 13:06 | No trigger | Yes | No Trigger | Yes |
| Quarry Hill | 19/10/20 | 19/10/20 | 12:52 | 1.397 mm/s | Yes | 102.8 dBL | Yes |
| Silverwattle | 19/10/20 | 19/10/20 | 12:52 | 0.51 mm/s | Yes | 100 dBL | Yes |
| Quarry Hill | 29/07/20 | 29/07/20 | 12:16 | 1.78 mm/s | Yes | 102.8 dBL | Yes |
| Silverwattle | 29/07/20 | 29/07/20 | 12:16 | 0.51 mm/s | Yes | 100 dBL | Yes |
| Quarry Hill | 10/06/20 | 10/06/20 | 14:03 | 1.651 mm/s | Yes | 102.8 dBL | Yes |
| Silverwattle | 10/06/20 | 10/06/20 | 14:03 | 0.51 mm/s | Yes | 100 dBL | Yes |
| Quarry Hill | 19/05/20 | 19/05/20 | 13:13 | 1.524 mm/s | Yes | 107 dBL | Yes |

| Location | Blast Date | Results Received | Blast Time | Ground Vibration Result** | GV Compliant | Overpressure Result** | OP Compliant |
|---------------|------------|------------------|------------|---------------------------|--------------|-----------------------|--------------|
| Silverwattle | 19/05/20 | 19/05/20 | 13:13 | 0.51 mm/s | Yes | 100 dBL | Yes |
| Quarry Hill | 01/04/20 | 01/04/20 | 14:40 | 1.470 mm/s | Yes | 103.5 dBL | Yes |
| Silverwattle | 01/04/20 | 01/04/20 | 14:40 | 0.51 mm/s | Yes | 100 dBL | Yes |
| Quarry Hill | 11/03/20 | 11/03/20 | 12:56 | 0.823 mm/s | Yes | 108.4 dBL | Yes |
| Silverwattle | 11/03/20 | 11/03/20 | 12:56 | 0.51 mm/s | Yes | 100 dBL | Yes |
| Quarry Hill | 17/02/20 | 17/02/20 | 13:00 | 1.37 mm/s | Yes | 107 dBL | Yes |
| Silverwattle | 17/02/20 | 17/02/20 | 13:00 | 0.684 mm/s | Yes | 100 dBL | Yes |
| Quarry Hill | 26/11/19 | 26/11/19 | 15:02 | 0.51 mm/s | Yes | 124.4 dBL | Yes |
| Silverwattle | 26/11/19 | 26/11/19 | 15:02 | No trigger | Yes | No trigger | Yes |
| Quarry Hill | 27/9/19 | 27/9/19 | 13:08 | 1.055 mm/s | Yes | 111.5 dBL | Yes |
| Silverwattle | 27/9/19 | 27/9/19 | 13:08 | 0.51mm/s | Yes | 100 dBL | Yes |
| Quarry Hill | 17/6/19 | 17/6/19 | 14:23 | 0.51mm/s | Yes | 102.8 dBL | Yes |
| Silverwattle | 17/6/19 | 17/6/19 | 14:23 | 0.51mm/s | Yes | 103.5 dBL | Yes |
| Quarry Hill | 6/5/19 | 6/5/19 | 13:49 | 0.51mm/s | Yes | 94 dBL | Yes |
| Silverwattle | 6/5/19 | 6/5/19 | 13:49 | 0.51mm/s | Yes | 100 dBL | Yes |
| Quarry Hill | 29/4/19 | 29/4/19 | 12:21 | 0.51mm/s | Yes | 103.5 dBL | Yes |
| Silverwattle | 29/4/19 | 29/4/19 | 12:21 | 0.51mm/s | Yes | 100 dBL | Yes |
| Quarry Hill | 29/1/19 | 29/1/19 | 13:05 | 0.51mm/s | Yes | 100 dBL | Yes |
| Silverwattle | 29/1/19 | 29/1/19 | 13:05 | 0.51mm/s | Yes | 100 dBL | Yes |
| Quarry Hill | 18/1/19 | 18/1/19 | 12:44 | 0.51mm/s | Yes | 101.9 dBL | Yes |
| Silverwattle | 18/1/19 | 18/1/19 | 12:44 | 0.51mm/s | Yes | 100 dBL | Yes |
| Quarry Hill | 5/12/18 | 5/12/18 | 13:13 | 0.51mm/s | Yes | 100 dBL | Yes |
| Silverwattle | 5/12/18 | 5/12/18 | 13:13 | 0.51mm/s | Yes | 100 dBL | Yes |
| Quarry Hill | 27/11/2018 | 27/11/2018 | 13:13 | 0.51mm/s | Yes | 100 dBL | Yes |
| Silverwattle | 27/11/2018 | 27/11/2018 | 13:13 | 0.51mm/s | Yes | 100 dBL | Yes |
| Quarry Hill | 30/10/2018 | 30/10/2018 | 13:21 | 0.51mm/s | Yes | 106 dBL | Yes |
| Silverwattle | 30/10/2018 | 30/10/2018 | 13:21 | 0.51mm/s | Yes | 105.5 dBL | Yes |
| Quarry Hill | 22/10/2018 | 22/10/2018 | 11:45 | 0.51mm/s | Yes | 100 dBL | Yes |
| Silverwattle | 22/10/2018 | 22/10/2018 | 11:45 | 0.51mm/s | Yes | 100 dBL | Yes |
| Quarry Hill | 24/9/2018 | 25/9/2018 | 13:33 | 0.51mm/s | Yes | 104.2 | Yes |
| Silverwattle | 24/9/2018 | 25/9/2018 | 13:33 | 0.51mm/s | Yes | 100 dBL | Yes |
| Quarry Hill | 27/7/2018 | 27/7/2018 | 13:21 | 0.51 mm/s | Yes | 103.5 dBL | Yes |
| Silverwattle | 27/7/2018 | 27/7/2018 | 13:21 | 0.51 mm/s | Yes | 100 dBL | Yes |
| Quarry Hill | 5/6/2018 | 5/6/2018 | 13:29 | 0.51 mm/s | Yes | 106.5 dBL | Yes |
| Silverwattle | 5/6/2018 | 5/6/2018 | 13:29 | 0.38 mm/s | Yes | 106.5 dBL | Yes |
| Quarry Hill | 25/5/2018 | 25/5/2018 | 13:11 | 0.51 mm/s | Yes | 105.5 dBL | Yes |
| Silverwattle | 25/5/2018 | 25/5/2018 | 13:11 | 0.51mm/s | Yes | 100 dBL | Yes |
| Quarry Hill | 20/4/18 | 27/4/18 | 13:00 | 0.51 mm/s | Yes | 105.5 dBL | Yes |
| Silver Wattle | 20/4/18 | 27/4/18 | 13:00 | 0.51 mm/s | Yes | 108 dBL | Yes |
| Quarry Hill | 5/2/18 | 12/2/18 | 11:13 | 0.51 mm/s | Yes | 100 dBL | Yes |
| Silver Wattle | 5/2/18 | 12/2/18 | 11:13 | 0.51 mm/s | Yes | 100 dBL | Yes |
| Quarry Hill | 5/12/17 | 12/12/18 | 13:22 | 0.51 mm/s | Yes | 109.5 dBL | Yes |
| Silver Wattle | 5/12/17 | 12/12/2017 | 13:22 | 0.51 mm/s | Yes | 100 dBL | Yes |

**Trigger levels set on the blast monitor for airblast were 100 dBL and ground vibration 0.51 mm/s.

Noise

Noise monitoring is conducted as per condition L2 of EPL 4082. The blasting monitoring results are summarised below.

Monitoring Period: May 2021
 Licensee: Hall Quarry
 Licensee Address: Kaveney's Rd, Murrumbateman NSW 2582
 EPL No: 4082

The monitoring and assessment results are presented in individual tables for each monitoring location.

The results of the attended noise measurements at location R1 for the April 2021 survey period are summarised in **Table 4** with relevant EPL limits, the calculated quarry noise contribution and prevailing meteorology conditions at the time of each measurement.

| Table 4 Operator-Attended Noise Survey Results – Manager's Cottage (R1) | | | | | | | |
|---|------------|----------------------------|------------------|------------------|-----------|------------------------------------|--|
| Date | Time (hrs) | Descriptor (dBA re 20 µPa) | | | EPL Limit | Meteorology | Description and SPL, dBA |
| | | L _{Amax} | L _{Aeq} | L _{A90} | | | |
| 23/04/2021 (Morning Shoulder) | 06:39 | 77 | 60 | 48 | 36 | WD: W WS: 0.5m/s Rain: Nil | Traffic 45-77 Birds 45-51 Quarry Crushing 45-56 (constant) |
| Quarry Site L _{Aeq} (15min) Contribution | | | | | | | 46 |
| 22/04/2021 (Day) | 11:17 | 75 | 54 | 43 | 39 | WD: SSW WS: 2.7m/s Rain: Nil | Traffic 43-75 Wind in trees 41-46 Quarry Mobile Plant <36 (only audible during breaks in traffic) |
| Quarry Site L _{Aeq} (15min) Contribution | | | | | | | <36 |
| 22/04/2021 (Evening) | 18:50 | 66 | 41 | 27 | 37 | WD: NW WS: 0.1m/s Rain: Nil | Traffic 25-66 Insects 25-36 Aircraft 28-42 Quarry Inaudible |
| Quarry Site L _{Aeq} (15min) Contribution | | | | | | | Site Not Operating |

Note: Meteorology data obtained from direct measurement by the operator.

The results of the attended noise measurements at location R2 for the April 2021 survey period are summarised in **Table 5** with relevant EPL limits, the calculated quarry noise contribution and prevailing meteorology conditions at the time of each measurement.

| Table 5 Operator-Attended Noise Survey Results – Silverwattle (R2) | | | | | | | |
|--|------------|----------------------------|------------------|------------------|--------------|------------------------------------|---|
| Date | Time (hrs) | Descriptor (dBA re 20 µPa) | | | EPL Limit | Meteorology | Description and SPL, dBA |
| | | L _{Amax} | L _{Aeq} | L _{A90} | | | |
| 23/04/2021 (Morning Shoulder) | 06:20 | 60 | 41 | 28 | 36 | WD: W WS: 0.1m/s Rain: Nil | Birds 28-51 Traffic 28-60 Agriculture 36-42 Quarry Inaudible |
| Quarry Site L _{Aeq} (15min) Contribution | | | | | | | <35 |
| 22/04/2021 (Day) | 11:55 | 68 | 52 | 43 | 39 | WD: SSW WS: 2.5m/s Rain: Nil | Traffic 37-68 Wind in trees 37-56 Quarry Inaudible |
| Quarry Site L _{Aeq} (15min) Contribution | | | | | | | <35 |
| 22/04/2021 (Evening) | 19:09 | 62 | 41 | 19 | 37 | WD: NW WS: 0.1m/s Rain: Nil | Insects <26 Traffic 20-62 Aircraft 26-46 Dog bark 26-38 Livestock 28-38 Quarry Inaudible |
| Quarry Site L _{Aeq} (15min) Contribution | | | | | | | Site Not Operating |

Note: Meteorology data obtained from direct measurement by the operator.

The results of the attended noise measurements at location R3 for the April 2021 survey period are summarised in **Table 6** with relevant EPL limits, the calculated quarry noise contribution and prevailing meteorology conditions at the time of each measurement.

| Table 6 Operator-Attended Noise Survey Results – Barton Highway (R3) | | | | | | | |
|--|------------|---------------------------------|------------------|------------------|--------------|------------------------------------|--|
| Date | Time (hrs) | Descriptor (dBA re 20 μ Pa) | | | EPL Limit | Meteorology | Description and SPL, dBA |
| | | L _{Amax} | L _{Aeq} | L _{A90} | | | |
| 23/04/2021 (Morning Shoulder) | 06:00 | 86 | 72 | 56 | 36 | WD: W WS: 0.1m/s Rain: Nil | Traffic 48-86 Quarry Inaudible |
| Quarry Site L _{Aeq} (15min) Contribution | | | | | | | <35 |
| 22/04/2021 (Day) | 12:21 | 84 | 68 | 49 | 39 | WD: SSW WS: 2.5m/s Rain: Nil | Traffic 43-84 Insects <43 Quarry Inaudible |
| Quarry Site L _{Aeq} (15min) Contribution | | | | | | | <35 |
| 22/04/2021 (Evening) | 18:31 | 83 | 70 | 54 | 37 | WD: NW WS: 0.1m/s Rain: Nil | Traffic 45-83 Quarry Inaudible |
| Quarry Site L _{Aeq} (15min) Contribution | | | | | | | Site Not Operating |

Note: Meteorology data obtained from direct measurement by the operator.

Monitoring Period: May 2020
 Licensee: Hall Quarry
 Licensee Address: Kaveney's Rd, Murrumbateman NSW 2582
 EPL No: 4082

The monitoring and assessment results are presented in individual tables for each monitoring location.

The results of the 15 minute attended noise measurements for Tuesday 21 April 2020 and Wednesday 22 April 2020 for R1 are summarised in **Table 4**.

| Table 4 Operator-Attended Noise Survey Results – Manager's Cottage (R1) | | | | | | | |
|---|--------------------------------|---|------------------|------------------|-----------------------------------|------------------------------|-----|
| Date | Time (hrs) | Primary Noise Descriptor (dBA re 20 µPa) | | | Meteorology | Description and SPL, dBA | |
| | | L _{Amax} | L _{Aeq} | L _{A90} | | | |
| 22/04/2020 | 06:23 (Morning Shoulder) | 79 | 60 | 40 | WS: <0.5m/s WD: W Rain: Nil | Local Traffic 40-79 | |
| | | | | | | Highway Traffic <35-40 | |
| | | | | | | Birds 38-51 | |
| | | | | | | Site Vehicles/Loading <30-40 | |
| | | Quarry Site L _{Aeq} (15min) Contribution | | | | | <36 |
| 22/04/2020 | 08:17 (Day) | 76 | 60 | 40 | WS: 1.0m/s WD: NW Rain: Nil | Local Traffic 40-76 | |
| | | | | | | Highway Traffic <32-40 | |
| | | | | | | Birds 37-63 | |
| | | | | | | Site Vehicles/Loading 32-38 | |
| | | | | | | Site Impacts 38-40 | |
| | | | | | | Site Hum <32-34 | |
| | | Quarry Site L _{Aeq} (15min) Contribution | | | | | 37 |
| 21/04/2020 | 19:57 (Evening) | 77 | 52 | 22 | WS: <0.1m/s WD: W Rain: Nil | Local Traffic 30-77 | |
| | | | | | | Highway traffic 20-43 | |
| | | | | | | Site Not Operating | |
| | | Quarry Site L _{Aeq} (15min) Contribution | | | | | |

The results of the 15 minute attended noise measurements for Tuesday 21 April 2020 and Wednesday 22 April 2020 for R2 are summarised in **Table 5**.

| Table 5 Operator-Attended Noise Survey Results – Silverwattle (R2) | | | | | | |
|--|--------------------------------|--------------------------------|------------------|------------------|-------------|-----------------------------|
| Date | Time (hrs) | Primary Noise Descriptor (dBA) | | | Meteorology | Description and SPL, dBA |
| | | re 20 µPa | | | | |
| | | L _{Amax} | L _{Aeq} | L _{A90} | | |
| 22/04/2020 | 06:43 (Morning Shoulder) | 78 | 57 | 37 | WS: <0.5m/s | Birds 34-63 |
| | | | | | WD: W | Traffic 35-78 |
| | | | | | Rain: Nil | Residential Noise 38-40 |
| | | | | | | Site Vehicles/Loading 30-38 |
| Quarry Site L _{Aeq} (15min) Contribution | | | | | | Site Hum 30-33 |
| Quarry Site L _{Aeq} (15min) Contribution | | | | | | 34 |
| 22/04/2020 | 08:37 (Day) | 79 | 55 | 38 | WS: 1.0m/s | Birds 35-57 |
| | | | | | WD: W | Traffic 40-79 |
| | | | | | Rain: Nil | Site Vehicles/Loading 35-38 |
| | | | | | | Site Impacts 35-40 |
| Quarry Site L _{Aeq} (15min) Contribution | | | | | | Site Hum <33 |
| Quarry Site L _{Aeq} (15min) Contribution | | | | | | 35 |
| 21/04/2020 | 20:27 (Evening) | 73 | 50 | 14 | WS: <0.1m/s | Insects 20-33 |
| | | | | | WD: W | Birds 20-28 |
| | | | | | Rain: Nil | Traffic 20-73 |
| Quarry Site L _{Aeq} (15min) Contribution | | | | | | Site Not Operating |

The results of the 15 minute attended noise measurements for Tuesday 21 April 2020 and Wednesday 22 April 2020 for R3 are summarised in **Table 6**.

| Table 6 Operator-Attended Noise Survey Results – Barton Highway (R3) | | | | | | |
|--|--------------------------------|---|------------------|------------------|-----------------------------------|--|
| Date | Time (hrs) | Primary Noise Descriptor (dBA re 20 µPa) | | | Meteorology | Description and SPL, dBA |
| | | LA _{max} | LA _{eq} | LA ₉₀ | | |
| | | | | | | |
| 22/04/2020 | 06:00 (Morning Shoulder) | 81 | 66 | 47 | WS: <0.1m/s WD: W Rain: Nil | Traffic 41-81 Site Not Audible |
| Quarry Site LA _{eq} (15min) Contribution | | | | | | <36 |
| 22/04/2020 | 07:57 (Day) | 80 | 66 | 43 | WS: <0.1m/s WD: W Rain: Nil | Traffic 37-80 Birds 35-42 Site Not Audible |
| Quarry Site LA _{eq} (15min) Contribution | | | | | | <39 |
| 21/04/2020 | 19:37 (Evening) | 81 | 62 | 35 | WS: 0.5m/s WD: W Rain: Nil | Traffic 25-81 Insects <25 |
| Quarry Site LA _{eq} (15min) Contribution | | | | | | Site Not Operating |

Hall Quarry Monitoring Locations.

Blast Monitoring Location

