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Karuah Hard Rock Quarry

## Environmental Monitoring Report

March 2025



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## 1.0 Introduction

This report has been completed to meet the requirements of Section 66(6) of the *Protection of the Environment Operations Act 1997* and the NSW Environmental Protection Authority’s (EPA) Requirements for Publishing Pollution Monitoring Data (EPA, 2013). This report summarises the required monitoring data under Environmental Protection Licence 11569 (the EPL) and Development Consent for the Karuah Hard Rock Quarry (the Quarry) as summarised by **Table 1** and **Table 2** respectively.

**Table 1 Summary of Environment Protection Licence, EPL 11569**

<b>EPL Number:</b>	EPL 11569
<b>Licensee’s Name:</b>	Hunter Quarries Pty Ltd
<b>Licensee’s Address:</b>	Karuah Hard Rock Quarry PO Box 3284, Thornton NSW 2322 Corner of Andesite Road and The Branch Lane, Karuah NSW 2324.
<b>Link to Full Licence on the EPA website:</b>	<a href="#">EPL 11569</a>

**Table 2 Summary of Project Approval, DA 265-10-2004**

<b>Project Approval:</b>	DA 265-10-2004
<b>Applicant:</b>	Hunter Quarries Pty Ltd
<b>Consent Authority:</b>	Minister for Infrastructure, Planning and Natural Resources
<b>Link to Full Project Approval on the NSW Planning website:</b>	<a href="#">Development Consent DA 265-10-2004</a>

A summary of the environmental monitoring data for the March 2025 reporting period (the Reporting Period) is covered in this report. Tables throughout this report provide key monitoring information from the EPL and the Consent, including:

- location of monitoring;
- pollutant;
- unit of measurement; and
- monitoring frequency required.

Monitoring locations are illustrated by the site plan provided by **Appendix 1**.

## 2.0 Air Quality Monitoring

Dust emissions generated by the Quarry operation must not cause additional exceedances of ambient air quality criterion outlined in Schedule 3, Condition 13 of the Consent and summarised by **Table 3**, **Table 4** and **Table 5**.

Deposited dust monitoring is undertaken at the locations listed in **Table 6**, in accordance with the Approved Methods of Sampling and Analysis of Air Pollutants in NSW (EPA, 2022).

**Table 3 Long-term Assessment Criteria for Deposited Dust (DA 265-10-2004).**

Pollutant	Averaging Period	Maximum Increase in Deposited Dust Level <sup>1</sup>	Maximum Total Deposited Dust Level <sup>1</sup>
Deposited Dust	Annual	2 g/m <sup>2</sup> /month	4 g/m <sup>2</sup> /month

<sup>1</sup> Deposited dust is assessed as insoluble solids as defined by AS 3580.10.1-2003.

**Table 4 Long-term Assessment Criteria for Particulate Matter (DA 265-10-2004).**

Pollutant	Averaging Period	Criterion
Total Suspended Particulates	Annual	90 µg/m <sup>3</sup>
Particulate Matter < 10 µm (PM10)	Annual	30 µg/m <sup>3</sup>

**Table 5 Short-term Assessment Criteria for Particulate Matter (DA 265-10-2004).**

Pollutant	Averaging Period	Criterion
Particulate Matter < 10 µm (PM10)	24-hour	50 µg/m <sup>3</sup>

**Table 6 Air Quality Monitoring Locations (EPL 11569).**

Site Monitoring Point ID	EPL Monitoring Point ID	Location	Address	Coordinates
DDG 1	2	South-West of Karuah Hard Rock Quarry	54 Mill Hill Close, Karuah NSW 2324	32°38'04''S 151°59'58''E
DDG 2	3	South-West of Karuah Hard Rock Quarry	64 Mill Hill Close, Karuah NSW 2324	32°38'02''S 152°00'09''E
DDG 3	4	South-West of Karuah Hard Rock Quarry	Lot 251 DP1092111, Karuah NSW 2324	32°37'57''S 151°59'41''E
DDG 4	5	East of Karuah Hard Rock Quarry	21 Halloran Road, North Arm Cove NSW 2324	32° 37' 30.87"S 152°01'10.18"E

Deposited dust results for the 12-months prior-to and including March 2025 are summarised by **Table 7**.

**Table 7** *Deposited dust monitoring results.*

Reporting Period	Start Date	End Date	Days	DDG 1 EPL ID 2	DDG 2 EPL ID 3	DDG 3 EPL ID 4	DDG 4 EPL ID 5
Apr-24	28/03/2024	29/04/2024	32	0.9	0.4	0.5	0.8
May-24	29/04/2024	29/05/2024	30	0.5	0.3	0.2	0.4
Jun-24	29/05/2024	28/06/2024	30	0.7	0.5	0.5	0.7
Jul-24	28/06/2024	30/07/2024	32	1.1	0.8	0.6	0.9
Aug-24	30/07/2024	30/08/2024	31	0.7	0.5	0.7	0.9
Sep-24	30/08/2024	30/09/2024	31	2.2	1.2	1.3	1.2
Oct-24	30/09/2024	31/10/2024	31	1.0	0.7	0.7	5.1*
Nov-24	31/10/2024	29/11/2024	29	1.4	1.1	1.1	1.7
Dec-24	29/11/2024	30/12/2024	29	0.6	1.4	1.3	3.1
Jan-25	30/12/2024	31/01/2025	32	3.8	1.7	1.9	1.3
Feb-25	31/01/2025	03/03/2025	31	1.2	0.9	1.1	1.2
Mar-25	03/03/2025	03/04/2025	31	0.7	1.0	1.4	
	04/03/2025	03/04/2025	30				1.1
<b>Progressive Annual Average</b>				<b>1.2</b>	<b>0.9</b>	<b>0.9</b>	<b>1.5</b>

Monitoring results for the Reporting Period at the four DDG monitoring sites are within the long-term annual deposited dust limit of 4 g/m<sup>2</sup>/month.

*\*Note: an anomalous exceedance was recorded at DDG4 during the October 2024 Monitoring Period which was subsequently reported to the NSW Department of Planning, Housing & Infrastructure (NSW Planning), the NSW EPA and surrounding landholders in accordance with the relevant conditions of the Consent and EPL.*

### 3.0 Blast Monitoring

Blast monitoring is undertaken for all blasts at the Quarry at the nearest residential location to ensure that air blast overpressure and ground vibration remain within the compliance limits, as summarised by **Table 8**; with the monitoring results summarised by **Table 9**.

There was one blast undertaken within the Reporting Period, which was observed to be within compliance limits.

**Table 8 Blasting Airblast Overpressure and Ground Vibration Criteria (DA 265-10-2004 & EPL 11569).**

Location	Airblast Overpressure (dB(L))	Ground Vibration (mm/s)	Allowable Exceedance
Private Residence B	120	10	0%
	115	5	5% over 12-month reporting period.

**Table 9 Blasting Monitoring Results.**

Date	Time	Location	Airblast Overpressure (dB(L))	Ground Vibration (mm/s)
21/03/2025	13:06	RL 95	113.8	1.46

\*Not triggered = n/t  
 Ground Vibration < 0.5 mm/s  
 Overpressure < 108 dB(L)

### 4.0 Noise Monitoring

Noise monitoring is undertaken in accordance with the EPL and NSW Planning approved Environmental Management Strategy & Monitoring Program (EMS&MP), which requires attended and unattended noise monitoring to be conducted on a 6-monthly basis.

No noise monitoring was undertaken during the Reporting Period.

## 5.0 Surface Water Monitoring

Water monitoring is undertaken in accordance with the EPL and NSW Planning approved Site Water Management Plan, with daily monitoring of surface water being discharged from the Quarry via the licenced discharge point in accordance with Condition L2 and M2 of the EPL.

There were two discharge events over five days during the Reporting Period, as summarised by **Table 10**.

Both discharge events consisted of controlled discharges that were compliant with the limits provided by the Consent and EPL, including Total Suspended Solids (TSS) below 50 mg/L and pH within the range of 6.5 to 8.5.

**Table 10** *Discharge Water Monitoring Results.*

Date	Oil and Grease	pH	Total Suspended Solids, TSS (mg/L)	Nitrogen (total) (mg/L)	Phosphorus (total) (mg/L)	Discharge Type
<b>LDP 1 – Sediment Dam 2</b>						
10/03/2025	Not Visible	7.4	38	1	<0.05	Controlled
11/03/2025	Not Visible	7.3	28	1.1	<0.05	Controlled
12/03/2025	Not Visible	7.4	24	1.1	<0.05	Controlled
13/03/2025	Not Visible	7.2	35	1.3	<0.05	Controlled
29/03/2025	Not Visible	7.4	50	1.4	0.08	Controlled

## 6.0 Weather Station Monitoring

The Quarry operates and maintains a permanent meteorological monitoring station to record weather parameters including temperature, wind speed and direction, solar radiation and rainfall. **Figure 1** below outlines the weather records for the Reporting Period.

### Monthly Weather Summary



Site: **Karuah Quarry Complex**  
 Month: **March 2025**

Date	Day	Temperature @ 2m			Temperature @ 10m			Winds			Solar Radiation		Rain <sup>2</sup> mm
		Max <sup>1</sup> °C	Min <sup>2</sup> °C	Ave <sup>1</sup> °C	Max <sup>1</sup> °C	Min <sup>2</sup> °C	Ave <sup>1</sup> °C	Max Gust <sup>1</sup> km/h	Ave Speed <sup>1</sup> km/h	Dir Ave <sup>1</sup> deg	Max <sup>1</sup> W/m <sup>2</sup>	Ave <sup>1</sup> W/m <sup>2</sup>	
1	Sat	37.1	20.4	26.8	34.8	21.0	26.3	26.0	4.2	168	820.0	224.5	0.0
2	Sun	32.5	19.4	25.0	30.9	19.9	24.5	21.3	4.9	173	1008.3	202.9	0.0
3	Mon	34.4	19.9	25.4	32.1	20.5	24.8	29.6	5.2	136	809.2	226.7	0.8
4	Tue	24.8	20.0	21.8	23.4	20.2	21.5	36.7	6.0	129	626.7	90.2	5.4
5	Wed	25.2	19.7	21.7	24.4	19.9	22.0	40.2	9.1	101	975.8	104.7	22.0
6	Thu	25.9	20.2	22.1	24.5	20.3	22.1	46.1	9.1	101	1035.8	131.0	9.8
7	Fri	25.5	18.7	21.2	24.1	19.3	21.4	45.0	8.8	101	965.8	110.3	9.0
8	Sat	24.5	19.7	21.5	23.7	19.9	21.5	47.3	10.1	106	704.9	102.0	16.0
9	Sun	27.1	18.6	21.8	25.2	19.7	22.1	41.4	5.9	142	1005.7	149.1	5.6
10	Mon	27.3	20.2	22.6	26.0	20.1	22.4	26.0	4.0	180	949.9	143.9	1.0
11	Tue	23.5	19.8	20.9	22.7	19.7	20.7	16.6	3.1	131	299.1	65.1	7.2
12	Wed	24.1	17.6	20.4	23.1	17.9	20.3	16.6	2.8	155	625.8	76.2	4.0
13	Thu	27.9	16.2	20.7	25.3	16.7	20.6	18.9	2.8	152	1055.0	136.4	0.6
14	Fri	30.8	17.2	22.7	27.8	17.8	22.4	18.9	3.3	177	945.8	205.9	0.0
15	Sat	33.6	18.7	24.5	31.4	19.2	24.3	16.6	3.1	184	763.3	218.8	0.0
16	Sun	34.4	17.8	24.9	33.5	19.4	25.7	18.9	3.1	251	935.7	201.3	0.0
17	Mon	35.5	18.8	26.2	33.9	18.9	26.3	40.2	5.5	181	903.2	189.0	0.0
18	Tue	22.8	14.2	18.1	20.7	14.5	17.8	42.6	5.0	190	814.2	112.1	0.0
19	Wed	25.6	17.5	20.7	23.2	17.5	20.5	18.9	3.8	134	1019.2	117.4	0.0
20	Thu	29.3	16.7	22.7	27.2	17.5	22.4	23.7	5.3	181	874.2	191.3	0.0
21	Fri	31.9	17.4	23.2	29.8	18.1	22.9	23.7	3.3	191	714.9	184.7	0.0
22	Sat	25.5	17.2	20.3	24.9	17.6	20.4	22.5	2.3	222	451.7	48.8	18.4
23	Sun	28.6	19.9	22.3	25.9	19.8	21.9	23.7	3.4	157	971.7	121.9	4.4
24	Mon	25.2	20.6	21.7	23.9	20.6	21.4	27.2	2.7	161	521.6	81.7	1.4
25	Tue	25.3	18.9	21.5	24.6	18.9	21.5	18.9	2.3	174	527.4	75.3	3.4
26	Wed	26.2	17.4	20.9	24.9	17.8	20.8	21.3	2.3	153	797.5	100.8	1.0
27	Thu	26.2	17.2	20.6	24.6	17.4	20.5	20.1	2.1	182	842.5	111.9	0.0
28	Fri	26.8	16.1	20.8	25.1	16.8	20.8	26.0	3.2	165	721.6	128.5	0.2
29	Sat	25.2	18.8	21.0	24.2	18.7	20.8	20.1	2.7	136	431.6	78.5	42.8
30	Sun	21.1	18.6	19.9	20.9	18.6	20.0	27.2	4.0	223	230.8	28.6	36.2
31	Mon	25.9	17.8	20.9	24.4	18.2	20.7	46.1	8.0	212	814.2	120.7	16.2
<b>Ave or Total</b>		<b>27.7</b>	<b>18.4</b>	<b>22.1</b>	<b>26.2</b>	<b>18.8</b>	<b>22.0</b>	<b>28.0</b>	<b>4.6</b>	<b>162.9</b>	<b>779.5</b>	<b>131.6</b>	<b>205.4</b>
<b>High</b>		<b>37.1</b>	<b>20.6</b>	<b>26.8</b>	<b>34.8</b>	<b>21.0</b>	<b>26.3</b>	<b>47.3</b>	<b>10.1</b>		<b>1055.0</b>	<b>226.7</b>	<b>42.8</b>
<b>Low</b>		<b>21.1</b>	<b>14.2</b>	<b>18.1</b>	<b>20.7</b>	<b>14.5</b>	<b>17.8</b>	<b>16.6</b>	<b>2.1</b>		<b>230.8</b>	<b>28.6</b>	
												<b>No. rain days &gt;1mm:</b>	<b>15</b>

Notes: 1. Values are for the 24 hour period from 9am to 9am next day.

2. Values are for the 24 hours to 9am.

**Figure 1 Weather Records Summary.**

## 7.0 Production Data

Monthly monitoring of sales and truck movements are summarised by **Table 11**.

**Table 11** Quarry Production Data.

Month	Truck Movements	Quarry Product Sales (t)
Jan-25	352	12,215
Feb-25	794	26,011
Mar-25	745	23,981
<b>Progressive Annual Total</b>	<b>1,891</b>	<b>62,207</b>

## 8.0 Reporting

### 8.1 Reportable Environmental Incidents

During the Reporting Period, no reportable environmental incidents occurred at the Quarry.

### 8.2 Reportable Non-Compliances

During the Reporting Period, no reportable non-compliances were identified at the Quarry.

### 8.3 Community Complaints

During the Reporting Period, no community complaints were reported to the Quarry.

## Appendix 1 – EPL 11569 Monitoring Locations

