



Karuah Hard Rock Quarry

Summary of Environmental Monitoring Data



For the Period: September 2012

1. 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* (March 2012). This report summarises the required monitoring data under Environmental Protection Licence (EPL) 11569 for the Karuah Hard Rock Quarry (Karuah Quarry). This report also includes some monitoring requirements under Development Application 265-10-2004.

A summary of the environmental monitoring data for September 2012 is covered in this report.

A summary of the licence information is provided in the tables in the report.

Table 1 – Licence Information

Environmental Protection Licence Number	11569
Licensee's Name	Hunter Quarries Pty Ltd
Licensee's Address	Licensee Postal Address: PO Box 3284 Thornton NSW 2322 Premises Address: Karuah Quarry, Corner of Andesite Road and The Branch Lane, Karuah NSW 2324
Link to Full Licence on the EPA Website	http://www.environment.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=30942&SYSUID=1&LICID=11569

2. Dust Monitoring Results

There are no specific dust criteria listed in the EPL, but the following dust criteria are listed in Schedule 3 Condition 14 of DA 265-10-2004.

Table 2 - OEH Dust Deposition Criteria for the Karuah Quarry

Averaging Period	Maximum Increase in Deposited Dust Level¹	Maximum Total Deposited Dust Level¹
Annual	2 g/m ² /month	4 g/m ² /month

Note ¹: Dust is assessed as insoluble solids as defined by AS 3580.10.1-2003.

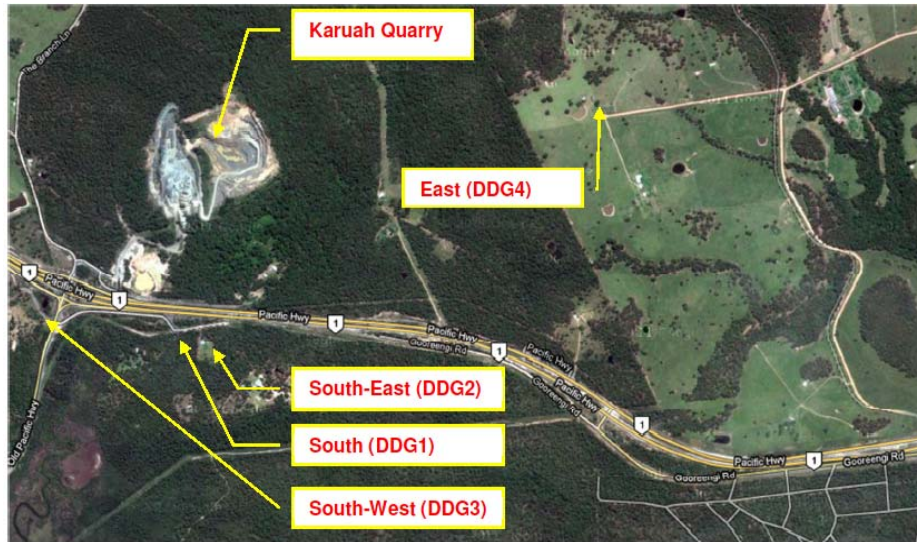
SLR Consulting Australia Pty Ltd undertakes the depositional dust monitoring at Karuah Quarry. Monitoring is completed at the locations listed in **Table 3** below.

Table 3 – Air Quality Monitoring Locations for the Karuah Quarry

Site ID	Location	Address	GPS Coordinates
South (DDG1)	South of the Karuah Quarry	5760 Pacific Hwy, Karuah NSW 2324	32°38'04"S 151°59'58"E
South-East (DDG2)	South of the Karuah Quarry	5770 Pacific Hwy, Karuah NSW 2324	32°38'02"S 152°00'09"E
South-West (DDG3)	South-West of the Karuah Quarry	DP 1024341, Karuah	32°37'57"S 151°59'41"E
East (DDG4)	East of the Karuah	21 Halloran Rd	32° 37' 30.87"S

Site ID	Location	Address	GPS Coordinates
	Quarry	North Arm Cove NSW 2324	152°01'10.18"E

Figure 1 Illustrates the air quality monitoring locations at Karuah Quarry.



Source: Google Earth

Figure 1 - Air Quality Monitoring Locations

Air Quality Monitoring was undertaken during the period 22 August 2012 to 19 September 2012 at the locations detailed in **Table 4**. Depositional dust gauge ($\text{g}/\text{m}^2/\text{month}$) results for September 2012 and the year to date are shown in **Table 4**.

Table 4 – Insoluble Solids ($\text{g}/\text{m}^2/\text{month}$) for the Year to Date

EPL		11569		
Date Sampled		19 September 2012		
Obtained by Hunter Quarries		7 November 2012		
Published by Hunter Quarries		30 November 2012		
Date	DDG1	DDG2	DDG3	DDG4
10/01/2012 to 6/02/2012	0.2	0.1	0.8	0.4
6/02/2012 to 6/03/2012	0.7	4.5	0.9	0.3
6/03/2012 to 3/04/2012	1.2	2.4	0.8	0.5
3/04/2012 to 2/05/2012	1.2	0.5	0.4	0.7
2/05/2012 to 30/05/2012	2.2	1.7	0.7	0.4
30/05/2012 to 27/06/2012	1.5	0.6	0.4	0.3
27/06/2012 to 26/07/2012	0.6	0.9	0.5	0.5
26/07/2012 to 22/08/2012	2.6	1.1	0.8	0.8
22/08/2012 to 19/09/2012	1.6	1.2	0.7	0.7
Average	1.4	1.4	1.3	0.6
Rolling Annual Average	1.4	1.3	1.3	0.7

Dust monitoring results have been consistently lower than $4\text{g}/\text{m}^2/\text{month}$ in 2012. All monitoring locations in September 2012 were below $4\text{g}/\text{m}^2/\text{month}$.

3. Blast Monitoring Results

The following conditions in EPL 11569 refer to blast management.

M6.1 The licensee must monitor all blasts carried out in or on the premises at or near the nearest residence or noise sensitive location (such as a school or hospital) that is likely to be most affected by the blast and that is not owned by the licensee or subject of a private agreement between the owner of the residence or noise sensitive location and the licensee relating to alternative blasting limits.

L4.1 Blasting in or on the premises must only be carried out between 0900 hours and 1500 hours, Monday to Friday. Blasting in or on the premises must not take place on weekends or Public Holidays without the prior approval of the EPA.

L4.2 The overpressure level from blasting operations carried out in or on the premises must not:

- a) exceed 115 dB(L) for more than 5% of the total number of blasts carried out on the premises within the 12 months annual reporting period; and*
- b) exceed 120 dB(L) at any time*

at any residence or noise sensitive location (such as a school or hospital) that is not owned by the licensee or subject of a private agreement between the owner of the residence or noise sensitive location and the licensee as to an alternative overpressure level.

L4.3 The ground vibration peak particle velocity from blasting operations carried out in or on the premises must not:

- a) exceed 5mm/second for more than 5% of the total number of blasts carried out on the premises within the 12 months annual reporting period; and*
- b) exceed 10mm/second at any time at any residence or noise sensitive location (such as a school or hospital) that is not owned by the licensee or subject of a private agreement between the owner of the residence or noise sensitive location and the licensee as to an alternative ground vibration level.*

Table 5 summarises the September 2012 blasting results.

Table 5 – September 2012 Blast Monitoring Results

Date and Time	Overpressure and Vibration	Monitor 1	Monitor 2
25/9/2012	Overpressure dB(L)	109.9	108.4
12:20pm	Vibration(mm/s)	0.90	0.91

Due to access restrictions blasts are carried out at Monitors 1 and 2 which are located closer to the quarry than the nearest residents. Blast results during September 2012 were below vibration and overpressure criteria outlined in the EPL.

4. Noise Monitoring Results

Condition 1 of the Development Consent requires Hunter Quarries to ensure noise generated by the development does not exceed criteria outlined in **Table 6** at any residence, or any noise sensitive receptor on privately owned land.

Table 6 – Development Consent Noise Impact Criteria – Karuah Quarry

Time Period	Noise Limit (dBA) 1 LAeq(15minute)
Day 7:00am to 6:00pm Monday to Friday 7:00am to 1:00pm Saturday	48
Evening 6:00pm to 10:00pm Monday to Friday	47
At All Other Times	46

Table 7 illustrates the operator attended and unattended noise monitoring locations at Karuah Quarry.

Table 7 – Development Consent Noise Impact Criteria – Karuah Quarry

Noise Monitoring Location	Property Name	Distance from Karuah Quarry
NM1	Lot 3 DP785172 5772 Pacific Hwy, Karuah	317 metres South of the Karuah Quarry
NM2	Lot 2 DP 785172 5760 Pacific Hwy, Karuah	200 metres South of the Karuah Quarry
NM3	Lot 22 DP 1024341	370 metres South West of the Karuah Quarry

Figure 2 below illustrates the noise monitoring locations at Karuah Quarry.



Figure 2 - Noise Monitoring Locations

SLR Consulting Australia Pty Ltd was engaged by Hunter Quarries to prepare and implement a noise monitoring program for the Karuah Quarry in accordance with the Conditions of Development Consent for the operation. There was no noise monitoring completed in September 2012. The next noise monitoring survey is due in November 2012.

Published by Hunter Quarries	30 October 2012
Licensee	Hunter Quarries Pty Ltd
EPL No.	11569

5. Surface Water Monitoring Results

Condition L2 of the EPL outlines the requirement to monitor surface water discharges from Karuah Quarry via the licensed discharge point (LDP001).

Table 8 summarises discharge monitoring at Karuah Quarry.

Table 8 - Surface Water Discharge Monitoring Results

Sampling Point	Monitoring Frequency	Pollutant	Measurement	EPL Limit
LDP001	During Discharge	pH	<i>No discharge during September 2012</i>	6.5 – 8.5