



## **Karuah Hard Rock Quarry**

### **Summary of Environmental Monitoring Data**



**For the Period: January 2020**

## 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* (October 2013). 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 Consent (DA 265-10-2004).

A summary of the environmental monitoring data for January 2020 is covered in this report.

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

**Table 1 – Licence Information**

<b>Environmental Protection Licence Number</b>	11569
<b>Licensee's Name</b>	Hunter Quarries Pty Ltd
<b>Licensee's Address</b>	Licensee Postal Address: PO Box 3284 Thornton NSW 2322.  Premises Address: Karuah Quarry, 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>

## 2. Dust Monitoring Results

There are no specific dust criteria listed in the EPL, but the following dust criteria (**Table 2**) are listed in Schedule 3 Condition 14 of DA 265-10-2004.

**Table 2 - DA 265-10-2004 Dust Deposition Criteria for the Karuah Quarry**

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

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

Valley Civilab Pty Ltd undertakes 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**

<b>Site ID</b>	<b>Location</b>	<b>Address</b>	<b>GPS Coordinates</b>
South (DDG 1)	South of the Karuah Quarry	5760 Pacific Hwy, Karuah NSW 2324	32°38'04"S 151°59'58"E
South-East (DDG 2)	South of the Karuah Quarry	5770 Pacific Hwy, Karuah NSW 2324	32°38'02"S 152°00'09"E
South-West (DDG 3)	South-West of the Karuah Quarry	DP 1024341, Karuah	32°37'57"S 151°59'41"E
East (DDG 4)	East of the Karuah Quarry	21 Halloran Rd North Arm Cove NSW 2324	32° 37' 30.87"S 152°01'10.18"E

**Appendix 1** Illustrates the air quality monitoring locations at Karuah Quarry.

Air quality monitoring was undertaken during the period 12 December 2019 to 13 January 2020 at the locations detailed in **Table 4**. Depositional dust gauge (g/m<sup>2</sup>/month) results for this month and the year to date are shown in **Table 4**.

**Table 4 – Insoluble Solids (g/m<sup>2</sup>/month) for the Year to Date**

EPL		11569		
Date Sampled		13 January 2020		
Date	DDG 1	DDG 2	DDG 3	DDG 4
8/01/2018 to 5/02/2018	1.5	0.8	1.3	1.0
5/02/2018 to 5/03/2018	1.6	1.0	1.0	1.5
5/03/2018 to 3/04/2018	0.6	0.6	1.1	2.6
3/04/2018 to 1/05/2018	0.8	1.0	1.0	1.7
1/05/2018 to 30/05/2018	0.9	0.5	0.7	1.1
30/05/2018 to 27/06/2018	0.6	0.5	0.4	0.9
27/06/2018 to 26/07/2018	0.7	0.6	1.2	0.6
26/07/2018 to 23/08/2018	0.9	0.9	0.9	1.3
23/08/2018 to 20/09/2018	1.6	1.0	0.6	0.7
26/10/2018 to 23/11/2018	1.5	3.4	1.1	1.1
23/11/2018 to 21/12/2018	1.3	0.6	0.1	3.0
21/12/2018 to 18/01/2019	0.8	0.4	2.2	0.2
18/01/2019 to 18/02/2019	<b>1.7</b>	<b>2.7</b>	<b>1.2</b>	<b>1.0</b>
18/02/2019 to 20/03/2019	2.4	2.5	1.7	1.7
20/03/2019 to 16/04/2019	2.1	4.0	0.9	1.0
16/04/2019 to 15/05/2019	0.8	1.2	0.5	4.8
15/05/2019 to 12/06/2019	0.4	0.6	0.3	<0.1
12/06/2019 to 15/07/2019	0.4	0.5	0.2	0.1
15/07/2019 to 14/08/2019	0.7	0.7	0.3	0.5
14/08/2019 to 12/09/2019	0.6	2.4	0.7	2.5
12/09/2019 to 16/10/2019	0.3	0.7	0.1	1.1
16/10/2019 to 14/11/2019	3.8	2.0	3.5	2.4
14/11/2019 to 12/12/2019	2.6	2.0	3.1	2.5
12/12/2019 to 13/01/2020	2.0	2.7	1.9	2.0
<b>Rolling Annual Average</b>	1.5	1.8	1.2	1.6

Monitoring results indicate that for the period 12 December 2019 to 13 January 2020 the insoluble solid levels recorded at DDG1 to 4 monitoring locations were below the project criterion of 4 g/m<sup>2</sup>/month.

**Note** <sup>1</sup>: Rolling Annual Average from the EPL 20611 anniversary date of 13 January.

## 2.1 High Volume Air Sampling Results

The TSP and PM<sub>10</sub> results for January 2020 are shown in Table 5 with the long-term monitoring results displayed in **Figure 1**.

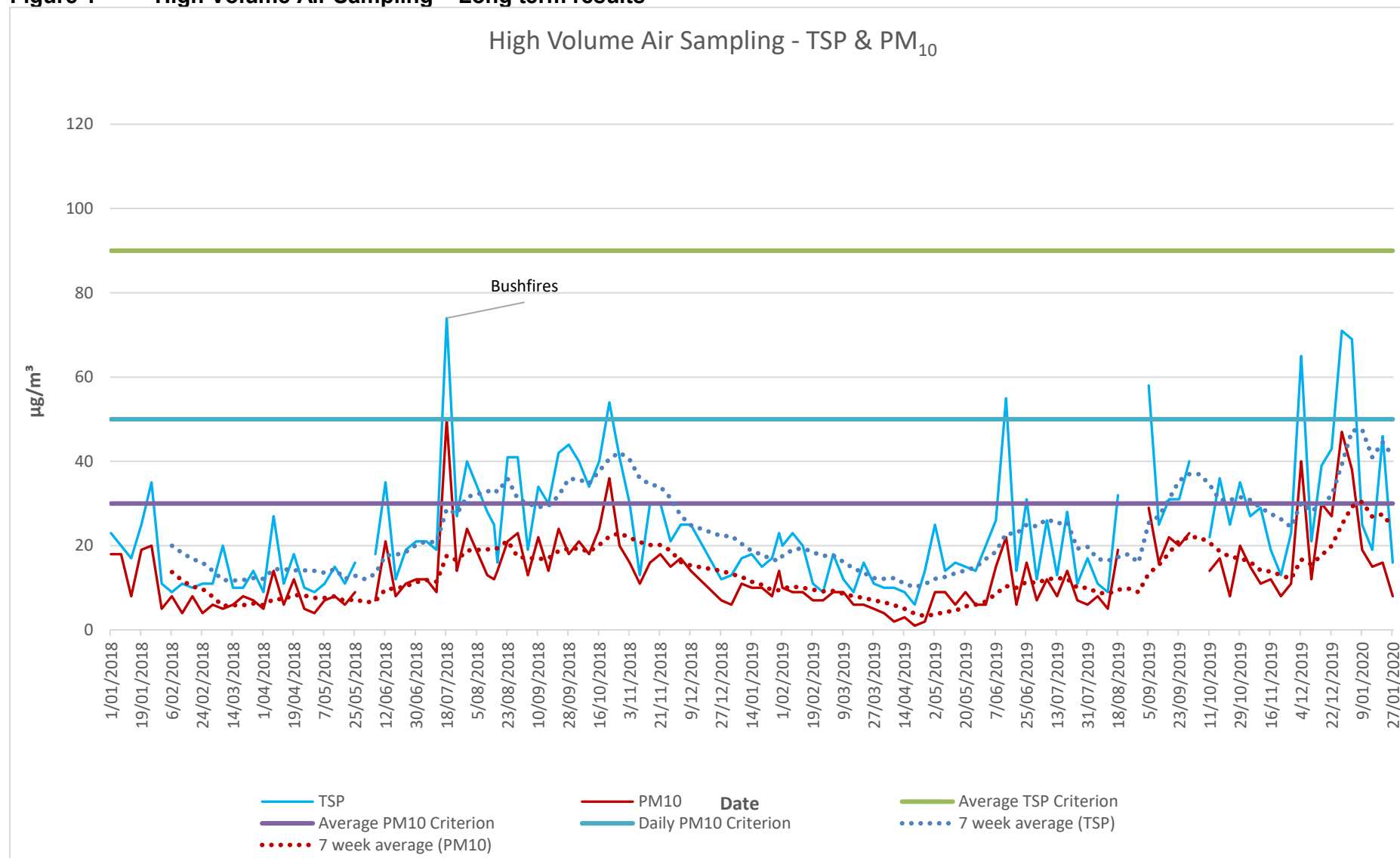
**Table 5 High Volume Air Sampling ( $\mu\text{g}/\text{m}^3$ ) results**

<b>Date</b>	<b>HVAS TSP (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>HVAS PM10 (<math>\mu\text{g}/\text{m}^3</math>)</b>
3/01/2020	49	26
9/01/2020	45	30
15/01/2020	32	14
21/01/2020	66	32
27/01/2020	47	25
<sup>1</sup> 24hr Max Criteria	<b>N/A</b>	<b>50</b>
Report Average	27.8	20.4
<sup>2</sup> Rolling Annual Average	<b>37.3</b>	<b>17.7</b>
<sup>1</sup> Annual Average Criteria	<b>90</b>	<b>30</b>

**Note:** 1. Maximum criteria as specified in PA 09\_0175  
2. Rolling Annual Average from the EPL 20611 anniversary date of 27 January.

All monitoring results to the end of January 2020 indicate that the TSP and PM<sub>10</sub> levels recorded were below the project criterion.

**Figure 1 High Volume Air Sampling – Long term results**



### 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 6** summarises the January 2020 blasting results.

**Table 6: January 2020 Blast Monitoring Results**

Date and time	Overpressure and Vibration	Nearest Residence
15/01/2020 12:00 PM	Overpressure dB(L)	105.5
	Vibration(mm/s)	1.20

As shown in **Table 6**, a single blast was undertaken in January 2020. Monitoring results shows that the overpressure and ground vibration were below the EPL criteria at nearest residence.

### 4. Noise Monitoring Results

Schedule 3 Condition 1 of the Development Consent requires Hunter Quarries to ensure noise generated by the development does not exceed criteria outlined in **Table 7** at any residence, or any noise sensitive receptor on privately owned land.

**Table 7 – Development Consent Noise Impact Criteria – Karuah Quarry**

Time Period	Noise Limit (dBA) 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
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**Table 8** illustrates the operator attended and unattended noise monitoring locations at Karuah Quarry.

**Table 8 – 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

Noise monitoring was not required in January 2020. The most recent monitoring was undertaken in October 2019.

## 5. Surface Water Monitoring Results

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

**Table 9** summarises discharge monitoring at Karuah Quarry.

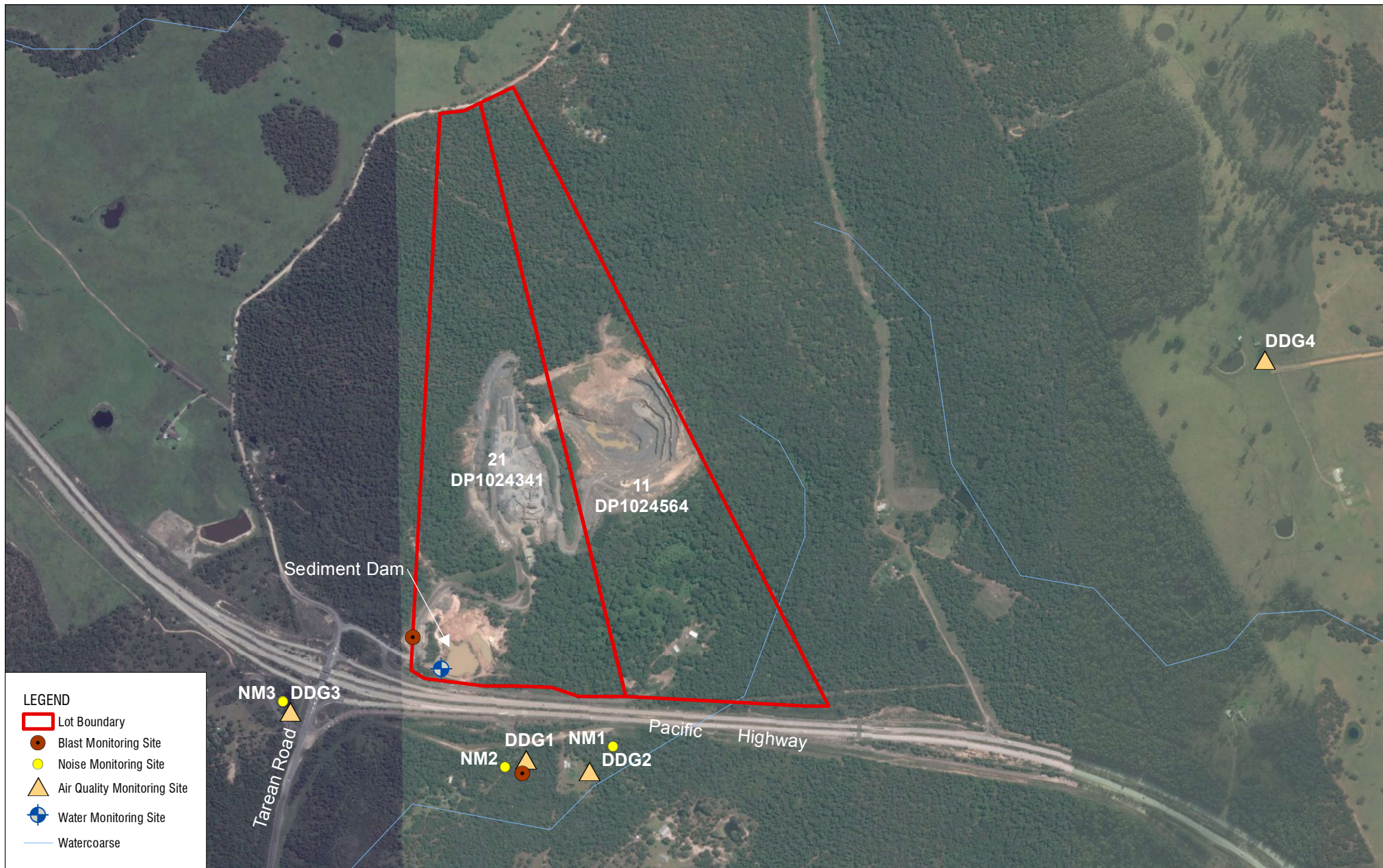
**Table 9 - Surface Water Discharge Monitoring Results**

Sampling Point	Monitoring Frequency	Pollutant	Measurement	EPL Limit
LDP001	During Discharge	pH	<i>No discharge during January 2020</i>	6.5 – 8.5
		TSS		50

# **APPENDIX 1**

## **Monitoring Locations**





**LEGEND**

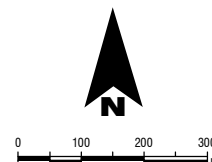
- Lot Boundary
- Blast Monitoring Site
- Noise Monitoring Site
- ▲ Air Quality Monitoring Site
- ⊕ Water Monitoring Site
- Watercourse

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Project No.:	633.HQP00.0030
Date:	23/06/2014
Drawn by:	LH
Scale:	1:12,000
Sheet Size:	A4
Projection:	GDA 1994 MGA Zone 56



Hunter Quarries Pty Ltd

**Environmental Services and Support**

**Karuah Hard Rock Quarry  
Environmental Monitoring Locations**

FIGURE 1