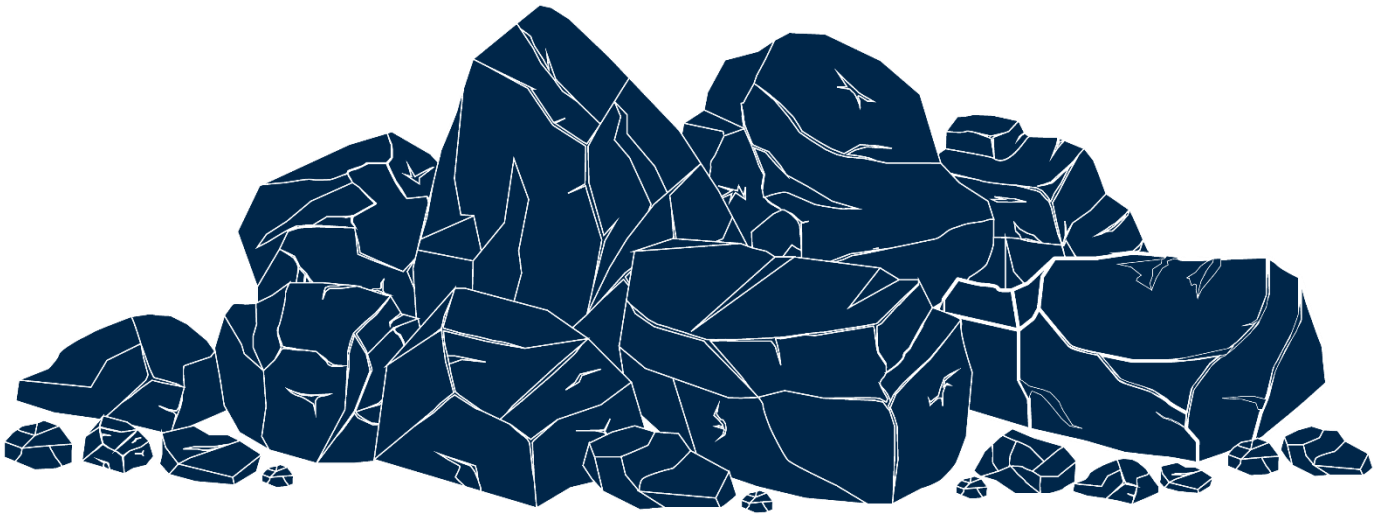
Karuah East Quarry
ABN: 80 141 505 035
Karuah East Quarry Pty Limited
Blue Rock Close, Karuah NSW 2324

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Karuah East Quarry

Environmental Monitoring Report

October 2026



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1.0 Introduction

This report has been completed to meet the requirements of Section 66(6) of the NSW *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 20611 (the EPL) and Project Approval MP09_0175 (the Consent) for the Karuah East Quarry (the Quarry) as summarised by **Table 1** and **Table 2** respectively.

Table 1 Summary of Environment Protection Licence, EPL 20611

EPL Number:	EPL 20611
Licensee's Name:	Karuah East Quarry Pty Limited
Licensee's Address:	Karuah East Quarry PO Box 3284, Thornton NSW 2322 Blue Rock Close, Karuah NSW 2324
Link to Full Licence on the EPA website:	EPL 20611

Table 2 Summary of Project Approval, MP09_0175

Project Approval:	MP09_0175
Applicant:	Karuah East Quarry Pty Limited
Consent Authority:	NSW Planning Assessment Commission
Link to Full Project Approval on the NSW Planning website:	Project Approval MP09_0175

A summary of the environmental monitoring data for the October 2026 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 and TSP/PM10 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 (MP09-0175).

Pollutant	Averaging Period	Maximum Increase in Deposited Dust Level[1]	Maximum Total Deposited Dust Level[1]
Deposited Dust	Annual	2 g/m^2/month	4 g/m^2/month

[1] Deposited dust is assessed as insoluble solids as defined by AS 3580.10.1-2003.

Table 4 Long-term Assessment Criteria for Particulate Matter (MP09-0175).

Pollutant	Averaging Period	Criterion
Total Suspended Particulates	Annual	90 $\mu g/m^3$
Particulate Matter < 10 µm (PM10)	Annual	30 $\mu g/m^3$

Table 5 Short-term Assessment Criteria for Particulate Matter (MP09-0175).

Pollutant	Averaging Period	Criterion
Particulate Matter < 10 µm (PM10)	24-hour	50 $\mu g/m^3$

Table 6 Air Quality Monitoring Locations (EPL 20611).

Site Monitoring Point ID	EPL Monitoring Point ID	Location	Address
DDG 1	12	South-West of Karuah East Quarry	54 Mill Hill Close, Karuah NSW 2324
DDG 2	13	South-West of Karuah East Quarry	64 Mill Hill Close, Karuah NSW 2324
DDG 3	14	South-West of Karuah East Quarry	Lot 251 DP1092111, Karuah NSW 2324
DDG 4	15	East of Karuah East Quarry	21 Halloran Road, North Arm Cove NSW 2324
HVAS	9	South-West of Karuah East Quarry	64 Mill Hill Close, Karuah NSW 2324

2.1 Deposited Dust Monitoring

Deposited dust results for the 12-months prior-to and including October 2026 are summarised by **Table 7**.

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

Table 7 Deposited dust monitoring results.

Reporting Period	Start Date	End Date	Days	DDG 1 EPL ID 12	DDG 2 EPL ID 13	DDG 3 EPL ID 14	DDG 4 EPL ID 15
Nov-25	31/10/2025	02/12/2025	32	1.0	2.5	2.1	1.1
Dec-25	02/12/2025	02/01/2026	31	1.8	1.6	1.3	1.5
Jan-26	02/01/2026	30/01/2026	28	1.1	1.2	0.9	0.5
Feb-26	30/01/2026	27/02/2026	28	0.8	1.2	1.1	1.4
Mar-26	27/02/2026	31/03/2026	32	1.2	7.7[1]	0.8	4.6[1]
Apr-26	31/03/2026	01/05/2026	31	1.9	9.2[2]	0.8	3.7
May-26	01/05/2026	01/06/2026	31	0.6	0.4	0.3	0.2
Jun-26	01/06/2026	01/07/2026	30	1.1	1.3	0.7	0.6
Jul-26	01/07/2026	31/07/2026	30	0.8	1.2	0.5	1.1
Aug-26	31/07/2026	01/09/2026	32	3.5	1.1	1.0	1.2
Sep-26	01/09/2026	29/09/2026	28	1.5	1.1	1.0	1.0
Oct-26	29/09/2026	29/10/2026	30	1.7	0.9	0.8	0.7
Progressive Annual Average				**1.4**	**2.4**	**0.9**	**1.5**

Notes:

1. *Recorded exceedances at DDG 2 and DDG 4 in March 2026 which was reported to the NSW Department of Planning, Housing and Infrastructure (NSW Planning), the NSW EPA and surrounding landholders in accordance with relevant conditions of the Consent and EPL. The exceedances are considered unlikely to be directly attributable to quarry operations given strong easterly winds during the monitoring period placed DDG 4 upwind of the site, whilst the result at DDG 2 was not repeated at the two neighbouring monitoring locations indicating a localised dust source.*

2. *Recorded exceedance at DDG 2 in April 2026 which was reported to NSW Planning, the NSW EPA and surrounding landholders in accordance with relevant conditions of the Consent and EPL. The result at DDG 2 was not repeated at the two neighbouring monitoring locations indicating a localised dust source.*

2.2 High Volume Air Sampling

TSP and PM10 results for the Reporting Period are summarised by **Table 8** and illustrated respectively by **Figure 1** and **Figure 2**.

Monitoring results for the five HVAS run days within the Reporting Period were compliant with the long-term criteria for TSP and PM10, and short-term criteria for PM10.

Table 8 HVAS TSP and PM10 monitoring results for the Reporting Period.

Run Date	Total Suspended Particulates, TSP (µg/m^3)	Particulate Matter < 10 µm, PM10 (µg/m^3)
04/10/2026	26	17
10/10/2026	26	14
16/10/2026	17	8
22/10/2026	13	7
28/10/2026	24	11

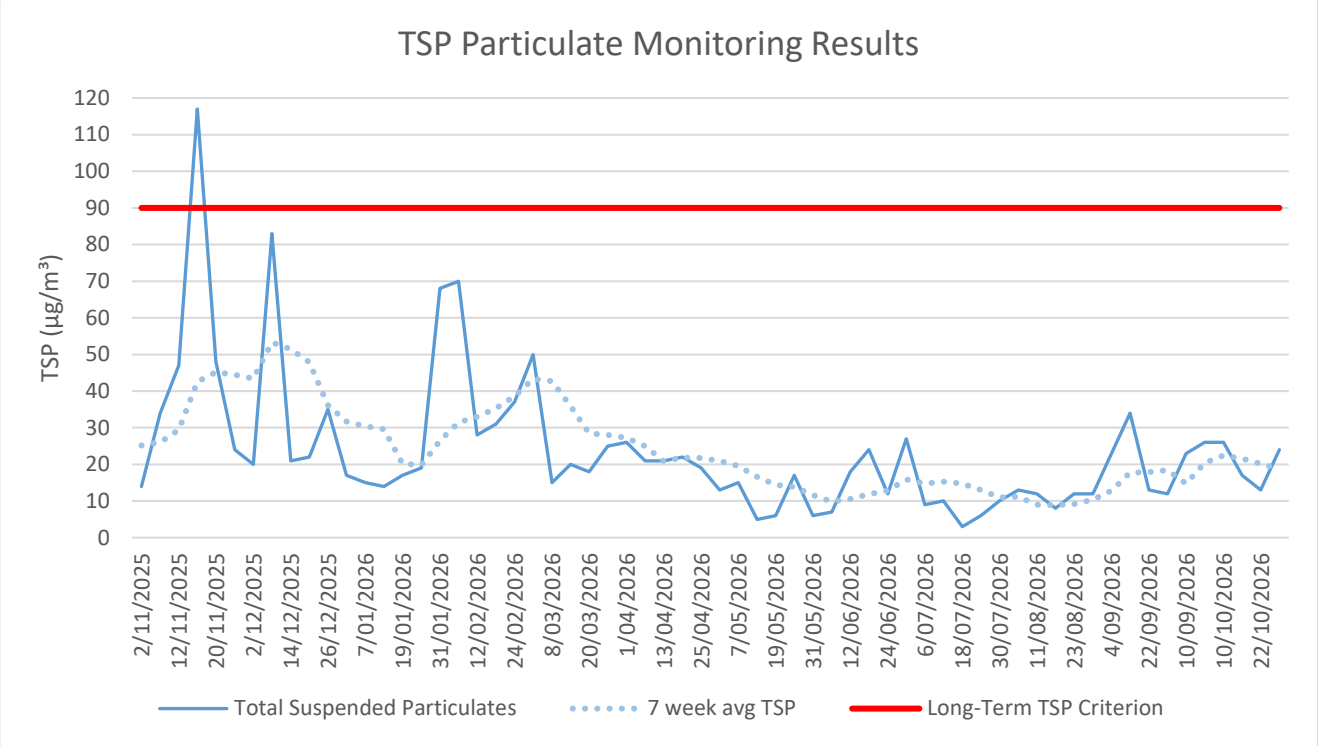


Figure 1 Long-term TSP monitoring trends.

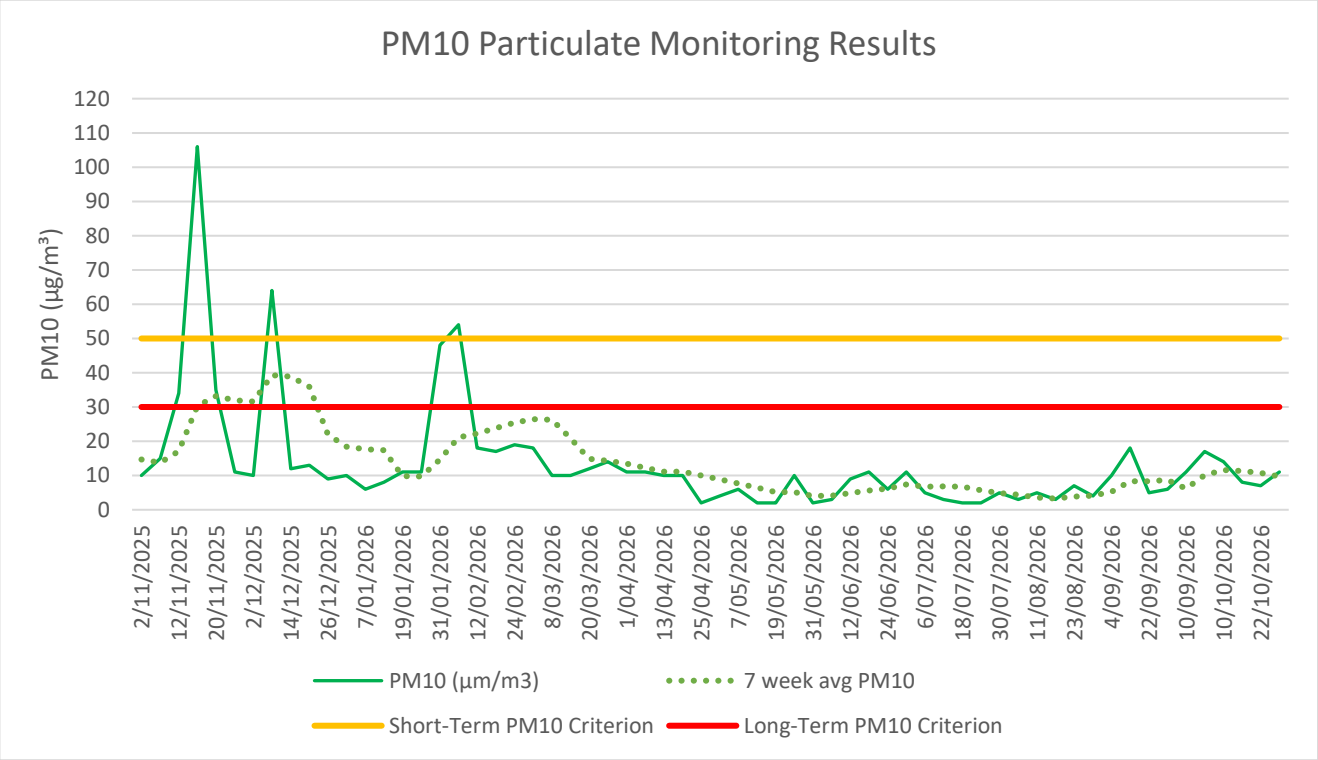


Figure 2 Long-term PM10 monitoring trends.

3.0 Blast Monitoring

Blast monitoring is undertaken for all blasts at the Quarry at the nearest residential location (EPL Monitoring Point 11) to ensure that air blast overpressure and ground vibration remain within the compliance limits, as summarised by **Table 9**; with the monitoring results summarised by **Table 10.**

There were two blasts undertaken during the Reporting Period, which were observed to be within compliance limits.

Table 9 Blasting Airblast Overpressure and Ground Vibration Criteria (MP09-0175 & EPL 20611).

Location	Airblast Overpressure (dB(L))	Ground Vibration (mm/s)	Allowable Exceedance
Private Residence B EPL Monitoring Point ID 11	120	10	0%
	115	5	5% over 12-month reporting period.

Table 10 Blasting Monitoring Results.

Date	Time	Location	Airblast Overpressure (dB(L))	Ground Vibration (mm/s)
14/10/2026	11:57 AM	RL120 + RL128	n/t	n/t
30/10/2026	2:44 PM	RL90	109.8	0.9

Notes: **Nil Trigger events occur when both recorded overpressure is <112 dBL and recorded ground vibration is <0.5 mm/s.*

4.0 Noise Monitoring

Noise monitoring is undertaken in accordance with the EPL and NSW Planning approved Noise Management Plan, which requires attended noise monitoring to be conducted on a quarterly basis.

There was no noise monitoring 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.

Three discharge events across 4 days occurred during the Reporting Period, as summarised by **Table 11**.

All discharge events were controlled and compliant with the limits provided by the Consent and EPL, including Total Suspended Solids (TSS) below 40 mg/L and pH within the range of 6.5 to 8.5.

Table 11 Discharge Water Monitoring Results.

Date	pH	Turbidity (NTU)	Total Suspended Solids, TSS (mg/L)	Oil and Grease	Discharge Type
LDP 1 – Dam 1					
-	-	-	-	-	-
LDP 2 – Dam 2					
15/10/2026	7.1	45	29	Not Visible	Controlled
22/10/2026	7.3	70	36	Not Visible	Controlled
23/10/2026	7	50	30	Not Visible	Controlled
LDP 3 – Dam 3					
14/10/2026	7.2	18	6	Not Visible	Controlled
22/10/2026	7.4	18	14	Not Visible	Controlled
23/10/2026	7	16	9	Not Visible	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 3** below outlines the weather records for the Reporting Period.

An additional backup rain gauge has been installed at Karuah East Quarry, with data from this gauge included for reference. The Hunter Quarry rain gauge will continue to be used as the primary rainfall data source for calculating rainfall averages and monthly totals.

Monthly Weather Summary

Site: **Karuah Quarry Complex**
Month: **October 2026**

Date	Day	Temperature @ 2m			Temperature @ 10m			Wind Speed			Solar Radiation		Rain[2]	Rain[2]
		Max[1]	Min[2]	Ave[1]	Max[1]	Min[2]	Ave[1]	Max Gust[1]	Ave Speed[1]	Dir Ave[1]	Max[1]	Ave[1]	(KEQ)[3]	(HQ)
		°C	°C	°C	°C	°C	°C	km/h	km/h	deg	W/m²	W/m²	mm	mm
1	Thu	28	10.8	18.3	26.4	12.1	18.5	13.3	3.7	202.6	770	226.1	0	0
2	Fri	30.4	11.5	19.7	28.4	13.1	20.2	19.2	3.2	187	795.8	221.1	0	0
3	Sat	32.1	16.4	22	30	16.6	21.7	15.3	3.5	174	873.2	182.4	0	0
4	Sun	22.7	12.4	18.2	22	13.1	18.4	14.3	3.3	184.1	414.9	75.3	0	0
5	Mon	30.2	16.7	20.4	28	16.5	20	22	6.1	173.4	865	193.4	0.8	0
6	Tue	25.4	14.2	18.5	23.1	14.6	18.1	15.7	3.9	161.2	887.4	160.9	0.8	0.8
7	Wed	27.8	13.9	19.5	25.7	14.2	19.2	25	5.7	133.7	984.9	183	9	6.8
8	Thu	19.5	10	14.7	18.2	10.2	14.6	20.1	6.3	166.5	675.8	97.1	2.2	1.4
9	Fri	20.5	7.8	13.5	18.5	8.4	13.4	16.3	3.6	196.1	1085.8	180.6	0	0.2
10	Sat	25.1	13.9	19.2	22.6	14.8	19	17.9	4.8	153.4	794.2	227.3	0.8	0.4
11	Sun	30.9	14.7	20.7	30.2	16.2	21.2	17.6	2.8	202.5	975	143.9	2.2	2.0
12	Mon	28.7	14.5	21.1	25.7	15.5	20.8	17.9	4.8	150.9	807.4	230.6	0	0.0
13	Tue	36	18.3	26.3	34.8	18.7	26.2	18	4.5	190.6	931.6	203.9	1.2	1.0
14	Wed	26.5	14	17.6	24.4	14	17.5	23.8	5.8	157.2	744.1	70.5	39.2	35.6
15	Thu	17.4	11	14.6	16.6	11.6	14.5	24	5.9	152.9	450.8	87.1	2.4	2.0
16	Fri	20.2	12.5	15.4	18.7	12.6	15.4	18.4	3.9	162.6	1068.3	127.6	0.2	0.0
17	Sat	19.4	11	14.9	17.9	11.4	14.8	23.5	4	169.9	690.8	117.8	2.2	2.2
18	Sun	20.9	9.3	15	19.2	9.6	14.8	24.3	5.3	159.2	1094.1	165	1	0.4
19	Mon	23	10.1	15.9	21.5	10.6	15.8	23.5	3.7	162.1	1151.7	195.4	0.2	0.0
20	Tue	23.9	12.2	17.3	22.5	13	17.4	21.8	4.7	165.4	1050.8	172.2	0.4	0.0
21	Wed	24.7	15.2	19.1	22.9	15.6	18.8	21.4	5.3	126.3	1116.7	213.9	0.2	0.0
22	Thu	25.3	16.4	19.1	23	16.9	18.8	18.5	4.2	153.9	1192.4	136.8	41	36.6
23	Fri	20.1	15.2	17.6	20	15.7	17.6	14	3.7	122.5	604.1	106.5	6.6	5.6
24	Sat	25.2	14.1	19.6	22.9	14.7	19.4	17.9	4.9	185	1131.7	189.1	0.2	0
25	Sun	29.6	17.8	23.1	27.1	18.3	22.7	18.6	4.2	169.7	947.5	250.3	0	0
26	Mon	31.9	17.8	23.6	30.2	18	23.4	16.9	4.1	212.5	1120	200.7	7.8	7
27	Tue	21.6	14.9	17.7	20	15	17.4	20.1	5.1	158.3	1037.4	102.8	0.2	0.2
28	Wed	23.7	14.3	18.4	22	14.5	18.2	15.4	4.6	202.2	1228.2	197.9	0	0
29	Thu	27.8	9	16.5	25.8	10	16.4	26	5.2	203.8	1012.5	251.4	0	0
30	Fri	27	11	17.8	24.4	11.8	17.3	21.8	4.3	156.9	880	273.9	0	0
31	Sat	25.4	14.3	20	23.1	14.9	19.5	21.4	6.4	177.9	940	253.6	0	0
Ave or Total		**25.5**	**13.4**	**18.6**	**23.7**	**13.9**	**18.4**	**19.5**	**4.6**	**170.1**	**913.6**	**175.4**	**118.6**	**102.2**
High		**36.0**	**18.3**	**26.3**	**34.8**	**18.7**	**26.2**	**26.0**	**6.4**		**1228.2**	**273.9**	**41.0**	**36.6**
Low		**17.4**	**7.8**	**13.5**	**16.6**	**8.4**	**13.4**	**13.3**	**2.8**		**414.9**	**70.5**		
												No. rain days >1mm:		**9**

Notes: 1. Values are for the 24 hour period from 9am to 9am next day.
2. Values are for the 24 hours to 9am.
3. Rainfall data obtained from the backup rain gauge located at KEQ.

Figure 3 Weather Records Summary during the Reporting Period.

7.0 Production Data

Monthly monitoring of sales and truck movements are summarised by **Table 12**.

Table 12 Quarry Production Data.

Month	Truck Movements	Quarry Product Sales (t)
Jan-26	1,669	53,474
Feb-26	2,453	76,092
Mar-26	2,684	82,141
Apr-26	2,223	70,604
May-26	2,358	73,611
Jun-26	3,420	99,798
Jul-26	2,831	90,733
Aug-26	2,272	67,633
Sep-26	2,261	69,542
Oct-26	1,945	59,811
Progressive Annual Total	**24,116**	**743,439**

8.0 Reporting

8.1 Reportable Environmental Incidents

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

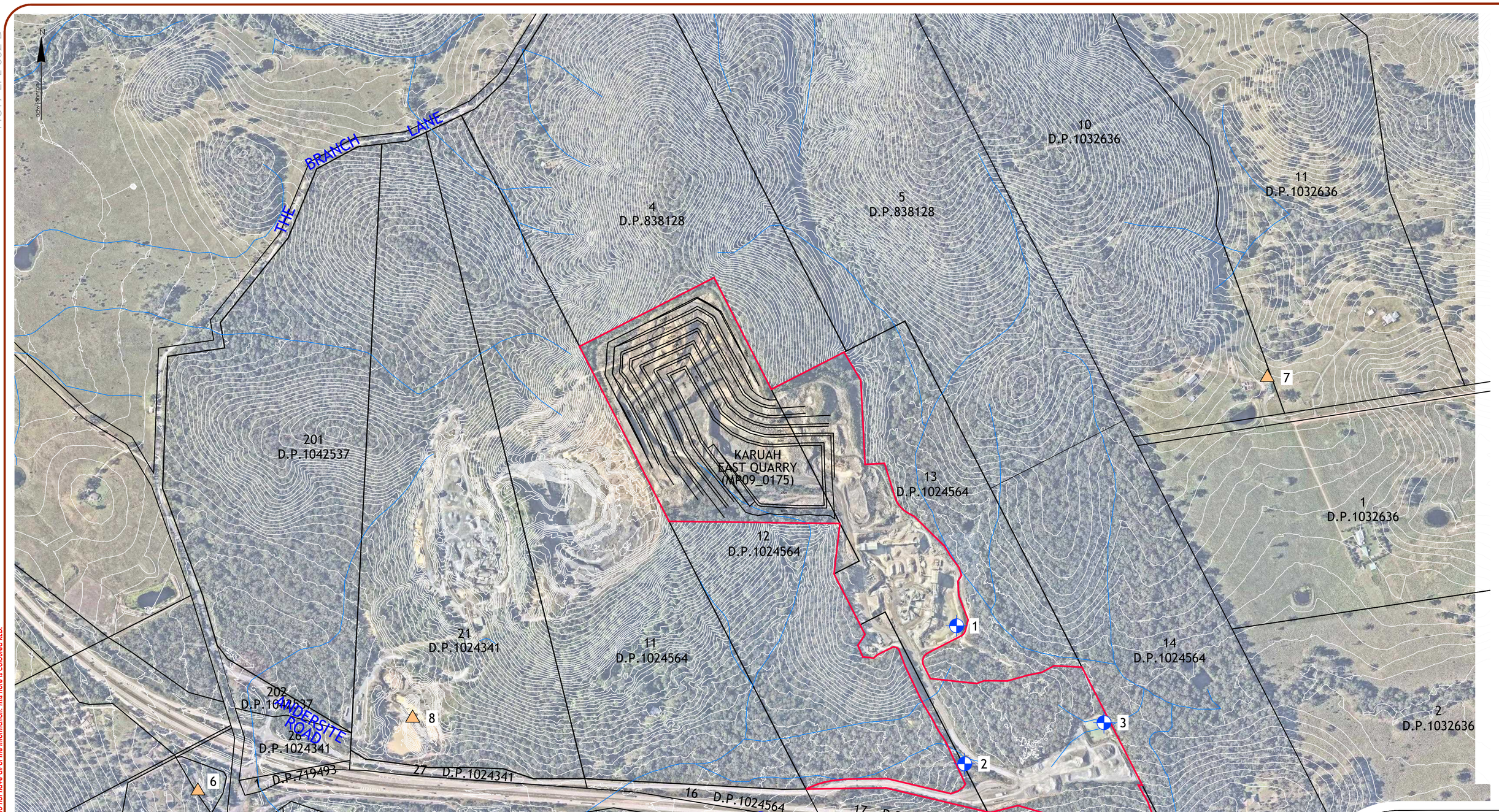
8.2 Reportable Non-Compliances

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 20611 Monitoring Locations



EPA IDENTIFICATION POINTS ^				
No.	TYPE	EASTING*	NORTHING*	DESCRIPTION
1	DISCHARGE	407 341 m	6 389 325 m	LDP1 (Discharge to Waters from Dam 1)
2	DISCHARGE	407 358 m	6 389 032 m	LDP2 (Discharge to Waters from Dam 2)
3	DISCHARGE	407 654 m	6 389 119 m	LDP3 (Discharge to Waters from Dam 3)
12	MONITORING	406 300 m	6 388 858 m	DDG1 Air Quality Sensitive Receiver
13	MONITORING	406 430 m	6 388 808 m	DDG2 Air Quality Sensitive Receiver
14	MONITORING	405 726 m	6 388 974 m	DDG3 Air Quality Sensitive Receiver
15	MONITORING	408 002 m	6 389 854 m	DDG4 Air Quality Sensitive Receiver
16	MONITORING	406 183 m	6 389 129 m	DDG5 Air Quality Sensitive Receiver
9	MONITORING	406 434 m	6 388 809 m	B HVAS Air Quality Sensitive Receiver
11	MONITORING	406 398 m	6 389 903 m	Air Blast Monitor

*COORDINATES SHOWN ARE PROVIDED BY HQPL & ARE ON GDA2020 DATUM

ver.	date	comment	surveyed	drawn	checked	pm
A	11.06.2020	INITIAL EPL PLAN	- -	Z.J.	M.R.	M.R.
B	24.07.2023	UPDATED EPL BOUNDARY	- -	Z.J.	M.R.	M.R.
C	17.05.2024	UPDATED MONITORING LOCATIONS	HQPL	Z.J.	M.R.	M.R.
D	20.05.2024	UPDATED LDP NAMING & POINTS	HQPL	Z.J.	M.R.	M.R.

co-ordinate information
CO-ORDINATE SYSTEM: M.G.A. ZONE 56
FOR PLAN CONTENT GDA94
ORIGIN OF CO-ORDINATES: P.M.

level information
DATUM: A.H.D. CONTOUR INTERVAL:
ORIGIN OF LEVELS: LiDAR DATA 2.0 m

scale (A1 original size)
0 100 200m
SCALE: 1:4000 (FULL)

page
1 OF 1

^ MONITORING POINTS HAVE BEEN PROVIDED BY HUNTER QUARRIES PTY LTD.
REFER TO PLAN 'KARUAH HARD ROCK QUARRY ENVIRONMENTAL MONITORING LOCATIONS - FIGURE 1' BY SLR CONSULTING AUSTRALIA - REFERENCE: 633.HQP00.0030 DATED 23/06/2014.

PLAN OF:
ENVIRONMENTAL PROTECTION LICENCE (EPL 20611)
KARUAH EAST QUARRY

location: LOT 12 D.P.1024564, LOT 13 D.P.1024564 BLUE ROCK CLOSE, KARUAH, NSW, 2324

council: MID COAST

dwg ref: 11819-EPL-002-D

client: HUNTER KARUAH EAST

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hunter office ph: (02) 4978 5100
sydney office ph: (02) 8046 7411
www.adwjohnson.com.au

working beyond expectations

Plotted By: Zachary Jarvie Plot Date: 20/05/24 8:22:45PM Cad File: N:\11819\DWG\11819-EPL-002-D.DWG
This plan includes coloured information. If you have a black and white copy you do not have all of the information. This note is coloured RED.
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