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## Karuah East Quarry

### S4.55 (1A) Modification Report Proposed Modification to Operational Noise Criteria and Implementation of Improved Acoustic Mitigation Measures Project Approval 09\_0175

**Property:**

Various Lots  
Blue Rock Close, Karuah

**Applicant:**

Karuah East Quarry Pty Ltd

**Date:**

June 2019



Project Management • Town Planning • Engineering • Surveying  
Visualisation • Economic Analysis • Social Impact • Urban Planning

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# Document Control Sheet

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Issue No.	Amendment	Date	Prepared By	Checked By
A	Draft	05/06/2019	AS	MR
B	Final	20/06/2019	MR	ML

## Limitations Statement

This report has been prepared in accordance with and for the purposes outlined in the scope of services agreed between ADW Johnson Pty Ltd and the Client. It has been prepared based on the information supplied by the Client, as well as investigation undertaken by ADW Johnson and the sub-consultants engaged by the Client for the project.

Unless otherwise specified in this report, information and advice received from external parties during the course of this project was not independently verified. However, any such information was, in our opinion, deemed to be current and relevant prior to its use. Whilst all reasonable skill, diligence and care have been taken to provide accurate information and appropriate recommendations, it is not warranted or guaranteed and no responsibility or liability for any information, opinion or commentary contained herein or for any consequences of its use will be accepted by ADW Johnson or by any person involved in the preparation of this assessment and report.

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APPROVED DEVELOPMENT PLAN (MP 09-0175 (LASTEST AMENDMENT AS APPROVED BY MOD 2))

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# 1.0 Introduction

## 1.1 PROJECT DETAILS

ADW Johnson has been commissioned by Karuah East Quarry Pty Ltd to prepare a Section 4.55(1A) application to modify Project Approval 09\_0175.

The purpose of the application is to implement improved acoustic mitigation measures and to modify the operational noise criteria of the Project Approval (Condition 3 of Schedule 3) in accordance with the *NSW Noise Policy for Industry (2017)*. This Modification Application is supported by a Noise Impact Assessment prepared by Thearle Acoustics in accordance with the *NSW Noise Policy for Industry (2017)*. The proposed modification seeks to modify the Project Approval to reflect the findings and recommendations of the Noise Impact Assessment.

The application seeks to modify the project approval under Section 4.55(1A) of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

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PROJECT DETAILS:	
<b>Description of Proposal:</b>	Modification under Section S4.55 (1A) of the Environmental Planning and Assessment Act 1979 to Project Approval 09_0175 (as Modified). Proposal to Implement Improved Acoustic Mitigation Measures and Modify Operational Noise Criteria in accordance with <i>NSW Noise Policy for Industry (2017)</i> .
<b>Applicant Name:</b>	Karuah East Quarry Pty Limited
<b>Applicant Address:</b>	Karuah East Quarry Pty Limited C/- ADW Johnson Pty Ltd Unit 7, 335 Hillsborough Road WARNERS BAY NSW 2282
<b>Property Description:</b>	Lot 12 DP 1024564 (Karuah East Quarry site). Lot 13 DP1024564 (Karuah East Quarry site). Lot 202 DP1042537 (approved roadworks). Lots 26 and 27 DP1024341 (approved roadworks). Lots 16 and 17 DP 1024564 (approved roadworks).

## 1.2 BACKGROUND AND MODIFICATION OVERVIEW

The Karuah East Quarry was granted Project Approval 09\_0175, on 17 June 2014 under the provisions of Section 75J (former Part 3A) of the *Environmental Planning and Assessment Act 19179* (EP&A Act). The Project Approval (09\_0175) provides consent for the establishment and operation of the Karuah East Quarry until 2034.

A key document of the Environmental Assessment (31 January 2013) that forms part of the Project Approval is the Noise and Blasting Assessment prepared by SLR (2 November 2012). The findings of this assessment guided Condition 3 of Schedule 3 of the Project Approval (Operational Noise Criteria) as well as the acoustic mitigation measures that formed part of the Statement of Commitments (Appendix 6 of the Project Approval).

Quarrying activity commenced in 2018; however following commencement of activity, it was identified that improved targeted acoustic mitigation measures were necessary and would be beneficial to all stakeholders. The SLR (2012) Noise and Blasting Assessment was developed based on a concept layout with assumptions on equipment to be utilised. It was assessed in accordance with the now superseded *NSW Industrial Noise Policy (2000)*. The proponent has commissioned the services of Thearle Acoustics to undertake a new Noise Impact Assessment that considers the impact of actual site/plant layout, equipment and operation of the Karuah East Quarry in the context of the current background environment in accordance with the *NSW Noise Policy for Industry (2017)*. Appropriate operational criteria and industry best practice noise mitigation measures have been identified as part of this process.

This process has been undertaken in consultation with the NSW Department of Planning and Environment (DPE), NSW Environmental Protection Authority (EPA) and the Karuah East Quarry Community Consultative Committee.

The applicant seeks consent from the DPE to modify Project Approval 09\_0175 to reflect the findings of the Noise Impact Assessment.

The approved project was transitioned to a State Significant Development (SSD) by the delegate of the NSW Minister for Planning on 25 January 2019 in accordance with Schedule 2 Clause 6(1) of the *Environmental Planning and Assessment (Savings, Transitional and other Provisions) Regulation 2017*. The appropriate method of modifying the Project Approval is a Section 4.55(1A) Modification Application.

The project approval as it relates to extraction rates, quarrying, processing, operational activity, hours of operation and rehabilitation is not proposed to be modified.

This Modification Report addresses all key issues relating to the proposed modification.

### 1.3 DEVELOPMENT HISTORY

Project Approval 09\_0175 was granted for the Karuah East Quarry Project on 17 June 2014 under the provisions of Section 75J of the *EP&A Act 1979*.

Key features of the approval include:

- Quarrying operation is permitted on the site until 31 December 2034;
- The extraction (excluding overburden), processing and transport of quarry products is limited to 1.5 million tonnes in any calendar year;
- Hours of operation are specified in Condition 7 (Schedule 2) and apply to quarrying operations, construction activities and maintenance activities; and
- Conditions apply to manage / mitigate potential impacts associated with a range of environmental conditions including noise; blasting; air quality; soil and water; transport; biodiversity; heritage; emergency and hazards management and waste.

Construction works are largely complete.

Modification (MOD 1) to Project Approval 09\_0175 for the Karuah East Quarry Project was approved on 27 April 2018 under the provisions of Section 75W of the EP&A Act. The modification allows a nominal expansion to the approved area of disturbance by an additional 2,500m<sup>2</sup>. The additional area approved allows for substantially improved vehicle manoeuvring associated with the quarry plant infrastructure which will result in improved operational efficiencies.

Modification (MOD 2) to Project Approval 09\_0175 was approved on 19 December 2018 under the provisions of Section 75W of the EP&A Act. MOD 2 approves a minor increase to the site disturbance by an additional 1.133 ha to allow for improved environmental management, improved operational safety and increased efficiency.

On 25 January 2019 the Karuah East Quarry project was transitioned to a State Significant Development (SSD) under the provisions of Schedule 2 Clause 6(1) of the *Environmental Planning and Assessment (Savings, Transitional and other Provisions) Regulation 2017*.

## 1.4 STRUCTURE OF REPORT

This S4.55(1A) Assessment Report has been prepared to address the key relevant issues relating to the proposed modification. The format is as follows:

- Chapter 1 provides an introduction to this S4.55(1A) Assessment and project background and history;
- Chapter 2 details the proposed development;
- Chapter 3 details key consultation undertaken with:
  - NSW DPE assessment staff;
  - NSW EPA; and
  - The Community Consultative Committee (CCC) for the Karuah East Quarry.
- Chapter 4 provides a site description;
- Chapter 5 considers relevant planning legislation;
- Chapter 6 undertakes an environmental assessment of the proposed modification;
- Chapter 7 provides a Statement of Commitments specifically relevant to the proposed modification; and
- Chapter 8 provides a conclusion.

## 2.0 Description of Proposal

### 2.1 PROPOSED MODIFICATIONS

The proposed modification seeks to modify Project Approval 09\_0175 in accordance with the recommendations of the Noise Impact Assessment prepared by Thearle Acoustics (refer **Appendix B**). The proposal seeks to modify operational noise criteria in line with the *NSW Noise Policy for Industry (2017)* and to also implement improved noise mitigation measures.

The project approval as it relates to extraction rates, quarrying, processing, operational activity and rehabilitation will not be affected by the proposal.

The proposal seeks the following:

- Establishment of the following Operational Noise Criteria to replace the Operational Noise Criteria specified within Condition 3 of Schedule 3 of the Project Approval.

#### Operational Noise Criteria

LOCATION	RECOMMENDED OPERATIONAL NOISE CRITERIA (DAY)
A	42 dBA
G	44 dBA
H	45 dBA
All Other Residences	40 dBA

Provided in **Figure 1** below is the location of sensitive receivers referred to in the recommended operational noise criteria.



**Figure 1: Location of Sensitive Receivers.**

- Implementation of the following improved Acoustic Mitigation Measures to replace the Acoustic Mitigation Measures specified in the Project Approval Statement of Commitments (Section 5.0):

### Acoustic Mitigation Measures

- Enclosure of the Jaw Crusher with 100mm thick concrete panels on the North, East and South sides. Roofing materials to have an acoustic rating of STC28;
- Enclosure of the Cone Crushers on the Northern and eastern elevations with materials having an acoustic rating of STC28. Southern and western elevations and roof to be enclosed with Colorbond; and
- Purchasing and use of generator sets which are acoustically treated including complete enclosure of the engine and generator, acoustically treated exhaust systems and cooling systems.

## 2.2 MODIFICATIONS TO PROJECT APPROVAL 09\_0175

To facilitate the proposal, it is suggested that Project Approval 09\_0175 be amended as follows:

- Replace Schedule 3 Condition 3 with the following:

### NOISE

#### Operational Noise Criteria

3. *The Proponent must ensure that the operational noise generated by the project does not exceed the criteria in Table 2.*

Table 2: Operational noise criteria

Location	Criteria (day)
A	42 dBA
G	44 dBA
H	45 dBA
All other residences	40 dBA

#### Notes:

- Receiver locations are shown in Appendix 2.
- Noise generated by the project is to be measured in accordance with the relevant requirements, and exemptions (including certain meteorological conditions), of the Noise Policy for Industry (2017).
- Appendix 3 sets out the meteorological conditions under which these criteria apply, and the requirements for evaluating compliance with these criteria.

*However, the noise criteria in Table 2 do not apply if the Proponent has an agreement with the relevant landowner to generate higher noise levels, and the Proponent has advised the Department in writing of the terms of the agreement.*

- The figure in Appendix 2 (Noise Receiver Locations) to be updated with the following Figure:



**Figure 2: Location of Sensitive Receivers.**

- The reference to the *NSW Industrial Noise Policy* in Appendix 3 (Noise Compliance Assessment) to be replaced to reference the *Noise Policy for Industry 2017*; and
- Replace Section 5.0 (Noise, Blasting and Vibration) of the Statement of Commitments (Appendix 6 of the Project Approval) with the below text (it should be noted that it is only the noise mitigation measures proposed to be modified. The noise monitoring, blasting and vibration commitments remain unchanged by the proposal):

The following will be undertaken:

- Enclosure of the Jaw Crusher with 100mm thick concrete panels on the North, East and South sides. Roofing materials to have an acoustic rating of STC28;
- Enclosure of the Cone Crushers on the Northern and eastern elevations with materials having an acoustic rating of STC28. Southern and western elevations and roof to be enclosed with Colorbond;
- Purchase and use of generator sets which are acoustically treated including complete enclosure of the engine and generator, acoustically treated exhaust systems and cooling systems;
- Noise compliance monitoring will be undertaken in accordance with conditions of consent and Noise Management Plan by a suitably qualified acoustic expert. The monitoring will consider the performance of the quarry in relation to the project specific noise (as established in the Thearle Acoustics Noise Impact Assessment 10 June 2019) and vibration and blast criteria established in the SLR Noise and Blasting Impact Assessment (dated 2 November 2012);
- The proponent will not fire blasts at the existing quarry and the proposed Karuah East quarry at the same time;
- The proponent will implement a blasting program where nearby receivers are notified in advance of a blast;

- o The following control measures for vibration will be undertaken:
  - Reducing the maximum instantaneous charge (MIC) by using delays, reduced hole diameter and/or deck loading;
  - Changing the burden and spacing by altering the drill pattern and/or delay layout or altering the hole inclination;
  - Use the minimum practicable sub drilling which gives satisfactory toe conditions; and
  - Investigate alternative rock breaking techniques.
- o The following control measures for air blasting will be undertaken:
  - Reducing the maximum instantaneous charge (MIC) by using delays, reduced hole diameter and/or deck loading;
  - Ensure stemming depth and type is adequate;
  - Eliminate exposed detonating cord and secondary blasting;
  - Restrict blasting events to favourable weather conditions;
  - Orient quarry faces away from potentially sensitive receivers;
  - Use a hole spacing and burden which will ensure that the explosive force is just sufficient to break the ore to the required size; and
  - The proponent will take particular care where the face is already broken and consider deck loading where appropriate to avoid broken ground or cavities in the face.

A revised Statement of commitments relevant to the proposed modification is provided in **Section 7**.

### 2.3 ALTERNATIVES TO THE PROPOSED MODIFICATION

The only alternative to the proposal is the 'do nothing' option. The impact of not proceeding with the modification will result in the operation of the Karuah East Quarry in a far less efficient manner in terms of acoustic mitigation. Opportunity for implementation of industry best practice acoustic mitigation measures will be lost as will be the opportunity to operate in accordance with the *NSW Noise Policy for Industry (2017)*.

## 3.0 Consultation

### 3.1 NSW DEPARTMENT OF PLANNING AND ENVIRONMENT

The proponent has maintained ongoing consultation with NSW DPE staff regarding the proposal. In particular the following is noted:

1. This application was originally lodged with the NSW DPE as a Section 75W application on 27 February 2018 prior to the winding up of transitional arrangements for former Part 3A projects from 1 March 2018. At the time of lodgement, the application sought modification to the approved statement of commitments as they related to noise. DPE assessment staff advised that in order to proceed as a S75W application, an Environmental Assessment (EA) was required to be lodged by 1 September 2018 and if this was not possible, the application would be required to be withdrawn, the project transitioned to SSD, and then the application re-lodged as a S4.55 application.

In line with DPE's advice, the S75W modification application was withdrawn and the Karuah East Quarry project was transitioned to SSD on 25 January 2019. The details of the proposal have now been properly refined through the completion of a new Noise Impact Assessment and the application is lodged as a Section 4.55(1A) application.

2. An inspection of the site was undertaken by Mr Anthony Barnes, Mr Colin Phillips and Mr Nathan Heath from the NSW Department of Planning and Environment (DPE) on 5 March 2019 with representatives of Karuah East Quarry Pty Ltd (KEQ) and ADW Johnson Pty Ltd. The purpose of the site visit was to undertake a general inspection of the overall status of the Karuah East Quarry. During the inspection, DPE officers inspected the acoustic attenuation measures that are proposed by this modification. It was generally agreed that the measures implemented, including the use of 'hushclad' cladding to mitigate noise generated by the primary jaw crusher and secondary cone crushers, represented industry best practice. It was confirmed at this meeting that a S4.55 application would shortly be lodged with NSW DPE to formalise the findings of the Thearle Noise Impact Assessment.
3. Further contact from the NSW DPE was made directly with the KEQ Manager, seeking manufacturer details of the 'hushclad' cladding material for future reference, noting its effectiveness.

### 3.2 NSW ENVIRONMENT PROTECTION AUTHORITY

The proponent has undertaken ongoing liaison with NSW EPA staff. In particular, the proponent introduced the modification proposal to the NSW EPA in a meeting held on 30 January 2019. Attendees at the meeting included Mr Peter Jamieson of the NSW EPA and also Mr Joel Curran of the NSW DPE. Specifically, relevant to the proposed modification, the following key matters were discussed:

- KEQ Pty Ltd are shortly intending to lodge a new Modification application with the NSW DPE. The purpose of the application is to implement improved operational acoustic mitigation measures and to ensure that Condition 3 (Schedule 3) of the Project Approval, which specifies operational noise criteria, is guided by the current 'Noise Policy for Industry' (2017).

It was noted that Condition 3 (Schedule 3) of the Project Approval formed part of the Project Approval based on the approved Noise and Blasting Assessment (SLR, 2012) which was completed by SLR under the now superseded *NSW Industrial Noise Policy (2000)*. The SLR assessment also relied on a number of operational assumptions. A new Noise Impact Assessment (NIA) will be supplied as part of the Modification application and will be based on:

- o The current *NSW Noise Policy for Industry (2017)*;
- o Current background noise data; and
- o Actual known plant equipment to be used in the quarry and actual operations (rather than modelled).

The above process will result in a more accurate and current acoustic assessment (including targeted acoustic mitigation measures) than the Noise and Blasting Assessment (SLR, 2012) that forms part of the Project Approval.

- The proponent confirmed that fieldwork for the new NIA is underway and nearing completion.
- The NSW EPA (Mr Jamieson) offered the following comments:
  - o Current and valid background data is of critical importance to inform the NIA; and
  - o It is essential that the NIA demonstrates compliance with the *Noise Policy for Industry 2017*.

The proponent considers that the NIA that accompanies this application satisfies the commentary made by NSW EPA staff.

### 3.3 KARUAH EAST QUARRY COMMUNITY CONSULTATIVE COMMITTEE

The Community Consultative Committee (CCC) established for the Karuah East Quarry (required by Condition 6 of Schedule 5 of the Project Approval) were provided with a brief on the proposed modification by the proponent at the CCC meeting held on 4 March 2019.

As part of the CCC meeting, members were transported around the site and were shown the noise mitigation measures implemented at the crushing plant (primary jaw crusher enclosure and secondary cone crusher enclosure) as a result of the Thearle Noise Impact Assessment.

Overall, the CCC members voiced their support for the genuine effort made by KEQ Pty Ltd to appropriately mitigate noise impact.

Full details of the CCC meeting on 4 March 2019 are available on the proponent's website at [www.hunterquarries.com.au](http://www.hunterquarries.com.au).

The details of the proposed modification will be outlined to the CCC in greater detail at the next CCC meeting, scheduled for 2 September 2019. The proponent will continue to inform the CCC as assessment of the modification application progresses.

### 3.4 COMMUNITY CONSULTATION

In addition to community consultation carried out with the CCC, the quarry has maintained contact with a number of local residents situated to the East of the Karuah East quarry throughout the completion of this application. Anecdotally, KEQ Pty Ltd are receiving positive feedback and support for the proposal. The applicant understands that one (1) community member has made direct contact with DPE staff to confirm support for the proposed improved mitigation measures.

## 4.0 Site Description & Location

### 4.1 PROPERTY DESCRIPTION AND LAND OWNERSHIP

Key details relevant to the land subject to Project Approval 09\_0175 is described in the table below.

The proposed modifications relate to all land affected by Project Approval 09\_0175.

**Table 2: Key Project Details**

Description of Subject Land				
	Lot and Deposited Plan	Address	Total Site Area (Approximate)*	Land Owner
Quarry and Operations	Lot 12 DP 1024564	5887 Pacific Highway Karuah	36.4ha	Branch Land Pty Ltd
	Lot 13 DP 1024564	5893 Pacific Highway Karuah	37.91ha	Hilton Ross Grugeon and Beverley Clare Grugeon
Existing Quarry Access (not affected by proposed modification)	Lot 202 DP 1042537	N/A	1.289ha	Roads and Maritime Services
	Lot 26 DP 1024341	N/A	2.743ha	Roads and Maritime Services
	Lot 27 DP 1024341	N/A	1.195ha	Roads and Maritime Services
	Lot 16 DP 1024564	N/A	2.21ha	Roads and Maritime Services
	Lot 17 DP 1024564	N/A	3.597ha	Roads and Maritime Services

\* Areas have been derived from registered Deposited Plan information.

### 4.2 THE LOCALITY AND SITE

The Karuah East Quarry is located north east of Raymond Terrace, south east of Dungog, south-west of Bulahdelah and west of Hawks Nest. Travel time to the site from Newcastle via the Pacific Highway is approximately 45 minutes.

The operational area of the approved quarry is described as Lots 12 and 13 DP 1024564 and is located off the Pacific Highway, Karuah. The Karuah East Quarry is accessed via an extension of Blue Rock Close which was approved as part of Project Approval 09\_0175 (extension works completed and now operational).

The site is well located relative to the Pacific Highway, providing excellent connectivity to Newcastle, and the broader Hunter and Mid Coast Regions. The Karuah East Quarry site is separated from substantial residential areas, and is located adjacent to an existing quarry operation (the Karuah Quarry). The Karuah Nature Reserve is located to the south west of the site on the opposite side of the Pacific Highway. **Figures 3** and **4** show the location of the site. **Figure 5** shows the configuration of key plant infrastructure.

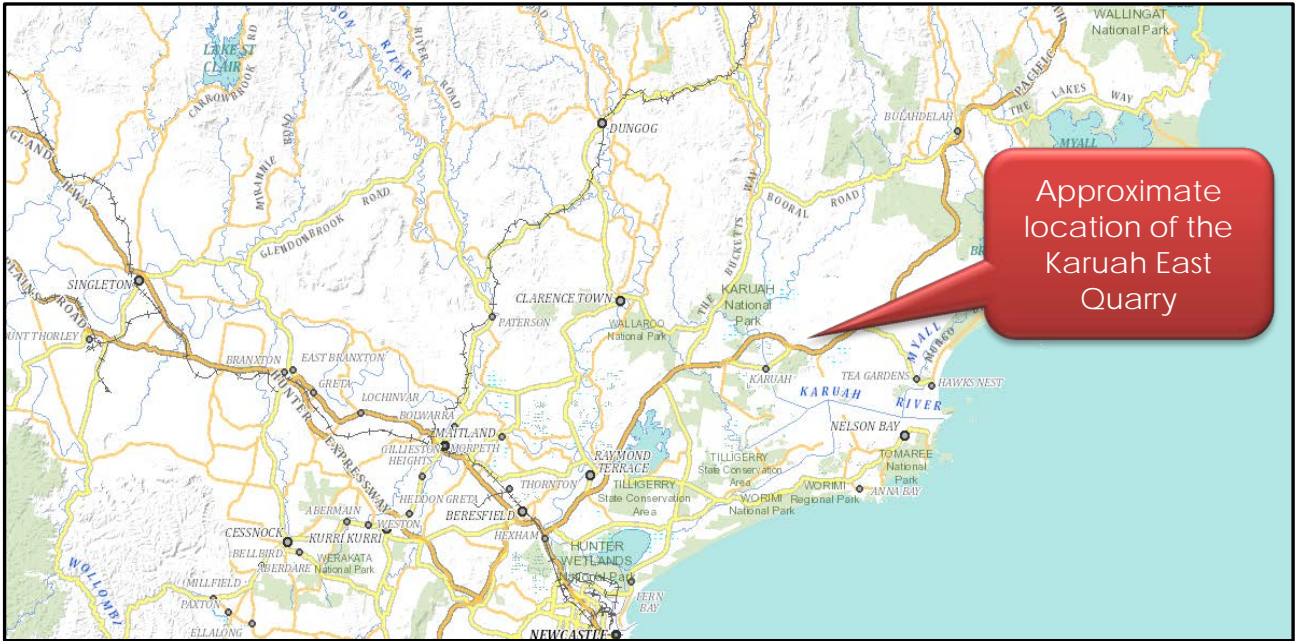


Figure 3: Location Plan Showing Site in a Broad Regional Context.

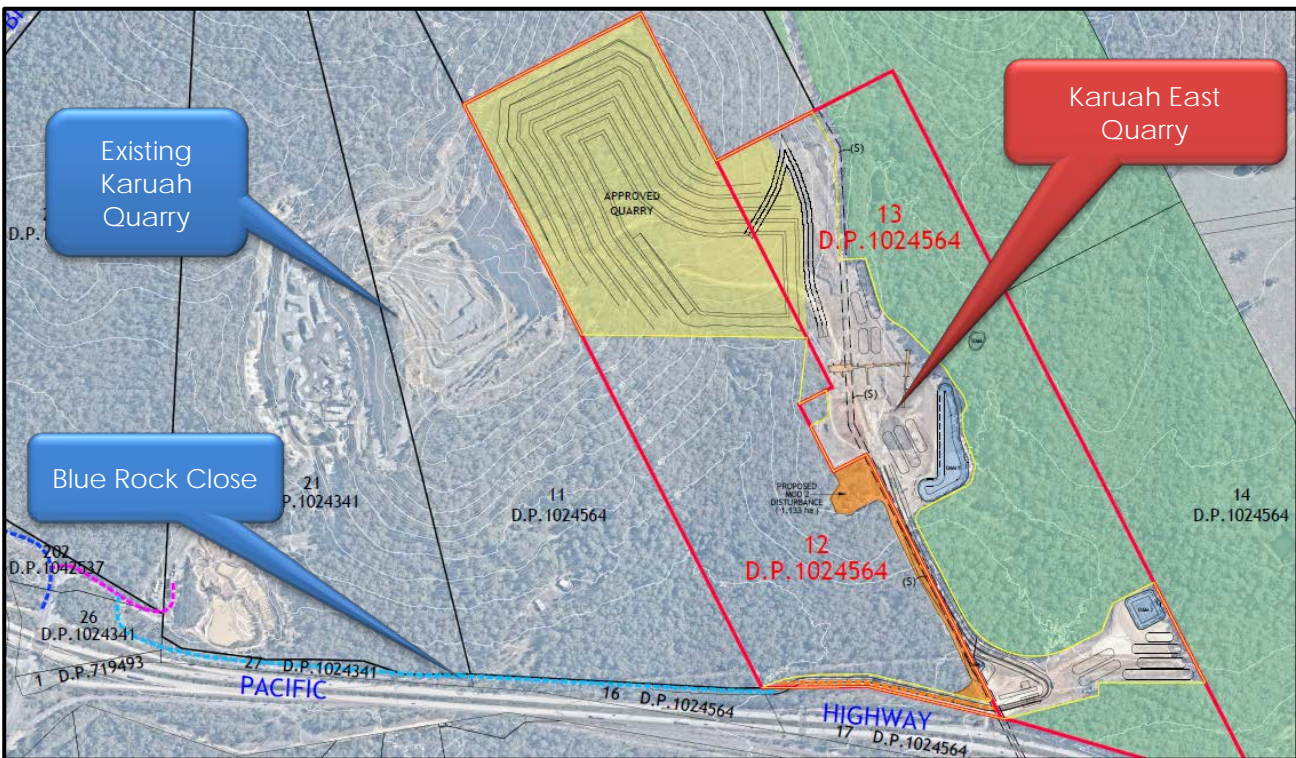


Figure 4: Aerial Photograph of Karuah East Quarry (as per latest MOD approval (MOD 2)).

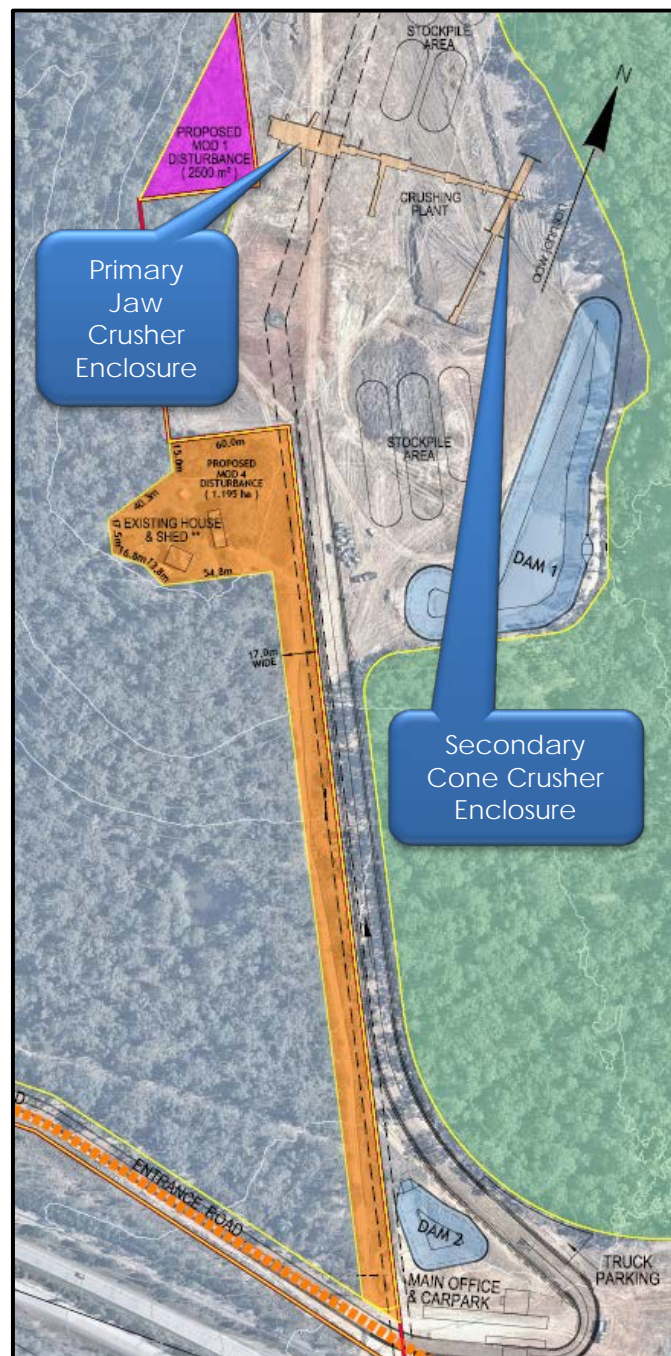


Figure 5: Aerial Photograph of Karuah East Quarry Plant and Office Area (as per latest MOD approval (MOD 2)).

### 4.3 EXISTING SITE IMPROVEMENTS

Construction works for the approved Karuah East Quarry, in accordance with Project Approval 09\_0175 (as modified) are largely complete. This can be seen in the aerial image shown in **Figures 4** and **5**. Provided below are photographs of the primary jaw crusher enclosure and the secondary cone crusher enclosure.



Figure 6: Primary Jaw Crusher Enclosure.



Figure 7: Secondary Cone Crusher Enclosure.

#### 4.4 VEGETATION

Areas of the site not affected by the Project Approval remain predominately well vegetated, comprising uncleared bushland. The proposed modification will not result in any additional disturbance to vegetation.

#### 4.5 ACCESS, ROAD NETWORK AND TRAFFIC

Access to the Karuah East Quarry site is provided from the approved and constructed quarry access, which comprises an extension to Blue Rock Close which extends adjacent to the Pacific Highway.

Blue Rock Close is a sealed road that extends off Andersite Road in an easterly direction. Andersite Road is a sealed road that provides access to the existing Karuah Quarry off the Branch Lane.

Branch Lane to the north of the Andersite Road intersection reverts to a gravel road. Branch Lane links at grade to the Old Pacific Highway corridor into the Karuah Township to the south of the Karuah Interchange.

The proposal does not involve any changes to access or the approved Karuah East Quarry extraction rate and accordingly the proposal will have no impact on traffic or access.

#### 4.6 TOPOGRAPHY, DRAINAGE AND FLOODING

The site is situated in the Karuah River Basin, on the south east facing slopes of a small mountain. The approved Karuah East Quarry site is characterised by steep landscapes.

The majority of the extraction area lies within the Yalimbah Creek catchment draining to the south west, with only a small portion of the area draining to the east and into the Bulga Creek catchment. The land where the office facilities, processing area and stockpiles are located lies within the Bulga Creek catchment.

The site is not affected by flooding.

#### 4.7 SOILS AND GEOTECHNICAL

A Soil Survey and Land Resource Assessment and Groundwater Impact Assessment formed part of the package of information supplied and approved as part of the Project Approval (09\_0175). The assessments confirmed the suitability of the Karuah East Quarry site for quarrying activities and that the site is not affected by potential acid sulfate soils.

#### 4.8 BUSHFIRE

The subject site is identified as being bushfire prone land. The proposed modifications will have no impact on the risk of bushfire associated with the proposed development.

## 4.9 EASEMENTS

A 10m wide easement for overhead power reticulation extends through the approved Karuah East Quarry site (on Lot 12 and 13 DP 1024564).

The former purpose of the electricity easement was to supply overhead power reticulation to the dwellings on Lot 5 DP 838128 and Lot 12 DP 1024564. These dwellings are owned by the proponent and are no longer reliant on the electricity easement.

The proposed modification does not impact on these easements.

## 5.0 Planning Context

### 5.1 APPROVAL PATHWAY AND PERMISSIBILITY

Schedule 2 of the *Environmental Planning and Assessment (Savings, Transitional and Other Provisions) Regulation 2017* (Transitional Regulation) provides transitional arrangements for development approved under former Part 3A of the EP&A Act 1979 including winding up of transitional Part 3A Modification Provisions.

In accordance with Schedule 2, Clause 6 of the Transitional Regulation, the Karuah East Quarry Project (09-0175) was declared a State Significant Development (SSD) for the purposes of the EP&A Act 1979 on January 2019, by order published in the NSW Government Gazette No 5 of 25 January 2019 (notice reference n2019-124).

Accordingly, the Karuah East Quarry is now subject to the modification provisions of Section 4.55 of the EP&A Act 1979. This application seeks to amend the approved development in accordance with Section 4.55 (1A) of the EP&A Act.

It is necessary to give consideration to Schedule 2 Clause 3BA(6) of the Transitional Regulation, which states:

*(6) In the application of section 4.55 (1A) or (2) or 4.56 (1) of the Act to the following development, the consent authority need only be satisfied that the development to which the consent as modified relates is substantially the same development as the development authorised by the consent (as last modified under section 75W):*

*(a) development that was previously a transitional Part 3A project and whose approval was modified under section 75W....*

The proposal will remain substantially the same as the development last modified under S75W of the EP&A Act 1979 (MOD 2 of MP 09\_0175). The modification is minor in nature and will result in improved acoustic mitigation measures being implemented as well as establishment of operational noise criteria in line with the *NSW Noise Policy for Industry (2017)*.

### 5.2 RELEVANT ISSUES UNDER SECTION 4.55 OF THE EP&A ACT 1979

Under Section 4.55(1A) of the EP&A Act, the consent authority must be satisfied that the modified development is substantially the same as the development originally approved as follows:

*A consent authority may, on application being made by the applicant or any other person entitled to act on a consent granted by the consent authority and subject to and in accordance with the regulations, modify the consent if:*

*(a) it is satisfied that the proposed modification is of minimal environmental impact, and*

**Comment:** The proposed modification does not seek to modify the Project Approval as it relates to extraction rates, quarrying, processing, operational activity, hours of operation and rehabilitation. The proposed modification is minor in nature and will result in improved acoustic mitigation measures being

implemented as well as establishment of operational noise criteria in line with the *NSW Noise Policy for Industry (2017)*. As such, the proposal is considered to be of minimal environmental impact.

*(b) it is satisfied that the development to which the consent as modified relates is substantially the same development as the development for which the consent was originally granted and before that consent as originally granted was modified (if at all), and*

**Comment:** The proposal will remain substantially the same development. Refer to the above commentary made regarding Schedule 2 Clause 3BA(6) of the Transitional Regulation (**Section 5.1** above).

*(c) it has notified the application in accordance with:*

*(i) the regulations, if the regulations so require, or*

*(ii) a development control plan, if the consent authority is a council that has made a development control plan that requires the notification or advertising of applications for modification of a development consent, and*

**Comment:** It is understood that the NSW DPE will exhibit the proposal and invite public feedback.

*(d) it has considered any submissions made concerning the proposed modification within any period prescribed by the regulations or provided by the development control plan, as the case may be.*

**Comment:** Any submissions will be considered by the DPE and the proponent.

Noting the above, it is considered that the request to modify the consent can be assessed under the parameters of Section 4.55(1A) of EP& A Act and is therefore submitted to the DPE for approval on this basis.

### 5.3 RELEVANT ISSUES UNDER THE EP&A REGULATION (2000)

Clause 115 of the *Environmental Planning and Assessment Regulation 2000* sets out additional requirements that all applications for modifications of consent under Section 4.55 must comply with. The relevant requirements and how they have been complied with are set out in the following table:

**Table 3: Clause 115 Requirements**

Clause 115 Requirements	Comment
<i>(1) An application for modification of a development consent under 4.55 (1), (1A) or (2) or 4.56 (1) of the Act must contain the following information:</i>	
<i>(a) the name and address of the applicant</i>	Provided on application form.
<i>(b) a description of the development to be carried out under the consent (as previously modified),</i>	Provided within this Section 4.55(1A) Report and on the application form.
<i>(c) the address, and formal particulars of title, of the land on which the development is to be carried out,</i>	Provided within this Section 4.55(1A) Report and on the application form.

Clause 115 Requirements	Comment
(d) a description of the proposed modification to the development consent,	Provided within this Section 4.55(1A) Report and on the application form.
(e) a statement that indicates either: (i) that the modification is merely intended to correct a minor error, misdescription or miscalculation, or (ii) that the modification is intended to have some other effect, as specified in the statement,	Discussed within relevant sections of this Section 4.55(1A) Report.
(f) a description of the expected impacts of the modification,	Discussed within relevant sections of this Section 4.55(1A) Report.
(g) an undertaking to the effect that the development (as to be modified) will remain substantially the same as the development that was originally approved,	Discussed within relevant sections of this Section 4.55(1A) Report.
(g1) in the case of an application that is accompanied by a biodiversity development assessment report, the reasonable steps taken to obtain the like-for-like biodiversity credits required to be retired under the report to offset the residual impacts on biodiversity values if different biodiversity credits are proposed to be used as offsets in accordance with the variation rules under the Biodiversity Conservation Act 2016,	Not Applicable.
(h) if the applicant is not the owner of the land, a statement signed by the owner consents to the making of the application (except where the application for the consent the subject of the modification was made, or could have been made, without the consent of the owner,	Owners consent for all parcels of land subject to Project Approval 09_0175 are provided as part of this application.
(i) a statement as to whether the application is being made to the Court (under section 4.55) or to the consent authority (under section 4.56),	N/A
and, if the consent authority so requires, must be in the form approved by that authority.	N/A.

#### 5.4 RELEVANT ISSUES UNDER SECTION 4.15 OF THE EP&A ACT 1979

Under Section 4.15 of the *EP&A Act 1979*, the following matters are required to be considered as part of the assessment of the application:

##### (a)(i) *The Provisions of any Environmental Planning Instrument*

Consideration has been given to the provisions of all relevant environmental planning instruments (EPIs). The *EP&A Act 1979* and *Transitional Regulation* is addressed in earlier sections of this report. Other EPIs applicable to the proposed amendments are discussed below:

## **SEPP (Infrastructure) 2007**

SEPP (Infrastructure) 2007 (ISEPP) provides a consistent planning regime for infrastructure and the provision of services across NSW, along with providing for consultation with relevant public authorities during the assessment process. The ISEPP supports greater flexibility in the location of infrastructure and services along with improved regulatory certainty and efficiency.

Division 17 – Roads and Traffic, Clause 104 ‘Traffic Generating Development’ and Schedule 3 of the ISEPP identify traffic generating development that requires referral to RMS. The proposal does not change approved quarrying, extraction rates, processing or operational activity. The proposal seeks to improve the mitigation of noise impacts associated with the operation. Accordingly, the proposed development is not categorised as traffic generating development that requires referral to NSW RMS.

## **SEPP (Mining, Petroleum Production and Extractive Industries) 2007**

*State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007* (SEPP MPPEI) aims to provide for the proper management and development of mineral, petroleum and extractive material resources for the social and economic welfare of the State. It establishes appropriate planning controls to encourage ecologically sustainable development.

SEPP MPPEI was considered during the assessment process for the Karuah East Quarry. In addition to providing permissibility for the Karuah East Quarry (under clause 7(3)(a)) and extinguishing any LEP provisions (Clause 8), Part 3 of SEPP MPPEI provided that additional matters be considered by the consent authority relating to:

- Compatibility with other land uses;
- Compatibility with mining, petroleum production or extractive industry;
- Natural resource management and environmental management;
- Resource recovery;
- Transport; and
- Rehabilitation.

These matters were satisfactorily addressed by the EA Report (January 2013) and Preferred Project Report (July 2013) for the Karuah East Quarry.

Given that the proposal seeks to implement improved acoustic mitigation measures and establish operational criteria in line with the *NSW Noise Policy for Industry (2017)*, and noting that the Project Approval as it relates to disturbance footprint, quarrying, extraction rates, processing and operational activity will not be affected by the proposed modification, it is considered that the proposal is acceptable in terms of each of the above considerations.

## **SEPP (Coastal Management) 2018**

SEPP (Coastal Management) 2018 updates and consolidates into one integrated policy the former SEPP 14 (Coastal Wetlands), SEPP 26 (Littoral Rainforests) and SEPP 71 (Coastal Protection), including Clause 5.5. of the Standard Instrument – Principal Local Environmental Plan. These policies are now repealed.

The quarry operation area is not mapped as being within a sensitive coastal area. A small part of the site's access is located within a Coastal Environment Area and Coastal Use area. Notwithstanding this, the proposed development does not seek to modify the disturbance footprint, or approved quarrying, extraction rates, processing or operational activity other than to improve the mitigation of noise impacts associated with the operation. The proposed modification will not result in any impact to the coastal zone or environmental assets of the coast.

#### **SEPP 44 (Koala Habitat Protection)**

SEPP 44 (Koala Habitat Protection) (SEPP 44) aims to encourage the proper conservation and management of areas of natural vegetation that provide habitat for Koalas to ensure a permanent free-living population over their present range and reverse the current trend of Koala population decline.

The proposal does not seek to modify disturbance footprint, or modify approved quarrying, extraction rates, processing or operational activity. The proposed development will have no impact on koala habitat.

#### **SEPP 33 (Hazardous & Offensive Development)**

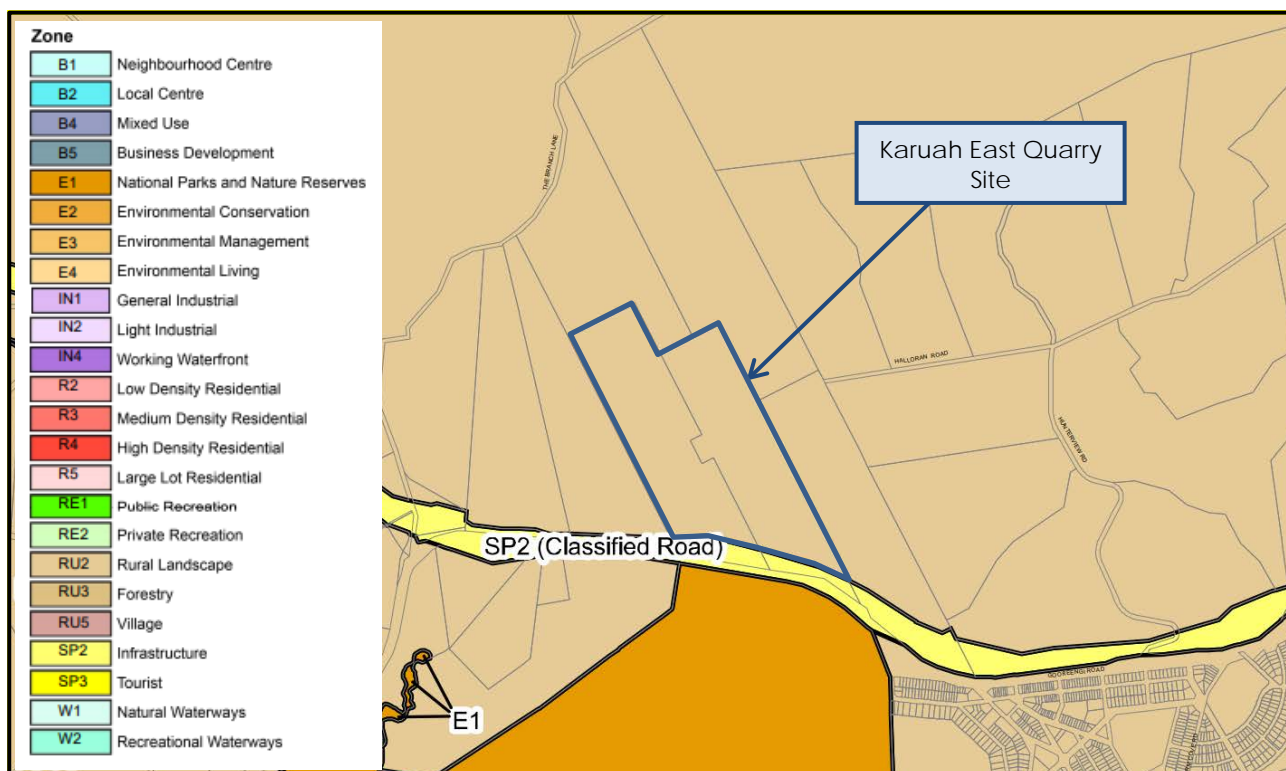
SEPP 33 (Hazardous & Offensive Development) (SEPP 33) provides definitions for 'hazardous industry', 'hazardous storage establishment', 'offensive industry' and 'offensive storage establishment'. The definitions apply to all planning instruments, existing and future. The definitions enable decisions to approve or refuse a development to be based on the merit of a proposal. SEPP 33 also requires specified matters to be considered for proposals that are 'potentially hazardous' or 'potentially offensive' as defined in SEPP 33.

Storage of minor amounts of fuel and oil were addressed as part of the existing project approval. This modification does not seek to change the amounts of fuel and oil stored on the site.

Accordingly, it is considered that the proposal does not trigger the provisions of SEPP 33.

#### **Great Lakes Local Environmental Plan 2014**

The site is zoned RU2 Rural Landscape under the GLLEP 2014. An extract of the zoning plan is shown in **Figure 8**.



**Figure 8: Zoning Plan.**

### Permissibility

The proposal forms part of an 'extractive industry' under the GLLEP 2014. An extractive industry is defined below.

***extractive industry** means the winning or removal of extractive materials (otherwise than from a mine) by methods such as excavating, dredging, tunnelling or quarrying, including the storing, stockpiling or processing of extractive materials by methods such as recycling, washing, crushing, sawing or*

Development for the purpose of an extractive industry is permissible on the site in accordance with Clause 7(3)(a) of SEPP MPPEI. Notwithstanding this, an extractive industry land use is permissible with the of consent of Council in the RU2 Rural Landscape zone.

#### **(a)(ii) The Provisions of any Draft Environmental Planning Instruments**

There are no draft environmental planning instruments relevant to the application.

#### **(a)(iii) Any Development Control Plans**

Not Applicable.

#### **(a)(iiia) Any Planning Agreement that has been entered into Under Section 7.4, or any Draft Planning Agreement that a Developer has Offered to enter into Under Section 7.4, and**

Not applicable.

**(a)(iv) Any Matters Prescribed by the Regulations**

Clause 115 of the EP&A Regulations is addressed in the earlier sections of this report. There are no other matters prescribed by the regulations relevant to the application.

**(b) The Likely Impacts Of The Development, Including Environmental Impacts on both the Natural and Built Environments, and Social and Economic Impacts in the Locality,**

An environmental assessment of the proposal is provided within Section 6 of this report that addresses all potential impacts of the proposal.

**(c) The Suitability of the Site for the Development**

The subject site remains entirely suitable for the proposed development. The proposal seeks to modify the development consent to implement improved noise mitigation measures and establish operational criteria in line with the *NSW Noise Policy for Industry 2017*.

**(d) Any Submissions made in Accordance with the Act or Regulations**

Any public submissions will be considered by the NSW DPE and the proponent.

**(e) The Public Interest**

The purpose of the proposal is to implement improved acoustic mitigation measures and establish operational noise criteria in line with the *NSW Policy for Industry 2017*. The proposal is considered to be in the public interest.

## 5.5 OTHER LEGISLATIVE MATTERS

### 5.5.1 Environment Protection and Biodiversity Conservation Act 1999

EPBC Act Approval 2014/7282 for the Karuah East Quarry was granted on 20 March 2015.

The proponent is fully aware of its obligations under EPBC Approval 2014/7282 and has maintained contact with Federal Department of Environment and Energy (DoEE) staff during the development of the Karuah East Quarry to date.

As the proposal relates to modifications to operational noise criteria and improved acoustic mitigation measures only, no modification to the existing EPBC Approval (2014/7282) is required.

### 5.5.2 Protection of The Environment Operations Act 1997

An Environmental Protection License (EPL) (No. 20611) has been obtained for the Karuah East Quarry.

A variation to the EPL as a result of this modification application will be undertaken in consultation with the NSW Environment Protection Authority (as necessary).

### 5.5.3 National Parks and Wildlife Act 1974

The *National Parks and Wildlife Act 1974* is the primary state legislation relating to Aboriginal cultural heritage in NSW.

The proposed modification will have no impact on Aboriginal heritage.

### 5.5.4 NSW Heritage Act 1977

Historical archaeological relics, buildings, structures, archaeological deposits and features are protected under the *Heritage Act 1977* and may be identified on the State Heritage Register (SHR) or by an active Interim Heritage Order.

The proposed modification will have no impact on heritage.

### 5.5.5 Biodiversity Conservation Act 2016

The *Biodiversity Conservation Act 2016* (BC Act 2016) commenced on 25 August 2017 and replaced the *Threatened Species Conservation Act 1995* (TSC Act 1995) as well as the animal and plant provisions of the *National Parks & Wildlife Act 1974*.

The purpose of the BC Act 2016 is to maintain a healthy, productive and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development.

The proposed modification will have no impact on flora and fauna.

### 5.5.6 National Greenhouse and Energy Reporting Act

The *National Greenhouse and Energy Reporting Act* (the NGER Act) established a mandatory reporting system for company greenhouse gas emissions and energy production and consumption.

The proposed modification will not alter the approved operational procedures and practices for the quarry and will not result in any additional greenhouse gas emissions.

### 5.5.7 Water Management Act

The *Water Management Act 2000* (WM Act 2000) contains provisions for the licensing of water capture and use.

The proposed modification does not generate the requirement for any separate approvals under the provisions of the WM Act 2000.

## 5.6 STRATEGIC CONTEXT

The NSW Government has developed the Hunter Regional Plan 2036 as an overarching framework to guide land use planning priorities and infrastructure funding decisions in the Hunter region over the next 20 years.

The Plan sets priorities and provides a direction for regional planning decisions. It focuses on new housing and jobs, and targets growth in strategic centres and renewal corridors close to transport to deliver social and economic benefits. It sets in place line-of-sight land use planning for the region, regional districts like the Greater Newcastle metropolitan area and each Council area.

The vision of the Hunter Regional Plan 2036 is for the Hunter to be the leading regional economy in Australia with a vibrant new metropolitan city at its heart. To achieve this vision, the NSW Government has set the following regionally focused goals:

- The leading regional economy in Australia;
- A biodiversity-rich natural environment;
- Thriving communities; and
- Greater housing choice and jobs.

While very minor in nature, the proposal is consistent with the Hunter Regional Plan, in particular noting the following:

- The proposal will result in improved operational environmental performance;
- The proposal will have negligible environmental impact;
- The proposal will have a positive social impact; and
- The proposal supports the Karuah East Quarry which will extract a valuable hard rock resource and make it available to the construction industry for use in significant infrastructure projects within the Hunter Region, for example motorway upgrades as identified within Goal 1 Direction 4 of the plan.

## 6.0 Environmental Assessment of MOD 2

This section provides an assessment of the key environmental issues associated with the proposed modification.

### 6.1 NOISE

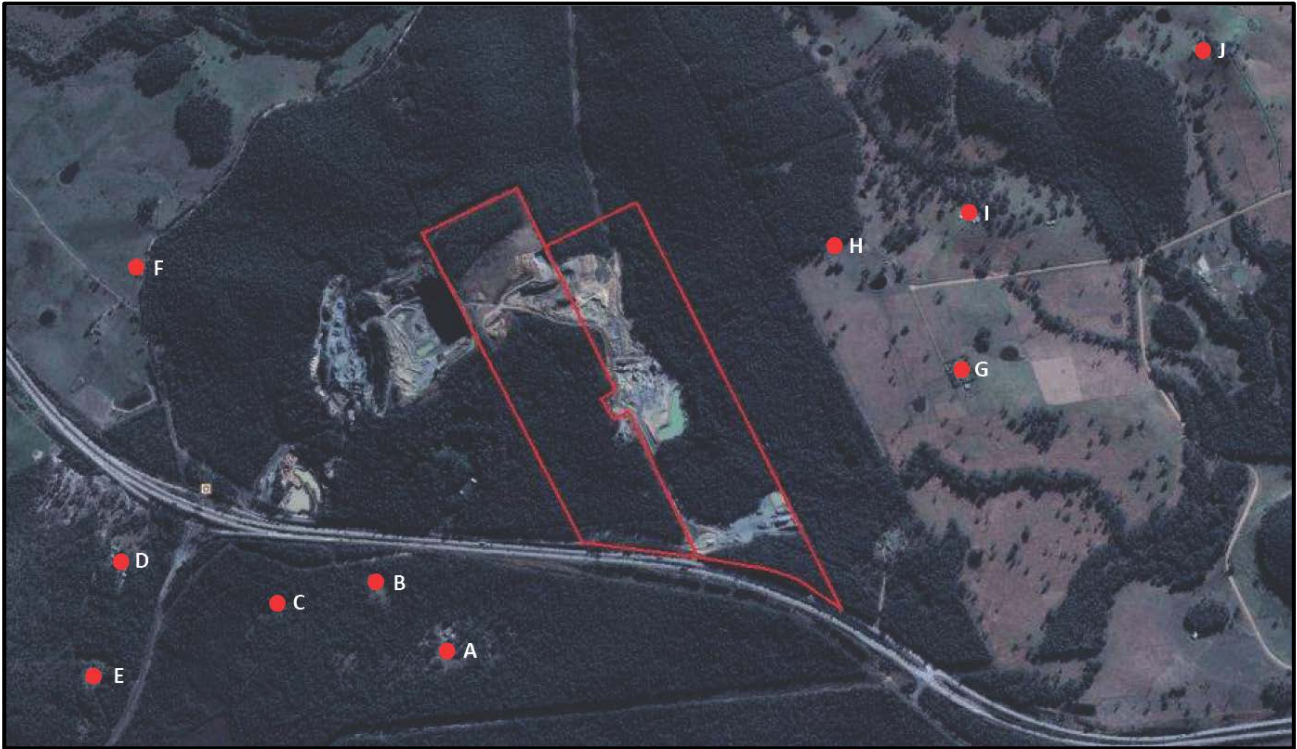
Thearle Acoustics was commissioned by the proponent to prepare a Noise Impact Assessment for the Karuah East Quarry. The assessment is enclosed as **Appendix B**. The purpose of the Noise Impact Assessment is to assess the Karuah East Quarry in line with the current *NSW Noise Policy for Industry (2017)*, ensure that appropriate acoustic mitigation measures are implemented and to ensure that the operational noise criteria outlined in Condition 3 (Schedule 3) of the Project Approval is consistent with the *Noise Policy for Industry (2017)*.

The assessment identifies impacts of noise from the quarry at the nearest sensitive receivers utilising current information on background noise levels. Background information used to prepare the noise impact assessment includes:

- Weather data obtained from the Bureau of Meteorology Weather Station located at Williamstown NSW. Weather data from this location was obtained for a period of 3 years to determine the likelihood of noise enhancing weather conditions;
- Background Noise Levels of the location Lot 3 DP 785172 (identified as Receptor B in **Figure 9**) taken in 2003 prior to the commissioning and potential acoustic effects of the adjacent Karuah Quarry. This is to provide a conservative approach to the locations on the southern side of the Pacific Motorway; and
- Background Noise Levels of the sensitive receivers to the east of Karuah East Quarry taken in 2019 prior to the commissioning of the Karuah East Quarry.

Sound power levels were obtained from measurements of plant and equipment onsite and the Karuah East Quarry.

Potentially affected receivers surrounding the project site were originally identified in the SLR Noise and Blasting Impact Assessment (November 2012). Since the time of Project Approval (June 2014), new dwelling approvals have occurred that are potentially affected by the quarry. These new dwellings have been considered by the assessment. Potentially affected receivers are shown in **Figure 9** below. New dwelling approvals are identified as Locations H, I and J.



**Figure 9: Location of Sensitive Receivers.**

The predicted noise impact of the Karuah East Quarry was developed using a computer model. The model was developed based on LIDAR information supplied for the developed site and the surrounding area. The model was prepared based on the quarry plan with all buildings, ground cover and noise source data in place.

Assumptions for the modelling were conservative and included:

- All plant to operate at the same time under peak load;
- The Jaw Crusher is enclosed on the Northern, Eastern and Southern elevations with 100mm concrete walls and a roof with acoustic properties of STC28;
- The Cone Crushers are enclosed with the Northern and Eastern elevations with acoustic properties of STC28. The Southern and Western elevations were assumed to be standard Colorbond;
- Weather conditions are calm, nominally 20°C and 60% relative humidity; and
- The start of extraction conditions provide the worst case acoustic outcome with RL's of the extraction area at maximum height.

Results of the predicted impact from the Karuah East Quarry are presented in the **Table 4** below. Results are presented for the day period only (as no night time use is proposed).

**Table 4: Predicted Noise Levels**

Predicted Noise Levels		
Location	Predicted Noise Impact	Predicted Intrusiveness Criteria
A	42 dBA	49 dBA
B	36 dBA	49 dBA
C	37 dBA	49 dBA
D	34 dBA	49 dBA
E	39 dBA	49 dBA
F	26 dBA	40 dBA
G	43 dBA	44 dBA
H	45 dBA	43 dBA
I	40 dBA	40 dBA
J	<35 dBA	40 dBA

Modelling of the Karuah East Quarry identifies that sites A through J meet the criteria of project intrusiveness and project amenity. Site H exceeds the limit set by project intrusiveness however it remains compliant with the overall amenity of the area.

Location H currently has a dwelling approved for construction. Modelling of the area indicates that the proposed location of the dwelling will have a noise impact from the Karuah East Quarry of 45 dBA. The approval for this premises by Mid Coast Council (DA 69/2018/A) however included a condition of consent for acoustic treatment of the building to limit the noise impacts from the quarry according to the requirements of AS/NZS 2107. In its assessment of the application for the dwelling, Council gave consideration to the operation of the quarry and included Condition 11 of consent DA 69/2018 which states:

*“Prior to the issue of a construction certificate, plans and specifications detailing the measures to reduce noise impacts on the building occupants from the quarry must be submitted to and approved by the certifying authority. The buildings must be acoustically designed and constructed to meet the requirements of Australian Standard AS/NZS 2107: Acoustics - Recommended design sound levels and reverberation times for building interiors. Evidence from an appropriately qualified person that their design will achieve the requirements of the Australian standard must be submitted with the plans and specifications.”*

Information regarding this design was requested from Mid Coast Council, however Council cannot release the documentation due to copyright and privacy restrictions. Referencing AS/NZS 2107, rural areas only define sleeping areas at night time and as such is not affected by the quarry. To define an appropriate daytime noise level, it is reasonably assumed that the category ‘Houses and apartments in suburban areas or near minor roads’ is appropriate with a design sound level of up to 40 dBA applying for living and work areas.

In accordance with Table 4.1 of the *NSW Noise Policy for Industry (2017)*, the difference between the predicted noise level and the project noise trigger level is equal to 2 dBA. As such, the total cumulative industrial noise level is not applicable resulting in negligible effects to the dwelling. That is: *“The exceedances would not be discernible by the average listener and therefore would not warrant receiver-based treatments or controls”*.

However, as the predicted noise level is equal to 5 dBA above the design sound level of 40 dBA for living and work areas defined in AS/NZS 2107 and that the predicted impact from the quarry complies with the project amenity noise level, it can be reasonably assumed that the significance of the residual noise level is marginal to the dwelling. That is: *“Provide mechanical ventilation/comfort condition systems to enable windows to be closed without compromising internal air quality/amenity”*. It is reasonably expected that as this is the minimum treatment level as defined by the NSW Noise Policy for Industry (2017) that this would be included as part of the requirements of Council.

Overall, the assessment concludes that operational noise levels of the quarry are predicted to meet the project specific noise targets at all nearest, non-project related residential locations surrounding the site with the exception of Location H (Lot 10, DP 1032636). Acoustic impacts of this site have been determined to be negligible however according to the *NSW Noise Policy for Industry (2017)* and as such satisfy the requirements of the policy.

Traffic noise from the quarry will not change from that considered in the previously approved Noise and Blasting Impact Assessment (SLR 2012). The Karuah East Quarry’s contribution to traffic on the Pacific Motorway is very minor with no discernible impact to any residential location adjacent to the Pacific Motorway.

Cumulative noise impact from the nearby Karuah Quarry, the proposed Karuah South Quarry on Lot 11 DP 1024564 and the proposed Karuah Red Quarry on Lot 210 DP 1042537 has been reviewed and the proposal remains consistent with the Noise Policy for Industry in terms of cumulative considerations.

The following acoustic mitigation measures are proposed to ensure that appropriate operational acoustic mitigation measures are implemented and to ensure that the operational noise criteria is consistent with the *NSW Policy for Industry (2017)*:

- Enclosure of the Jaw Crusher with 100mm thick concrete panels on the North, East and South sides. Roofing materials to have an acoustic rating of STC28;
- Enclosure of the Cone Crushers on the Northern and eastern elevations with materials having an acoustic rating of STC28. Southern and western elevations and roof to be enclosed with Colorbond; and
- Purchasing and use of generator sets which are acoustically treated including complete enclosure of the engine and generator, acoustically treated exhaust systems and cooling systems.

The assessment recommends establishment of the following Operational Noise Criteria to replace the Operational Noise Criteria specified within Condition 3 of Schedule 3 of the Project Approval to achieve consistency with the *NSW Noise Policy for Industry (2017)*.

**Operational Noise Criteria**

LOCATION	RECOMMENDED OPERATIONAL NOISE CRITERIA (DAY)
A	42 dBA
G	44 dBA
H	45 dBA
All Other Residences	40 dBA

Overall, the proposed modification will allow for an improvement to the ongoing management and mitigation of noise.

## 6.2 OTHER MATTERS

The proposal seeks development consent for the implementation of improved acoustic mitigation measures and establishment of operational noise criteria consistent with the *NSW Noise Policy for Industry (2017)*. Accordingly, the proposal will have no impact nor will it be impacted upon by any of the following considerations:

- Flora and Fauna;
- Surface Water and Groundwater Management;
- Air Quality;
- Visual Impacts;
- Rehabilitation;
- Heritage;
- Soil and land resources;
- Access, road network and traffic;
- Geotechnical;
- Bushfire;
- Economic considerations; and
- Waste Management.

Assessment of the overall Karuah East Quarry in relation to the above items was undertaken as part of the Project Approval process (including MOD 1 and MOD 2 approvals). It is considered that the proposed modification will not affect or be affected by any of these considerations.

In terms of social impact considerations, the proposal will have a positive impact noting that it will facilitate improved acoustic mitigation measures and establishment of operational noise criteria consistent with the *NSW Noise Policy for Industry (2017)*.

## 7.0 Statement of Commitments Relative to Proposal

Provided below is a Statement of Commitments specifically relevant to the proposed modification.

### 7.1 PLANS, DOCUMENTS AND APPROVALS

The proposed development will be completed generally in accordance with the documentation and descriptions of the proposed development provided in the Section 4.55(1A) modification report (June 2018) prepared by ADW Johnson.

The proposed development will be carried out in general accordance with the Project Approval.

### 7.2 REVISION OF MANAGEMENT PLANS

The following Management Plan, approved by the NSW Secretary, will be updated to reflect the determination of this modification:

- Noise Management Plan (SLR, November 2015).

### 7.3 NOISE MANAGEMENT

- The Noise Management Plan (SLR 2015) will be updated once this modification application has been determined to reflect the changes in operational noise criteria and improved mitigation measures;
- The following will be undertaken:
  - Enclosure of the Jaw Crusher with 100mm thick concrete panels on the North, East and South sides. Roofing materials to have an acoustic rating of STC28;
  - Enclosure of the Cone Crushers on the Northern and Eastern elevations with materials having an acoustic rating of STC28. Southern and Western elevations and roof to be enclosed with Colorbond;
  - Purchase and use of generator sets which are acoustically treated including complete enclosure of the engine and generator, acoustically treated exhaust systems and cooling systems;
  - Noise compliance monitoring will be undertaken in accordance with conditions of consent and Noise Management Plan by a suitably qualified acoustic expert. The monitoring will consider the performance of the quarry in relation to the project specific noise (as established in the Thearle Acoustics Noise Impact Assessment 10 June 2019) and vibration and blast criteria established in the SLR Noise and Blasting Impact Assessment (dated 2 November 2012);
  - The proponent will not fire blasts at the existing quarry and the proposed Karuah East quarry at the same time;
  - The proponent will implement a blasting program where nearby receivers are notified in advance of a blast;
  - The following control measures for vibration will be undertaken:
    - Reducing the maximum instantaneous charge (MIC) by using delays, reduced hole diameter and/or deck loading;
    - Changing the burden and spacing by altering the drill pattern and/or delay layout or altering the hole inclination;

- Use the minimum practicable sub drilling which gives satisfactory toe conditions; and
  - Investigate alternative rock breaking techniques.
- The following control measures for air blasting will be undertaken:
    - Reducing the maximum instantaneous charge (MIC) by using delays, reduced hole diameter and/or deck loading;
    - Ensure stemming depth and type is adequate;
    - Eliminate exposed detonating cord and secondary blasting;
    - Restrict blasting events to favourable weather conditions;
    - Orient quarry faces away from potentially sensitive receivers;
    - Use a hole spacing and burden which will ensure that the explosive force is just sufficient to break the ore to the required size; and
    - The proponent will take particular care where the face is already broken and consider deck loading where appropriate to avoid broken ground or cavities in the face.

## 8.0 Conclusion

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This modification application is made under Section 4.55(1A) of the *Environmental Planning and Assessment Act 1979* and the *Environmental Planning and Assessment (Savings, Transitional and Other Provisions) Regulation 2017 (Transitional Regulation)* and seeks to modify Project Approval 09\_0175 for the Karuah East Quarry.

The proposal seeks to implement improved acoustic mitigation measures and establish operational noise criteria in accordance with the *NSW Noise Policy for Industry (2017)*. The proposed modification will have a positive outcome in terms of acoustic mitigation. The proposal is minor in nature and will remain entirely consistent with the current Project Approval for the Karuah East Quarry.

Consultation has been undertaken with NSW DPE and NSW EPA and this application is considered to be consistent with the outcome of consultation completed. Consultation has also been undertaken with the Karuah East Quarry Community Consultative Committee.

Overall, it is considered that the proposed amendment to Project Approval 09\_0175 is a suitable development.



# Appendix A

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APPROVED DEVELOPMENT PLAN (MP 09-0175 (LASTEST AMENDMENT AS APPROVED BY  
MOD 2))

# Appendix B

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NOISE IMPACT ASSESSMENT (THEARLE ENGINEERING)