

Gunlake Quarry



Noise and Blast Management Plan

October 2022

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1. Introduction

1.1 Overview

This Noise and Blast Management Plan has been prepared by Gunlake Quarries Pty Ltd (Gunlake) for Gunlake Quarry (the Quarry). The Quarry is located approximately 7 km northwest of Marulan, off the Brayton Road as shown on **Figure 1**, Appendix A.

Under Schedule 3, Conditions 8 and Condition 13 of the Gunlake Extension Project SSD Development Consent, Gunlake was required to prepare and implement a Noise and Blasting Management Plan (NBMP) in consultation with the NSW EPA, to be submitted to the Secretary of the Department of Planning and Environment (DPE) for approval. The Consent Conditions require the NBMP to include noise and vibration monitoring, and a protocol for evaluating compliance with the relevant impact assessment criteria in the approval. This version of the NBMP represents an update to the approved 2018 NBMP following approval of the SSD Development Consent Modification 2 (LEC2020/327172) which allows for an increase in truck movements and product transport from 2 Mtpa to 2.6 Mtpa.

1.2 Aims and Objectives

Gunlake seeks to meet all noise and blasting criteria as specified in the Development Consent and Environment Protection Licence (EPL) at all non-company owned residential receptors.

As required by Condition 7 of Schedule 3, Gunlake aims to

- ❑ Implement best practice management to minimise the construction, operational and road transportation noise of the development particularly during the evening and night periods;
- ❑ Minimise the noise impacts from the Quarry;
- ❑ Carry out quarterly attended noise monitoring to determine whether the Quarry is complying with the relevant conditions of the consent; and
- ❑ Regularly assess noise monitoring data and modify and/or stop operations on site to ensure compliance with the relevant conditions of the Development Consent.

1.3 Current Approval Requirements

Environmental performance provisions specifically relating to noise, blasting and vibration are covered in Conditions 1 to 13 inclusive of Schedule 3 of the Development Consent. Conditions 2, 6 and 10 detail the noise, blast and vibration impact assessment criteria relevant to the quarry which are discussed in Sections 2.1 and 2.2. Conditions 1 and 2 relate to land acquisition and additional mitigation requirements, Conditions 3, 4, 5, 7, 9, 11, and 12 cover various operating conditions relating to noise, blasting and vibration. Condition 9 deals with traffic noise, while Conditions 8 and 13 specifically deal with matters relevant to this NBMP as detailed in Table 1.1 below.

The Environment Protection Licence (EPL) also contains conditions relevant to noise impacts and monitoring.

Table 1.1 – Development Consent Conditions: Noise and Blast Management Plan

Condition		Where Addressed	
Schedule 3:	ENVIRONMENTAL PERFORMANCE CONDITIONS		
Noise Management Plan			
8	The Applicant must prepare a Noise Management Plan for the development to the satisfaction of the Secretary. This plan must:		
	(a)	be prepared in consultation with the EPA;	5.3
	(b)	be submitted to the Secretary within six months of commencing development under this consent and prior to commencing quarrying operations under this consent;	Noted
	(c)	describe the measures that would be implemented to ensure: <ul style="list-style-type: none"> <input type="checkbox"/> compliance with the noise criteria in this consent; <input type="checkbox"/> best practice noise management is being employed; <input type="checkbox"/> noise impacts of the development are minimised during meteorological conditions under which the noise criteria in this consent do not apply (see Appendix 4 of the Development Consent); and <input type="checkbox"/> best practice management is being employed to minimise the noise impacts on the primary transport route and the secondary transport route; 	3.2
	(d)	describe the proposed noise management system;	3
	(e)	include a monitoring program to be implemented to measure noise from the development against the noise criteria in Table 4, and which evaluates and reports on the effectiveness of the noise management system on site	3
Blast Management Plan			
13	The Applicant must prepare a Blast Management Plan for the development to the satisfaction of the Secretary. This plan must:		
	(a)	be submitted to the Secretary for approval within six months of commencing development under this Consent and prior to commencing quarrying operations under this Consent;	Noted
	(b)	describe the measures that would be implemented to ensure compliance with the blasting criteria and operating conditions of this consent;	4.2
	(c)	Include measures to manage fly rock	4.2
	(d)	include a monitoring program for evaluating and reporting on compliance with the blasting criteria in this consent;	4
	(e)	include a protocol for investigating and responding to complaints.	5.2
	(f)	Include community notification procedures for blasting, which include: <ul style="list-style-type: none"> (i) a notification process to alert any resident who registers an interest in the blasting schedule to be notified at least 24 hours in advance of each blast; (ii) a blasting hotline, or alternative system agreed to by the Secretary, to enable the public to obtain up-to-date information on blasting operations; and 	4.2

Condition		Where Addressed
Schedule 3:	ENVIRONMENTAL PERFORMANCE CONDITIONS	
	(iii) information on how the public will be kept informed of the hotline, or any alternative system.	

1.4 Statement of Commitments

Further to the consent conditions, the Statement of Commitments in Appendix 2 of the Development Consent states in relation to Noise and Vibration, that:

- ❑ Voluntary land acquisition and mitigation
 - Voluntarily acquisition rights will be offered to receiver R2 in accordance with the VLAMP
 - Voluntary mitigation rights will be offered to receiver R2 and R7 in accordance with the VLAMP
- ❑ Primary crusher noise attenuation
 - The primary crusher will be enclosed as part of the extension project within two months of commencing development under the Extension Project Consent
 - The primary crusher will not be operated at night until it is enclosed
- ❑ Overburden emplacement
 - The overburden emplacement east of the infrastructure area will be extended to the north and south as shown on the general site layout
- ❑ Evening and night operation of mobile fleet
 - The mobile fleet operations will be reduced during the evening and night periods, as represented in the noise model
- ❑ Noise and Blast Management Plan
 - An updated Noise and Blast Management Plan will be submitted to DPE within six months of commencing development under the consent

These commitments form part of the Development Consent for the Gunlake Extension Project.

1.5 Consultation

Gunlake Quarries undertakes regular consultation with regulatory authorities. This included provision of draft versions of the 2018 NBMP prior to finalisation. Comments received from government agencies were incorporated into the documentation as necessary and provided in Appendix B.

Version 10 of the NBMP incorporates minor updates following approval the Gunlake Extension Project SSD Development Consent Modification 2 and are administrative in nature. There were no changes to the operating conditions or requirements of the NBMP in the modified consent and no changes to the approved management controls in this version of the NBMP and therefore consultation with expert agencies was not required for this update. The NBMP was however provided to EPA but no comments have been received to date.

2. Noise Criteria

2.1 Operational Noise Assessment Criteria

Condition 6, Schedule 3 of the Development Consent states that Gunlake shall ensure that the noise generated by the development does not exceed the noise impact assessment criteria reproduced in Table 2.1.

Table 2.1: Operational Noise Assessment Criteria (dB(A))

Noise Assessment Location	Day	Evening	Night	
	L _{Aeq} (15 minute)	L _{Aeq} (15 minute)	L _{Aeq} (15 minute)	L _{A1} (1 minute)
R7	38	38	38	45
R8	37	37	37	45
All other privately-owned residences	35	35	35	45

Noise generated by the development is to be measured in accordance with the relevant requirements and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy (with the exception of applying appropriate modifying factors for low frequency noise during compliance testing, which is to be undertaken in accordance with Fact Sheet C of the NSW Noise Policy for Industry (EPA, 2017)). Appendix 4 of the Consent 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 2.1 do not apply if Gunlake has an agreement with the relevant landowner to exceed the noise criteria, and Gunlake has advised the Department in writing of the terms of this agreement.

In accordance with Condition 1, Schedule 3 of the Development Consent, upon receiving a written request from the owner of R2, Gunlake will acquire the land in accordance with Condition 5 of Schedule 4.

In accordance with Condition 2, Schedule 3 of the Development Consent, upon receiving a written request from the owner of R2 or R7, Gunlake will implement additional mitigation measures at the residence, in consultation with the landowner. These measures will be reasonable and feasible and directed towards reducing the noise impacts of the development on the residence.

Mitigation may include measures such as double-glazing, insulation and/or air conditioning. If within three months of receiving this request from the owner, Gunlake and the owner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Secretary for resolution.

2.2 Blasting and Vibration Impact Assessment Criteria

The maximum level of airblast overpressure in regard to annoyance is 115 dB(Lin Peak). This may be exceeded on up to 5% of the total number of blasts over 12 months; however, the level should not exceed 120 dB(Lin Peak) on any occasion. Similarly for ground vibration, the maximum level in regard to annoyance is 5 millimetres per second (mm/s) peak particle velocity (ppv). This level may be exceeded on up to 5% of the total number of blasts over 12 months, while not exceeding 10 mm/s on any occasion.

Blast designs will meet or exceed specific requirements of the publication Australian and New Zealand Conservation Council's (ANZECC 1990) *Technical Basis for Guidelines to Minimise Annoyance due to Blasting Overpressure and Ground Vibration*. Should explosives be stored on site, the storage facilities shall meet Standards Australia's (AS 2187.2-2006) *Explosives – Storage and Use* and (AS 2107:2000).

All blasts are to be monitored. Any exceedence in criteria will result in a change in blast design in order to meet the criteria.

In accordance with Condition 10, Schedule 3 of the Development Consent, Gunlake will ensure that the airblast overpressure level and ground vibration from blasting at the development does not exceed the criteria reproduced in Table 2.2 at any residence on privately owned land.

Table 2.2: Airblast Overpressure Impact Assessment Criteria for Residences on Privately Owned Land

<i>Airblast Overpressure Level (dB(Lin Peak))</i>	<i>Ground Vibration (mm/s)</i>	<i>Allowable Exceedance</i>
120	10	0%
115	5	5% of the total number of blasts over a period of 12 months

Notes:

The above criteria do not apply if the Applicant has a written agreement with the relevant owner to exceed the limits in Table 2.2, and the Applicant has advised the Department in writing of the terms of this agreement. For the purposes of this condition, a blast refers to a single blast event, which may involve a number of individual blasts fired in quick succession in a discrete area of the quarry.

2.3 Noise Sources

The current noise sources relevant to the Gunlake Quarry operation are:

- Overburden stripping and emplacement – this involves use of dozer pushing into piles followed by loading with front end loader into trucks for delivery to designated emplacement areas.
- Drilling involving a single drill rig with compressor.
- Quarrying – involving blasting followed by loading into trucks for delivery to the processing plant.
- Processing – involving primary, secondary and tertiary crushing and associated screening to produce a range of sized aggregate products.

- ❑ Product delivery – involving of loading of road registered trucks at designated stockpiles and transport to markets via the public road system including the bypass road.
- ❑ Rehabilitation – involving final shaping of prepared batters using a dozer which may include ripping, spreading of soil ameliorants and fertilizer, and sowing activities.
- ❑ Transport of product to various markets

2.4 Hours of Operation

The approved hours of operation are reproduced in Table 2.3 as per Condition 4, Schedule 3 of the Development Consent

Table 2.3: Approved Operating Hours

Activity	Day	Time
Construction	Monday – Friday	7.00am to 6.00pm
	Saturday	8.00am to 1.00pm
	Sunday and Public Holidays	None
Overburden removal/emplacement and drilling	Monday – Saturday	7.00am to 6.00pm
	Sunday and Public Holidays	None
Blasting	Monday – Friday	9.00am to 5.00pm
	Sunday and Public Holidays	None
Quarrying operations (excluding overburden removal/emplacement and drilling)	Monday – Saturday	24-hours except 6.00pm Saturday to 2.00am Monday
	Sunday and Public Holidays	None
Loading and Dispatching	Monday to Saturday	24-hours except 6.00pm Saturday to 2.00am Monday
	Sunday and Public Holidays	None
Transportation on the primary transport route	Monday – Saturday	24-hours except 6.00pm Saturday to 2.00am Monday
	Sunday and Public Holidays	None
Transportation on the secondary transport route	Monday – Saturday	6.00am to 7.00pm
	Sunday and Public Holidays	None
Maintenance	Monday – Saturday AND Sunday and Public Holidays	At any time provided that the activity is not audible at any privately-owned residence

Notes: the following activities may be carried out on the site outside the hours specified in Condition 4:

(a) Delivery or dispatch of materials as requested by Police or other authorities; and

(b) Emergency work to avoid the loss of lives, property and/or to prevent environmental harm.

In such circumstances, the Applicant must notify the Secretary and the affected residents prior to undertaking the activities, or as soon as is practical thereafter.

3. Noise Monitoring and Management

3.1 General Requirements

This Plan primarily seeks to confirm that the quarry is operating as proposed as well as confirm the predictions provided in the assessment. Specific noise management and monitoring initiatives are described in the following sections.

3.2 Noise Management Initiatives

Gunlake Quarry is ideally situated from a noise emission perspective particularly since the purchase of additional surrounding properties and the completion of the bypass road. Although there are now fewer residential receptors, Gunlake maintains the original management principles with respect to noise. The management initiatives are as follows:

- Enclosure of the primary crusher to achieve at least a 5 dB(A) reduction in the measured sound power level. The required reduction has been verified by a suitably qualified acoustic practitioner. The compliance report was provided to and approved by the DPE.
- Noise checks on all mobile plant to ensure that noise emitted from the plant does not exceed the original noise model.
- Noise monitoring on and around the site to verify the impact prediction made in the EIS and Mod 2 SEE.
- Ensure all mobile plant and fixed noise sources such as crushers and screens are effectively maintained to ensure that noise emissions do not increase over time.
- Prompt response to community issues of concern.
- Refinement of on site noise mitigation measures and quarry operating procedures, where practical.
- Include noise management provisions in relevant on-site work inductions.
- Quarterly operator attended noise surveys.

Gunlake is also committed to continuous environmental improvements in all its activities. This is achieved by regular preventative maintenance of plant and equipment, identification through regular inspections of any activities that may give rise to increased noise and dust emissions, and evaluating any trends in recorded monitoring results. In the event that non-compliance is determined Gunlake will implement the following additional controls:

- Investigate the source of the non-compliance.
- Implement site-specific controls designed to ameliorate the identified source of the non-compliance. This is likely to be maintenance or repairs to specific items of plant or equipment.
- Undertake further monitoring to verify that the noise criteria is being achieved.

Despite the noise criteria not applying during certain adverse weather conditions such as prevailing wind and temperature inversions, Gunlake will follow the protocol below through targeted monitoring in adverse weather conditions to demonstrate continued compliance during such conditions. The protocol is:

- ❑ Using the weather station data to determine the occurrence of temperature inversions or high wind conditions.
- ❑ Where possible undertaking an attended noise monitoring session during a temperature inversion to identify the dominant operational noise sources. These may be different than other operational noise sources identified during routine quarterly monitoring. These can include short duration or tonal noise sources.
- ❑ Applying reasonable and feasible additional noise mitigation actions during these weather conditions.

As adverse weather conditions are short term and intermittent, the application of reasonable and feasible additional controls would rely on their effectiveness to achieve a measurable outcome. The additional controls would likely be limited to:

- ❑ Predicting adverse weather conditions in advance to enable modification of the operations to be planned.
- ❑ Apply additional noise attenuation to plant and equipment to reduce any identified tonal or short term noise emissions identified during adverse weather conditions.

3.3 Operator-Attended Noise Surveys

In accordance with Condition 7(c), Schedule 3 of the Consent, quarterly attended noise monitoring will be undertaken. The purpose of attended noise surveys is to provide an accurate validation of the impact predictions provided in the EIS and the Mod 2 SEE. This form of monitoring includes checking the noise levels of each noise source on site and comparing these with actual noise readings at or near the property boundary.

Should the levels at the property boundary exceed the noise criteria, then further attended monitoring is done at the receptor location. Operator-attended noise measurements and recordings are conducted to quantify the intrusive noise emissions from quarrying and processing as well as the overall level of ambient noise.

During the attended noise measurements, the operator records any significant quarry generated noise sources (ie haul trucks, dozer, etc.) and collect information regarding the operating equipment and machinery. In addition, the operator obtains copies of the relevant fixed plant and mobile quarrying equipment operating shift logs. The results are recorded and summarised in the Annual Review.

The 2019 Independent Audit included a review of noise emission data and assessed the results against the predictions made in the EIS. No evidence was identified that would contradict the EIS assessment. Gunlake will however continue to review operator attended noise survey results in order to identify any additional noise controls that may be required.

3.4 Monitoring Locations and Intervals

The previous noise receptors for the operation of the quarry were receptors R2 and R4. As Gunlake has purchased R4 and conditions in relation to purchase of R2 are specified in the Development Consent, monitoring and compliance provisions have now moved to receptors R7 and R8 which are located further to the southeast of the Quarry on Brayton Road.

To verify compliance with the noise assessment criteria, quarterly attended monitoring will be undertaken at representative locations for R7 and R8 as shown on **Figure 2**, Appendix A. Climatic conditions at the time of survey will also be recorded to determine the influence of enhancing weather conditions, such as wind speed and direction, and temperature inversions.

If non-compliance is identified, further emission source monitoring will be conducted in order to isolate the dominating noise source. Although this has not occurred to date additional noise mitigation controls may be required in future if specific additional noise generation occurs. This may require unattended continuous noise logging in order to re-establish prevailing ambient noise levels.

3.5 Weather Monitoring Instrumentation

All noise measurements are accompanied by both qualitative description including cloud cover and quantitative measurements of prevailing local weather conditions throughout the survey period.

Meteorological measurements will be guided by the requirements of AS2923-1987 "Ambient Air – Guide for Measurements of Horizontal Wind for Air Quality Applications". An automatic weather station located adjacent to the site office is programmed to continuously record the meteorological parameters as shown in Table 3.1.

Table 3.1: Meteorological Monitoring.

Measured Parameter	Unit	Sample Interval
Mean Wind Speed	Km/hr (or m/s)	15 minute
Mean Wind Direction	Degrees	15 minute
Sigma-theta	/	15 minute
Aggregate rainfall	mm	15 minute
Mean Air Temperature	°C	15 minute
Mean Relative Humidity	%RH	15 minute

3.6 Traffic Noise Compliance Assessment

In accordance with Schedule 3, Condition 9 of the Development Consent, a noise compliance assessment of the traffic noise impacts of the project must be undertaken within two months of annual dispatches of the quarry products exceeding 1 million, 1.5 million, 1.9 million and 2.5 million tonnes. The assessment will be conducted by a suitably qualified and experienced acoustical practitioner and will assess compliance of the traffic noise impacts against the predictions in the Extension Project EIS, Mod 2 SEE and

relevant road noise criteria. The traffic noise compliance assessment reports will be provided to the DPE within one month of each assessment being undertaken.

The Truck Driver Code of Conduct includes specific measures to reduce noise impacts on local communities both on the primary and secondary transport routes. The Code of Conduct was reviewed as part of the 2019 Independent Environmental Audit. The measures included in this are:

- ❑ Treat local road users and local community respectfully
- ❑ Report any deterioration of road conditions to the Quarry management which would include pot holes and rough surfacing which would increase noise generation
- ❑ Not drive in convoys by maintaining 300m separation
- ❑ Speed limit 80km/hr to and from the Hume Highway, 50 km/hr south bound through Marulan township
- ❑ Avoid use of air compression brakes unless in the case of emergencies
- ❑ Avoid unnecessary use of air horns.

4. Blast Monitoring and Management

Condition 13, Schedule 3 of the Consent requires the preparation and implementation of a Blast Monitoring Program.

4.1 Overview

This NBMP has been developed in accordance with the procedures described in AS 2187.2-2006, "Explosives – Storage, Transport and Use" and with reference to the Technical Services (1995): Imperial Chemical Industries Explosives Blasting Guide and ANZECC's "Technical Basis for Guidelines to Minimise Annoyance due to Blasting Overpressure and Ground Vibration", September 1990.

Gunlake has continually developed and refined blasting practice since operations commenced. The current blast design and practice conforms to current best practice in the quarrying industry. Each blast event is monitored for ground vibration and airblast overpressure. This data is then used to refine subsequent blast designs in order to control blast emission levels.

4.2 Blast Management Initiatives

The primary mitigation strategy to manage blasting impacts is the ongoing refinement of the blast design, which is unique for each blast event. The blasting contractor provides a description of blast parameters prior to each blast event including:

- ❑ Tonnes of explosive to be used;
- ❑ Hole diameter and depth;
- ❑ Number of holes and hole layout;
- ❑ Number of delays;
- ❑ Delay time intervals in milliseconds; and
- ❑ Weather conditions.

Each blast event is monitored for ground vibration and airblast overpressure. Subsequent to each blast event, a Blast Report is prepared for Gunlake by the contractor. In order to maximise the benefits of the blast monitoring process, the significant design parameters, emission levels and meteorological data are collated and maintained by the Quarry in a Blast Design Record for each blast event. These reports include the significant design parameters as well as the monitored emission levels and meteorological data, and are used to assist in the design and optimisation of future events, planning and control of blast emissions and retained by Gunlake to provide a traceable system of documentation in case of incident of complaint.

The following blast management controls currently apply at Gunlake:

- ❑ Blast design (charge weight and delay) are designed to achieve the ground vibration and overpressure levels specified at receiver locations.
- ❑ The blast design minimises the occurrence of fly rock.

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- ❑ Gunlake has provided an open invitation to community members to sign up to receive additional information on quarry operations and to register an interest in the blasting notification process. This, together with a telephone hotline, is provided on Gunlake's web page and is communicated through the CCC .
 - ❑ The notification process has been implemented to alert any resident who registers an interest in the blasting schedule. The alerts are given 24 hours in advance of each blast via the registered email.
 - ❑ The notification process provides the main telephone contact details to enable contact with Gunlake in the event of complaints and/or requests for further information in relation to blasting. Information received will be used by Gunlake to refine the notification process and/or blasting arrangements.
 - ❑ Gunlake will take appropriate precautions in response to landowner feedback in relation to stock protection and farm management issues.
 - ❑ All blasts are undertaken in accordance with Gunlake's internal safety protocol including exclusion zones within the quarry around the blast area.
 - ❑ All blasts are monitored including video recording.
 - ❑ As per Condition 11 of Schedule 3 of the Development Consent, a maximum of two blasts will be carried out per week unless an additional blast is required following a misfire. A blast refers to a single blast event, which may involve a number of individual blasts fired in quick succession in a discrete area of the quarry.

4.3 Monitoring Locations

A portable blast emissions monitor that measures airblast overpressure and vibration is currently positioned at R2). Monitoring will continue at this location as this represents the closest residential location to the operation and is adversely affected by prevailing winds. By meeting the criteria at this location Gunlake can confirm the criteria will be met at more remote locations such as R7 and R8.

4.4 Instrumentation Requirements

4.4.1 Blast Emission Monitors

Monitoring equipment is supplied, maintained and operated by the blast contractor and complies with relevant Australian Standards. Trigger levels are set to avoid miscellaneous activation from events such as vehicle movements and weather conditions. These trigger levels are adjusted for each blast in order to obtain actual measurements of the blast.

4.4.2 Weather Monitoring Equipment

The onsite weather station is used to obtain relevant wind speed and direction data for each blast.

5. Communication and Reporting

Each Management Plan in operation at Gunlake Quarry includes ongoing consultation with government and community stakeholders.

5.1 Community Consultation

Gunlake management is required keep the local community and relevant agencies informed about the construction, operation and environmental performance of the development. A Community Consultative Committee (CCC) has been formed and issues relating to noise and blasting are discussed in CCC meetings.

5.2 Community Complaints

Gunlake maintains a community complaint register that identifies actions required to resolve community issues. The main phone line is listed in the white pages, the property sign at the main entrance, and the company website. The complaints register records the following details:

- Complainant name and contact details
- Nature of the complaint (noise, dust, traffic etc)
- Time and date of the complaint
- Specifics of the complaint
- Actions taken to resolve the complaint
- Confirmation that the complaint has been resolved.

In the event that an issue is unresolved, the register will include details of the outstanding issues and any actions that are required. It is recognised that some issues may not have a simple resolution and have resulted in multiple complaints. These form part of the ongoing environmental improvement program for the operation.

Gunlake are aware that if noise and blasting emissions are not correctly managed complaints may be made in the future. Gunlake will strive to not only meet the established criteria for noise and blasting but endeavour to continually improve its environmental performance.

5.3 Government Liaison

Gunlake will continue to liaise with relevant government agencies in relation to the ongoing quarry operation.

5.4 Public Access to Information

Gunlake provide updated environmental monitoring data on the company's web page as required by Condition 13 of Schedule 5 of the development consent. Information provided includes dust monitoring data in accordance with the Environment Protection Licence.

5.4.1 Notifying Landowners or Occupiers of Blast Events

In accordance with Schedule 3, Condition 13 of the consent Gunlake undertakes the following notification requirements outlined in Table 5.1:

Table 5.1: Community Notification Procedures

Condition		Gunlake Notification Procedure
13	The proponent shall:	
(f) (i)	A notification process to alert any resident who registers an interest in the blasting schedule to be notified at least 24 hours in advance of each blast	Gunlake notifies residences that have registered an interest within 2 km of the Quarry pit prior to any blasting. The residents are advised by telephone or email. Records are kept of the notification.
(f) (ii)	A blasting hotline, or alternative system agreed to be the Secretary, to enable the public to obtain up-to-date information on blasting operations.	The number of the blasting hotline is displayed on a sign at the main access gate on Brayton Road, as well as the company's website.
(d)	Information on how the public will be kept informed of the hotline, or alternative system.	All residents who have registered for notification will be kept updated by telephone or email

5.5 Reporting

Conditions 8, 9 and 10 of Schedule 5 detail the required reporting regime. These include incident reporting, regular reporting of environmental performance and annual reporting. Gunlake will continue to submit an Annual Review to the Department of Planning and Environment each year. The Annual Review is also submitted to the Community Consultative Committee and relevant agencies. The contents required for the Annual Review are detailed in Condition 10, Schedule 5 of the development consent.

The Gunlake Quarry Environmental Protection Licence No. 12012 also specifies reporting requirements. In accordance with the Licence, Gunlake submits an Annual Return to the Environment Protection Authority (EPA) no later than 60 days after the anniversary date of the Licence. The anniversary date of the Gunlake Quarry Licence is 13 July and consequently, the Annual Return has to be submitted by 11 September each year.

The Annual Return to the EPA includes a Statement of Compliance and a Monitoring and Complaints Summary. Condition R2 of the Gunlake Quarry Environment Protection Licence also requires Gunlake and its employees to notify the EPA as soon as practicable after they have become aware of an incident causing or threatening material harm to the environment. Notification must be made by telephoning the Environmental Line service on 131 555.

6. Verification and Corrective Action

This NBMP forms a component of the overall Environmental Management System for the Gunlake Project. An essential component of the EMS is verification and implementation of corrective actions as required to achieve the requirements of the Development Consent and Environment Protection Licence.

6.1 Environmental Monitoring

As described in Chapters 3 and 4, noise and blast management initiatives will be monitored during the quarry life. This monitoring work falls within the overall monitoring program for the site which includes surface and groundwater, traffic, biodiversity and vegetation. The results of this monitoring is summarised in the Annual Review each year.

6.2 Non-Conformance, Corrective Action and Adaptive Management

There are specific trigger levels established for noise and blasting as follows.

- Monitored noise levels where the contribution from the site exceeds the criteria described in Table 2.1.
- Blast overpressure being greater than 115 dB(Lin Peak) when measured at R1.
- Peak particle velocity greater than 5 mm/sec when measured at R1.

In any of the above situations, Gunlake will undertake the following:

- Initiate the reporting procedures detailed in Section 6.2.
- Investigate the source of the non-compliance and implement appropriate mitigation measures to bring the site back into compliance with its noise criteria as described in Section 3.2.
- Investigate blast design and modify accordingly in order to meet criteria. This may include varying MIC, hole depth or angle, charge delay and number of charges.

The blasting contractor is responsible for the design, management and monitoring of each blast in consultation with the Quarry Manager. All non-conformances are reported to the Quarry Manager in the first instance. Corrective actions are implemented as soon as practicable on identification of any non-conformances, and records of such are to be maintained. Corrective actions are to be in line with current best practice within the industry and ensure that appropriate guidelines are met.

Noise monitoring is the responsibility of the Environmental Officer in consultation with the Quarry Manager. Potential non-compliances are reported to the Quarry Manager in the first instance and an investigation is to be undertaken to identify the specific mobile plant or equipment that is causing the excessive noise.

As part of the Development Consent conditions, corrective action forms part of the Adaptive Management process where any exceedance of the criteria and/or performance measures has occurred.

6.3 Management Review

In accordance with Condition 4 of Schedule 5 of the Development Consent, this NBMP will be reviewed and if necessary revised within three months of:

- submission of an Annual Review;
- submission of an incident report to DPE or other relevant agencies;
- submission of an Independent Environmental Audit report;
- approval of any modifications to this consent.

Within four weeks of conducting any such review, Gunlake will advise the DPE of the outcomes of the review, and provide any revised documents to the DPE for review and approval.

The existing noise and blasting controls were reviewed by the 2019 Independent Environmental Audit and no further or additional controls were recommended. Gunlake management however will continually monitor the effectiveness of existing controls and implement any additional measures as considered necessary to meet the required noise and blast emission assessment criteria.

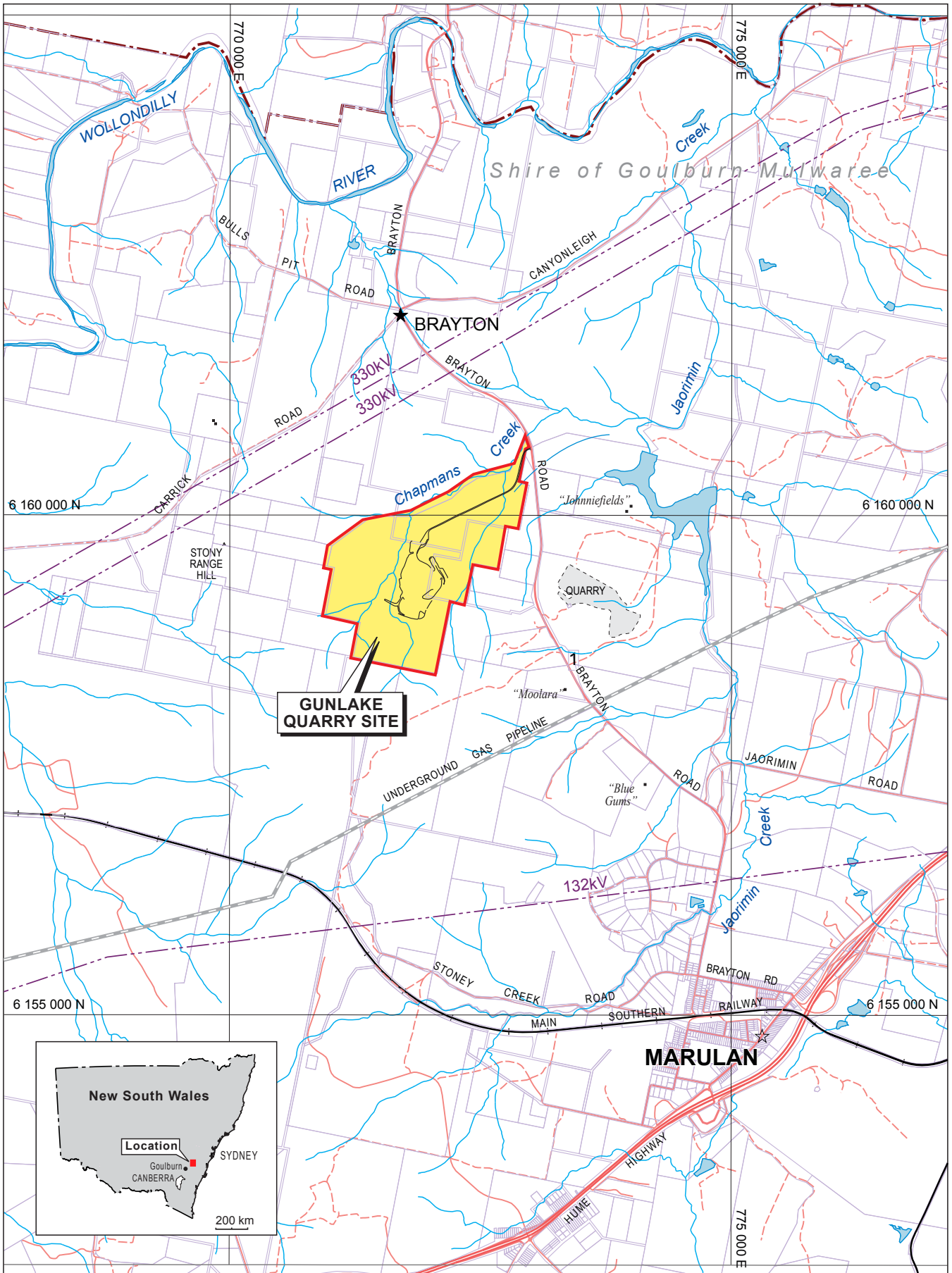
6.4 Continuous Improvements

A key component of the environmental management of Gunlake Quarry is the commitment to continuous improvement. This will be measured by formal and informal criteria. Formal measures will include monitoring data, internal and external inspection and action plans. This information will be used to establish trends in non-compliance and environmental performance. The level of non-compliance with both statutory and company standards will then be summarised in the Annual Review.

6.5 Reporting Procedures

In accordance with Condition 8 of Schedule 5 of the Development Consent, Gunlake will immediately notify the DPE and EPA of any incident. Within seven days of the date of the incident, Gunlake will provide a detailed report on the incident, and such further reports as may be requested by DPE and EPA.

Appendix A - Plans



Datum: GDA
MGA Zone 55

Map Source: © Department of Lands, NSW

- | | | | | | |
|--|----------------|--|--------------------------|--|-----------|
| | Dam | | Gas pipeline | | Main road |
| | River or creek | | Electricity transmission | | Railway |

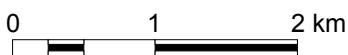
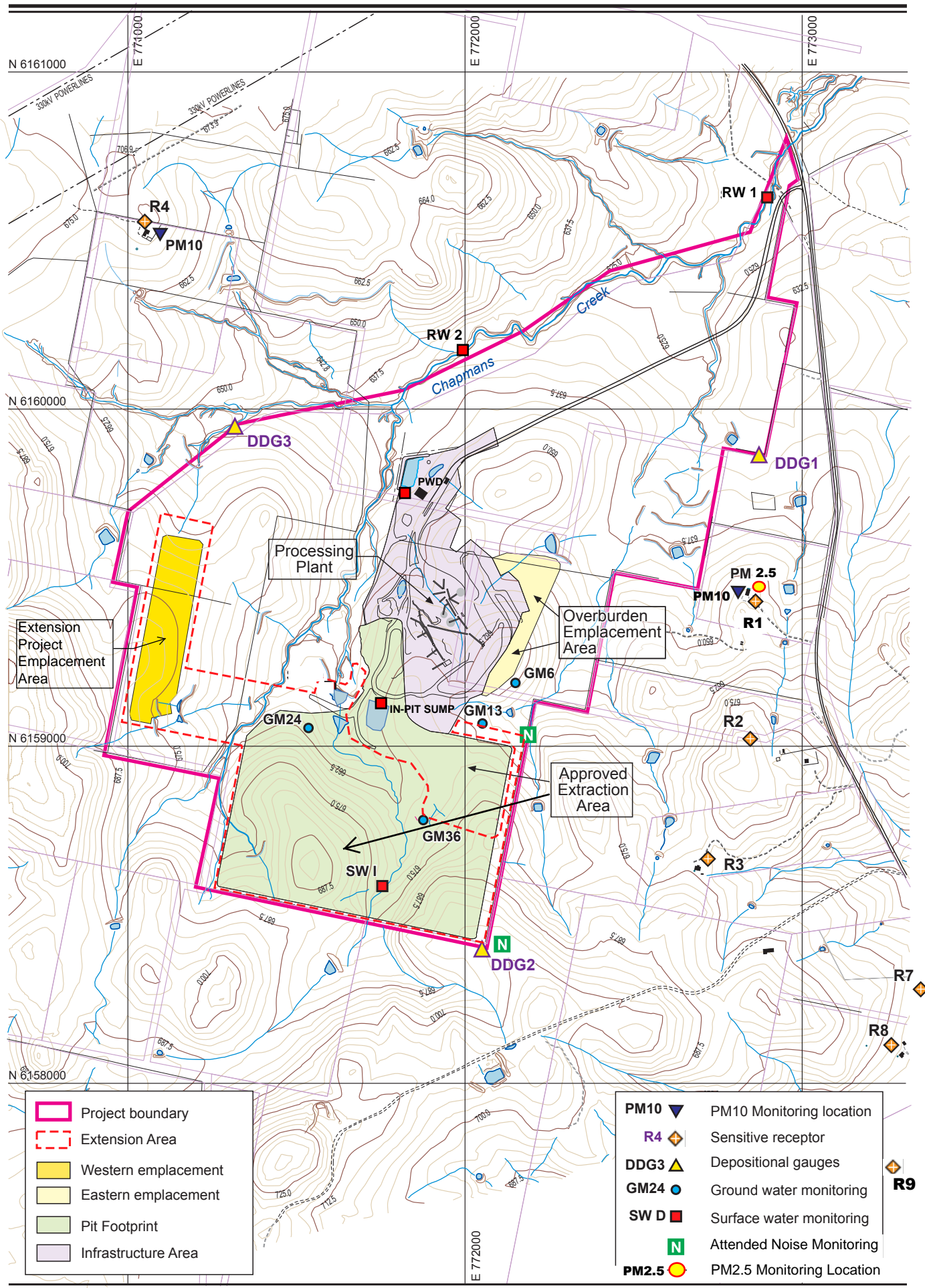


FIGURE 1
Gunlake Quarry
Regional Location



	Project boundary
	Extension Area
	Western emplacement
	Eastern emplacement
	Pit Footprint
	Infrastructure Area

	PM10	PM10 Monitoring location
	R4	Sensitive receptor
	DDG3	Depositional gauges
	GM24	Ground water monitoring
	SW D	Surface water monitoring
	N	Attended Noise Monitoring
	PM2.5	PM2.5 Monitoring Location

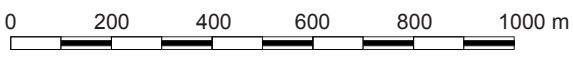


FIGURE 2
Gunlake Quarry
Environmental Monitoring Sites

Appendix B – Stakeholder Consultation

kirsty.nielsen@iec.com.au

From: David Kelly <davidkelly@gunlake.com.au>
Sent: Friday, 6 April 2018 1:55 PM
To: Kirsty Nielsen (kirsty.nielsen@iec.com.au)
Subject: FW: HPE CM: Gunlake Marulan Quarry - Extension Project MP07-0074, SSD7090, LEC 2017/00108663

From: Michael Heinze <Michael.Heinze@epa.nsw.gov.au>
Sent: Thursday, 8 February 2018 9:12 AM
To: David Kelly <davidkelly@gunlake.com.au>
Cc: Stefan Press <Stefan.Press@epa.nsw.gov.au>
Subject: RE: HPE CM: Gunlake Marulan Quarry - Extension Project MP07-0074, SSD7090, LEC 2017/00108663

Good morning David

Thank you for sending those plans through.

It is very unlikely I will have the time to comment on these plans in the time frame you have requested. However, despite the EPA not having an approval role in these plans, I will try and find time to have a look over them in the near future and provide any necessary comment.

Michael

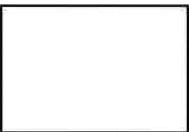
Michael Heinze

Regional Operations Officer – South East Region

South and West Branch, NSW Environment Protection Authority
+61 2 6229 7002 +61 0408 695 070

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Report pollution and environmental incidents 131 555 (NSW only) or +61 2 9995 5555



Please send all official electronic correspondence to queanbeyan@epa.nsw.gov.au

Please note that I do not currently work on Wednesdays

From: David Kelly [mailto:davidkelly@gunlake.com.au]
Sent: Friday, 2 February 2018 2:42 PM
To: Michael Heinze <Michael.Heinze@epa.nsw.gov.au>
Subject: HPE CM: Gunlake Marulan Quarry - Extension Project MP07-0074, SSD7090, LEC 2017/00108663

Dear Michael,

Please find attached our draft Soil & Water, Noise & Blast and Air Quality Management Plans for your comment, as required by our consent Ref MP07-0074, SSD7090, LEC 2017/00108663 (copy attached).

These are an update to the site's currently approved plans and take into account the new conditions of consent for the quarry extension project.

Can you please provide your feedback within 2 weeks. If no feedback is received by then we will proceed on the basis that the updated plans have satisfied your requirements.

Thanks & regards,

David Kelly
Head of Development
M: 0437 545732
E: davidkelly@gunlake.com.au



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PLEASE CONSIDER THE ENVIRONMENT BEFORE PRINTING THIS EMAIL

Kirsty Nielsen

From: David Kelly
Sent: Wednesday, 31 August 2022 2:53 PM
To: Michael Heinze
Cc: Kirsty Nielsen
Subject: FGunlake Quarry Noise and Blast Management Plan and Air Quality Management Plan for EPA comment
Attachments: Noise and Blast Management Plan July 2022 Markup.docx; Air Quality Management Plan July 2022 Markup.docx

Hi Michael,

Please see attached the Gunlake Quarry Noise and Blast Management Plan and Air Quality Management Plans incorporating the DPE comments relating to the Extension Project Mod 2 Management review of the plans.

Please let me know if you want any other changes but we believe we have addressed everything.

Appendix B of both plans will be updated to include any feedback from EPA. Otherwise appendices will be the same as current web versions.

Regards,

DAVID KELLY
Head of Development

GUNLAKE CONCRETE AND QUARRIES



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