



Newman Quarrying Pty Ltd

Quarry Expansion at Lot 2 DP 1055044, Tullymorgan-
Jackybulbin Road, Mororo
Noise Management Plan

September 2022

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1. Introduction

This Noise Management Plan (NMP) forms part of the Environmental Management Strategy (EMS) for Sly's Quarry located at Lot 2 DP 1055044, Tullymorgan – Jackbulbin Road, Mororo. This NMP has been prepared to meet the requirements of the Ministers Conditions of Approval (CoA) outlined in Development Consent SSD 6624, the mitigation measures outlined in the Environmental Impact Statement (EIS) for Sly's Quarry and all relevant legislation.

Noise will be generated from normal site activities, particularly the operation of plant and equipment. Haul trucks will generate noise outside of the quarry site boundaries through the transport of material to customers. Potential impacts include disturbance to local residents from site operations and works outside of prescribed working hours increasing the impact.

1.1 Objectives

The key objective of the NMP is to ensure appropriate controls and procedures are implemented in order to minimise the impacts to the local community and the built environment from noise.

To achieve this objective, Newman Quarrying will undertake the following:

- Identify sensitive receivers and ensure appropriate environmental controls and procedures are implemented during operational activities.
- Minimise potential adverse noise impacts to the environment and community.
- Manage impacts if they occur through a systematic analysis of mitigation strategies.
- Ensure appropriate measures are implemented to address the relevant CoA outlined in Table 2-1.
- Ensure appropriate measures are implemented to comply with all relevant legislation and other requirements as described in Section 2.1 of this NMP.

1.2 Targets

The following targets have been established for the management of noise during the operational lifetime of Sly's Quarry:

- Ensure full compliance with the relevant legislative requirements and CoA.
- No exceedance of the operational noise limits.
- No justified complaints from adjacent residents in relation to noise generation.
- No out of hours work.

1.3 Consultation

Extensive consultation was undertaken with the local community during preparation of the EIS. Any concerns identified by relevant stakeholders were addressed in the EIS and mitigation measures developed which have been incorporated into this NMP.

As per CoA 5(a), Schedule 3, the Environment Protection Authority (EPA) were consulted in relation to the NMP. Evidence of the consultation is provided in Appendix A.

2. Environmental requirements

2.1 Legislation

Legislation relevant to noise management includes:

- Protection of the Environment Operations Act 1997
- Protection of the Environment Operations (Noise Control) Regulation 2008

Further discussion of the above legislation is covered in Section 2 of the EMS, as well as the EIS.

2.2 Guidelines

The following guidelines have been consulted during development of this NMP:

- Industrial Noise Policy (NSW EPA, 2000)
- Noise Policy for Industry (NSW EPA 2017)
- Description and Measurement of Environmental Noise (Australian Standard AS1055 2018)

2.3 Conditions of approval

The consent conditions relevant to this NMP are listed in Table 2-1. A cross reference is also included to indicate where the condition is addressed in this NMP or other environmental management documents.

Table 2-1 Consent conditions relevant to the NMP

Condition No.	Requirement	Reference										
Schedule 3, Condition 1	<p>The Applicant must comply with the operating hours set out in Table 1.</p> <table border="1"> <caption>Table 1: Operating Hours</caption> <thead> <tr> <th>Activity</th> <th>Permissible Hours</th> </tr> </thead> <tbody> <tr> <td>Employee arrival</td> <td> <ul style="list-style-type: none"> • From 6:30 am Monday to Saturday inclusive • From 7:30 am Sundays or public holidays if engaged in maintenance, site security or other similar activities </td> </tr> <tr> <td>Quarrying operations including loading and dispatch of laden trucks</td> <td> <ul style="list-style-type: none"> • 7 am to 6 pm Monday to Friday • 7 am to 1 pm Saturday • 7 am to 4 pm Saturday if fulfilling a contract for the supply of quarry products to the Pacific Highway update project (SSD 4963)* • At no time on Sundays or public holidays </td> </tr> <tr> <td>Blasting</td> <td> <ul style="list-style-type: none"> • 9 am to 3 pm Monday to Friday (except public holidays) </td> </tr> <tr> <td>Maintenance</td> <td> <ul style="list-style-type: none"> • May be conducted at any time, provided that these activities are not audible at any privately-owned residence </td> </tr> </tbody> </table> <p>*Note: Evidence of contracts that cover those periods during which extended Saturday afternoon operating hours are undertaken must be reported in the Annual Review required by condition 9 of Schedule 5.</p>	Activity	Permissible Hours	Employee arrival	<ul style="list-style-type: none"> • From 6:30 am Monday to Saturday inclusive • From 7:30 am Sundays or public holidays if engaged in maintenance, site security or other similar activities 	Quarrying operations including loading and dispatch of laden trucks	<ul style="list-style-type: none"> • 7 am to 6 pm Monday to Friday • 7 am to 1 pm Saturday • 7 am to 4 pm Saturday if fulfilling a contract for the supply of quarry products to the Pacific Highway update project (SSD 4963)* • At no time on Sundays or public holidays 	Blasting	<ul style="list-style-type: none"> • 9 am to 3 pm Monday to Friday (except public holidays) 	Maintenance	<ul style="list-style-type: none"> • May be conducted at any time, provided that these activities are not audible at any privately-owned residence 	Section 4.1
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Blasting	<ul style="list-style-type: none"> • 9 am to 3 pm Monday to Friday (except public holidays) 											
Maintenance	<ul style="list-style-type: none"> • May be conducted at any time, provided that these activities are not audible at any privately-owned residence 											
Schedule 3, Condition 2	<p>The following activities may be carried out on the site outside the hours specified in condition 1:</p> <p>(a) delivery or dispatch of materials as requested by Police or other authorities; and</p> <p>(b) emergency work to avoid the loss of lives, property and/or to prevent environmental harm.</p> <p>In such circumstances, the Applicant must notify the Secretary and affected residents prior to undertaking the activities, or as soon as is practical thereafter.</p>	Section 4.1										

Condition No.	Requirement	Reference								
Schedule 3, Condition 3	<p>The Applicant must ensure that the noise generated by the development does not exceed the criteria in Table 2 at any residence on privately-owned land.</p> <table border="1"> <caption>Table 2: Noise criteria dB(A)</caption> <thead> <tr> <th>Receiver</th> <th>Day L_{Aeq} (15 minute)</th> <th>Evening L_{Aeq} (15 minute)</th> <th>Night L_{Aeq} (15 minute)</th> </tr> </thead> <tbody> <tr> <td>All privately-owned residences</td> <td>35</td> <td>35</td> <td>35</td> </tr> </tbody> </table> <p>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. Appendix 4 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 Applicant has an agreement with the relevant landowner to exceed the noise criteria, and the Applicant has advised the Department in writing of the terms of this agreement.</p>	Receiver	Day L _{Aeq} (15 minute)	Evening L _{Aeq} (15 minute)	Night L _{Aeq} (15 minute)	All privately-owned residences	35	35	35	
Receiver	Day L _{Aeq} (15 minute)	Evening L _{Aeq} (15 minute)	Night L _{Aeq} (15 minute)							
All privately-owned residences	35	35	35							
Schedule 3, Condition 5	<p>The Applicant must prepare a Noise Management Plan for the development to the satisfaction of the Secretary. This plan must:</p> <p>(a) be prepared in consultation with the EPA;</p> <p>(b) be submitted to the Secretary within 6 months of the date of this consent, unless otherwise agreed by the Secretary;</p> <p>(c) describe the measures that would be implemented to ensure:</p> <ul style="list-style-type: none"> compliance with the noise criteria in this consent best practice management is being employed the noise impacts of the development are minimised during meteorological conditions under which the noise criteria in this consent do not apply (see Appendix 4) <p>(d) describe the proposed noise management system</p> <p>(e) include a monitoring program to be implemented to measure noise from the development against the noise criteria in Table 2 [of the consent] and the road noise criteria in the EIS, and which evaluates and reports on the effectiveness of the noise management system on site.</p>	<p>Entire report</p> <p>Section 1.3</p> <p>Section 1</p> <p>Section 4</p> <p>Section 4</p> <p>Section 4 Section 5</p>								
Schedule 5, Condition 3	<p>The Applicant must ensure that the management plans required under this consent are prepared in accordance with any relevant guidelines, and include:</p> <p>(a) detailed baseline data;</p> <p>(b) a description of:</p> <ul style="list-style-type: none"> the relevant statutory requirements (including any relevant approval, licence or lease conditions); any relevant limits or performance measures/criteria; and the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures. <p>(c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;</p>	<p>Section 3</p> <p>Section 2.1 Section 5</p> <p>Section 5</p> <p>Section 4</p>								

Condition No.	Requirement	Reference
	(d) a program to monitor and report on the: <ul style="list-style-type: none"> • impacts and environmental performance of the development; and • effectiveness of any management measures (see (c) above); 	Section 5.1
	(e) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;	Section 0
	(f) a program to investigate and implement ways to improve the environmental performance of the development over time;	Section 6
	(g) a protocol for managing and reporting any: <ul style="list-style-type: none"> • incidents; • complaints; • non-compliances with statutory requirements; and • exceedances of the impact assessment criteria and/or performance criteria; and 	Section 5.3
	(h) a protocol for periodic review of the plan.	Section 6
Schedule 5, Condition 4	Within 3 months of the submission of an: <ol style="list-style-type: none"> Annual Review under condition 9 below; incident report under condition 7 below; audit report under condition 10 below; and any modifications to this consent, the Applicant must review the strategies, plans and programs required under this consent, to the satisfaction of the Secretary. Where this review leads to revisions in any such document, then within 4 weeks of the review the revised document must be submitted for the approval of the Secretary.	Section 6
Schedule 5, Condition 5	To ensure that strategies, plans or programs required under this consent are updated on a regular basis, and that they incorporate any appropriate additional measures to improve the environmental performance of the development, the Applicant may at any time submit revised strategies, plans or programs for the approval of the Secretary. With the agreement of the Secretary, the Applicant may also submit any strategy, plan or program required by this consent on a staged basis. The Secretary may approve a revised strategy, plan or program required under this consent, or the staged submission of any of these documents, at any time. With the agreement of the Secretary, the Applicant may prepare a revision of or a stage of a strategy, plan or program without undertaking consultation with all parties nominated under the applicable condition in this consent. While any strategy, plan or program may be submitted on a staged basis, the Applicant will need to ensure that the operations associated with the development are covered by suitable strategies, plans or programs at all times. If the submission of any strategy, plan or program is to be staged; then the relevant strategy, plan or program must clearly describe the specific stage/s of the development to which the strategy, plan or program applies; the relationship of this stage/s to any future stages; and the trigger for updating the strategy, plan or program.	Section 6

Condition No.	Requirement	Reference
	<p>Notes:</p> <p>While any strategy, plan or program may be submitted on a staged basis, the Applicant will need to ensure that the operations associated with the development are covered by suitable strategies, plans or programs at all times.</p> <p>If the submission of any strategy, plan or program is to be staged; then the relevant strategy, plan or program must clearly describe the specific stage/s of the development to which the strategy, plan or program applies; the relationship of this stage/s to any future stages; and the trigger for updating the strategy, plan or program</p>	
Schedule 5, Condition 6	<p>The Applicant must assess and manage development-related risks to ensure that there are no exceedances of the criteria and/or performance measures in Schedule 3. Any exceedance of these criteria and/or performance measures constitutes a breach of this consent and may be subject to penalty or offence provisions under the EP&A Act or EP&A Regulation. Where any exceedance of these criteria and/or performance measures has occurred, the Applicant must, at the earliest opportunity:</p>	
	a) take all reasonable and feasible steps to ensure that the exceedance ceases and does not reoccur;	Section 5.3
	b) consider all reasonable and feasible options for remediation (where relevant) and submit a report to the Department describing those options and any preferred remediation measures or other course of action;	Section 5.3
	c) within 14 days of the exceedance occurring, submit a report to the Secretary describing these remediation options and any preferred remediation measures or other course of action; and	Section 5.3
	d) implement remediation measures as directed by the Secretary;	Section 5.3
	to the satisfaction of the Secretary	
Appendix 4 – Noise Compliance Assessment	<p>1. The noise criteria in Table 2 are to apply under all meteorological conditions except the following:</p> <p>a) wind speeds greater than 3 m/s at 10 m above ground level; or</p> <p>b) temperature inversion conditions between 1.5°C and 3°C/100 m and wind speed greater than 2 m/s at 10 m above ground level; or</p> <p>c) temperature inversion conditions greater than 3°C/100 m.</p>	Section 3.2.1
	2. Except for wind speed at microphone height, the data to be used for determining meteorological conditions must be that recorded by the meteorological station required under condition 16 of Schedule 3.	Section 5.1.2
	3. A noise compliance assessment must be undertaken within two months of commencement of the proposed increased extraction rate. The assessment must be conducted by a suitably qualified and experienced acoustical practitioner and must assess compliance with noise criteria presented above. A report must be provided to the EPA within 1 month of the assessment.	The report was issued to EPA on 24/11/2016

Condition No.	Requirement	Reference
	<p>4. Unless the Secretary agrees otherwise, this monitoring is to be carried out in accordance with the relevant requirements for reviewing performance set out in the NSW Industrial Noise Policy (as amended from time to time), in particular the requirements relating to:</p> <ul style="list-style-type: none"> a) monitoring locations for the collection of representative noise data; b) equipment used to collect noise data, and conformity with Australian Standards relevant to such equipment; c) modifications to noise data collected, including for the exclusion of extraneous noise and/or penalties for modifying factors apart from adjustments for duration; and d) the use of an appropriate modifying factor for low frequency noise to be applied during compliance testing at any individual residence if low frequency noise is present (in accordance with the INP) and before comparison with the specified noise levels in the consent. 	Section 5.1.2

2.1 Environment Protection Licence

The quarry has obtained an Environmental Protection Licence (EPL) (11649). The EPL conditions relevant to this NMP are listed in Table 2-2. A cross reference is also included to indicate where the condition is addressed in this NMP or other environmental management documents.

Table 2-2 EPL conditions relevant to the NMP

Condition No.	Requirement	Reference
L4.1	Noise from the premises must not exceed an LAeq(15minute) noise emission criterion of 35 dB(A), except as expressly provided by this licence	Section 3.2.1
L4.2	<p>For the purposes of compliance with the above condition:</p> <ul style="list-style-type: none"> a) noise from the premises must be measured or computed from at 30 metres from residential Receiver 3 as identified in the Noise Impact Assessment (April 2015) for the proposal; b) noise from the premises must be measured over a period of 15 minutes using the "FAST" response on the sound level meter. c) A modifying factor correction must be applied for tonal, impulsive, or intermittent noise in accordance with the document Noise Policy for Industry 2017. <p>The noise limits set out in above apply under all meteorological conditions except for the following:</p> <ul style="list-style-type: none"> a) Wind Speeds greater than 3 metres/second at 10 metres above ground level; or b) Temperature inversion conditions up to 3oC/100m and wind speeds greater than 2 metres/second at c) 10 metres above ground level; or d) c) Temperature inversion conditions greater than 3oC/100m. 	Section 3.2.1

Condition No.	Requirement	Reference
L6.1	<p>Noise generating activities at the premises must be conducted during the following hours:</p> <ul style="list-style-type: none"> • 7:00 am and 6:00 pm Monday to Friday; • 7:00 am and 1:00 pm Saturday; • at no time on Sundays and Public Holidays. <p>Note: Saturday working hours are extended to 7am to 4pm only for the purposes of fulfilling a contract for the supply of quarry products to the Pacific Highway upgrade project (SSD 4963).</p>	Section 4.1
L6.2	<p>This condition does not apply to the delivery of material outside the hours of operation permitted by condition L6.1, if that delivery is required by police or other authorities for safety reasons; and/or the operation or personnel or equipment are endangered. In such circumstances, prior notification must be provided to the EPA and affected residents as soon as possible or within a reasonable period in the case of emergency.</p>	Section 4.1
M1.2	<p>All records required to be kept by this licence must be:</p> <ol style="list-style-type: none"> a) in a legible form, or in a form that can readily be reduced to a legible form; b) kept for at least 4 years after the monitoring or event to which they relate took place; and c) produced in a legible form to any authorised officer of the EPA who asks to see them. 	Section 5.3
M1.3	<p>The following records must be kept in respect of any samples required to be collected for the purposes of this licence:</p> <ol style="list-style-type: none"> a) the date(s) on which the sample was taken; b) the time(s) at which the sample was collected; c) the point at which the sample was taken; and d) the name of the person who collected the sample. 	Section 5.3
M5.1	<p>The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.</p>	Section 5.3.1
M5.2	<p>The record must include details of the following:</p> <ol style="list-style-type: none"> a) the date and time of the complaint; b) the method by which the complaint was made; c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect; d) the nature of the complaint; e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and f) if no action was taken by the licensee, the reasons why no action was taken. 	Section 5.3.1
M5.3	<p>The record of a complaint must be kept for at least 4 years after the complaint was made.</p>	Section 5.3.1

Condition No.	Requirement	Reference
M5.4	The record must be produced to any authorised officer of the EPA who asks to see them.	Section 5.3.1
E2.1	A noise compliance assessment must be undertaken within two months of commencement of the proposed increased extraction rate. The assessment must be conducted by a suitably qualified and experienced acoustical practitioner and shall assess compliance with noise criteria presented above. A report must be provided to the EPA within 1 month of the assessment.	The report was issued to EPA on 24/11/2016

3. Existing environment and impacts

3.1 Existing environment

The Noise Impact Assessment (NIA) in the EIS identified eleven potentially sensitive receivers in the vicinity of the quarry using aerial imagery. The nearest identified sensitive receiver was located approximately 1.5 km from the quarry boundary. Sensitive receivers identified in the vicinity of the site are detailed in Table 3-1. Figure 3-1 shows a site aerial image and the location of identified noise sensitive receivers. These receivers were identified to represent those with the greatest potential for adverse noise impact.

Table 3-1 Identified noise sensitive receivers

Receiver	Receiver type	Approximate distance to nearest boundary (m)
R1	Residential	1600
R2	Residential	1700
R3	Residential	1500
R4	Residential	2600
R5	Residential	2700
R6	Residential	2800
R7	Residential	3200
R8	Residential	3600
R9	Residential	3300
R10	Residential	3500
R11	Residential	3000

Background noise monitoring was undertaken for the NIA by GHD at two locations between 13 November 2014 and 20 November 2014. The logger locations are shown in Figure 3-1 and a summary of the noise monitoring results are provided in Table 3-2 and Table 3-3.



NEWMAN QUARRYING
 SLYS QUARRY

LOCATIONS OF SENSITIVE NOISE
 RECEIVERS AND NOISE LOGGERS

Job Number | 22-17528
 Revision | A
 Date | NOV 2016

Figure 3-1

Table 3-2 Summary of noise monitoring results – East - dB(A)

Date	Background L ₉₀ dB(A)			Ambient L _{Aeq} dB(A)		
	Day (7am to 6pm)	Evening (6pm to 10pm)	Night (10pm to 7am)	Day (7am to 6pm)	Evening (6pm to 10pm)	Night (10pm to 7am)
13/11/14	42	42	38	52	50	50
14/11/14	40	42	40	49	50	52
15/11/14	36	37	7	52	48	51
16/11/14	39	40	40	54	50	52
17/11/14	40	40	39	51	50	51
18/11/14	39	41	28	53	51	51
19/11/14	43	41	39	52	51	51
20/11/14	39	43	43	50	53	53
RBL and LAeq Overall	40	41	39	52	51	52

Table 3-3 Summary of noise monitoring results – West - dB(A)

Date	Background L ₉₀ dB(A)			Ambient L _{Aeq} dB(A)		
	Day (7am to 6pm)	Evening (6pm to 10pm)	Night (10pm to 7am)	Day (7am to 6pm)	Evening (6pm to 10pm)	Night (10pm to 7am)
13/11/14	28	23	19	40	36	40
14/11/14	31	24	29	43	36	41
15/11/14	27	25	20	40	38	40
16/11/14	27	25	21	45	37	43
17/11/14	29	25	22	43	37	43
18/11/14	30	25	22	44	40	40
19/11/14	31	25	21	44	42	46
20/11/14	25	32	23	43	43	41
RBL and LAeq Overall	29	25	22	43	39	42

3.2 Impacts

3.2.1 Noise criteria

Noise criteria for the project were provided in the development consent (CoA 3, Schedule 3) and EPL (Condition L4.1) and are outlined in Table 3-4. Noise generated by the project must not exceed the criteria at any residence on privately-owned land.

Table 3-4 Noise criteria dB(A)

Receiver	Day L _{Aeq} (15 minute)	Evening L _{Aeq} (15 minute)	Night L _{Aeq} (15 minute)
All privately owned residences	35	35	35

The noise criteria in Table 3-4 are to apply under all meteorological conditions except the following, as measured by the on-site meteorological station:

- Wind speeds greater than 3 m/s at 10 m above ground level; or
- Temperature inversion conditions between 1.5°C and 3°C/100 m (note the EPL criteria is up to 3°C/100 m) and wind speed greater than 2 m/s at 10 m above ground level; or
- Temperature inversion conditions greater than 3°C/100 m.

3.2.2 Operational impacts

The NIA modelled and assessed predicted noise impacts to sensitive receivers based on two operational scenarios:

- **Scenario 1:** Proposed operations with current quarry shape (considered to represent a worst-case scenario as equipment would be most exposed to sensitive receivers).
- **Scenario 2:** Proposed operations with final quarry shape.

For both Scenario 1 and Scenario 2, the noise impact of the quarry on surrounding receivers has been assessed at:

- Average daily production, which is expected to generate about 50 truck and dog loads (100 movements) per day.
- Peak daily production, which would require about 125 truck and dog loads (250 truck movements) per day.

The predicted noise levels for daytime site operations are shown in Table 3-5 and Figure 3-2.

Table 3-5 Predicted operational noise levels

Sensitive Receiver	Noise criterion Leq dB(A)	Predicted noise level Leq dB(A)							
		Scenario 1 – Existing quarry configuration				Scenario 2 – Final quarry configuration			
		Average daily production without rock breaking	Average daily production with rock breaking	Peak daily production without rock breaking	Peak daily production with rock breaking	Average daily production without rock breaking	Average daily production with rock breaking	Peak daily production without rock breaking	Peak daily production with rock breaking
R1	45	26	26	28	28	26	26	28	29
R2	45	25	26	27	28	26	26	28	28
R3	35	32	33	34	35	30	31	32	33
R4	35	23	25	25	26	21	22	23	24
R5	35	23	24	25	25	20	21	22	23
R6	35	22	23	24	25	20	21	22	23
R7	35	21	22	22	23	18	19	21	21
R8	35	19	20	21	22	17	18	19	20
R9	35	20	21	22	23	18	18	20	21
R10	35	20	21	21	22	17	18	19	20
R11	35	21	22	23	24	19	20	21	22

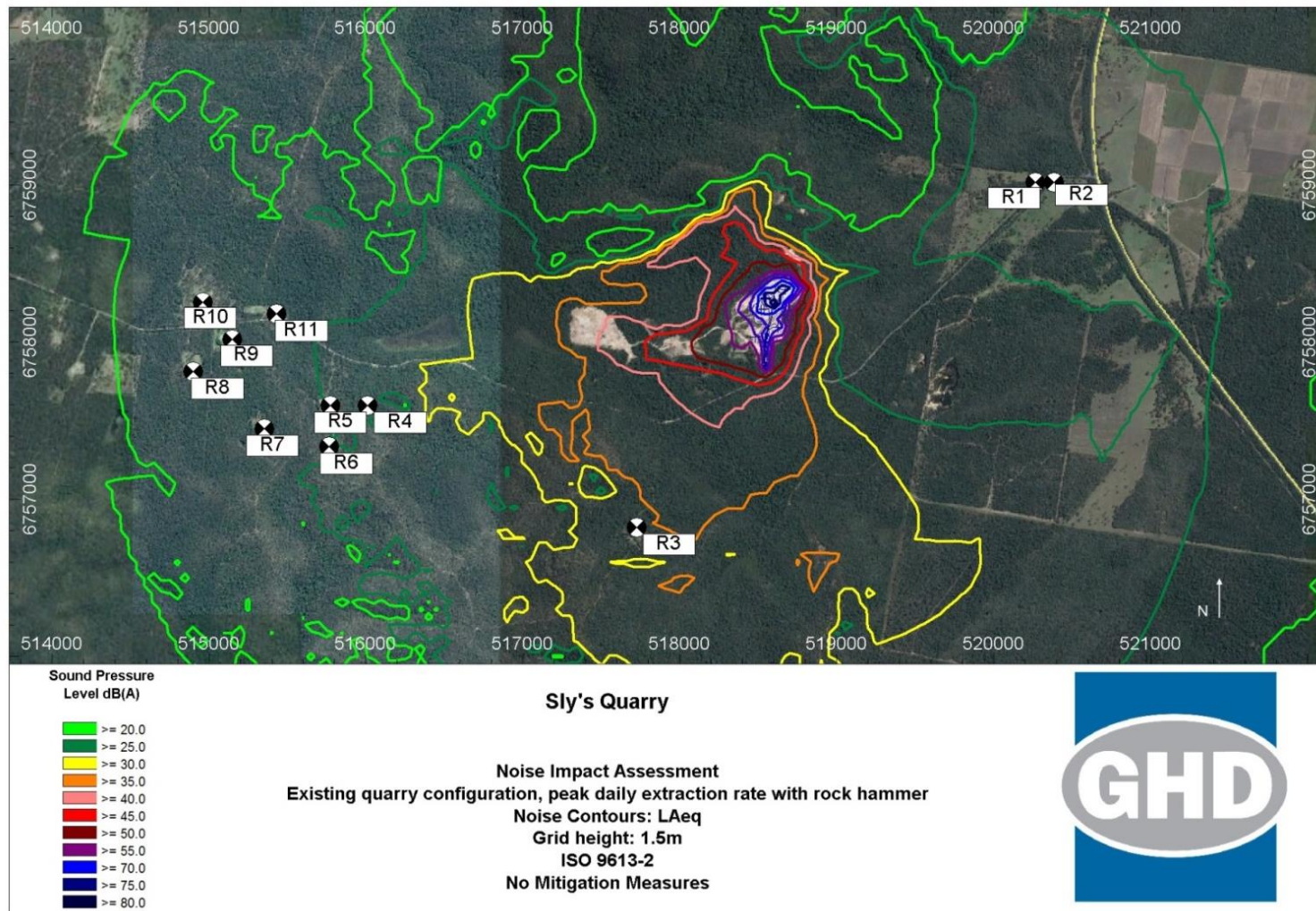


Figure 3-2 Predicted operational noise levels – Scenario 1 (existing quarry configuration) – Peak daily production with rock hammer

The results indicate that noise levels generated from quarry operations are predicted to comply with the noise criteria at all sensitive receivers. It is noted that off-site noise levels at R3 are equal to the criteria, and the use of loud tools such as the rock hammer during peak daily production may cause an exceedance.

Predictions under Scenario 2 indicate that the changing the quarry shape will make little difference to the receiver levels.

This assessment is considered conservative as it has not considered the potential screening benefits of equipment operating behind stockpiles.

It should be noted that the noise modelling is based on worst case operating conditions with conservative assumptions regarding site operations and equipment sound power levels. This conservative approach is likely to result in predicted operational noise levels being slightly higher than actual noise levels.

3.2.3 Traffic noise impacts

The quarry has the potential to create additional traffic noise on Tullymorgan-Jackybulbin Road.

Table 3-6 summarises the predicted road traffic noise level for when the quarry is operating at peak daily production and compares the predicted levels against the NSW *Road Noise Policy* (OEH 2011) (RNP) criteria.

Table 3-6 Predicted road traffic noise level during peak production

Roadway	Generated heavy vehicle movements per day (average daily production)	Generated heavy vehicle movements per day (peak daily production)	RNP criteria Day (7 am – 10 pm)	Predicted road noise level	
				Average daily production LAeq(1 hour) dB(A)	Peak daily production LAeq(1 hour) dB(A)
Jackybulbin Rd	100 (50 loads)	250 (125 loads)	LAeq(1 hour) 55 (external)	49	52
1. Predicted results have received a 2.5 dB(A) façade correction					

The results show that road traffic noise along Tullymorgan-Jackybulbin Road during peak daily production is expected to comply with the RNP criteria.

However, the increase in heavy vehicle traffic is expected to be noticeable to receivers R1 and R2 and have the potential to generate annoyance. In particular, bumps, pot holes or other irregularities in the roadway can cause short-term increased noise during vehicle passbys.

4. Environmental control measures

Environmental requirements and control measures are identified in the Conditions of Approval and the EIS. Specific measures and requirements to address noise impacts are outlined in Table 4-1.

Table 4-1 Environmental controls and mitigation measures

Ref	Environmental Management Measure	Timing	Responsibility
N1	Ensure all employee inductions include the relevant requirements and controls outlined in the NMP. Use regular toolbox talks to reinforce the requirements, especially on days when the noise criteria do not apply.	Operation	Quarry Manager
N2	The operating hours specified in the development consent and in Section 4.1 must be complied with.	Operation	Quarry Manager
N3	Noise generated by the development must not exceed the criteria in Table 3-4 at any residence on privately-owned land unless there is a written agreement with the landowner and DPE have been advised of the terms of the agreement.	Operation	Quarry Manager
N4	Noise generated by the development is to be measured in accordance with the relevant requirements and exemptions (including certain meteorological conditions) of the <i>NSW Industrial Noise Policy</i> , refer to Section 5.1.	Operation	Quarry Manager
N5	Best practice management, as outlined in this NMP, must be implemented to minimise the operational and road transportation noise of the development.	Operation	Quarry Manager
N6	The noise impacts of the development must be minimised during meteorological conditions when the noise criteria in the consent do not apply (see Section 3.2.1) by implementing, at a minimum N11, N13 and N14.	Operation	Quarry Manager
N7	Noise monitoring must be carried out in accordance with Section 5.1	Operation	Quarry Manager
N8	Trucks are to reduce speed when passing dwellings near Tullymorgan-Jackbulbin Road.	Operation	Truck Drivers
N9	Noise monitoring should also be conducted following any change in operating conditions that are likely to increase noise emissions from the site (such as a sudden increase in production rate or heavy vehicle movements) or move noise sources significantly closer to noise sensitive receivers.	Operation	Quarry Manager
N10	The noise monitoring data should be regularly assessed and on site operations should be modified or stopped to ensure compliance with the relevant conditions of the consent. For example, noise barriers consisting of earth mounds or shipping containers may be used to reduce noise impacts.	Construction Operation	Quarry Manager
N11	Where practical, machines will be operated at low speed or power and switched off when not being used rather than left idling for prolonged periods.	Operation	Quarry Manager

Ref	Environmental Management Measure	Timing	Responsibility
N12	Keep truck drivers informed of designated vehicle routes, parking locations and delivery hours via inductions, toolbox talks and compliance with the Drivers Code of Conduct, refer to the Traffic Management Plan.	Operation	Quarry Manager
N13	Avoid dropping materials from height and avoid metal to metal contact on material.	Operation	Quarry Manager
N14	All engine covers will be kept closed while equipment is operating.	Operation	Quarry Manager
N15	The Quarry Manager is to erect a sign at the entrance of the quarry with a phone number and permanent site contact so that noise complaints can be received and addressed in a timely manner.	Operation	Quarry Manager

4.1 Hours of operation

Table 4-2 Hours of operation

Activity	Permissible Hours
Employee arrival	<ul style="list-style-type: none"> From 6:30 am Monday to Saturday inclusive From 7:30 am Sundays or public holidays if engaged in maintenance, site security or other similar activities
Quarrying operations including loading and dispatch of laden trucks	<ul style="list-style-type: none"> 7 am to 6 pm Monday to Friday 7 am to 1 pm Saturday 7 am to 4 pm if fulfilling a contract for the supply of quarry products to the Pacific Highway upgrade project At no time on Sundays or Public holidays
Blasting	<ul style="list-style-type: none"> 9 am to 3 pm Monday to Friday (except public holidays)
Maintenance	<ul style="list-style-type: none"> May be conducted at any time, provided that these activities are not audible at any privately-owned residence

**Note: Evidence of contracts that cover those periods during which extended Saturday afternoon operating hours are undertaken must be reported in the Annual Review required by condition 9 of Schedule 5.*

The following activities may be carried out on the site outside the hours specified in Table 4-2:

- delivery or dispatch of materials as requested by Police or other authorities; and
- emergency work to avoid the loss of lives, property and/or to prevent environmental harm.

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

5. Monitoring and reporting

5.1 Environmental inspections and monitoring

Routine weekly inspections by the Quarry Manager (or delegate) will occur throughout the operational lifetime of the quarry to identify any ad-hoc noise issues such as faulty equipment, noisy works.

Noise monitoring was undertaken for 2 years, which indicated compliance with the relevant noise criteria. Based on this, it was requested the noise monitoring cease, unless there is a justifiable noise complaint or a change in operating conditions that are likely to increase noise levels from the site, in which case noise monitoring will recommence, as described in Section 3.2.1. This request was approved by DPE on 17 October 2018, refer to Appendix A.

5.1.1 Meteorological monitoring

To determine the meteorological conditions during monitoring,

a meteorological station that complies with the requirements in AS3580.14:2014 and the *Approved Methods for Sampling and Analysis of Air Pollutants in New South Wales* (EPA 2022) has been installed adjacent to the site office and readings recorded while the quarry is operating. The weather station records temperature, humidity, dew point, wind speed, wind direction, barometric pressure and rainfall every 30 minutes.



Figure 5-1 Weather station location

5.1.2 Monitoring methodology

If compliance monitoring is required in future, it will be done in accordance with the specifications outlined in the Australian Standard AS1055 (2018) 'Description and Measurement of Environmental Noise' and the NSW Noise Policy for Industry (2017) (NPI), as follows:

- Meteorological data to be checked in the field using a hand-held Kestrel model 4000 weather meter (or equivalent) to confirm conditions relating to wind speed and rainfall are consistent with the NSW Noise Policy for Industry (EPA, 2017).
- Two 15-minute attended noise monitoring measurements are to be taken or computed 30 m from residential receiver R3 (or other affected receiver). Measurements are to be taken using the "FAST" response on a Bruel & Kjaer Type 1 sound level meter (or equivalent).
- The quarry noise contribution are to be determined by noting the instantaneous sound pressure levels when the quarry operations are clearly audible and dominate the acoustic environment. Since quarry noise is typically transient in nature, the contribution is determined by analysing the 1-second time trace and frequency spectra to filter extraneous noise from the data. Additionally, the quarry noise contribution can be estimated by noting the relative audibility of the quarry noise sources compared to other ambient noise sources.
- The use of an appropriate modifying factor for low frequency noise will be applied during compliance testing at any individual residence if low frequency noise is present (in accordance with the NPI (2017)) and before comparison with the noise criteria in Section 3.2.1.

5.2 Contingency plan

If the above monitoring detects an impact or there is a justified community, noise related, complaint, a contingency plan or trigger and response plan is to be implemented, as shown in Table 5-1.

Table 5-1 Contingency plan

Aspect	Trigger	Response
Routine noise monitoring	Excessively noisy equipment identified	Quarry Manager to commission testing of equipment for faults to confirm excessive noise generation. Quarry Manager to take plant or equipment out of service and commence maintenance (if practicable). Quarry Manager to replace faulty plant or equipment with plant or equipment that is in good working order and recommence activities.
Non-compliance with noise criteria	Change in operations/Community complaint	Identifying the noise source that has caused the exceedance. Reassess the mitigation measures employed at the site to reduce the impact of the noise source Following the adoption of noise mitigation, conduct further noise monitoring to ensure the success of the mitigation measure

5.3 Reporting

The general reporting requirements are described in Section 8.5 of the EMS. In relation to the noise monitoring, the routine noise monitoring will be recorded on the *Environmental Inspection Checklist*.

When compliance monitoring is required, a report will be prepared by the acoustic consultant following the compliance monitoring. This is to include, as a minimum:

- The date(s) of the monitoring
- The time(s) of the monitoring
- The location of the monitoring
- Who collected the sample
- The activities occurring during the monitoring
- A comparison of the results with the adopted noise criteria

If an exceedance of the criteria is recorded, the affected resident and DPE are to be notified in writing and provided with regular monitoring results until the quarry is again complying with the relevant criteria.

If an exceedance occurs NQ will also:

- Take action to address the issue immediately
- Consider all reasonable and feasible options for addressing the issue, so it does not occur again
- Submit a report to DPE within 14 days outlining the options considered and the preferred option
- Implement the preferred option once approved by DPE

A summary of any monitoring results will be presented in the Annual Report (refer to Section 8.5 of the EMS) and the NQ website. In the Annual Report the monitoring results are to discuss:

- Non-compliances and what actions were taken to ensure compliance
- Trends
- Discrepancies between the predicted and actual impacts
- Any measures implemented to improve the environmental performance of the operation

All records will be:

- Maintained in a legible form
- Kept for at least 4 years
- Produced to any authorised officer of the EPA and/or DPE upon request

5.3.1 Complaint records

A legible record of all complaints in relation to noise must include:

- The date and time of the complaint
- The method by which the complaint was made
- Any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect
- The nature of the complaint

- The action taken in relation to the complaint, including any follow-up contact with the complainant
- If no action was taken, the reason why no action was taken

Any complaint needs to be entered into the complaints register on the NQ website at least monthly.

Further details regarding complaints are provided in the EMS.

5.3.2 Incident notification

The Quarry Manger will immediately (within 24 hours) notify DPE and any other relevant agency of any incident. The incident is to be investigated in detail and within 7 days of the incident, a detailed report is to be submitted to DPE and any other relevant agency. The report is to include:

- The cause, time and duration of the event
- The type, volume and concentration of every pollutant discharged as a result of the event
- The name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event
- The name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort
- Action taken by the licensee in relation to the event, including any follow-up contact with any complainants
- Details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event
- Any other relevant matters

The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided. The additional information must be provided to the EPA within the time specified in the request.

Further details regarding incidents are provided in the EMS and Pollution Incident Response Management Plan (PIRMP).

5.4 Independent Review

If the Secretary is satisfied that an independent review is warranted for exceeding the relevant criteria, then within 2 months of the Secretary's decision, NQ must:

- a) Commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Secretary, to:
 - Consult with the landowner to determine his/her concerns;
 - Conduct monitoring to determine whether the development is complying with the relevant criteria; and
 - If the development is not complying with these criteria, then identify measures that could be implemented to ensure compliance with the relevant criteria.
- b) Give the Secretary and landowner a copy of the independent review.

6. Review and improvement

6.1 Review

To continuously improve the environmental performance of the operations, the Quarry Manager will review the NMP and its implementation. The review will be completed within 3 months of the submission of an:

- Annual Review
- Incident report
- Audit report
- Any modifications

The purpose of the review is to ensure that the system is meeting the requirements of the standards, policies and objectives. Between the scheduled reviews, a register of issues will be maintained to ensure that any issue raised by internal and external personnel associated with the quarry is recorded.

The review will consider (where available or applicable):

- Changes to the operation
- Site personnel comments
- Agency comments
- Audit findings
- Environmental monitoring records
- Complaints
- Details of corrective and preventative actions taken
- Environmental non-conformances, environmental inspection notices, inspection reports, and non-conformance reports
- Incident reports
- Changes in organisation structures and responsibilities
- The extent of compliance with objectives and targets
- The effect of changes in standards and legislation
- Co-ordination of environmental management of sub-contractors

A record of the review is maintained by the Quarry Manager and kept on site.

6.2 Updates

The outcomes of the above reviews may include amendments to the NMP and supporting documentation, updates to the Project aspects and impacts register, re-evaluation of the Project objectives and targets, or reallocation of Project resources. If any amendments are considered necessary, these need to be submitted to DPE within 4 weeks of the review for approval. With the agreement of the Secretary, the NMP can be submitted on a staged basis and without consultation with all parties nominated to be consulted. If the submission of NMP is to be staged; then it must clearly describe the specific stage/s of the development to which the NMP applies; the relationship of this stage/s to any future stages; and the trigger for updating the plan.

During the revision of the NMP, the operations associated with the development are to be managed as per the existing NMP until the revised NMP is approved by DPE.

Once approved, a copy of the revised NMP will be made available on the NQ website and any amendments made communicated to relevant personnel.

Appendices

Appendix A – Agency consultation

Ben Luffman

From: Scott Ensbey <Scott.Ensbey@epa.nsw.gov.au>
Sent: Monday, 14 November 2016 5:28 PM
To: Ben Luffman
Subject: RE: EPL 11649

CompleteRepository: 2217528
Description: Sly's Quarry EIS
JobNo: 17528
OperatingCentre: 22
RepoEmail: 2217528@ghd.com
RepoType: Job

Hi Ben,

Sorry, I thought I'd spoken to you about the plan review issue.

I understand that it's a condition of consent that Newman's consult with the EPA on the development of the plans. The EPA does not typically review/endorse Environmental Management Plans, Noise Management Plans, etc. It is up to the licensee (usually via their consultant) to ensure that the plans comply with the relevant guidelines. In this case, the SWMP needs to be based on the Blue Book, Volumes 2 and 2E, the Noise Management Plan should be guided by the principles of the Industrial Noise Policy.

I'm happy to discuss this position if needed, otherwise I'll leave it with you.

Regards

Scott Ensbey

Operations Officer – North Coast
NSW Environment Protection Authority
(02) 6640 2522 MOB: 0447142916

scott.ensbey@epa.nsw.gov.au www.epa.nsw.gov.au [@EPA_NSW](https://twitter.com/EPA_NSW)

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



From: Ben Luffman [mailto:Ben.Luffman@ghd.com]
Sent: Friday, 11 November 2016 4:45 PM
To: Scott Ensbey <Scott.Ensbey@epa.nsw.gov.au>
Subject: RE: EPL 11649

Hi Scott,

How are you going with the review of the plans? Another discrepancy between the EPL and consent is the consent allows for receiving 10,000 tonnes of topsoil and 5,000 m3 of mulch during any calendar year but the EPL does not.



Mr Mark Newman
Newman Quarrying Pty Ltd
Jackybulbin Road,
Mororo NSW 2469

Dear Mr Newman

**Sly's Quarry (SSD 6624)
Noise Monitoring**

I refer to your letter dated 16 October 2018 seeking the Secretary's approval to cease noise monitoring at Sly's Quarry, in accordance with the approved Noise Management Plan.

The Department notes that quarterly noise monitoring has demonstrated compliance with the applicable operational and road noise criteria. On this basis, the Department agrees to the cessation of noise monitoring at this time.

However, if the site receives a noise complaint or makes an operational change that is likely to increase noise emissions from the site, the Department expects that noise monitoring will recommence in accordance with the approved Noise Management Plan.

If you wish to discuss this further, please contact Genevieve Seed at the details above.

Yours sincerely,

A handwritten signature in blue ink that reads 'Ms B Dawson' followed by a horizontal line and the date '17/10/18'.

Megan Dawson
A/Director
Resource Assessments
As the Secretary's nominee

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Document Status

Revision	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
0	B Luffman	E Smith	<i>E Smith</i>	S Lawer	<i>S Lawer</i>	03/03/2017
1	B Luffman	S Lawer		S Lawer		31/01/2020
2	B Luffman	S Lawer		S Lawer		17/03/2022
3	B Luffman	S Lawer		S Lawer		29/07/2022
4	B Luffman	S Lawer		S Lawer		08/09/2022

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