

Holcim (Australia) Pty Ltd

Dunloe Sand Quarry Noise Management Plan

July 2020

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1. Introduction

This Noise Management Plan (NMP) forms part of the Environmental Management Strategy (EMS) for Dunloe Sand Quarry. This NMP has been prepared to meet the requirements of the Minister's Conditions of Approval (CoA) outlined in Development Consent No. 06_0030, the mitigation measures outlined in MOD2 (GHD 2017), the Environmental Impact Statement (EIS) (Planit 2007), the Environment Protection Licence 13077 (EPL) and relevant legislation.

1.1 **Objectives**

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

To achieve this objective, Holcim 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 Dunloe Sand 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 and MOD2. Any concerns identified by relevant stakeholders were addressed in the EIS and MOD2 mitigation measures which have been incorporated into this NMP.

As per CoA 5(b), 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 2017

Further discussion of the above legislation is provided in the EMS, as well as the MOD2 and the EIS.

2.2 Guidelines

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

• Noise Policy for Industry (EPA 2017)

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.

Condition No.	Requirement			Reference
Schedule 3, Condition 2	The Proponent must ensure that the noise generated by the project does not exceed the criteria in Table 1 at any residence on privately-owned land.			Section 5
	Table 1: Noise Impact Assessment Criteria			
	Receiver Location	Day LAeq (15 min)	dB(A)	
	R6 and R7	42		
	R8	48		
	All other residences	41		
	Noise generated by the project must be monitored and measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the <i>NSW Noise Policy for Industry</i> (EPA, 2017). The noise criteria in Table 1 do not apply if the Proponent has an agreement with the owner/s of the relevant residence or land to exceed the noise criteria, and the Proponent has advised the Department in writing of the terms of this agreement.			
Schedule 3,	The Proponent must comply with the operating hours in Table 2.			Section 5
Condition 3	Table 2: Operating Hours			
	Activity	Day	Time	
	Sand extraction and processing, delivery and distribution, and other quarry related activities	Monday – Friday Saturday Sunday and Public Holidays	7:00 am to 5:00 pm 7:00 am to 12:00 pm Nil	
	Maintenance (if inaudible at neighbouring residences)	Any day	Any time	
Schedule 3, Condition 4	The Proponent must: (a) implement best practice management to minimise the construction, operational and road transportation noise of the development;		Section 5	
	(b) minimise the noise impacts of the project during meteorological conditions when the noise criteria in this approval do not apply;			Section 5

Table 2-1 Consent conditions relevant to the NMP

Condition No.	Requirement	Reference
	(c) carry out attended noise monitoring (at least every 3 months or as otherwise agreed by the Secretary) to determine whether the project is complying with the relevant conditions of this approval; and	Section 6
	 (d) regularly assess noise monitoring data and modify and/or stop operations on site to ensure compliance with the relevant conditions of this approval to the satisfaction of the Secretary. Note: Monitoring under this approval is not required at all residences 	Section 5
	and the use of representative monitoring locations can be used to demonstrate compliance with criteria, if agreed to by the Secretary.	
Schedule 3, Condition 5	Within three months of the approval of Modification 2, the Proponent must prepare a Noise Management Plan for the project to the satisfaction of the Secretary. This plan must:	This plan
	(a) be prepared by a suitably qualified and experienced person/s whose appointment has been endorsed by the Secretary;	
	(b) be prepared in consultation with the EPA;	Appendix A
	(c) describe the measures to be implemented to ensure:	Section 5
	(i) compliance with the noise criteria and operating conditions in this approval;	
	(ii) best practice management is being employed;(iii) noise impacts of the project are minimised during noise-enhancing meteorological conditions;	
	(d) describe the noise management system; and	Section 5
	 (e) include a monitoring program to be implemented to measure noise from the project against the noise criteria in Table 1, and which evaluates and reports on the effectiveness of the noise management system on site. The Proponent must implement the Noise Management Plan as 	Section 6
	approved by the Secretary.	
Schedule 5, Condition 1A	The Proponent must ensure that the management plans required under this approval are prepared in accordance with any relevant guidelines, and include:	
	(a) a summary relevant background or baseline data;	Section 3
	(b) a description of:	Section 1.2 and
	 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 project or any management measures; 	Section 2
	(c) a description of the measures that to be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;	Section 5
	 (d) a program to monitor and report on the: impacts and environmental performance of the project; and effectiveness of any management measures (see (c) above); 	Section 6
	(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 6.3
	(f) a program to investigate and implement ways to improve the environmental performance of the project over time	Section 7
	(g) a protocol for managing and reporting any:incidents;complaints;	Refer to the EMS
	 non-compliances with statutory requirements; and exceedances of the impact assessment criteria and/or performance criteria; and 	
	(h) a protocol for periodic review of the plan.	Section 7

2.4 Environment protection licence

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.

Condition	Requirement	Reference
No.		
L4.1	Noise from the premises must not exceed an LAeq (15 minute) noise emission criterion of 48 dB(A), except as expressly provided by this licence.	Section 4
L4.2	Noise from the premises is to be measured at the most affected point within the residential boundary, or at the most affected point within 30 metres of the dwelling where the dwelling is more than 30 metres from the boundary, to determine compliance with this condition.	Section 6
L4.3	Where it can be demonstrated that direct measurement of noise from the premises is impractical, the EPA may accept alternative means of determining compliance. See Chapter 11 of the NSW Industrial Noise Policy January 2000 for general guidance on determining compliance.	Section 6
L4.4	The noise emission limits identified in this section apply under calm meteorological conditions of wind speeds u pto 3m/s at 10 metres above ground level, and temperature inversion conditions.	Section 5
L5.1	Activities covered by this licence must only be carried out between the hours of 0700 hrs to 1700 hrs Monday to Friday, and 0700 hrs to 1200 hrs Saturday, and at no time on Sundays and Public Holidays.	Section 4.2
L5.2	Exemptions to standard construction hoursa) Any maintenance work that is inaudible from neighbouring residences;b) Emergency work to avoid the loss of lives or property, and/or to prevent environmental harm.	Section 4.2

Table 2-2 EPL conditions relevant to the NMP

Existing environment and impacts

3.1 The site and sensitive receivers

The site is located within the Tweed Local Government Area, approximately 25 kilometres south of the Tweed Heads town centre. Road access to the site is via Pottsville Road from the north.

The nearest identified sensitive receivers located in the vicinity of the site are detailed in Table 3-1 and shown in Figure 3-1 below. Distances are stated from the receiver to the nearest point at the site boundary.

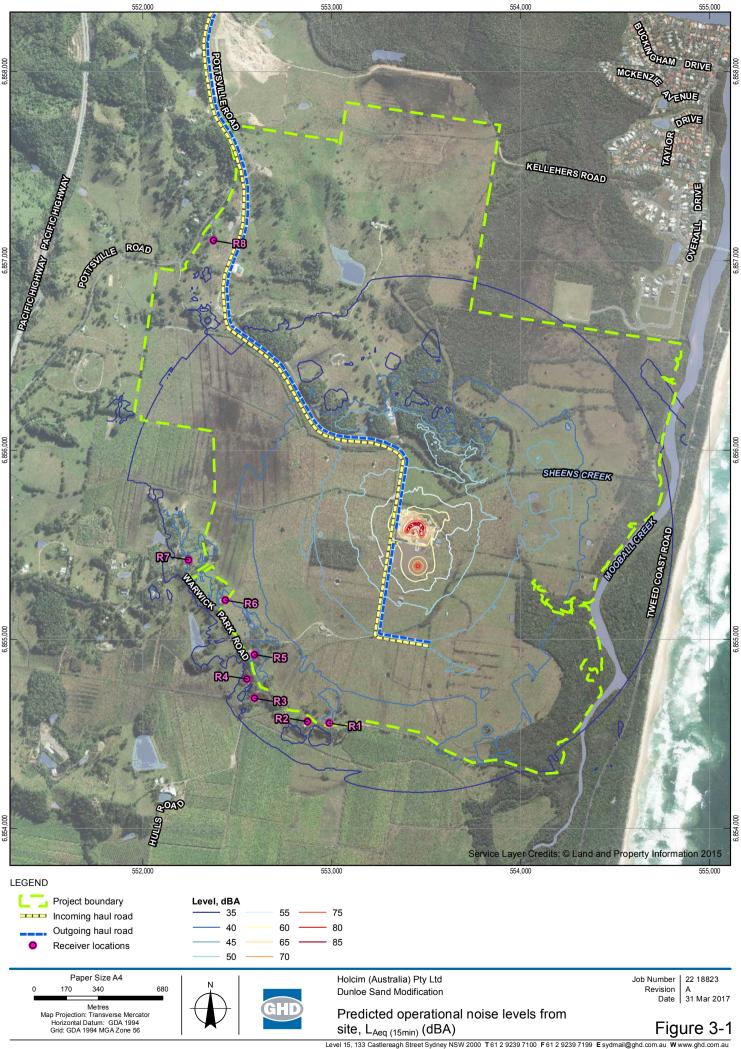
Receiver	Receiver type	Address	Distance from site activity (metres)	Direction from site
R1	Residential	265 Warwick Park Road	1,030	South
R2	Residential	265 Warwick Park Road	1,060	South
R3	Residential	200 Warwick Park Road	1,070	Southwest
R4	Residential	200 Warwick Park Road	1,060	Southwest
R5	Residential	175 Warwick Park Road	960	Southwest
R6	Residential	157 Warwick Park Road	970	Southwest
R7	Residential	129 Warwick Park Road	1,090	West
R8	Residential	679 Pottsville Road	1,720	Northwest

Table 3-1 Identified noise sensitive receivers (from site operations)

Sensitive receivers were also identified along Pottsville Road, which will be used to access the quarry. These are detailed in Table 3-2 and Figure 3-2 and Figure 3-3 below.

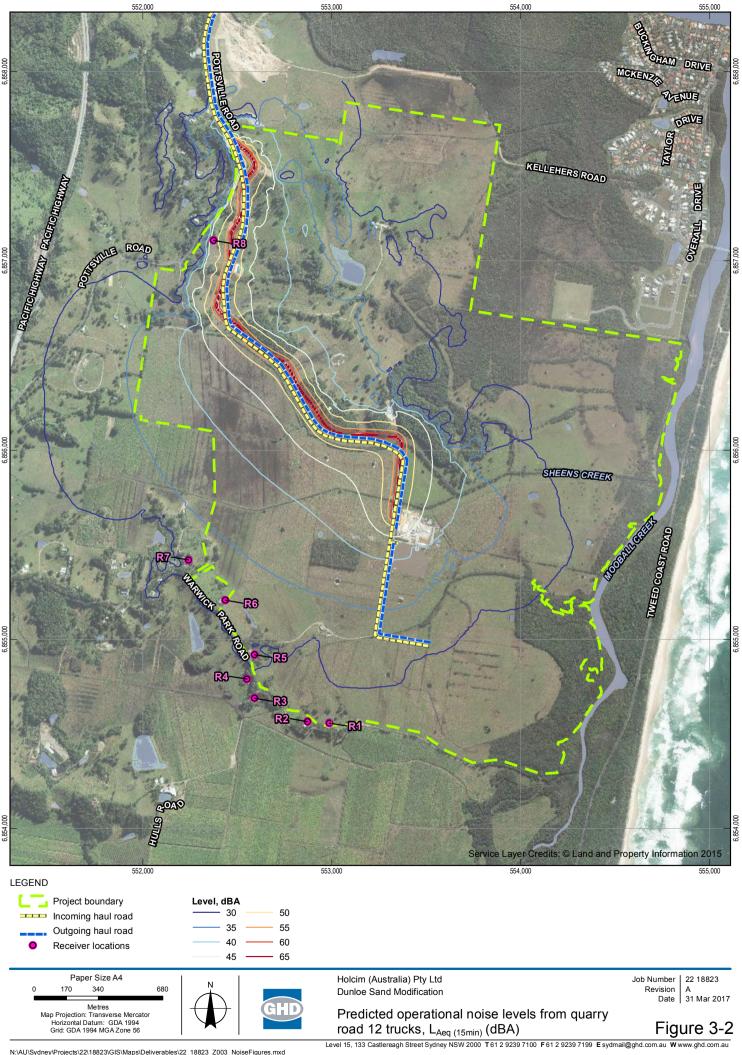
Receiver	Receiver type	Address	Distance from Pottsville Road (metres)
R9	Residential	765 Pottsville Road	96
R10	Residential	771 Pottsville Road	14
R11	Residential	834 Pottsville Road	56
R12	Residential	854 Pottsville Road	46
R13	Residential	866 Pottsville Road	10
R14	Residential	883 Pottsville Road	14
R15	Residential	883 Pottsville Road	16
R16	Residential	940 Pottsville Road	79
R17	Residential	943 Pottsville Road	104
R18	Residential	56 Hazelwood Drive	164
R19	Residential	943 Pottsville Road	69
R20	Residential	940 Pottsville Road	51
R21	Residential	3 Hazelwood Drive	27

Table 3-2 Identified noise sensitive receivers (along Pottsville Road)



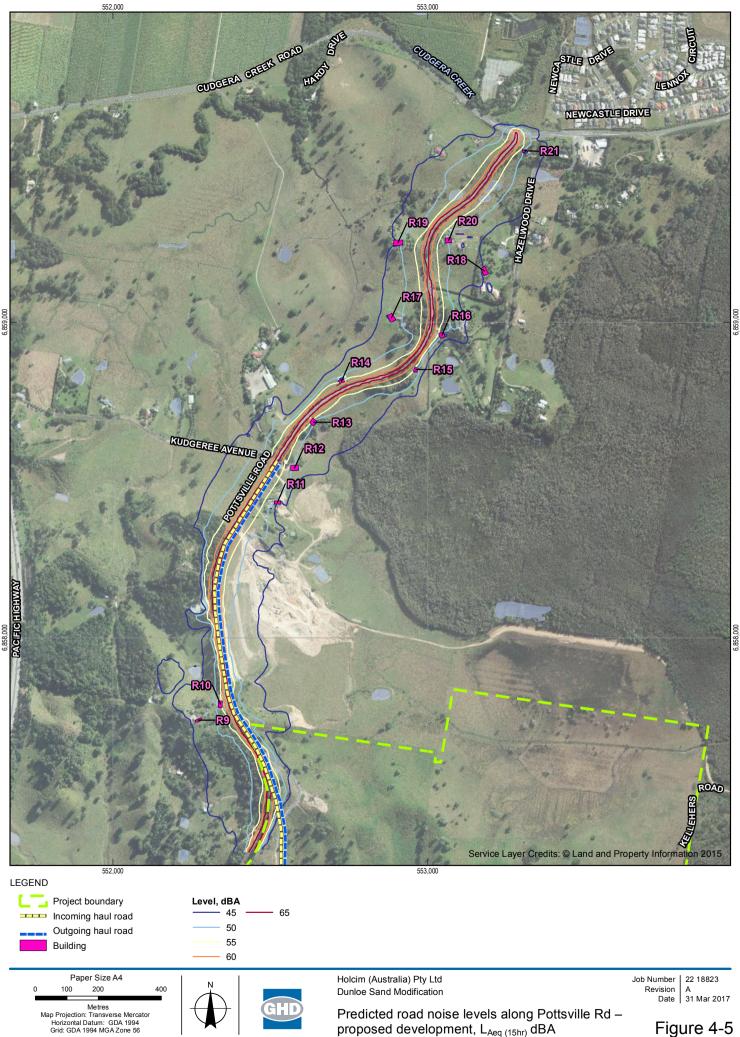
N:\AU\Sydney\Projects\22118823\GIS\Maps\Deliverables\22_18823_Z003_NoiseFigures.mxd © 2017. Whilst every care has been taken to prepare this map. GHD (and Sixmaps, NSW Land and Property Information) make no represen and responsibility of any kind (whether in contract, tort or otherwise) for any expenses, losses, damages and/or costs (including indirect or cor in any way and for any reason. y, completeness or suitability for any particular purpose and cannot accept liability ed by any party as a result of the map being inaccurate, incomplete or unsuitable ne) which are incurr

Data source: Aerial Imagery: Sixmaps (2017 - NSW LPI), General Topo: NSW DTDB 2012. Created by:mking3



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Data source: Aerial Imagery: Sixmaps (2017 - NSW LPI), General Topo: NSW DTDB 2012. Created by:mking3



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proposed development, LAeq (15hr) dBA

Level 15, 133 Castlereagh Street Sydney NSW 2000 T 61 2 9239 7100 F 61 2 9239 7199 E sydmail@ghd.com.au W www.ghd.com.au

Data source: Aerial Imagery: Sixmaps (2017 - NSW LPI), General Topo: NSW DTDB 2012. Created by:mking3

Figure 4-5

3.2 Operational noise impact

3.2.1 Site operation

The site operation, consisting of plant and equipment within the quarry, was modelled and the resulting noise levels at sensitive receivers is shown in Table 3-3 below. Results show that the proposed scenario of twelve trucks per hour will comply with the noise criteria of 48 dBA at all sensitive receivers. A noise emission map for the site has also been provided in Figure 3-1 below.

Receiver	Sound Pressure Level L _{Aeq(15min)} dB(A)	Compliance
R1	40	Yes
R2	38	Yes
R3	36	Yes
R4	36	Yes
R5	41	Yes
R6	42	Yes
R7	42	Yes
R8	31	Yes

Table 3-3 Noise levels at sensitive receivers from onsite operation

3.2.2 Quarry road operation

Operation of the quarry access road was assessed against the noise limits provided in the original project approval. Truck volumes along the quarry access road are expected to increase from the current scenario of four trucks per hour (8 movements) to twelve trucks per hour (24 movements). The expected truck volume of twelve trucks per hour (24 movements) has been used to assess noise from operation of the quarry access road. The resulting noise levels at each receiver are shown below in Table 3-4.

Results show that the proposed scenario of twelve trucks per hour on the quarry access road will comply with the noise criteria of 48 dBA at all sensitive receivers. Noise emission maps for the current and proposed cases have been provided for the Quarry Road in Table 3-4 and Figure 3-2.

Receiver	Proposed development twelve trucks per hour LAeq(15min) dB(A)	Criteria, dBA	Compliance
R1	26	48	Yes
R2	27	48	Yes
R3	24	48	Yes
R4	24	48	Yes
R5	29	48	Yes
R6	31	48	Yes
R7	31	48	Yes
R8	46	48	Yes

Table 3-4 Noise levels at sensitive receivers from Quarry Road operation

3.3 Traffic noise impacts

The impact on traffic levels and resulting noise at sensitive receivers along Pottsville Road was modelled using SoundPLAN as outlined above. The noise impact was assessed against the noise criteria for a sub-arterial road of 60 dBA $L_{Aeq(15hr)}$. The resulting noise levels at sensitive receivers are shown in Table 3-5. A noise emission map for Pottsville Road is also provided in Figure 3-3.

Receiver	Proposed development LAeq(15hr) dBA	Criteria, dBA	Compliance
R9	52	60	Yes
R10	57	60	Yes
R11	45	60	Yes
R12	49	60	Yes
R13	51	60	Yes
R14	56	60	Yes
R15	48	60	Yes
R16	44	60	Yes
R17	50	60	Yes
R18	42	60	Yes
R19	54	60	Yes
R20	48	60	Yes
R21	38	60	Yes

Table 3-5 Noise levels at sensitive receivers from truck operation along Pottsville Road

4. Operating criteria

4.1 Noise criteria

Development Consent No. 06_0030 originally had a noise criteria of 48 dBA at all sensitive receivers. EPL 13077 also has a noise criteria of 48 dBA. On the basis of the Noise Impact Assessment (GHD 2017) issued to support MOD2, the noise criteria were updated, as provided in Table 4-1.

Table 4-1 Noise criteria

Receiver Location	Day LAeq (15 min) dB(A)	
R6 and R7	42	
R8	48	
All other residences	41	

Noise generated by the project must be monitored and measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the *NSW Noise Policy for Industry* (EPA, 2017).

The noise criteria in Table 4-1 do not apply if Holcim has an agreement with the owner/s of the relevant residence or land to exceed the noise criteria, and Holcim has advised the DPI&E in writing of the terms of this agreement.

4.2 Hours of operation

Holcim are required to comply with the operating hours in Table 4-2.

Table 4-2 Operating hours

Activity	Day	Time
Sand extraction and processing, delivery and distribution, and other quarry related activities	Monday-Friday	7:00 am to 5:00 pm
	Saturday	7:00 am to 12:00 pm
	Sunday and Public Holidays	Nil
Maintenance (if inaudible at neighbouring residences)	Any day	Any time

5. Environmental control measures

Environmental requirements and control measures are identified in the CoA, EIS, MOD2 and EPL. Specific measures and requirements to address noise impacts are outlined in Table 5-1.

Ref **Environmental Management Measure** Responsibility Timing N1 During the induction, all personnel on site should Operation Quarry be made aware of the potential for noise impacts Manager and should aim to minimise impact or elevated noise levels, where possible. N2 The operating hours specified in the Operation Quarry development consent and in Table 4-2 must be Manager complied with. Noise generated by the development must not N3 Operation Quarry exceed the criteria in Table 4-1. Manager N4 Excessively noisy machinery or activities must Operation Quarry cease during meteorological conditions when the Manager noise criteria in the consent do not apply e.g. high winds (refer NSW Noise Policy for Industry (EPA, 2017)). N5 Prescribed buffer zones around the extraction Operation Quarry ponds to be planted and maintained. Manager N6 Noise monitoring must be carried out at least Operation Quarry every 3 months or as otherwise agreed with the Manager Secretary to determine whether the development is complying with the relevant conditions of the consent and the adopted noise criteria. N7 Noise monitoring will also be conducted following Operation Quarry any change in operating conditions that are likely Manager 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. N8 Compliance noise monitoring will also be Operation Quarrv undertaken following receipt of a justified Manager complaint relating to noise emissions from the site. N9 The noise monitoring data will be regularly Operation Quarry assessed and on site operations will be modified Manager or stopped to ensure compliance with the relevant conditions of the consent. For example, dredge to be fitted with suitable mufflers, truck speed reduced. Where practical, machines will be operated at N10 Operation Quarry low speed or power and switched off when not Manager being used rather than left idling for prolonged periods. N11 Keep truck drivers informed of designated Operation Quarry vehicle routes, parking locations and delivery Manager hours. N12 Avoid dropping materials from height and avoid Operation Quarry metal to metal contact on material. Manager N13 All engine covers would be kept closed while Operation Quarry equipment is operating. Manager

Table 5-1 Environmental controls and mitigation measures

Ref	Environmental Management Measure	Timing	Responsibility
N14	Vehicles will be kept properly serviced and fitted with appropriate mufflers. The use of exhaust brakes will be eliminated, where practicable.	Operation	Quarry Manager
N15	Machines found to produce excessive noise compared to industry best practice will be removed from the site or stood down until repairs or modifications can be made.	Operation	Quarry Manager
N16	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

6. Monitoring and reporting

6.1 Environmental inspections

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, using the *Environmental Inspection Checklist* in the Environmental Monitoring and Management Plan.

6.2 Noise monitoring

Attended noise compliance monitoring will occur at R6, R7 and R8 (refer to Figure 3-1) quarterly for the first two years following approval of this NMP. If this monitoring indicates compliance with the criteria in Table 4-1 and Department of Planning, Industry and Environment (DPI&E) approve, the noise monitoring will cease unless there is:

- A justifiable noise complaint in relation to Dunloe Sand Quarry operations
- A change in operating conditions that are likely to increase noise emissions from the site

The assessment must be conducted by a suitably qualified and experienced acoustic consultant in accordance with the *Noise Policy for Industry* (EPA 2017).

6.3 Contingency plan

If the above monitoring detects an impact or there is a justified community, noise related, complaint in relation to Dunloe Sand Quarry operations, a contingency plan or trigger and response plan is to be implemented, as described in Table 6-1.

In general, all issues will be investigated and corrective actions determined within 24 hours. The timeframe to implement the corrective actions will depend on the risk and consequence of the issue. The nature of the corrective action will also influence the implementation timeframe.

Table 6-1 Contingency plan

Trigger	Response
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 maintain or modify (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	 Identify 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.
Justified noise related complaint	 Consult complainant to determine time and source of noise. Offer noise monitoring. If monitoring indicates the complaint is justified and relates to Dunloe Sand Quarry operations, 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. Provide details of the response and noise monitoring to the complainant.

6.4 Reporting

The general reporting requirements are described in the EMS. In relation to the noise monitoring, the routine noise monitoring will be recorded on the *Environmental Inspection Checklist* in the Environmental Monitoring and Management Plan.

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
- 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 Department of Planning, Industry and Environment (DPI&E) will be notified in writing and provided with regular monitoring results until the results show that the project is complying with the relevant criteria.

A summary of these results will be presented in the Annual Report (refer to the EMS). 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 DPI&E upon request

7. Review and improvement

Continuous improvement of this NMP will be achieved by reviewing the plan in accordance with the EMS and through the ongoing evaluation of environmental management performance against environmental policies, objectives and targets.

The continuous improvement process is designed to:

- Identify areas of opportunity for improvement of environmental management and performance.
- Determine the cause or causes of non-conformances and deficiencies.
- Develop and implement a plan of corrective and preventative action to address any nonconformances and deficiencies.
- Verify the effectiveness of the corrective and preventative actions.
- Document any changes in procedures resulting from process improvement; and make comparisons with objectives and targets.

Appendices

Appendix A – Agency consultation

Ben Luffman

From:	Geff Cramb <geff.cramb@epa.nsw.gov.au></geff.cramb@epa.nsw.gov.au>
Sent:	Wednesday, 21 August 2019 11:20 AM
To:	Ben Luffman
Subject:	RE: Dunloe Quarry Management Plan consultation
CompleteRepository:	2220056
Description:	Dunloe EMP
JobNo:	20056
OperatingCentre:	22
RepoEmail:	2220056@ghd.com
RepoType:	Job

Dear Ben

The EPA do not intend to review and provide comment upon the management plans. The EPA are content with the scope. However, it is understood that EPA will undertake compliance reviews against the requirements of the Environment Protection Licence issued and the implementation of the management plan at our discretion.

Regards Geff

Geff Cramb

Operations Officer – Environment Management Unit North Coast, NSW Environment Protection Authority

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geff.cramb@epa.nsw.gov.au www.epa.nsw.gov.au ♥@EPA NSW Report pollution and environmental incidents 131 555 (NSW only) or +61 2 9995 5555



I work flexibly. I'm sending this message now because it's a good time for me, but I don't expect that you will read, respond to or action it outside of your own regular hours.

From: Ben Luffman <<u>Ben.Luffman@ghd.com</u>>
Sent: Thursday, 8 August 2019 12:51 PM
To: Peter Lynch <<u>Peter.Lynch@epa.nsw.gov.au</u>>
Cc: Janelle Bancroft <<u>Janelle.Bancroft@epa.nsw.gov.au</u>>; Victoria Musgrove
<<u>victoria.musgrove@lafargeholcim.com</u>>
Subject: Dunloe Quarry Management Plan consultation

Hi Peter,

Not sure if you are the correct person to contact but we have updated the management plans for Dunloe Quarry following the recent approval of MOD2. The conditions of the Project Approval – SSD 06_0030 require a number of the plans to be prepared in consultation with the EPA. We have therefore attached the relevant plans for review.

The updates have mainly been a reformatting to remove duplication and inclusion of additional information to address the new requirements of the conditions.

We would appreciate your comments by 23 August 2019.

Please contact me if you have any questions.

Regards

Ben Luffman | A GHD Associate

B.App.Sc. (Hons) | Grad.Dip. Urban and Regional Planning | Environmental Auditor **Technical Director - Environment**

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3/https://projects.ghd.com/oc/Newcastle3/holcimdunloesandquar/Delivery/Documents/2220056_RP T_Dunloe Noise Management Plan.docx

Document Status

Revision	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
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