

ANNUAL REVIEW
1 January 2020 – 31 December 2020

Jandra Quarry

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Appendix 1 – Transport Summary

Appendix 2 – Quarterly Noise Monitoring

SITE DETAILS

Name of operation	Jandra Quarry
Name of operator	Holcim (Australia) Pty Ltd
Development consent / project approval #	DA 213-10-99 (Modification 5)
Name of holder of development consent / project approval	Holcim (Australia) Pty Ltd
Annual Review start date	January 1, 2020
Annual Review end date	December 31, 2020
<p>I, Matt Neil, certify that this audit report is a true and accurate record of the compliance status of Jandra Quarry for the period of January 1, 2020 - December 31, 2020 and that I am authorised to make this statement on behalf of Holcim (Australia) Pty Ltd.</p> <p><i>Note.</i></p> <p>a) _ <i>The Annual Review is an 'environmental audit' for the purposes of section 122B(2) of the Environmental Planning and Assessment Act 1979. Section 122E provides that a person must not include false or misleading information (or provide information for inclusion in) an audit report produced to the Minister in connection with an environmental audit if the person knows that the information is false or misleading in a material respect. The maximum penalty is, in the case of a corporation, \$1 million and for an individual, \$250,000.</i></p> <p>b) _ <i>The Crimes Act 1900 contains other offences relating to false and misleading information: section 192G (Intention to defraud by false or misleading statement—maximum penalty 5 years imprisonment); sections 307A, 307B and 307C (False or misleading applications/information/documents—maximum penalty 2 years imprisonment or \$22,000, or both).</i></p>	
Name of authorised reporting officer	Matt Neil
Title of authorised reporting officer	Quarry Manager
Signature of authorised reporting officer	
Date	31/03/2021

1 STATEMENT OF COMPLIANCE

See **Table 1** for statement of commitments for the 2020 reporting period for Jandra Quarry. **Table 3** details the non-compliances identified within the reporting period.

Table 1: Statement of Commitments

Were all conditions of the relevant approval(s) complied with?	
DA 213-10-99 (Mod 5)	NO - see table below for further details.
EPL No. 2796	YES

Table 2: DPIE Compliance Status Key

Risk level	Colour code	Description
High	Non-compliant	Non-compliance with potential for significant environmental consequences, regardless of the likelihood of occurrence
Medium	Non-compliant	Non-compliance with: <ul style="list-style-type: none"> • potential for serious environmental consequences, but is unlikely to occur; or • potential for moderate environmental consequences, but is likely to occur
Low	Non-compliant	Non-compliance with: <ul style="list-style-type: none"> • potential for moderate environmental consequences, but is unlikely to occur; or • potential for low environmental consequences, but is likely to occur
Admin NC	Non-compliant	Only to be applied where the non-compliance does not result in any risk of environmental harm (e.g. submitting a report to government later than required under approval conditions)

Table 3: Non-Compliances for 2020

Relevant approval	Condition #	Condition description (summary)	Compliance status	Section addressed in Annual Review/Comment
DA 213-10-99 (Mod 5)	Schedule 3 Condition 27	<p>Rehabilitation and Conservation Bond <i>Within 12 months of the approval of the Biodiversity and Rehabilitation Management Plan, the Applicant shall lodge a Rehabilitation and Conservation bond with the Department to ensure that the biodiversity offset strategy and rehabilitation of the sites implemented in accordance with the performance and completion criteria set out in the Biodiversity and Rehabilitation Management Plan.</i></p> <ul style="list-style-type: none"> <i>(a) Calculating the cost of implementing the biodiversity offset strategy and rehabilitating the site, and</i> <i>(b) Employing a suitably qualified quantity surveyor or other expert to verify the calculated costs, to the satisfaction of the Secretary.</i> 	<p>Low Risk Non-Compliant</p>	<p>Section 5.1 Actions from 2019 Annual Review</p> <p>Section 8.1 Rehabilitation and Landscape Management Plan</p> <p>Non-compliance due to the arrangements to protect the Biodiversity Offset Area in perpetuity underway but not yet endorsed by DPIE.</p>

2 INTRODUCTION

Holcim (Australia) Pty Ltd (Holcim) operates Jandra Quarry, a hard rock quarry located on the Pacific Highway, Possum Brush in the Greater Taree Local Government Area. The site operates under Development Consent (DA -213-10-99 Modification 5) approved by the then New South Wales (NSW) Department of Planning and Environment (DPE) (now Department of Planning, Industry and Environment (DPIE)) on 13 March 2015.

The site also operates in accordance with Environment Protection Licence (EPL) No. 2796 issued by the Environmental Protection Authority (EPA). A regional locality figure and aerial view of the site are outlined in **Figure 1** and **Figure 2** below.

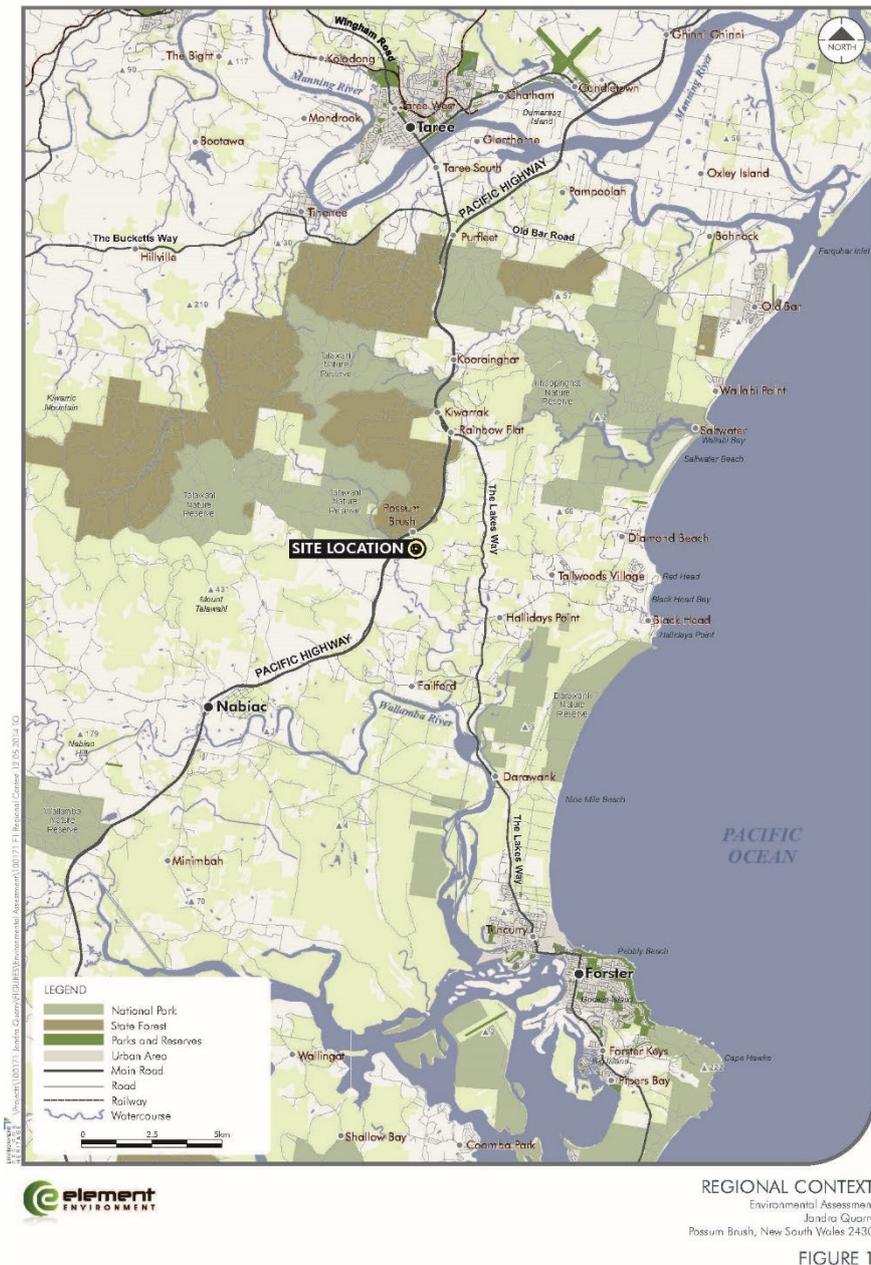


Figure 1: Regional Locality (Umwelt, 2012 as in Element Environment, 2014, Environmental Assessment)



Figure 2: Jandra Quarry Operation – Source: Umwelt August 2012

In accordance with Schedule 5, Condition 4 of the modified Development Consent the site is required to undertake an Annual Review of the site. This Annual Review has been prepared in accordance with Schedule 5 Condition 4 (Annual Performance Monitoring) of the Development Consent and in accordance with the *Annual Review Guideline: post approvals requirements for state significance mining developments* (October 2015). The Annual Review requirements and the section where they have been addressed in this document have been provided in **Table 4**.

Table 4: Annual Review Requirement

Condition	Section in Annual Review
<p>4. Annual Review</p> <p>Annual Review By the end of March each year, the Applicant shall review the environmental performance of the development to the satisfaction of the Secretary. This review must:</p> <p>(a) describe the development (including rehabilitation) that was carried out in the previous calendar year, and the development that is proposed to be carried out over the current calendar year;</p>	Section 4 and 6
<p>(b) include a comprehensive review of the monitoring results and complaints records of the development over the previous calendar year, which includes a comparison of these results against:</p> <ul style="list-style-type: none"> - the relevant statutory requirements, limits or performance measures/criteria;. - the monitoring results of previous years, and - the relevant predictions in the documents listed in condition 2 of Schedule 2; 	Section 6 and 7
<p>(c) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;</p>	Section 1 and 11
<p>(d) identify any trends in the monitoring data over the life of the development;</p>	Section 6 and 7
<p>(e) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and</p>	Section 6
<p>(f) describe what measures will be implemented over the current calendar year to improve the environmental performance of the development</p>	Section 12

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3 APPROVALS

The site operates under the following approvals listed in **Table 5**.

Table 5: Approvals for Jandra Operations

Approval	Regulatory Authority
DA 213-10-99 (Modification No. 5)	NSW Department of Planning Industry & Environment
EPL No. 2796	NSW Environmental Protection Authority

Holcim holds EPL 2796 which covers its activities at Jandra Quarry. **Table 6** outlines the EPL licensing limits.

Table 6: EPL Fee-Based Activity at Jandra Quarry

Scheduled Activity	Fee Based Activity	Scale
Crushing, grinding or separating	Crushing, grinding or separating	> 100,000 – 500,000 T processed
Extractive activities	Land-based extractive activity	>100,000 – 500,000 T extracted, processed or stored
Resource recovery	Recovery of general waste	Any waste recovered
Waste storage	Waste storage – other types of waste	Any other types of waste stored

EPL 2796 had a variation 6 November 2019 which had consequences for Jandra Quarry's noise management and monitoring. EPL 2796 is up for review in 2021 as requested by the site.

Schedule 2 Condition 8 outlines the approved extraction limit is 490,000 tonnes of quarry products from the site in any calendar year. An outline of 2020 production is outlined in **Section 4.4**.

4 OPERATIONS SUMMARY

4.1 Exploration

No exploration activities were completed during the Annual Review period.

4.2 Land Preparation

No land preparation (clearing) occurred within the project boundary during the Annual Review period.

4.3 Construction Activities

There was no construction undertaken during the Annual Review period.

4.4 Quarry Operations

Development activities undertaken at Jandra Quarry in 2020 included:

- Stripping of topsoil and overburden within the existing extraction limit boundary;
- Drill, blast, load and haul activities; and
- Crushing, screening and stockpiling of product.

In November of the reporting period Jandra Quarry reclaimed an overburden dump for the purpose of selling overburden product. This was within an already disturbed footprint.

Extraction and processing operations in 2020 were undertaken between 6am and 10pm, Monday to Friday and between 6am and 6pm on Saturdays. Transportation operations in 2020 were undertaken between 6am and 10pm, Monday to Saturday. These timeframes are in accordance with the permissible hours outlined in Schedule 2, Condition 10 of the Development Consent DA 213-10-99 (Modification No. 5) dated 13 March 2015.

Table 7 includes a summary of the operations undertaken during the reporting period against the development consent conditions regarding product transported from Jandra Quarry.

Table 7: Total Product Distributed (Jandra Quarry)

Material	Approved Limit (Schedule 2, Condition 8 & 9)	2018	2019	2020	Next Reporting Period (2021)
Product Extracted Total	490 000 T	252,165 T	323,930	328,114	320,000
Product Sales Total	475 000 T	257,016 T	403,317	310,759	430,000

Schedule 2 Condition 7 outlines the applicant shall not extract more than 16.5 million tonnes of quarry product per year under this consent. This consent was granted on 13 March 2015. From the start of 2015 to the end of 2020 the site has extracted approximately 1,787,147 tonnes which is well within the limits of the Development Consent.

The cumulative production is outlined in the table below:

Table 8: Cumulative Production for Development Consent

Year	Extraction Tonnage
2015	232,028
2016	315,205
2017	335,705
2018	252,165
2019	323,930
2020	328,114

4.5 Next Reporting Period

Operational activities proposed to be carried out at Jandra Quarry in 2021, include:

- Upgrade of existing wash plant;
- Installation of new screen in secondary plant;
- Stripping of topsoil and overburden within the existing extraction limit boundary;
- Drill, blast, load and haul activities;
- Crushing, screening and stockpiling of product;
- Establishment of mobile conveyors in the stockpile area; and
- Progressive maintenance of rehabilitation in the completed bench at RL 50 on the northern face.

5 ACTIONS REQUIRED FROM PREVIOUS ANNUAL REVIEW

5.1 Actions from 2019 Annual Review – DPIE Review

The actions listed in **Table 9** were required as part of the findings of the 2019 Annual Review. These were included in the letter dated 14 July 2020 by DPIE.

Table 9: Actions required for the 2020 Annual Review – DPIE

Section	Requirement	Comment
Section 6.6 Biodiversity and Bushfires Section 8 Rehabilitation and Landscape Management	Monitoring not undertaken in 2019 as required by Biodiversity and Rehabilitation Plan – DA 213-10-99 (Mod 5) Schedule 3 Condition 25. To be completed in 2020.	Monitoring undertaken per Development Consent requirements in 2020.
Section 6.3 Air Quality	Administrative change to PM ₁₀ exceedances from a non-compliance per Schedule 3 Condition 10 to a non-compliance with Schedule 3 Condition 6.	Fixed in section 6.3 of 2019 Annual Review.

5.2 Actions from 2019 Annual Review – Holcim Proposed Actions

Table 10 outlines an update on the proposed Holcim actions from the previous Annual Review.

Table 10: Proposed Actions from Holcim

Actions from Previous Annual Reviews	Improvement Measure	Works Undertaken	Section in this document
Progressive Rehabilitation	The site will continue to progressively rehabilitate available areas.	Some rehabilitation preparation work was undertaken in this period, including the preparation of one bench.	Section 8
Management of Bushfire Areas	Continue inspections and assess impacts from the bushfire. Additional rehabilitation may be required if burnt out rehabilitation areas are not showing signs of recovery.	In 2020, Holcim approached Kleinfelder for a Rehabilitation Assessment on the rehabilitation areas and the Biodiversity Offset Area. These works were delayed due to Covid-19 restrictions but were performed in 2021.	Section 8
Desilting of sites main process pond/sediment basin.	The site will continue to manage sediment control structures through inspections and desilting.	Inspections of on-site ponds were carried out. No management action such as desilting was required due to stable water and sediment levels.	Section 7
Biodiversity	Weed spraying will continue at the site during the next reporting period.	Weed spraying occurred up to twice a month in the 2020 reporting period. Spraying was focused on rehabilitation areas impacted by	Section 6.6

Actions from Previous Annual Reviews	Improvement Measure	Works Undertaken	Section in this document
		2019 bushfires in order to suppress weed growth.	
	Annual inspections of the nest boxes by Holcim staff be undertaken during next reporting period.	Annual inspections were not performed in the reporting period due to the nest boxes being damaged or destroyed in the 2019 bushfire. See Section 6.6.6 Proposed Actions.	Section 6.6
	Ecological pre-clearance surveys will be required in the next reporting period for vegetation clearing required to extend the eastern end of the approved extraction boundary.	Rehabilitation was undertaken on 1.5 ha of the project area on land that had been cleared outside this report period.	Section 6.6.3
	<p>A feral animal assessment will be undertaken in the next reporting period to determine if there is a need for managing feral animals in the rehabilitation area and Biodiversity Offset Area. A feral animal control program will be completed if required.</p> <p>To date, Holcim employees have not reported any sightings of feral animals within these areas.</p>	Ecological surveys undertaken in late 2020 and early 2021 found that there is no need for a feral animal control program in the rehabilitation area and Biodiversity Offset Area.	Section 8

6 ENVIRONMENTAL PERFORMANCE

6.1 Meteorological Monitoring

Meteorological monitoring was undertaken by Jandra Quarry in the report period using on-site weather stations. During 2020 Jandra Quarry continued to refine the maintenance schedule of the monitoring station and the summarisation process of site data into daily or monthly weather reports. As such, a summary of meteorological data was retrieved from the Taree Airport Bureau of Meteorology station to better present a complete record of weather conditions at the project site. This summary is presented in **Table 11** below. Both meteorological data collected on-site and from BOM were used in the daily activities of the project.

Table 11: Meteorological Monitoring Results from Taree Airport, Station 060141

Month	Total Rainfall (mm)	Minimum Temperature (°C)	Maximum Temperature (°C)
January	113.0	16.6	39.7
February	407.2	15.7	40.4
March	191.0	12.0	36.6
April	29.4	9.0	30.8
May	30.4	6.4	27.1
June	93.4	3.9	22.9
July	95.1	3.5	24.2
August	28.8	1.1	27.4
September	27.2	4.3	29.8
October	45.0	6.8	30.6
November	31.4	10.2	42.0
December	358.2	12.5	34.7
Annual TOTAL	1450.1		

6.2 Noise

6.2.1 EIS Predictions

The noise and blasting impact assessment in the Environmental Assessment (2014) considered the potential impacts of the proposed modification on nearby sensitive residential receivers.

Noise levels (without asphalt production) below the early morning shoulder project criteria, are predicted at all private residential receiver locations and for all stages of the quarry life, provided that operations are restricted during this time including:

- No works in the approved overburden emplacement area;

- No works above RL50; and
- No operation of the mobile processing plant.

Noise levels (without asphalt production) above the day / evening criteria are predicted at three private residential receivers and range from a marginal 2 dBA to 5 dBA above the criteria. Holcim is confident that these noise levels will not be perceived as a nuisance and has negotiated agreements with the potentially affected property owners.

Predicted noise levels from the Environmental Assessment (2014) from asphalt production were up to 7 dBA above the criteria at one private residential receiver R1 during all periods and all stages of the quarry development, as this receiver has a line of sight to the asphalt plant. Holcim has a negotiated agreement with the property holder of R1.

Jandra Quarry is currently only in Stage 1 of its development plan as described in the Noise and Blasting Impact Assessment detailed within the Environmental Assessment (2014). **Table 12** details the noise modelling for this stage. When compared with the data in **Table 14** all results have been below that modelled within the Environmental Assessment (2014).

Table 12: Stage 1 Assessment without asphalt plant operating (exceedances in bold)

Receptor	Day / Evening (dBA L _{eq}) 7am to 10pm		Early morning shoulder (dBA L _{eq}) 6am to 7 am		
	Project Criteria	Predicted Level	Project Criteria	Predicted level	
		Neutral		Neutral	Worst Case
R1	41	41	40	41	46
R2	38	30	38	30	35
R3	51	<30	50	<30	30
R4	41	34	40	33	38
R5	41	40	40	38	43
R6	38	32	38	32	37
R7	38	<30	38	<30	<30
R8 (Holcim)	41	33	40	32	36
R9 (Holcim)	41	38	40	36	40
R10 (Holcim)	38	44	38	43	47

6.2.2 Approved Criteria

Criteria for each of the receivers R1 – R10, as outlined in the Conditions of Consent, for both quarry operation and combined quarry and asphalt production operations are provided in **Table 13**.

Table 13: Noise Criteria

Location	Quarry Operations		Quarry Operations and Asphalt Plant Production	
	6am – 10pm	6am – 10pm	10pm – 6am	10pm – 6am
	LAeq(15min)	LAeq(15min)	LAeq(15min)	LA1(1min)
<i>R1^{1,2}</i>	46	48	46	51
R2	36	40	35	48
<i>R3^{1,2}</i>	N/A	N/A	N/A	N/A
R4	36	40	39	51
R5	40	41	39	51
R6	36	40	35	48
R7	35	36	35	48
<i>R8^{1,2}</i>	N/A	N/A	N/A	N/A
<i>R9^{1,2}</i>	N/A	N/A	N/A	N/A
<i>R10^{1,2}</i>	N/A	N/A	N/A	N/A

Note 1: Noise criteria are not applicable to these receivers as per Section 4 of the NBMP.

Note 2: Either quarry owned or excluded from the assessment as per Section 4 of the NBMP.

6.2.3 Key Environmental Performance

Noise monitoring was undertaken by Muller Acoustic Consulting quarterly in 2020. The assessments identified that noise emissions generated by Jandra Quarry were in compliance with relevant statutory noise criteria specified in the Conditions of Consent on all occasions at all assessed locations.

Jandra Quarry received a Notice of Variation for EPL 2796 from the EPA on the 6th November 2019. This variation made changes to noise monitoring requirements and noise monitoring report expectations in order to better reference the contemporary *NSW Noise Policy for Industry* and reflect Jandra Quarry operations.

Noise monitoring occurred at the locations R2, R4, R5, R6, and R7 in the report period. No quarry operations occurred during the Evening period of 2020. Therefore, the results shown in **Table 14** include the noise monitoring results for the Morning Shoulder and Day periods.

There were no exceedances in the noise criteria in the 2020 report period at the receivers R2, R4, R5, R6, and R7.

Table 14: Noise Monitoring Results 2020, (Muller Acoustic Consultants, 2020).

Assessment Period	Receiver No.	Quarrying Noise Criteria	Compliance (Quarry Noise Contribution)			
		L _{Aeq} (15min)	Q1	Q2	Q3	Q4
Morning Shoulder	R2	36	<30	<35	<36	<36
	R4	36	<30	<36	<36	<36
	R5	40	<34	<30	<40	<40
	R6	36	<30	<35	<36	<36
	R7	35	<30	<35	<35	<35
Day	R2	36	<35	<35	<36	<36
	R4	36	<35	<36	<36	<36
	R5	40	<35	<35	<40	<40
	R6	36	<30	<35	<36	<36
	R7	35	<30	<35	<35	<35

Long-term Trends:

2020 was the fourth full year of quarterly noise monitoring undertaken at Jandra Quarry. During 2016 noise monitoring at Jandra Quarry was undertaken only in Quarter 4. Noise results from 2017 to 2020 have been within criteria. There were no noise complaints received during 2020.

Comparison to EIS Predictions:

2020 noise results at Jandra Quarry remained consistent with EIS predictions. The well-established vegetative buffer and distance between the operations and the sensitive receivers assists the Quarry in meeting these predictions.

6.2.4 Management Measures

Management measures relating to noise are outlined within the *Jandra Quarry Noise and Blast Management Plan* (2018). These include:

- Defined operating hours as per Schedule 2 Condition 10 of the Development Consent;
- Work restrictions during the early morning shoulder period;
- Monitoring for noise and meteorological conditions;
- Broadband reversing beepers;
- Staff and contractors inductions; and
- Controlled blasting activities.

6.2.5 Proposed Improvements

The *Jandra Quarry Noise and Blast Management Plan* (NBMP) was revised during 2020 in order to improve noise management at Jandra Quarry. This updated NBMP will be submitted to DPIE in 2021 for comment and approval. Holcim has liaised with the EPA in 2020 about updating noise monitoring to make it complaints based, rather than quarterly. This consultation will continue into 2021. If approval is granted by the EPA, Holcim will then consult with DPIE about updating the *Noise Management Plan*.

6.3 Air Quality

6.3.1 Environmental Assessment Predictions

Jandra Quarry is currently in Stage 1 of its development plan as described in the Air Quality Impact Assessment detailed within the Environmental Assessment (2014). **Table 16** and **Table 17** are the modelled dust contributions expected from Jandra Quarry. The air quality impact assessment concluded that with the implementation of existing and additional feasible management measures, all relevant air quality criteria could be met at all identified sensitive residential receivers for all stages of the quarry development.

Table 15: Summary of Contemporaneous Impact and Background – R1

Date	Highest Background ($\mu\text{g}/\text{m}^3$)	Predicted Increment ($\mu\text{g}/\text{m}^3$)	Total ($\mu\text{g}/\text{m}^3$)	Date	Background ($\mu\text{g}/\text{m}^3$)	Highest Incremental ($\mu\text{g}/\text{m}^3$)	Total ($\mu\text{g}/\text{m}^3$)
Stage 1							
22/11/2012	45.8	0.6	46.4	3/06/2013	10.8	34.3	45.1
9/01/2013	42.7	0	42.7	22/06/2013	11.6	30.2	41.8
29/06/2013	41.3	0.3	41.6	30/07/2013	13.7	25	38.7
7/11/2012	40.7	0	41.6	8/07/2013	14.2	24.9	39.1
6/10/2012	40.6	0.3	40.9	7/06/2013	9.2	22.9	32.1
Stage 2							
22/11/2012	45.8	0.3	46.1	3/06/2013	10.8	28.3	39.1
9/01/2013	42.7	0	42.7	22/06/2013	11.6	20.7	32.3

Date	Highest Background (µg/m ³)	Predicted Increment (µg/m ³)	Total (µg/m ³)	Date	Background (µg/m ³)	Highest Incremental (µg/m ³)	Total (µg/m ³)
29/06/2013	41.3	0.3	41.6	17/05/2013	10.2	19	29.2
7/11/2012	40.7	0	40.7	30/07/2013	13.7	18.9	32.6
6/10/2012	40.6	0.1	40.7	8/07/2013	14.2	16.3	30.5
Stage 3							
6/10/2012	40.6	0.2	40.8	3/06/2013	10.8	33	43.8
7/11/2012	40.7	0	40.7	22/06/2013	11.6	25.3	36
22/11/2012	45.8	0.9	46.7	25/06/2013	8.7	21.1	29.8
9/01/2013	42.7	0	42.7	8/07/2013	14.2	22.8	37
29/08/2013	41.3	0.3	41.6	30/07/2013	13.7	22.9	36.6
Criteria			50				50
Note: Top 5 shown for each Stage of operation.							

Table 16: Predicted Incremental & Cumulative Annual Average TSP Concentrations (µg/m³)

Receptor ID	Increment			Cumulative		
	Stage 1	Stage 2	Stage 3	Stage 1	Stage 2	Stage 3
Privately Owned Receptors						
R1	2.5	2.6	2.8	48.5	48.6	48.8
R2	0.3	0.3	0.4	46.3	46.3	46.4
R3	0.8	0.7	0.6	46.8	46.7	46.6
R4	0.9	0.8	0.7	46.9	46.8	46.7
R5	0.6	0.5	0.5	46.6	46.5	46.5
R6	0.4	0.4	0.5	46.4	46.4	46.5
R7	0.1	0.1	0.2	46.1	46.1	46.2
R11	0.4	0.4	0.3	46.4	46.4	46.3
R12	0.3	0.3	0.3	46.3	46.3	46.3
R13	0.3	0.3	0.3	46.3	46.3	46.3
R14	0.3	0.3	0.3	46.3	46.3	46.3
R15	0.2	0.2	0.2	46.2	46.2	46.2
R16	0.3	0.2	0.2	46.3	46.2	46.2
R17	<0.1	<0.1	0.1	<46.1	<46.1	46.1
R18	<0.1	<0.1	<0.1	<46.1	<46.1	<46.1
R19	0.4	0.4	0.5	46.4	46.4	46.5
Quarry Owned Receptors						
R8	1.3	1.1	1	47.3	47.1	47
R9	1.7	1.7	1.7	47.7	47.7	47.7
R10	1.5	1.5	4.6	47.5	47.5	50.6
Criteria					90	

Table 17: Predicted Incremental Annual Average Dust Deposition Rate (g/m²/month)

Receptor ID	Stage 1	Stage 2	Stage 3
Privately Owned Receptors			
R1	<0.1	<0.1	<0.1
R2	<0.1	<0.1	<0.1
R3	<0.1	<0.1	<0.1
R4	<0.1	<0.1	<0.1
R5	<0.1	<0.1	<0.1
R6	<0.1	<0.1	<0.1
R7	<0.1	<0.1	<0.1
R11	<0.1	<0.1	<0.1
R12	<0.1	<0.1	<0.1
R13	<0.1	<0.1	<0.1
R14	<0.1	<0.1	<0.1
R15	<0.1	<0.1	<0.1
R16	<0.1	<0.1	<0.1
R17	<0.1	<0.1	<0.1
R18	<0.1	<0.1	<0.1
R19	<0.1	<0.1	<0.1
Quarry Owned Receptors			
R8	<0.1	<0.1	<0.1

6.3.2 Approved Criteria

Air Quality monitoring is required to be undertaken in accordance with the following criteria in Schedule 3 Condition 10 of the Development Consent represented in **Table 18**, **Table 19**, and **Table 20** below.

Table 18: Long-term impact assessment criteria for particulate matter

Pollutant	Averaging Period	^d Criterion
Total suspended particulate (TSP) matter	Annual	^a 90 µg/m ³
Particulate matter <10 µm (PM ₁₀)	Annual	^a 30 µg/m ³

^a Total impact (ie incremental increase in concentrations due to the development plus background concentrations due to all other sources);

^b Incremental impact (ie incremental increase in concentration due to the development on its own);

^c Deposited dust is to be assessed as insoluble solids as defined by Standards Australia AS/NZS 3850:10.1.2003 – Methods for Sampling and Analysis of Ambient Air – Determination of Particulate Matter – Deposited Matter – Gravimetric Method

^d Excludes extraordinary events such as bushfires, prescribed burning, dust storms, sea fog, fire incidents, illegal activities or any other activity agreed by the Secretary in consultation with EPA.

Table 19: Short-term impact assessment criteria for particulate matter

Pollutant	Averaging Period	^d Criterion
Particulate matter <10 µm (PM ₁₀)	24 hour	^a 50 µg/m ³

^a Total impact (ie incremental increase in concentrations due to the development plus background concentrations due to all other sources);

^b Incremental impact (ie incremental increase in concentration due to the development on its own);

^c Deposited dust is to be assessed as insoluble solids as defined by Standards Australia AS/NZS 3850:10.1.2003 – Methods for Sampling and Analysis of Ambient Air – Determination of Particulate Matter – Deposited Matter – Gravimetric Method

^d Excludes extraordinary events such as bushfires, prescribed burning, dust storms, sea fog, fire incidents, illegal activities or any other activity agreed by the Secretary in consultation with EPA.

Table 20: Long-term impact assessment criteria for deposited dust

Pollutant	Averaging Period	Maximum increase in deposited dust level	Maximum total deposited dust level
^c Deposited dust	Annual	^b 2 g/m ² /month	^a 4 g/m ² /month

^a Total impact (ie incremental increase in concentrations due to the development plus background concentrations due to all other sources);

^b Incremental impact (ie incremental increase in concentration due to the development on its own);

^c Deposited dust is to be assessed as insoluble solids as defined by Standards Australia AS/NZS 3850:10.1.2003 – Methods for Sampling and Analysis of Ambient Air – Determination of Particulate Matter – Deposited Matter – Gravimetric Method

^d Excludes extraordinary events such as bushfires, prescribed burning, dust storms, sea fog, fire incidents, illegal activities or any other activity agreed by the Secretary in consultation with EPA.

6.3.3 Key Environmental Performance

6.3.3.1 Depositional Dust

Dust deposition monitoring has been undertaken at the Jandra Quarry throughout the 2020 reporting period with all results within the expected levels of criteria at each monitoring point. Results are shown in **Table 21**.

Table 21: Dust Monitoring (Dust Deposition) - 2020

Date Sampled	Insoluble Solids (g/m ² /month)			
	DDG1	DDG2	DDG3	DDG4
January 8, 2020	0.7	1.1	1	0.7
February 3, 2020	* 20.1	1.5	2.2	1.7
March 3, 2020	1.9	2.1	0.7	2.1
April 1, 2020	1.5	2.2	1.1	2
May 1, 2020	0.8	1.7	0.9	0.6
June 1, 2020	0.4	1	0.4	0.6
July 8, 2020	0.3	2.6	0.4	0.6
August 11, 2020	0.7	1.3	3.6	1
September 9, 2020	0.4	0.8	0.5	* 0.7
October 7, 2020	0.6	1.3	2.9	0.3
November 10, 2020	2.3	2.8	1.1	0.9
December 9, 2020	1.5	2.3	1.3	1.7
Minimum	0.3	0.8	0.4	0.3
Maximum	* 20.1	2.8	3.6	2.1
Average	1.0	1.7	1.3	1.1
Criteria Level (4 g/m²/month)	Compliant	Compliant	Compliant	Compliant

Note: * indicates contaminated sample.

All gauges returned annual averages that were below the maximum total deposited dust level of 4 g/m²/month, demonstrating consistent compliance with development consent requirements. However, on one occasion DDG1 sampled 20.1 g/m²/month which exceeds this criterion. This elevated sample was impacted by the severe bushfire season the local region of Taree and greater NSW faced in early 2020. The Holcim environmental monitoring contract was also being transferred during February which disrupted some sampling procedures and may have contributed to this high result. Therefore, this sample is excluded from the annual average as it does not adequately reflect dust conditions of the site.

Depositional dust monitoring was not completed at DDG5 as it was historically because it is not an EPL

monitoring location.

Table 22 displays the long-term depositional dust monitoring across the site. The annual average for DDG1, DDG2 and DDG4 increased in 2020 from previous years. Depositional dust levels within this reporting period remained compliant with the development consent conditions. Contaminated samples have been excluded from the long-term results.

Table 22: Depositional Dust Monitoring Summary (2016-2020)

Dust Depositional Gauge	Monitoring Summary for Annual Review Period	Monitoring Results 2020 Period	Monitoring Results 2019 Period	Monitoring Results 2018 Period	Monitoring Results 2017 Period	Monitoring Results 2016 Period
		(g/m ² /month)				
DDG1	Insoluble Solids Reporting Period Average	1.0	1.1	0.6	0.6	0.4
	Max. Insoluble Solids	2.3	4.4	1.8	1.2	0.8
	Min. Insoluble Solids	0.3	0.2	0.3	0.2	<0.1
DDG2	Insoluble Solids Reporting Period Average	1.7	1.4	0.8	0.8	0.9
	Max. Insoluble Solids	2.8	4.0	2.2	1.5	2.9
	Min. Insoluble Solids	0.8	0.2	0.1	0.3	<0.1
DDG3	Insoluble Solids Reporting Period Average	1.3	1.4	0.5	0.7	0.5
	Max. Insoluble Solids	3.6	4.6	1.4	1.3	0.7
	Min. Insoluble Solids	0.4	0.2	0.1	0.2	<0.2
DDG4	Insoluble Solids Reporting Period Average	1.1	1.0	0.5	0.6	0.7
	Max. Insoluble Solids	2.1	3.3	1.5	1.3	1.8
	Min. Insoluble Solids	0.3	0.3	0.1	0.2	0.4
DDG5	Insoluble Solids Reporting Period Average	NS	NS	2.9	2.9	1.2
	Max. Insoluble Solids	NS	NS	10.8	9.8	1.9
	Min. Insoluble Solids	NS	NS	1.5	0.9	0.2

6.3.3.2 PM₁₀ Monitoring

PM₁₀ monitoring is required to be undertaken in accordance with the criteria provided in **Table 18** and **Table 19**.

Monitoring for PM₁₀ first commenced in May 2017 and has continued since into the 2020 reporting

period. Results are provided in **Table 23**.

Table 23: PM₁₀ Monitoring – 2020

Sampling Date	PM ₁₀ (µg/m ³)	Compliance Status
January 3, 2020	24.5	Within Criteria
January 9, 2020	33.4	Within Criteria
January 15, 2020	13.0	Within Criteria
January 21, 2020	102.0	Exceeds 24hr Criterion - Bushfires
January 27, 2020	8.7	Within Criteria
February 2, 2020	26.5	Within Criteria
February 8, 2020	23.1	Within Criteria
February 14, 2020	22.9	Within Criteria
February 20, 2020	22.4	Within Criteria
February 26, 2020	58.7	Exceeds 24hr Criterion - Bushfires
March 3, 2020	46.7	Within Criteria
March 9, 2020	11.2	Within Criteria
March 15, 2020	12.4	Within Criteria
March 21, 2020	27.1	Within Criteria
March 27, 2020	Damaged Filter	
April 2, 2020	14.2	Within Criteria
April 8, 2020	7.7	Within Criteria
April 14, 2020	14.6	Within Criteria
April 20, 2020	14.9	Within Criteria
April 26, 2020	14.4	Within Criteria
May 2, 2020	6.2	Within Criteria
May 8, 2020	9.8	Within Criteria
May 13, 2020	NS	
May 14, 2020	13.2	Within Criteria
May 20, 2020	10.3	Within Criteria
May 26, 2020	14.3	Within Criteria
June 1, 2020	11.2	Within Criteria
June 7, 2020	17.3	Within Criteria
June 13, 2020	8.2	Within Criteria
June 19, 2020	6.5	Within Criteria
June 25, 2020	7.0	Within Criteria
July 1, 2020	11.4	Within Criteria
July 7, 2020	10.4	Within Criteria
July 13, 2020	7.1	Within Criteria
July 19, 2020	6.0	Within Criteria
July 25, 2020	9.0	Within Criteria
July 31, 2020	14.5	Within Criteria
August 6, 2020	8.3	Within Criteria
August 12, 2020	9.8	Within Criteria
August 18, 2020	17.2	Within Criteria
August 24, 2020	18.6	Within Criteria

Sampling Date	PM ₁₀ (µg/m ³)	Compliance Status
August 30, 2020	24.0	Within Criteria
September 5, 2020	17.0	Within Criteria
September 11, 2020	8.5	Within Criteria
September 17, 2020	12.7	Within Criteria
September 23, 2020	14.8	Within Criteria
September 29, 2020	13.1	Within Criteria
October 5, 2020	15.5	Within Criteria
October 11, 2020	9.6	Within Criteria
October 17, 2020	17.5	Within Criteria
October 23, 2020	12.6	Within Criteria
October 29, 2020	5.9	Within Criteria
November 4, 2020	10.6	Within Criteria
November 10, 2020	8.2	Within Criteria
November 16, 2020	23.9	Within Criteria
November 22, 2020	19.2	Within Criteria
November 28, 2020	26.0	Within Criteria
December 4, 2020	16.7	Within Criteria
December 10, 2020	20.1	Within Criteria
December 16, 2020	7.8	Within Criteria
December 22, 2020	24.1	Within Criteria
December 28, 2020	14.4	Within Criteria

Note: NS stands for "Not Sampled".

Particulate matter monitoring indicated that the site was generally compliant with Development Consent criteria for air quality. There were 60 valid sampling events for the report period. Exceedances of the short term criteria value of 50 µg/m³ occurred on January 21 and February 26, 2020. These samples were impacted by external air quality conditions brought on by bushfires in local and greater regional areas. Therefore, despite these samples exceeding the criteria, the site is considered compliant for these monitoring events due to impacts from extraordinary events, as well an inability to distinguish between particulate matter generated on-site or externally.

From 2017 to 2020, annual averages were within the impact assessment criteria. **Table 24** compares PM₁₀ results for the years 2017 to 2020.

Table 24: PM₁₀ Monitoring Trends

Monitoring Summary for Annual Review Period	Monitoring Results 2020 Period (µg/m ³)	Monitoring Results 2019 Period (µg/m ³)	Monitoring Results 2018 Period (µg/m ³)	Monitoring Results May – December 2017 Period (µg/m ³)
PM ₁₀ Reporting Period Average	17.3	20.0	14.2	14.4
Max. PM ₁₀	102	94	42	40
Min. PM ₁₀	5.9	0.1	2	2

Long-term Trends:

Depositional dust monitoring commenced in 2016, once management plans were approved by the DPIE. From 2016 – 2020 the annual average depositional dust levels have been within the criteria.

The annual average particulate matter levels from 2017 to 2020 have been consistently below the target criteria. Results for 2018 were very similar to the 2017 PM₁₀ results. Results in 2019 were higher than

those of 2017 and 2018. The 2020 average for PM₁₀ was lower than the 2019 average, but does not fall to 2018 and 2017 levels. The 2020 reporting period had higher maximum and minimum values compared to the previous years.

Two short term exceedances occurred for PM₁₀ on the dates 21/01/2020 and 26/02/2020.

Comparison to EIS Predictions:

The results for depositional dust and PM₁₀ were within the predicted limits of the EIS predictions.

6.3.3.3 Calculated TSP Results

TSP results have been calculated from PM₁₀ results using conventional conversion factors. This has been done for this annual review to provide a comparison of TSP levels against the criteria outlined in Table 18.

Table 25: Calculated TSP Results

Sampling Date	PM ₁₀ (µg/m ³)	Calculated TSP (µg/m ³)	Sampling Date	PM ₁₀ (µg/m ³)	Calculated TSP (µg/m ³)
January 3, 2020	24.5	58.8	July 1, 2020	11.4	27.36
January 9, 2020	33.4	80.16	July 7, 2020	10.4	24.96
January 15, 2020	13.0	31.2	July 13, 2020	7.1	17.04
January 21, 2020	102.0	244.8	July 19, 2020	6.0	14.4
January 27, 2020	8.7	20.88	July 25, 2020	9.0	21.6
February 2, 2020	26.5	63.6	July 31, 2020	14.5	34.8
February 8, 2020	23.1	55.44	August 6, 2020	8.3	19.92
February 14, 2020	22.9	54.96	August 12, 2020	9.8	23.52
February 20, 2020	22.4	53.76	August 18, 2020	17.2	41.28
February 26, 2020	58.7	140.88	August 24, 2020	18.6	44.64
March 3, 2020	46.7	112.08	August 30, 2020	24.0	57.6
March 9, 2020	11.2	26.88	September 5, 2020	17.0	40.8
March 15, 2020	12.4	29.76	September 11, 2020	8.5	20.4
March 21, 2020	27.1	65.04	September 17, 2020	12.7	30.48
March 27, 2020	Damaged Filter		September 23, 2020	14.8	35.52
April 2, 2020	14.2	34.08	September 29, 2020	13.1	31.44
April 8, 2020	7.7	18.48	October 5, 2020	15.5	37.2
April 14, 2020	14.6	35.04	October 11, 2020	9.6	23.04
April 20, 2020	14.9	35.76	October 17, 2020	17.5	42

Sampling Date	PM ₁₀ (µg/m ³)	Calculated TSP (µg/m ³)
April 26, 2020	14.4	34.56
May 2, 2020	6.2	14.88
May 8, 2020	9.8	23.52
May 13, 2020	NS	
May 14, 2020	13.2	31.68
May 20, 2020	10.3	24.72
May 26, 2020	14.3	34.32
June 1, 2020	11.2	26.88
June 7, 2020	17.3	41.52
June 13, 2020	8.2	19.68
June 19, 2020	6.5	15.6
June 25, 2020	7.0	16.8

Sampling Date	PM ₁₀ (µg/m ³)	Calculated TSP (µg/m ³)
October 23, 2020	12.6	30.24
October 29, 2020	5.9	14.16
November 4, 2020	10.6	25.44
November 10, 2020	8.2	19.68
November 16, 2020	23.9	57.36
November 22, 2020	19.2	46.08
November 28, 2020	26.0	62.4
December 4, 2020	16.7	40.08
December 10, 2020	20.1	48.24
December 16, 2020	7.8	18.72
December 22, 2020	24.1	57.84
December 28, 2020	14.4	34.56
Minimum		14.2
Average		41.5
Maximum		244.8
Result (compared to 90 µg/m³)		Compliant

The 2020 average for TSP calculated from the PM₁₀ results was 41.5 µg/m³ which is less than the annual criteria of 90 µg/m³.

6.3.4 Management Measures

Dust minimisation and control measures implemented on site include:

- The use of a watercart that follows specified procedures to achieve the most optimal dust control measures;
- Sprays throughout the plant;
- Speed limits across the site;
- Dust covers in place across the screening building;
- Inspections;
- Defined operating hours;

- Monitoring for air quality and meteorological conditions; and
- Training of staff and contractors.

6.3.5 Proposed Improvements

The *Jandra Quarry Air Quality Management Plan* was progressively revised during 2020 to incorporate improvement actions from the 2019 IEA. This is to be submitted to DPIE for approval in the next report period.

An additional proposed dust minimalization measure for 2021 is the installation of sprinkler systems on the primary haul road.

Jandra Quarry is investigating future monitoring of TSP in order to ensure compliance with the Development Consent.

6.4 Blasting

6.4.1 Environmental Assessment Predictions

The Noise and Blasting Impact Assessment (SLR, 2014) identified the Maximum Instantaneous Charge (MIC) allows the ANZEC Guidelines for human comfort to be met, at the closest private (non-Holcim owned) residences, during all stages of the quarry development.

The design of blasts will then be optimised to limit the possibility of EPA criteria exceedances, when blast locations are closer to residences and preferred blast designs can be used for blast locations with adequate distances to residences.

6.4.2 Approved Criteria

The site undertook blasts in 2020 in accordance with the criteria listed in **Table 26**. This criteria is taken from the blasting criteria in **Table 4** of Schedule 3 Condition 5 of the Development Consent.

Table 26: Blasting Criteria for Jandra Quarry

Location	Airblast overpressure (dB(Lin Peak))	Ground vibration (mm/s)	Allowable exceedance
Any residence on privately owned land, or any public infrastructure	120	10	0%
	115	5	5% of the total number of blasts over a period of 12 months

6.4.3 Key Environmental Performance

Results of blasting undertaken in 2020 are shown in **Table 27**.

Table 27: 2020 Blast Monitoring Results for Jandra Quarry

Blast Number	Date	Result	
		Vibration (mm/s) (Criteria Limit 5 mm/s)	Overpressure (dBL) (Criteria Limit 115 dBL)
1	13-01-2020	DNT	DNT
2	03-02-2020	2.0	110
3	05-03-2020	DNT	DNT
4	16-03-2020	1.1	103.8
5	07-05-2020	1.3	93.9
6	25-05-2020	DNT	DNT
7	09-06-2020	DNT	DNT
8	08-07-2020	DNT	DNT
9	21-08-2020	2.4	111.9
10	08-09-2020	DNT	DNT
11	14-10-2020	0.6	103.1

DNT – Did not trigger

All blasts in 2020 were within the Development Consent criteria.

Sensitive receivers near the quarry are notified prior to blasting as per the *Jandra Quarry Noise and Blast Management Plan*. This process is managed by the weighbridge staff who send a text message to the tenants the day before a planned blast is undertaken.

Long-term Trends:

From 2015 – 2020 the blasting levels have been within the Development Consent criteria.

Table 28: Longterm Blasting Trends

Year	Number of Blasts	Max. Overpressure (dBL)	Average Overpressure (dBL)	Max Vibration (mm/s)	Average Vibration (mm/s)
2015	10	114.9	109.8	2.48	1.58
2016	9	116	107.8	1.3	0.84
2017	16	113.2	105.7	3.1	1.02
2018	11	111.0	99.8	1.52	0.85
2019	10	109.9	86.2	4.3	1.3
2020	11	111.9	104.5	2.4	1.5

Comparison to EIS Predictions:

The results for blasting were within the predicted limits of the EIS predictions.

6.4.4 Management Measures

Management measures relating to blasting are outlined within the *Jandra Quarry Noise and Blast Management Plan*, which includes a Drill and Blast Procedure. This procedure outlines the key steps of the blasting process including design, drilling, loading and firing.

6.4.5 Proposed Improvement

No improvements to blasting practices are required. However, revisions were made to the *Jandra Quarry Noise and Blast Management Plan* (NBMP) during this reporting period and the NBMP will be updated in 2021.

6.5 Traffic Management

6.5.1 Environmental Assessment Predictions

Section 3.5.6 of the Environmental Assessment (2014) stated that at peak demand, the maximum number of heavy vehicles leaving the site to deliver product to customers would reach approximately 12 (24 truck movements) per hour. This has been calculated based on a minimum loading time of approximately 5 minutes per truck. It is unlikely that, on a typical day, these peaks in demand will occur for more than a few hours at a time. A detailed assessment of traffic and transport is outlined within Section 6.2 of the Environmental Assessment (2014).

6.5.2 Approved Criteria

The site is required to operate traffic and manage transport through compliance with the requirements of the conditions listed below:

Pacific Highway Intersection

31. The Applicant shall maintain the intersection of the Pacific Highway and the Jandra Quarry Access Road, for the duration of product transport from the site, to the satisfaction of the RMS.
32. The Applicant shall install and subsequently maintain street lighting at the intersection of the Pacific Highway and the Jandra Quarry Access Road, to the satisfaction of the RMS, prior to transporting quarry products from the site outside of the hours 7 am to 6 pm. Any works affecting the Pacific Highway must not take place without the prior approval of the RMS.

Monitoring of Product Transport

33. The Applicant shall keep accurate records of:
 - (a) the amount of quarry products, including asphalt, transported from the site (calendar month and year);
 - (b) the number of laden vehicle movements to and from the site (day, calendar month and year); and
 - (c) publish these records on its website at the end of each calendar quarter.

6.5.3 Key Environmental Performance

The site has maintained the intersection at the Pacific Highway and Quarry Access Road in accordance with the conditions in **Section 6.4.2**. No impacts to the intersection have been identified during the reporting period.

The site has not operated outside the hours of 7am and 6pm. Holcim has installed solar lighting at the intersection during 2019 in accordance with Schedule 3, Condition 32 of the consent, see **Photo 1**.



Photo 1: Solar lighting installed at intersection in accordance with Schedule 3 Condition 32.

All truck movements and quarry product volumes are published on the Holcim (Jandra Quarry) webpage in accordance with Schedule 3, Condition 33 of the consent. A summary of transport data for 2020 is appended to this Annual Review as **Appendix 1**.

In summary:

- There were 10,906 truck movements; and
- There were 328,114 tonnes of material taken offsite as product.

Truck movements have decreased since 2019, when there were 13,554 truck movements. The amount of material produced has also decreased this report period, with 403,317 tonnes produced in 2019.

Management Measures

Management measures relating to traffic include:

- Defined haulage times;
- Covered loads leaving site;
- Defined haulage limits; and
- Trained transport operators.

6.5.4 Proposed Improvements

There are no proposed improvements relating to transport.

6.6 Biodiversity and Bushfires

6.6.1 Environmental Assessment Predictions

The Environmental Assessment (2014) assessed the biodiversity impacts associated with clearing an additional 1.284 hectares of native vegetation. The Flora and Fauna Assessment accompanying the EIS stated: *“With the implementation of flora and fauna management measures included in the Flora and Fauna Management Plan and this Environmental Assessment (2014), (depending on the outcome of the targeted surveys for the Eastern Underground Orchid) the proposed modification would not result in any significant impacts on biodiversity on site and in surrounding bushland”*.

6.6.2 Approved Criteria

There are no specific criteria relating to biodiversity within the Development Consent. Schedule 3 Condition 25 outlines the requirement to complete a *Biodiversity and Rehabilitation Management Plan* (BRMP). Jandra has been revising the previous 2018 BRMP during 2020 and expects the updated document be approved in 2021.

6.6.3 Key Environmental Performance

Jandra performed rehabilitation in 2020 on land that was cleared previous of the report period. This rehabilitation was done in line with the *Biodiversity and Rehabilitation Management Plan*.

Major bushfires occurred in the vicinity of Jandra Quarry during the 2019 report period, as can be seen in **Photo 2**. Areas of land within the buffer lands, rehabilitation areas on overburden emplacement and the pit, nest boxes located to the northwest and a Jandra Quarry shed were burnt during this event.

No bushfires occurred in this reporting period. However, recovery from the 2019 bushfire continued into 2020 including the impacted buffer land. Recovery included activities such as the removal of extra waste from site and conducting a reassessment of the progress of rehabilitation areas.

Weed spraying targeting Lantana (*Lantana* sp.) and Tobacco weed (*Solanum mauritianum*) were completed during the reporting period. Weed spraying was generally performed twice per month in this reporting period.

No nest box monitoring was completed in the reporting period, due to the nest boxes being damaged

and destroyed in the 2019 bushfire. The nest boxes were replaced in 2020. Nest box monitoring will continue in the next report period.

6.6.4 Comparison to EIS Predictions

There were limited impacts to biodiversity within the Annual Review period. This is consistent with the EIS predictions.

6.6.5 Management Measures

Management measures relating to biodiversity are outlined within the *Jandra Quarry Biodiversity Management Plan*. These include:

- Weed and feral animal management;
- Pre clearance surveys and tree felling procedures;
- Salvaging of habitat resources;
- Nest box installation;
- Bushfire management; and
- Rehabilitation and biodiversity offset area monitoring.

6.6.6 Proposed Improvements

Weed spraying will continue at the site during the next reporting period as weeds continue to regnerate.

New nest boxes will be installed in the offset area in the next reporting period to replace those lost in the 2019 bushfire.

No feral animal sightings have been reported at Jandra Quarry in this reporting period or in those previous. Consequently, feral animal control programs will be initiated on an as-required basis in 2021.

An ecological survey of the site was performed by Kleinfelder in late 2020. The findings of this report had not been published at the time of writing this Annual Review but will contribute to future management measures including those regarding biodiversity, bushfire recovery, and feral animal and weed management.

The *Jandra Quarry Biodiversity and Rehabilitation Management Plan* was progressively revised in 2020 in order for its submission to and approval by the DPIE in 2021.

6.7 Heritage

6.7.1 Environmental Assessment Predictions

An extensive AHIMS search was conducted on 5 February 2014 for the purposes of an Aboriginal Heritage Due Diligence Assessment for the Environmental Assessment (2014). The search covered an area of approximately 10 square kilometres, which encompassed the disturbance area of the new heavy vehicle access road and expansion of the existing finished product stockpile area. Seven recorded sites are within the Jandra Quarry Development Consent boundary. All seven of these sites were determined to be of low or medium significance. No Aboriginal archaeological sites registered on AHIMS are located within the disturbance area of the new heavy vehicle access road and expansion of the existing finished product stockpile area. There are no predicted detrimental impacts to Aboriginal and cultural heritage.

6.7.2 Approved Criteria

There are no specific criteria relating to Aboriginal and Cultural Heritage within the Development Consent. Schedule 3 Condition 29 outlines the requirement to prepare an *Aboriginal Cultural Heritage Management Plan*. The *Aboriginal Cultural Heritage Management Plan* was revised in 2020, with this sent to DPIE for comment and approval.

6.7.3 Key Environmental Performance

There were no issues relating to Aboriginal and Cultural Heritage in 2020. No clearing occurred in the report period and there were no disturbances to Aboriginal or Cultural Heritage sites.

6.7.4 Management Measures

Management measures relating to heritage are outlined within the *Jandra Quarry Aboriginal Cultural Heritage Management Plan*. These include:

- Consultation with Aboriginal stakeholders during the preparation of the *Jandra Quarry Aboriginal Cultural Heritage Management Plan*;
- Records of known sites of Aboriginal heritage significance;
- The Quarry Manager or delegate will undertake monthly inspections of the known Aboriginal and cultural heritage sites;
- Training of staff and contractors; and
- Procedure for impacts of unexpected finds.

6.7.5 Proposed Improvements

The *Jandra Quarry Aboriginal Cultural Heritage Management Plan* was revised in 2020. Jandra Quarry is currently waiting on any comments from DPIE before the plan is approved.

No other improvements are proposed to be implemented in 2021.

6.8 Waste Minimisation

6.8.1 Key Environmental Performance

Waste management at Jandra continued in 2020 with this including recycling and general waste. There was some increased general waste based on the impact of the bushfires.

6.8.2 Management Measures

Wherever possible, Jandra Quarry implements initiatives to minimise the waste generated from our operations. General waste is minimised and all oil, cardboard, paper and steel is sorted on site and sent to recycling facilities in the region. This is significantly reducing the amount of waste going to landfill.

Tyres from machines are used for traffic management, garden edging and signage stabilisers. This reduces the use of raw materials as well as diverting rubber from landfill.

General waste and recycling is stored in separated into different streams and stored in a separate 3m³ bin. These bins are collected fortnightly.

6.8.3 Proposed Improvements

There are no proposed improvements to waste management during the Annual Review period.

6.9 Summary of Environmental Performance

A summary of the performance of environmental management measures and sampling results are detailed in **Table 29**.

Table 29: Summary of Performance

Aspect	Approval criteria/EIS prediction	Performance during the reporting period	Trend/key management implications	Implemented/proposed management actions
Noise	EIS predictions are all below development consent criteria.	Quarterly monitoring has met the Development Consent Criteria.	Meets criteria.	None required.
Air quality	EIS predictions are all below development consent criteria.	Dust deposition results are within criteria of EPL, EIS and Development Consent. PM ₁₀ exceedances of short-term criteria occurred on the 21 January and 26 February 2020. However, these results are not non-compliances due to external air quality factors.	Dust deposition has been consistent with EIS and previous Annual Review reporting. PM ₁₀ short-term exceedances occurred in 2020, however the site is considered to be compliant with the Development Consent. Results consistent with previous annual review results.	Ensure air quality management measures are appropriately and punctually undertaken.
Blasting	EIS predictions are all below development consent criteria.	All blasts in 2020 were within the Development Consent criteria.	Blast results continue to remain within approved criteria and EIS predictions.	None required.
Water Management	EIS predictions are all below development consent criteria.	No discharges in 2020 triggered surface water monitoring.	No monitored discharges occurred for 2020 and 2019.	None required.
Biodiversity	2014 EA Mod – The proposed modification would not result in any significant impacts on biodiversity on site and in surrounding bushland.	No clearing was undertaken in 2020.	Biodiversity and rehabilitation monitoring was undertaken in 2020 to assess the recovery of rehabilitation affected by 2019 bushfires.	Completion of monitoring in 2021 as per the Biodiversity Management Plan.
Heritage	No predictions.	No impacts.	Continued to be no impacts.	None required.

7 WATER MANAGEMENT

7.1 EIS Predictions

The predictive modelling within the Environmental Assessment (July 2014) pertains to the water balance for Jandra Quarry (**Table 30**). During the reporting period, the water available on site was all that was required for operations providing Holcim with the confidence in the water balance figures. There are no other predictive figures for surface water management.

Table 30: Water Balance Modelling from Surface Water Management Assessment (2014)

Summary Results	Current			Stage 1		
	Dry Year	Mean Year	Wet Year	Dry Year	Mean Year	Wet Year
Total Runoff (ML/yr)	35	98	165	34	97	164
Total Demands (ML/yr) ¹	25.60	24.88	24.11	36.60	35.64	34.63
Stormwater Supplied (ML/yr) ²	25.46	24.88	24.11	32.13	35.45	34.63
Total Storage Top Up (ML/yr)	0.13	0.00	0.00	4.46	0.19	0.00
% Demand Met	99%	100%	100%	88%	99%	100%
Spill Volume (ML/yr)	4	68	131	3	57	112

Summary Results	Stage 2			Stage 3		
	Dry Year	Mean Year	Wet Year	Dry Year	Mean Year	Wet Year
Total Runoff (ML/yr)	39	110	186	45	129	219
Total Demands (ML/yr)	36.42	35.47	34.46	34.60	33.74	32.82
Stormwater Supplied (ML/yr)	32.32	35.34	34.46	31.85	33.74	32.82
Total Storage Top Up (ML/yr)	4.09	0.13	0.00	2.75	0.00	0.00
% Demand Met	89%	100%	100%	92%	100%	100%
Spill Volume (ML/yr)	4	70	139	9	90	174

The Environmental Assessment (2014) stated “with the implementation of surface water management measures included in the *Soil and Water Management Plan*, the EPL and this EA, the proposed modification would not result in any significant impacts on the downstream environments.”

7.2 Approved Criteria

The site is required to monitor and record discharge events from the Main Dam offsite in accordance with the requirements listed in **Table 31** taken from the EPL.

Table 31: EPL Discharge Monitoring Requirements

POINT 1

Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile concentration limit
pH	pH				6.5-8.5
Total suspended solids	milligrams per litre				50

Water and land

EPA Identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
1	Discharge quality monitoring	Discharge quality monitoring	Discharge from final sediment dam as shown in the CSR Readymix Site Photo - Jandra Quarry Water Monitoring Location Figure 1 provided to the EPA 13 May 2002

7.3 Water Use and Storage

Effective control of erosion and sediment movement at the site is currently achieved via the following measures:

- Sedimentation basins;
- Wash off water collection and primary treatment systems;
- Minimisation of disturbed areas;
- Diversion of clean water from undisturbed areas around working areas;
- Temporary erosion and sediment controls prior to commencement of topsoil and overburden removal;
- Sequential clearing and rehabilitation of the quarry as extraction of material proceeds; and
- Twice yearly maintenance of erosion and sediment control structures to ensure their efficiency.

In 2019 a kerbside drain and guttering was installed to harvest water into the wheel wash sump from the main Jandra Quarry driveway, as is shown in **Photo 2**.



Photo 2: Kerbside drain and gutter installed at the main Jandra Quarry driveway

7.4 Surface Water Results

Jandra Quarry began a revision of their *Soil and Water Management Plan* (SWMP) in 2020. This SWMP outlines the EPL 2796 requirement to complete monitoring of discharge events at the final sediment dam. Monthly water monitoring was discontinued in July 2018 and will only be completed if there is a discharge event. Three discharge events occurred in this 2020 report period. These occurred on the 10 February, 13 February, and 27 March 2020. These events were within the permissible criteria and, as such, were not monitored. Therefore, there are no surface water monitoring results presented in this Annual Review.

Longterm Trends:

The results from 2015 to 2018 were reviewed for surface water in the 2018 Annual Review. Results were similar over a long period with slightly alkaline pH and a large variability in TSS results. No discharge events occurred in 2019. There was no 2020 monitoring as this requirement was not triggered by rainfall levels. Jandra Quarry has a system in place at the site where samples are obtained prior to a discharge event, with the goal of containing water onsite if the water quality parameters are not within the EPL requirements.

Comparison to EIS Predictions:

The Environmental Assessment (2014) stated the increase in scale of the operations would not result in any significant impacts on the downstream environments. With there being no discharge events that triggered the monitoring requirements during the Annual Review period and the site operating as per the SWMP, Holcim consider this prediction has been met.

7.5 Groundwater Results

Jandra Quarry is unlikely to experience groundwater inflow and highly unlikely to impact groundwater (*Soil and Water Management Plan*, 2015). No groundwater monitoring program was implemented at Jandra during the Annual Review period. Some sampling was done at several bores in February 2020 as precautionary monitoring.

7.5.1 Water Take

There is no groundwater extraction licences at Jandra Quarry, therefore there has been no water take.

8 REHABILITATION AND LANDSCAPE MANAGEMENT

8.1 Rehabilitation Performance during the Reporting Period

Holcim pursued issues related to *Biodiversity and Rehabilitation Management Plan* in this report period in order to fully comply with DA 213-10-99 (Mod 5) Schedule 3 Condition 27. The Rehabilitation and Conservation Bond value was established in consultation with external advisors and DPIE as per the requirements of Schedule 3 Condition 27. Instruments regarding the security of the Biodiversity Offset Area and its continued active management by Holcim are in discussion with authorities and not get endorsed by DPIE. The resolution of this issue will continue in 2021.

A summary of rehabilitation at Jandra Quarry is outlined in **Table 32**.

Table 32: Rehabilitation Performance

Guideline Requirement	Site Comment
Extent of the operations and rehabilitation at completion of the reporting period	<p>Rehabilitation of benches continued during the Annual Review period as per the <i>Biodiversity and Rehabilitation Management Plan</i>. Approximately 0.15 ha of rehabilitation preparation (placing of overburden and topsoil) was completed on a bench in the south-west of site.</p> <p>Quarry benches are landscaped and vegetated using native tree and understorey species, to minimise the visual impact of the quarry.</p> <p>The rehabilitation process includes placing approximately 1 metre of overburden on benches, followed by 300mm of topsoil. Tubestocking is the preferred rehabilitation method on benches. Hydromulching was done on some rehabilitation areas.</p> <p>A Biodiversity Indicator and Reporting System (BIRS) Assessment was conducted in 2020.</p> <p>Replanting in burnt-out areas also occurred.</p>
Agreed post-rehabilitation land use	<p>The <i>Biodiversity and Rehabilitation Management Plan</i> outlines the proposed rehabilitation at the site.</p> <p>The proposed final land use is native woodland.</p>
Key rehabilitation performance indicators	<p>Key performance indicators are outlined within the <i>Biodiversity and Rehabilitation Management Plan</i>.</p> <p>Rehabilitation inspections are completed by Holcim.</p>
Renovation or removal of buildings	<p>Waste resulting from the 2019 bushfire, such as material from a burnt shed, was removed from site and taken to a licenced waste facility.</p>
Any other Rehabilitation including: <ul style="list-style-type: none"> • Exploration activities; • Infrastructure; • Dams; and • The installation or maintenance of fences, bunds and any other works. 	<p>No additional new rehabilitation of exploration, infrastructure or dams undertaken during the Annual Review period. There was some replanting of burnt out areas in 2020.</p>
Any rehabilitation areas which have received formal sign off from the Resources Regulator	None.
Variations to activities undertaken to those proposed (including why there were variations and whether Resource Regulator was notified)	<p>Rehabilitation was completed as per the <i>Biodiversity and Rehabilitation Management Plan</i>. No rehabilitation was completed in 2020.</p>
Outcomes of trials, research projects and other initiatives	No trials.

Guideline Requirement	Site Comment
Key issues that may affect successful rehabilitation	<p>There are several potential issues including availability of material, seed stock, climatic events and rehabilitation methodology.</p> <p>As mentioned in Section 6.5.3 a major bushfire event occurred in 2019 which resulted in all rehabilitation areas being burnt. Assessment of the recovery of these areas has been undertaken through inspection by drone footage and foot. Furthermore, ecological surveys were conducted by Kleinfelder in the report period. The findings of these inspections and reports are informing the progressive rehabilitation of Jandra Quarry.</p>

8.2 Summary of Current Rehabilitation and Disturbance

A summary of the rehabilitation and disturbance status is outlined in **Table 33**.

Table 33: Rehabilitation and Disturbance Status

Quarry Area Type	2018 Annual Review Period	2019 Annual Review Period (ha)	2020 Annual Review Period (ha)*	Predicted 2021 Review Period (ha)
A. Total Quarry Footprint ₁	21	25.7	25.1	25.1
B. Total Active Disturbance ₂	19.1	22.9	19.2	17.7
C. Land Being Prepared for Rehabilitation ₃	0	0	0	0
D. Land Under Active Rehabilitation ₄	1.9	2.8	5.9	Additional 1.5 ha (total 7.4 ha)
E. Completed Rehabilitations ₅	0	0	0	0

Note: *areas updated based on a review of GIS.

- 1 *Total disturbance and rehabilitation.*
- 2 *Total disturbance within the Development Consent boundary*
- 3 *Rehabilitation that is being shaped in a phase of decommissioning, landform establishment and growth medium development.*
- 4 *rehabilitation under a phase of ecosystem and land use establishment or ecosystem and land use sustainability*
- 5 *This refers to rehabilitation that has been signed off from the Resources Regulator.*

During 2020 an inactive bench on the south western corner of the site was prepared as a rehabilitation area with the application of overburden and topsoil over 0.15 ha.

Rehabilitation and nest box monitoring are required under the Development Consent and the BRMP. Rehabilitation monitoring was undertaken in 2020 in the form of inspections done by Holcim staff on a quarterly basis. Biodiversity Offset Area monitoring was undertaken in 2020. Those rehabilitation areas impacted by the 2019 bushfire were inspected routinely to assess recovery in 2020.

The nest boxes at Jandra were destroyed or significantly destroyed as a result of the 2019 bushfire. Consequently new nest boxes were installed during 2020. Monitoring of these new nest boxes was undertaken by an ecologist in Spring 2020.

8.3 Actions for the next Reporting Period

The DPIE 2015 Annual Review Guidelines require the Annual Review to outline the rehabilitation actions proposed during the next reporting period. These actions are detailed in **Table 34**.

Table 34: Rehabilitation and Closure Actions for the Next Reporting Period

Requirement	Site Comment
Describe the steps to be undertaken to progress agreement during next reporting period, where final rehabilitation outcomes have not yet been agreed between stakeholders	Rehabilitation to continue as per the <i>Biodiversity and Rehabilitation Management Plan</i> .
Outline proposed rehabilitation trials, research projects and other initiatives to be undertaken during next reporting period	No proposed rehabilitation trials.
Summary of rehabilitation activities proposed for next report period	Rehabilitation preparation will begin on bench RL50. Rehabilitation preparation will continue on the northern side of this area in 2021 (Figure 3).

The rehabilitation and disturbance areas at Jandra Quarry are outlined in **Figure 3**.



Figure 3: Jandra Quarry Rehabilitation and Disturbance (2020 and 2021)

9 COMMUNITY

9.1 Community Engagement Activities

Holcim has maintained community engagement measures during the reporting period by undertaking the following activities in accordance with Schedule 5, Condition 7 and 10 of the Development Consent:

- Maintenance of a website (containing publicly available documents);
- A telephone number, email and postal address (on the website) for community complaints and feedback;
- A copy of the Complaints Register is maintained on the company website; and
- All documents and items displayed on the website are regularly updated by Holcim staff.

9.2 Community Contributions

No community contributions were made by Jandra Quarry in 2020.

9.3 Complaints

A review of the Holcim Safety, Health & Environment (SHE) reporting database (INX) did not identify any complaints from external stakeholders during the 2020 reporting period. This was also the case in 2018 and 2019. The quarterly reports for the complaints register are available to the public on the Jandra Quarry webpage.

Information to contact the site or to make a complaint is also available on this webpage. The link to this webpage is:

<http://www.holcim.com.au/about-us/community-link/jandra-quarry-possum-brush-taree-nsw.html>

10 INDEPENDENT AUDIT

The site has previously undertaken Independent Environmental Audits (IEA) in 2016 and 2019 which occurred within the three-year timeframe outlined in the Development Consent. The 2019 IEA site inspection occurred on Tuesday 17th September 2019 and the final report was provided to DPIE in December 2019. All actions raised in the 2019 IEA have been undertaken.

The next IEA is due in 2022.

11 INCIDENTS AND NON-COMPLIANCE

Table 35 summarises the incidents and non-compliances at Jandra in 2020.

Table 35: Summary of Incidents and Non Compliances

Date	Incident/Non-Compliance	Action/Comment
Prior to this reporting period	Incident	No pre-clearance survey performed in 2019 due to the planned clearing not being performed. Notification was given to DPIE in late 2020 due to detection of incident through internal due diligence. This incident occurred in 2019 and has been resolved by Holcim and is therefore excluded from the discussions in this annual review, including the 2020 Compliance Summary in Table 3 .
Throughout reporting period	Non-compliance	Schedule 3 Condition 27 – Rehabilitation and Conservation Bond Non-compliance due to the arrangements to protect the Biodiversity Offset Area in perpetuity in ongoing discussion with DPIE and not yet endorsed by DPIE.

12 ACTIVITIES TO BE COMPLETED IN THE NEXT REPORTING PERIOD

Holcim staff will undertake the following works and improvement measures and projects in 2021 to ensure compliance with the consent and to ensure that effective environmental management controls are operating in accordance with the requirements of the Consent.

Table 36: Proposed Improvement Measures - 2021

Improvement Measure	Activities
Progressive Rehabilitation	The site will continue to progressively rehabilitate available areas.
Management of bushfire areas	Continue inspections and assessment of the recovery of those rehabilitation areas impacted by November 2019 bushfires.
Desilting of the sites main process pond/sediment Basin	The site will continue to manage sediment control structures through inspections and desilting of ponds. Tailings dams will be cleaned on an appropriate schedule.
Biodiversity	<p>Weed spraying will continue at the site during the next reporting period.</p> <p>Inspection of nest boxes will be undertaken in the next reporting period.</p> <p>A feral animal assessment will be undertaken in the next reporting period to determine if there is a need for managing feral animals in the rehabilitation area and Biodiversity Offset Area, and the development of a feral animal control program.</p>

13 REFERENCES

Department of Planning and Environment (2015) Jandra Quarry Development Consent (DA 213-10-99)
– Notice of Modification

SLR (2020) Jandra Quarry Annual Review 2019;

Holcim (2018) Jandra Quarry Annual Review 2017;

Holcim (2015) Environmental Management Plans;

Holcim (2014) Jandra Quarry Environmental Assessment – Intensification in Production; and

Office of Environment and Heritage – Environment Protection Licence 2796.

14 APPENDICES

APPENDIX 1

TRANSPORT SUMMARY



JANDRA QUARRY TRANSPORT 2020

2020	January		February		March		April		May		June		July		August		September		October		November		December	
	Truck Movements	Volume (T)	Truck Movements	Volume (T)	Truck Movements	Volume (T)	Truck Movements	Volume (T)	Truck Movements	Volume (T)	Truck Movements	Volume (T)	Truck Movements	Volume (T)	Truck Movements	Volume (T)	Truck Movements	Volume (T)	Truck Movements	Volume (T)	Truck Movements	Volume (T)	Truck Movements	Volume (T)
Day 1		0	7	267.86		0	31	772.86	25	695.36	27	916.5	36	1114.02		0	53	1514.75	38	1241.79		0	105	3343.13
Day 2		0		0	63	1930.24	32	1122.54		0	49	1558.46	41	1107.84		0	76	2453.6	34	1056.86	39	1112.3	74	2168.58
Day 3		0	39	1239.01	68	2048.94	36	1141.92		0	46	1585.74	48	1396.62	35	1063.44	90	2835.29		0	38	1167.42	83	2097.02
Day 4		0	56	1766.99	49	1488.08		0	39	1257.38	41	1156.48		0	83	2347.45	37	1165.71		0	76	1508.19	87	2390.47
Day 5		0	49	1596.96	17	557.86		0	18	618.98	42	1082.62		0	60	1862.43		0		0	58	1295.94		0
Day 6	9	152.24	45	1268.48	24	785.04	29	1019.4	34	1069.02		0	52	1504.66	76	2451.6		0	44	1317.39	47	1383.39		0
Day 7	12	340.32	8	217.4		0	40	1309.5	19	620.82		0	51	1396.78	34	949.74	49	1695.81	39	1179.45		0	97	3139.65
Day 8	21	652.68		0		0	31	1089.81	38	1314.26		0	57	1388.58		0	56	1532.53	29	932.56		0	122	3879.87
Day 9	21	518.04		0	37	1235.54	39	1134.92		0	36	1020.1	50	1303.9		0	41	1183.23	47	1641.45	95	2262.51	120	4019.48
Day 10	20	566.08	2	37.74	33	1163.57		0		0	7	243.18	52	1674.37	26	702.2	20	703.7		0	71	2124.24	107	3545.61
Day 11		0	27	560.22	27	828.57		0	39	1342.62	19	490.14		0	29	712.99	33	1053.87		0	82	2766.3	78	2723.01
Day 12		0	23	828.86	35	1089.99		0	33	1060.42	15	496.98		0	26	684.1		0	44	1296.85	77	2570.6	4	100.24
Day 13	25	763.73	18	593.5	18	638.7		0	37	1189.88		0	17	531.58	43	1223.54		0	53	1345.29	98	2655.79		0
Day 14	22	652.48	24	820.54		0	25	690.62	26	657.6		0	16	476.87	49	1422.82	35	1048.74	39	1324.38		0	69	2209.54
Day 15	19	662.72		0		0	25	734.68	24	579.32	26	869.7	19	484.36		0	48	1485.36	86	2535.96		0	28	899.8
Day 16	23	801.06		0	25	807.38	25	801.74		0	48	1402.72	25	633.56		0	63	1919.07	60	1980.37	46	1217.21	24	643.22
Day 17	20	660.6	19	705.72	29	963.2	40	955.87		0	50	1467.24	20	593.8	34	1041.09	53	1623.23		0	68	1757.79	25	701.12
Day 18		0	30	925.44	35	1197.32		0	25	905.58	47	1379.14		0	70	1884.81	34	1072.28		0	100	2889.06	21	648.99
Day 19		0	37	1204.84	36	1068.62		0	25	684.64	59	1699.72		0	60	1681.61		0	22	743.52	103	3374.36		0
Day 20	43	1393.74	31	938.88	54	1755	32	857.6	23	783.74	4	143.7	36	1028.4	61	1849.63		0	50	1276.38	88	2748.46		0
Day 21	39	1229.4	49	1499.18	19	615.97	44	1116.73	32	942.96		0	33	1082.15	56	1695.49	49	1594.67	46	1389.54	32	1098.4	27	768.72
Day 22	53	1605.26		0		0	28	795.6	16	538.14	67	1857.44	50	1621.42	2	65.1	54	1659.9	78	1830.35		0	24	751
Day 23	63	1827.44		0	51	1674.64	32	1033		0	60	1673.7	65	1962.38		0	71	2511.46	51	1017.87	124	3136.18		0
Day 24	14	441.62	27	862.62	41	1306.98	36	955.62		0	76	1743.17	42	1335.92	45	1420.28	81	2503.63		0	79	2090.58		0
Day 25		0	77	2436.92	29	987.5		0	28	708.86	45	1239.14		0	63	2040.75	53	1572.61		0	121	3026.54		0
Day 26		0	80	2287.36	32	837.34		0	18	535.64	37	1100.72		0	64	1678.58		0	31	881.3	70	2115.83		0
Day 27		0	72	2140.04	25	710.58	25	714.56	29	794.6		0	22	754.28	53	1698.66		0	22	615.22	79	2172.74		0
Day 28	25	767.18	43	1358.58		0	24	843.64	36	971.3		0	34	700.06	52	1648.01	50	1422.47	40	788.43		0		0
Day 29	29	816.76	1	32.38		0	16	510.3	34	994.9	37	1245.76	20	505.06		0	43	1383.12	17	399.43		0		0
Day 30	44	1487.12		0	24	587.82	25	772.05		0	52	1236.2	42	2193.43		0	57	1842.68	36	886.87	15	3205.82		0
Day 31	81	2322.43		0	26	680.94		0		0		0	29	690.36	28	884.3		0		0		0		0
TOTAL	583	17660.90	764	23589.52	797	24959.82	615	18372.96	598	18266.02	890	25608.55	857	25480.40	1049	31008.62	1146	35777.71	906	25681.26	1606	47679.65	1095	34029.45
TOTAL VOLUME	328,114 T (Q1 = 62,210 T Q2 = 62,247 T Q3 = 92,267 T Q4 = 107,390 T)																							
TOTAL TRUCK MOVEMENTS	10,906																							

APPENDIX 2
QUARTERLY NOISE MONITORING
REPORTS

Noise Monitoring Assessment

Jandra Quarry, Possum Brush, NSW
Quarter 1 Ending March 2020.

Document Information

Noise Monitoring Assessment

Jandra Quarry, Possum Brush, NSW

Quarter 1 Ending March 2020

Prepared for: Holcim (Australia) Pty Ltd

Prepared by: Muller Acoustic Consulting Pty Ltd

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Document ID	Status	Date	Prepared By	Signed	Reviewed By	Signed
MAC180611-04RP7	Final	9 March 2020	Nicholas Shipman		Oliver Muller	

DISCLAIMER

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1 Introduction

Muller Acoustic Consulting Pty Ltd (MAC) has been commissioned by Holcim (Australia) Pty Ltd (Holcim) to complete a Noise Monitoring Assessment (NMA) for the quarterly period ending March 2020 for Jandra Quarry (the 'quarry'), Possum Brush, NSW.

Noise monitoring has been conducted in accordance with the Jandra Noise and Blast Management Plan and in accordance with additional clarifications and requirements specified by the EPA in the recent variation (6 November 2019) of the EPL2796 (EPL).

The following variations have been made to the licence:

- Amendment of condition M8.1 to clarify the requirement to undertake noise monitoring during quarrying operations and to update reference to the contemporary NSW Noise Policy for Industry;
- Amendment of condition M8.2 referencing the contemporary NSW Noise Policy for Industry; and
- Amendment to Condition R4.1 requires that noise monitoring reports contain details of all quarrying activities that were occurring during each of the monitoring periods.

Specifically, the amendment to M8.1 is reproduced below.

M8 Noise monitoring

M8.1 *To assess compliance with the noise limits of this licence, attend noise monitoring must be undertaken in accordance with the conditions of this licence and:*

- a) during a period of normal quarry operations;*
- b) at each one of the noise monitoring locations listed in the noise limits table of this licence;*
- c) occur quarterly in a reporting period, and*
- d) occur during the night period as defined in the NSW Industrial Noise Policy, and in conjunction with an asphalt campaign if any such campaign occurs within the quarterly monitoring period.*

The assessment has been conducted in accordance with the following documents:

- NSW Environment Protection Authority (EPA), Noise Policy for Industry (NPI), 2017;
- Environment Protection Licence (EPL), 2796 and Variation 6 November 2019;
- Jandra Quarry Conditions of Consent (CoC), 2015;
- Jandra Quarry Noise and Blast Management Plan (NBMP), 2015; and
- Australian Standard AS 1055:2018 - Acoustics - Description and measurement of environmental noise - General Procedures.

A glossary of terms, definitions and abbreviations used in this report is provided in **Appendix A**.

The operations log during the noise monitoring is provided in **Appendix B**.

A copy of the recent licence variation is provided in **Appendix C**.

2 Noise Criteria

Section L4 of the Jandra Environment Protection Licence (EPL2796) presents noise criteria for residential receivers surrounding the quarry site, which are applicable for two different operational modes – quarrying and quarrying plus asphalt production.

Furthermore, Section 5 of the Jandra Noise and Blast Management Plan (NBMP) outlines that noise criteria do not apply at R1, R3, R8, R9, R10. Section 5 of the NBMP states:

- *'Holcim has executed a negotiated agreement with the property owner of R1 which excludes this receptor from the approved noise criteria';*
- *'R3 is not included in the approved noise criteria as this receiver represented road noise and the EA concluded that road noise impacts as a consequence of the development were below guideline thresholds and didn't warrant further assessment'; and*
- *'Receivers R8, R9 & R10 are Holcim owned residences and the approved criteria only apply to privately owned land'.*

Table 1 presents the criteria for the receivers R1 – R10 where compliance is required for both quarry operation and combined quarry and asphalt production operations.

Table 1 Noise Criteria				
Location	Quarry Operations	Quarry Operations and Asphalt Plant Production		
	6am – 10pm	6am – 10pm	10pm – 6am	10pm – 6am
	dB LAeq(15min)	dB LAeq(15min)	dB LAeq(15min)	dB LA1(1min)
EPA13 (R2)	36	40	35	48
EPA14 (R4)	36	40	39	51
EPA15 (R5)	40	41	39	51
EPA16 (R6)	36	40	35	48
EPA17 (R7)	35	36	35	48

Note 1: Noise criteria are not applicable to these receivers as per Section 5 of the NBMP.

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3 Methodology

3.1 Locality

The quarry is located at Possum Brush, NSW approximately 16km south of Taree, NSW. Receivers in the locality surrounding the quarry are primarily rural/residential. The Pacific Highway is situated to the west of the site, with highway traffic a dominant noise source at receivers within its' proximity. To the east, the quarry is bounded by rural properties with noise from Tuncurry Road dominating the acoustic environment. The monitoring locations with respect to the quarry and assessed receivers are presented in the locality plan shown in **Figure 1**.

3.2 Noise Monitoring Locations

Noise measurements were conducted at five monitoring locations specified in the EPL on Wednesday 26 February 2020 during the morning shoulder and daytime periods and are presented in **Figure 1**.

3.3 Assessment Methodology

Attended noise surveys were conducted in general accordance with the procedures described in Australian Standard AS 1055:2018, "Acoustics - Description and Measurement of Environmental Noise" and the EPL. The measurements were carried out by two MAC consultants using Svantek Type 1, 971 noise analysers on Wednesday 26 February 2020. The acoustic instrumentation used carries current NATA calibration and complies with AS/NZS IEC 61672.1-2019-Electroacoustics - Sound level meters - Specifications. Calibration of all instrumentation was checked prior to and following measurements. Drift in calibration did not exceed ± 0.5 dBA.

Noise measurements were of 15 minutes in duration and where possible, throughout each survey the operator quantified the contribution of each significant noise source. One measurement was conducted at each of the EPL monitoring locations during the morning shoulder and daytime periods. Monitoring during the evening period was not conducted due to the quarry not being operational.

Extraneous noise sources were excluded from the analysis to determine the $L_{Aeq}(15min)$ noise contribution for comparison against the relevant criteria. Where the quarry was inaudible, the contribution is estimated to be at least 10dB below the ambient noise level.



KEY

- EPL Locations
- Jandra Quarry



FIGURE 1
Jandra Quarry EPL Noise Monitoring
REF: MAC180611-04

4 Results

4.1 Assessment Results

The monitored noise level contributions and observed meteorological conditions for each assessment period at location are presented in **Table 2** to **Table 6**.

Table 2 Operator-Attended Noise Survey Results – Location EPA13						
Date	Time (hrs)	Descriptor (dBA re 20 μ Pa)			Meteorology	Description and SPL, dBA
		L _{Amax}	L _{Aeq}	L _{A90}		
26/02/2020	07:10 (Day)	71	47	42	WD: N WS: <0.5m/s Rain: Nil	Distant traffic <36-42
						Birds 40-71
						Insects <33-38
						Holcim vehicles <35 (5-6 minute duration)
Jandra Quarry Contribution						<35 dB L _{Aeq} (15min)
26/02/2020	06:01 (Morning Shoulder)	62	44	39	WD: N WS: <0.5m/s Rain: Nil	Distant traffic <36-42
						Birds 38-62
						Insects <33
						Holcim Inaudible
Jandra Quarry Contribution						<30 dB L _{Aeq} (15min) <40 dB L _{A1} (1min)

Note: Morning Shoulder – the period from 6am to 7am Monday to Saturday or 6am to 8am on Sundays and public holidays, Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

Table 3 Operator-Attended Noise Survey Results – Location EPA16

Date	Time (hrs)	Descriptor (dBA re 20 µPa)			Meteorology	Description and SPL, dBA
		L _{Amax}	L _{Aeq}	L _{A90}		
26/02/2020	07:30	61	44	40	WD: N WS: <0.5m/s Rain: Nil	Distant traffic <36-45
	(Day)					Birds 40-61
						Insects <36
						Aircraft 38-40
						Quarry vehicles <33
						(8-10 minute duration)
						Quarry loading/Rock tipping 37-38
						(<5 second duration)
Jandra Quarry Contribution						<35 dB L _{Aeq} (15min)
26/02/2020	06:17	71	49	41	WD: N WS: <0.5m/s Rain: Nil	Distant traffic <36-44
	(Morning Shoulder)					Insects <36
						Birds 42-71
						Dog barking 48-60
						Holcim Inaudible
Jandra Quarry Contribution						<30 dB L _{Aeq} (15min)
						<40 dB L _{A1} (1min)

Note: Morning Shoulder – the period from 6am to 7am Monday to Saturday or 6am to 8am on Sundays and public holidays, Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

Table 4 Operator-Attended Noise Survey Results – Location EPA14

Date	Time (hrs)	Descriptor (dBA re 20 µPa)			Meteorology	Description and SPL, dBA
		L _{Amax}	L _{Aeq}	L _{A90}		
26/02/2020	07:00	61	51	45	WD: N WS: 0.5m/s Rain: Nil	Highway traffic 45-56
	(Day)					Insects <45
						Birds 45-52
						Local residential noise 46-51
						Rooster 48-61
						Holcim Inaudible
Jandra Quarry Contribution						<35 dB L _{Aeq} (15min)
26/02/2020	06:00	69	51	44	WD: N WS: 0.5m/s Rain: Nil	Highway traffic 44-54
	(Morning Shoulder)					Insects <44
						Rooster 46-60
						Birds 46-54
						Local residential noise 46-69
						Holcim Inaudible
Jandra Quarry Contribution						<34 dB L _{Aeq} (15min)
						<40 dB L _{A1} (1min)

Note: Morning Shoulder – the period from 6am to 7am Monday to Saturday or 6am to 8am on Sundays and public holidays, Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

Table 5 Operator-Attended Noise Survey Results – Location EPA15

Date	Time (hrs)	Descriptor (dBA re 20 µPa)			Meteorology	Description and SPL, dBA
		L _{Amax}	L _{Aeq}	L _{A90}		
26/02/2020	07:18	56	43	40	WD: N	Highway traffic 41-46
	(Day)				WS: 0.1m/s	Insects <41
					Rain: Nil	Aircraft 41-56
						Holcim Inaudible
		Jandra Quarry Contribution				<30 dB L _{Aeq} (15min)
26/02/2020	06:22	64	44	39	WD: N	Highway traffic 38-48
	(Morning				WS: 0.1m/s	Birds 39-54
	Shoulder)				Rain: Nil	Insects <39
						Local residential noise 39-64
						Holcim Inaudible
		Jandra Quarry Contribution				<30 dB L _{Aeq} (15min)
						<40 dB L _{A1} (1min)

Note: Morning Shoulder – the period from 6am to 7am Monday to Saturday or 6am to 8am on Sundays and public holidays, Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

Table 6 Operator-Attended Noise Survey Results – Location EPA17

Date	Time (hrs)	Descriptor (dBA re 20 µPa)			Meteorology	Description and SPL, dBA
		L _{Amax}	L _{Aeq}	L _{A90}		
26/02/2020	08:00	71	47	41	WD: NE	Distant traffic <35-38
	(Day)				WS: <0.5m/s	Birds 40-71
					Rain: Nil	Insects <35
						Holcim vehicles <32
						(5-6 minute duration)
		Jandra Quarry Contribution				<30 dB L _{Aeq} (15min)
26/02/2020	06:43	60	46	40	WD: NE	Birds 40-60
	(Morning				WS: <0.5m/s	Insects <36-42
	Shoulder)				Rain: Nil	Distant traffic <36-39
						Holcim vehicle <34
						(1-2 minute duration)
		Jandra Quarry Contribution				<30 dB L _{Aeq} (15min)
						<40 dB L _{A1} (1min)

Note: Morning Shoulder – the period from 6am to 7am Monday to Saturday or 6am to 8am on Sundays and public holidays, Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

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5 Discussion

5.1 Discussion of Results - Location EPA13

Quarry noise was audible during the morning shoulder and inaudible during daytime measurements conducted on Wednesday 26 February 2020. Quarry noise contributions were estimated to satisfy the morning shoulder and daytime noise limits. The quarry was not operational during the evening period and hence, no measurements were conducted for this period.

Quarry noise sources observed during the measurement were vehicle movements. Non-quarry noise sources observed during the measurements included distant traffic, insects and birds

5.2 Discussion of Results - Location EPA16

Quarry noise was audible during daytime measurement conducted on Wednesday 26 February 2020. Quarry noise was inaudible during the morning shoulder period. Quarry noise contributions were estimated to satisfy the morning shoulder and daytime noise limits. The quarry was not operational during the evening period and hence, no measurements were conducted for this period.

Quarry noise sources observed during the measurement were vehicle movements and loading/rock tipping. Non-quarry noise sources observed during the measurements included distant traffic, insects, birds, aircraft and dogs barking.

5.3 Discussion of Results - Location EPA14

Quarry noise was inaudible during the morning shoulder and daytime measurements conducted on Wednesday 26 February 2020. Quarry noise contributions were estimated to satisfy the morning shoulder and daytime noise limits. The quarry was not operational during the evening period and hence, no measurements were conducted for this period.

Non quarry noise sources observed during the measurements included highway traffic, insects, birds, local residential noise and roosters.

5.4 Discussion of Results - Location EPA15

Quarry noise was inaudible during the morning shoulder and daytime measurements conducted on Wednesday 26 February 2020. Quarry noise contributions were estimated to satisfy the morning shoulder and daytime noise limits. The quarry was not operational during the evening period and hence, no measurements were conducted for this period.

Non quarry noise sources observed during the measurements included highway traffic, insects, aircraft, birds and local residential noise.

5.5 Discussion of Results - Location EPA17

Quarry noise was audible during the morning shoulder and daytime measurements conducted on Wednesday 26 February 2020. Quarry noise contributions were estimated to satisfy the morning shoulder and daytime noise limits. The quarry was not operational during the evening period and hence, no measurements were conducted for this period.

Quarry noise sources observed during the measurement were vehicle movements and non-quarry noise sources observed during the measurements included distant traffic, insects and birds.

6 Conclusion

Muller Acoustic Consulting Pty Ltd (MAC) has completed a Noise Monitoring Assessment (NMA) for Holcim (Australia) Pty Ltd at the Jandra Quarry, Possum Brush, NSW. The assessment was completed to determine compliance with the relevant noise criteria for the quarterly period ending March 2020.

Attended noise monitoring was completed on Wednesday 26 February 2020 at five nominated EPL monitoring locations with quarry noise contributions compared against the relevant criteria. The assessment has identified that noise emissions generated by Holcim Jandra Quarry comply with relevant noise criteria specified in the EPL at all assessed locations.

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Appendix A – Glossary of Terms

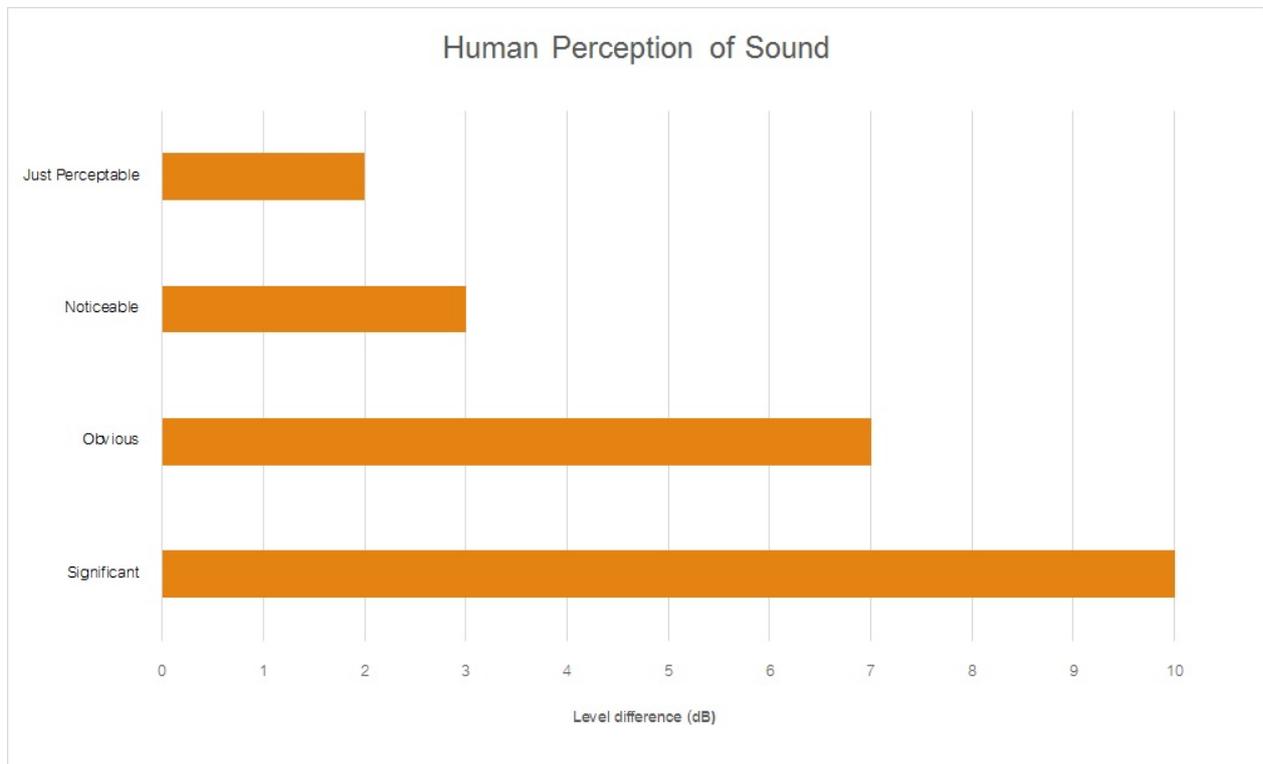
Table A1 provides a number of technical terms have been used in this report.

Table A1 Glossary of Terms	
Term	Description
1/3 Octave	Single octave bands divided into three parts
Octave	A division of the frequency range into bands, the upper frequency limit of each band being twice the lower frequency limit.
ABL	Assessment Background Level (ABL) is defined in the NPI as a single figure background level for each assessment period (day, evening and night). It is the tenth percentile of the measured LA90 statistical noise levels.
Adverse Weather	Weather effects that enhance noise (that is, wind and temperature inversions) that occur at a site for a significant period of time (that is, wind occurring more than 30% of the time in any assessment period in any season and/or temperature inversions occurring more than 30% of the nights in winter).
Ambient Noise	The noise associated with a given environment. Typically a composite of sounds from many sources located both near and far where no particular sound is dominant.
A Weighting	A standard weighting of the audible frequencies designed to reflect the response of the human ear to noise.
dBA	Noise is measured in units called decibels (dB). There are several scales for describing noise, the most common being the 'A-weighted' scale. This attempts to closely approximate the frequency response of the human ear.
dB(Z), dB(L)	Decibels Linear or decibels Z-weighted.
Hertz (Hz)	The measure of frequency of sound wave oscillations per second - 1 oscillation per second equals 1 hertz.
LA10	A noise level which is exceeded 10 % of the time. It is approximately equivalent to the average of maximum noise levels.
LA90	Commonly referred to as the background noise, this is the level exceeded 90 % of the time.
LAeq	The summation of noise over a selected period of time. It is the energy average noise from a source, and is the equivalent continuous sound pressure level over a given period.
LAm _{ax}	The maximum root mean squared (rms) sound pressure level received at the microphone during a measuring interval.
RBL	The Rating Background Level (RBL) is an overall single figure background level representing each assessment period over the whole monitoring period. The RBL is used to determine the intrusiveness criteria for noise assessment purposes and is the median of the ABL's.
Sound power level (LW)	This is a measure of the total power radiated by a source. The sound power of a source is a fundamental location of the source and is independent of the surrounding environment. Or a measure of the energy emitted from a source as sound and is given by : $= 10 \cdot \log_{10} (W/W_0)$ Where : W is the sound power in watts and W ₀ is the sound reference power at 10-12 watts.

Table A2 provides a list of common noise sources and their typical sound level.

Table A2 Common Noise Sources and Their Typical Sound Pressure Levels (SPL), dBA	
Source	Typical Sound Level
Threshold of pain	140
Jet engine	130
Hydraulic hammer	120
Chainsaw	110
Industrial workshop	100
Lawn-mower (operator position)	90
Heavy traffic (footpath)	80
Elevated speech	70
Typical conversation	60
Ambient suburban environment	40
Ambient rural environment	30
Bedroom (night with windows closed)	20
Threshold of hearing	0

Figure A1 – Human Perception of Sound



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Appendix B – Operations Log

Operations Log – Jandra Quarry 26 February 2020

Period ending	Pit	Plant
6:00am	No Activity – Morning Prestart	No Activity – Morning Prestart
6:30am	Load and Haul Activity. Excavator and Dump truck.	Sales loader loading road trucks. Pug mill operating. Road trucks
7:00am	Load and Haul Activity. Excavator and Dump truck. ROM loader	Sales loader loading road trucks. Pug mill operating. Road trucks Crushing plant operating
7:30am	Load and Haul Activity. Excavator and Dump truck. ROM loader	Sales loader loading road trucks. Pug mill operating. Road trucks Crushing plant operating
8:00am	Load and Haul Activity. Excavator and Dump truck. ROM loader	Sales loader loading road trucks. Pug mill operating. Road trucks Crushing plant operating
8:30am	Load and Haul Activity. Excavator and Dump truck. ROM loader	Sales loader loading road trucks. Pug mill operating. Road trucks Crushing plant operating
9:00am	Load and Haul Activity. Excavator and Dump truck. ROM loader	Sales loader loading road trucks. Pug mill operating. Road trucks Crushing plant operating
9:30am	ROM Loader	Sales loader loading road trucks. Pug mill operating. Road trucks Crushing plant operating
10:00am	Load and Haul Activity. Excavator and Dump truck. ROM loader	Sales loader loading road trucks. Pug mill operating. Road trucks Crushing plant operating
10:30am	Load and Haul Activity. Excavator and Dump truck. ROM loader	Sales loader loading road trucks. Pug mill operating. Road trucks Crushing plant operating
11:00am	Load and Haul Activity. Excavator and Dump truck. ROM loader	Sales loader loading road trucks. Pug mill operating. Road trucks Crushing plant operating
11:30am	Load and Haul Activity. Excavator and Dump truck. ROM loader	Sales loader loading road trucks. Pug mill operating. Road trucks Crushing plant operating
12:00pm	Load and Haul Activity. Excavator and Dump truck. ROM loader	Sales loader loading road trucks. Pug mill operating. Road trucks Crushing plant operating

Period ending	Pit	Plant
12:30pm	Load and Haul Activity. Excavator and Dump truck. ROM loader	Sales loader loading road trucks. Pug mill operating. Road trucks Crushing plant operating
1:00pm	Load and Haul Activity. Excavator and Dump truck. ROM loader	Sales loader loading road trucks. Pug mill operating. Road trucks Crushing plant operating
1:30pm	ROM Loader	Sales loader loading road trucks. Pug mill operating. Road trucks Crushing plant operating
2:00pm	Load and Haul Activity. Excavator and Dump truck. ROM loader	Sales loader loading road trucks. Pug mill operating. Road trucks Crushing plant operating
2:30pm	Load and Haul Activity. Excavator and Dump truck. ROM loader	Sales loader loading road trucks. Pug mill operating. Road trucks Crushing plant operating
3:00pm	Load and Haul Activity. Excavator and Dump truck. ROM loader	Sales loader loading road trucks. Road trucks Crushing plant operating
3:30pm	Load and Haul Activity. Excavator and Dump truck. ROM loader	Sales loader loading road trucks. Road trucks Crushing plant operating
4:00pm	Load and Haul Activity. Excavator and Dump truck. ROM loader	Sales loader loading road trucks. Road trucks Crushing plant operating
4:30pm	NA	Maintenance
5:00pm	NA	Maintenance
5:30pm	NA	Maintenance

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Appendix C – EPL Variation

Licence Variation



Licence - 2796

HOLCIM (AUSTRALIA) PTY LTD
ABN 87 099 732 297 ACN 099 732 297
LOCKED BAG 5007
BAULKHAM HILLS NSW 1755

Attention: Ian Vernon & Matt Neil

Notice Number 1585343
File Number EF13/3895
Date 06-Nov-2019

The Proper Officer

NOTICE OF VARIATION OF LICENCE NO. 2796

BACKGROUND

- A. HOLCIM (AUSTRALIA) PTY LTD ("the licensee") is the holder of Environment Protection Licence No. 2796 ("the licence") issued under the *Protection of the Environment Operations Act 1997* ("the POEO Act"). The licence authorises the carrying out of activities at PACIFIC HIGHWAY, POSSUM BRUSH, NSW, 2430 ("the premises").
- B. On 3 September 2019, the Environment Protection Authority ("the EPA") conducted a compliance inspection of the premises. During the compliance inspection, the EPA discussed relevant noise conditions with the licensee including the location and timing of noise monitoring.
- C. Condition L4.2 states "noise from the premises during quarrying operations only must not exceed the limits specified in the following table". Noise monitoring at a time when the quarry is operating is required to determine compliance with the noise limits specified at condition L4.2.
- D. Condition M8.1 of the licence outlines the requirements for noise compliance monitoring and includes the requirement to undertake attended noise monitoring that "c) occur during the night period as defined in the NSW Industrial Noise Policy, and in conjunction with an asphalt campaign if any such campaign occurs within the quarterly monitoring period".
- E. During the discussions with the EPA, the licensee's representative advised that the premises does not operate after 4:30pm, however noise compliance monitoring by the licensee's consultant has occurred at times when the quarry is not operating. The licensee's representative also advised that the quarry has not had an asphalt plant for some time, however development consent allows for such a plant.
- F. The EPA has made an amendment to condition M8.1 to clarify the requirement to monitor during quarrying operations and update reference to contemporary noise policy. Condition M8.2 has also been amended to reference the contemporary noise policy.

Licence Variation

- G. The NSW Industrial Noise Policy has been superseded by the NSW Noise Policy for Industry. Definition of the "night" period remains unchanged between the two policy documents.
- H. The EPA has made an amendment to condition R4.1 to require in reports of noise monitoring that details be provided of all quarrying activities that were occurring during each of the periods of monitoring.
- I. This Notice does not authorise a significant increase in the environmental impact of the activities authorised or controlled by the licence.
- J. This variation has been undertaken with consideration of section 45 of the POEO Act.

VARIATION OF LICENCE NO. 2796

- 1. By this Notice the EPA varies the licence. The attached licence document contains all variations that are made to the licence by this notice.
- 2. The following variations have been made to the licence:
 - Amendment of condition M8.1 to clarify the requirement to undertake noise monitoring during quarrying operations and to update reference to the contemporary NSW Noise Policy for Industry.
 - Amendment of condition M8.2 to reference the contemporary NSW Noise Policy for Industry.
 - Amendment to Condition R4.1 to require in reports of noise monitoring that details be provided of all quarrying activities that were occurring during each of the periods of monitoring.



.....
MATTHEW CORRADIN
A/Unit Head Hunter North
Environment Protection Authority
(by Delegation)

INFORMATION ABOUT THIS NOTICE

- This Notice is issued under Section 58(5) of the POEO Act.
- Details provided in this Notice, along with an updated version of the licence, will be available on the EPA's Public Register (<http://www.epa.nsw.gov.au/prpoeo/index.htm>) in accordance with section 308 of the POEO Act.

Licence Variation



Appeals against this decision

- You can appeal to the Land and Environment Court against this decision. The deadline for lodging the appeal is 21 days after you were given notice of this decision.

When this notice begins to operate

- The variations to the licence specified in this Notice begin to operate immediately from the date of this Notice, unless another date is specified in this Notice.
- If an appeal is made against this decision to vary the licence and the Land and Environment Court directs that the decision is stayed the decision does not operate until the stay ceases to have effect or the Land and Environment Court confirms the decision or the appeal is withdrawn (whichever occurs first).

Licence Variation



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Environment Protection Licence

Licence - 2796

Licence Details	
Number:	2796
Anniversary Date:	01-May

Licensee
HOLCIM (AUSTRALIA) PTY LTD
LOCKED BAG 5007
BAULKHAM HILLS NSW 1755

Premises
JANDRA QUARRY
PACIFIC HIGHWAY
POSSUM BRUSH NSW 2430

Scheduled Activity
Crushing, grinding or separating
Extractive activities
Resource recovery
Waste storage

Fee Based Activity	Scale
Crushing, grinding or separating	> 100000-500000 T annual processing capacity
Extractive activities	> 100000-500000 T annual capacity to extract or process
Recovery of general waste	Any general waste recovered
Waste storage - other types of waste	Any other types of waste stored

Region
North - Hunter
Ground Floor, NSW Govt Offices, 117 Bull Street NEWCASTLE WEST NSW 2302
Phone: (02) 4908 6800
Fax: (02) 4908 6810
PO Box 488G NEWCASTLE NSW 2300



Environment Protection Licence

Licence - 2796

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Information about this licence

Dictionary

A definition of terms used in the licence can be found in the dictionary at the end of this licence.

Responsibilities of licensee

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 ("the Act") and the Regulations made under the Act. These include obligations to:

- ensure persons associated with you comply with this licence, as set out in section 64 of the Act;
- control the pollution of waters and the pollution of air (see for example sections 120 - 132 of the Act);
- report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

Variation of licence conditions

The licence holder can apply to vary the conditions of this licence. An application form for this purpose is available from the EPA.

The EPA may also vary the conditions of the licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

Duration of licence

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

Licence review

The Act requires that the EPA review your licence at least every 5 years after the issue of the licence, as set out in Part 3.6 and Schedule 5 of the Act. You will receive advance notice of the licence review.

Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).

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The EPA publication “A Guide to Licensing” contains information about how to calculate your licence fees. The licence requires that an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints), be submitted to the EPA. The Annual Return must be submitted within 60 days after the end of each reporting period. See condition R1 regarding the Annual Return reporting requirements.

Usually the licence fee period is the same as the reporting period.

Transfer of licence

The licence holder can apply to transfer the licence to another person. An application form for this purpose is available from the EPA.

Public register and access to monitoring data

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- licence applications;
- licence conditions and variations;
- statements of compliance;
- load based licensing information; and
- load reduction agreements.

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

This licence is issued to:

HOLCIM (AUSTRALIA) PTY LTD
LOCKED BAG 5007
BAULKHAM HILLS NSW 1755

subject to the conditions which follow.

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1 Administrative Conditions

A1 What the licence authorises and regulates

A1.1 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

Scheduled Activity	Fee Based Activity	Scale
Crushing, grinding or separating	Crushing, grinding or separating	> 100000 - 500000 T annual processing capacity
Extractive activities	Extractive activities	> 100000 - 500000 T annual capacity to extract or process
Resource recovery	Recovery of general waste	Any general waste recovered
Waste storage	Waste storage - other types of waste	Any other types of waste stored

Note: The condition titled "Waste" under the Limit Conditions of this licence restricts what types of waste may be received at the Premises.

A1.2 Notwithstanding the fee scales noted above, the licensee must not:

- (a) extract more than 490,000 tonnes of quarry products from the premises per calendar year; and
- (b) transport more than 475,000 tonnes of quarry products from the premises per calendar year

Note: This condition has been added to be consistent with development consent DA231-10-99 MOD 5.

A2 Premises or plant to which this licence applies

A2.1 The licence applies to the following premises:

Premises Details
JANDRA QUARRY
PACIFIC HIGHWAY
POSSUM BRUSH
NSW 2430
LOT 2 DP 255621, LOT 11 DP 790056, LOT 12 DP 790056, LOT 13 DP 790056, LOT 14 DP 790056, LOT 15 DP 790056

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A3 Information supplied to the EPA

- A3.1 Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.

In this condition the reference to "the licence application" includes a reference to:

- a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and
- b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.

2 Discharges to Air and Water and Applications to Land

P1 Location of monitoring/discharge points and areas

- P1.1 The following points referred to in the table below are identified in this licence for the purposes of monitoring and/or the setting of limits for the emission of pollutants to the air from the point.

<i>Air</i>			
EPA identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
11	Ambient PM10 monitoring		Receiver location R1 identified on map titled "Jandra Environmental Monitoring Locations" within the Holcim Environmental Management Strategy - Jandra Quarry. See EPA document DOC16/387391, EF13/3895.
18	Dust deposition monitoring		Dust monitoring point on the northern site boundary identified on "Figure 1 Surrounding land use, residences and environmental monitoring locations" within the Holcim Air Quality Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391.
19	Dust deposition monitoring		Dust monitoring point on southern site boundary identified on "Figure 1 Surrounding land use, residences and environmental monitoring locations" within the Holcim Air Quality Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391.
20	Dust deposition monitoring		Dust monitoring point on the eastern site boundary identified on "Figure 1 Surrounding land use, residences and environmental monitoring locations" within the Holcim Air Quality Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391.

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21	Dust deposition monitoring	Dust monitoring point on the western site boundary identified on "Figure 1 Surrounding land use, residences and environmental monitoring locations" within the Holcim Air Quality Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391.
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P1.2 The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.

P1.3 The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.

Water and land

EPA Identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
1	Discharge quality monitoring	Discharge quality monitoring	Discharge from final sediment dam as shown in the CSR Readymix Site Photo - Jandra Quarry Water Monitoring Location Figure 1 provided to the EPA 13 May 2002

P1.4 The following points referred to in the table below are identified in this licence for the purposes of weather and/or noise monitoring and/or setting limits for the emission of noise from the premises.

Noise/Weather

EPA identification no.	Type of monitoring point	Location description
2	Air blast overpressure & ground vibration peak particle velocity monitoring	Receiver location R4 in accordance with development consent 231-10-99 MOD 5 and identified on "Figure 1 Surrounding land use, residence and environmental monitoring locations" within the Holcim Noise and Blast Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391, EF13/3895.
3	Air blast overpressure & ground vibration peak particle velocity monitoring	Receiver location R2 in accordance with development consent 231-10-99 MOD 5 and identified on "Figure 1 Surrounding land use, residence and environmental monitoring locations" within the Holcim Noise and Blast Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391, EF13/3895.

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4	Meteorological Station – to determine meteorological conditions for noise monitoring	Meteorological station adjacent to the "Main Dam" and identified on "Figure 1 Surrounding land use, residences and environmental monitoring locations" within the Holcim Air Quality Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391, EF13/3895.
13	Noise monitoring	Monitoring location R2 in accordance with development consent 231-10-99 MOD 5 and identified on "Figure 1 Surrounding land use, residences and environmental monitoring locations" within the Holcim Noise and Blast Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391, EF13/3895.
14	Noise monitoring	Monitoring location R4 in accordance with development consent 231-10-99 MOD 5 and identified on "Figure 1 Surrounding land use, residences and environmental monitoring locations" within the Holcim Noise and Blast Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391, EF13/3895.
15	Noise monitoring	Monitoring location R5 in accordance with development consent 231-10-99 MOD 5 and identified on "Figure 1 Surrounding land use, residences and environmental monitoring locations" within the Holcim Noise and Blast Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391, EF13/3895.
16	Noise monitoring	Monitoring location R6 in accordance with development consent 231-10-99 MOD 5 and identified on "Figure 1 Surrounding land use, residences and environmental monitoring locations" within the Holcim Noise and Blast Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391, EF13/3895.
17	Noise monitoring	Monitoring location R7 in accordance with development consent 231-10-99 MOD 5 and identified on "Figure 1 Surrounding land use, residences and environmental monitoring locations" within the Holcim Noise and Blast Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391, EF13/3895.

3 Limit Conditions

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L1 Pollution of waters

L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.

L2 Concentration limits

L2.1 For each monitoring/discharge point or utilisation area specified in the table\&s below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.

L2.2 Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.

L2.3 To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table\&s.

L2.4 Water and/or Land Concentration Limits

POINT 1

Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile concentration limit
pH	pH				6.5-8.5
Total suspended solids	milligrams per litre				50

L3 Waste

L3.1 The licensee must not cause, permit or allow any waste to be received at the premises, except concrete "wash-out" waste from concrete batch plants. All other wastes are not permitted on the premises, except as expressly permitted by this licence.

L3.2 The licensee must not:

- Process more than 3000 tonnes of concrete "wash-out" per annum;
- Store more than 1000 tonnes of concrete "wash-out" on the premises at any one time.

L3.3 Concrete 'wash-out' must be stockpiled on site in bunded areas and can be processed and blended with

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quarry raw product to produce quarry product(s).

L4 Noise limits

L4.1 Noise generated at the premises must not exceed the noise limits in the tables below. The locations referred to in the tables below are indicated in the document titled: "Jandra Quarry Intensification of Production Environmental Assessment (DA 231-10-99 MOD 5)" Dated July 2014

L4.2 Noise from the premises during quarrying operations only must not exceed the limits specified in the following table:

EPA identification no.	Limit dB(A) LAeq(15 min) Shoulder, Day & Evening
15	40
13, 14, 16	36
17	35

L4.3 Noise from the premises during operations including asphalt plant must not exceed the limits specified in the following table:

EPA identification no.	Limit dB(A) LAeq(15 min) Shoulder, Day & Evening	Limit dB(A) LAeq(15 minute) Night	Limit dB(A) LA1(1 minute) Night
15	41	39	51
14	40	39	51
13,16	40	35	48
17	36	35	48

Note:

1. Condition 10 of Schedule 2 of development consent DA 213 -10-99 MOD 5 prohibits quarrying operations during the hours of 10 pm-6 am;
2. Receiver locations are shown on the figure in Appendix 2 of development consent DA 213-10-99 a copy of which has been filed as EPA document DOC15/85830;
3. Noise limits are in accordance with development consent DA 231-10-99 MOD 5;
4. A negotiated agreement is in place for Residence R1 as referred to in development consent DA 231-10-99 MOD 5 & any noise issues from this premises will be addressed by the Department of Planning and Environment.

L4.4 For the purpose of the conditions above:

- Shoulder, Day and Evening is defined as the period from 6am - 10pm

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- Night is defined as the period from 10pm - 6am

L4.5 The noise limits set out in the above tables apply under all meteorological conditions except the following:

- a) Wind speeds greater than 3 metres/second at 10 metres above ground level; or
- b) Stability category F temperature inversion conditions and wind speeds greater than 2 metres/second at 10 metres above ground level; or
- c) Stability category G temperature inversion conditions.

L4.6 For the purpose of the conditions above:

- a) Data recorded by the meteorological station identified in this licence must be used to determine meteorological conditions; and
- b) Temperature inversion conditions (stability category) when determined by the sigma-theta method must be determined in accordance with Part E3 of the NSW Industrial Noise Policy. Temperature inversion conditions (determined by vertical temperature gradient in degrees C) are to be determined by direct measurement over a minimum 50m height interval as referred to in Part E2 to the NSW Industrial Noise Policy

L4.7 To determine compliance:

a) with Leq (15 minute) noise limits in this licence, the noise measurement equipment must be located:

- approximately on the property boundary, where any dwelling is situated 30 metres or less from the property boundary closest to the premises; or
- within 30 metres of a dwelling façade, but not closer than 3m, where any dwelling on the property is situated more than 30 metres from the property boundary closest to the premises; or
- where applicable within approximately 50 metres of the boundary of a National Park or a Nature Reserve.

b) With the LA1 (1 minute) noise limits in this licence, the noise measurement equipment must be located within 1 metre of a dwelling façade.

c) with the noise limits in this licence, the noise measurement equipment must be located:

- at the most affected point at a location where there is no dwelling at the location; or
- at the most affected point within an area at a location prescribed by this licence.

L4.8 A non-compliance of the noise limit conditions will still occur where noise generated from the premises in excess of the appropriate limit is measured:

- at a location other than an area prescribed by this licence; and/or
- at a point other than the most affected point at a location

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L5 Blasting

- L5.1 Blasting in or on the premises must only be carried out between 9am and 5pm, Monday to Friday and 9am and 3pm, Saturday. Blasting in or on the premises must not take place on Sundays or Public Holidays without the prior approval of the EPA.
- L5.2 The airblast overpressure level from blasting operations in or on the premises must not exceed: 115 dB (Lin Peak) for more than 5% of the total number of blasts during each reporting period; at either monitoring point 2 or 3 of this licence.
- L5.3 The airblast overpressure level from blasting operations in or on the premises must not exceed: 120 dB (Lin Peak) at any time; at either monitoring point 2 or 3 of this licence.
- L5.4 The ground vibration peak particle velocity from blasting operations carried out in or on the premises must not exceed: 5 mm/second for more than 5% of the total number of blasts during each reporting period; at either monitoring point 2 or 3 of this licence.
- L5.5 The ground vibration peak particle velocity from blasting operations carried out in or on the premises must not exceed: 10 mm/second at any time; at either monitoring point 2 or 3 of this licence.
- L5.6 Error margins associated with any monitoring equipment used to measure blasts must not be taken into account when determining whether or not the limit has been exceeded.
- L5.7 Offensive blast fume must not be emitted from the premises.

Definition:

Offensive blast fume means post-blast gases from the detonation of explosives at the premises that by reason of their nature, duration, character or quality, or the time at which they are emitted, or any other circumstances:

- 1. are harmful to (or likely to be harmful to) a person that is outside the premises from which it is emitted, or*
- 2. interferes unreasonably with (or is likely to interfere unreasonably with) the comfort or repose of a person who is outside the premises from which it is emitted.*

L6 Hours of operation

- L6.1 In accordance with development consent DA 231-10-99 MOD 5, hours of operation for the premises are specified in the table below:

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Day	Extraction and processing operations	Transportation operations	Asphalt Plant & associated transport (campaigns)
Monday - Friday	6am to 10pm	6am to 10pm	24 hours a day
Saturday	6am to 6pm	6am to 10 pm	24 hours a day
Sunday and Public Holidays	None	None	24 hours a day

- L6.2 In accordance with development consent DA 231-10-99 MOD 5, the following activities may be conducted at the premises outside the hours specified in the table above:
- (a) return of trucks to the premises prior to midnight Monday to Saturday;
 - (b) delivery or dispatch of materials as requested by Police, Fire Brigade or other similar authorities;
 - (c) emergency work to avoid the loss of lives, property and/or prevent environmental harm; and
 - (d) maintenance activities provided it is inaudible at residential premises.
- In circumstances outlines in (b) and (c), the Licensee shall notify affected residents prior to undertaking the activities, or as soon as practical thereafter

L7 Potentially offensive odour

- L7.1 The licensee must not cause or permit the emission of offensive odour beyond the boundary of the premises.

4 Operating Conditions

O1 Activities must be carried out in a competent manner

- O1.1 Licensed activities must be carried out in a competent manner.
This includes:
- a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
 - b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

O2 Maintenance of plant and equipment

- O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:
- a) must be maintained in a proper and efficient condition; and
 - b) must be operated in a proper and efficient manner.

O3 Dust

- O3.1 The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.

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O4 Emergency response

Note: The licensee must maintain, and implement as necessary, a current Pollution Incident Response Management Plan (PIRMP) for the premises. The PIRMP must be developed in accordance with the requirements in Part 5.7A of the POEO Act and Regulations.

The licensee must keep the PIRMP on the premises at all times. The PIRMP must document systems and procedures to deal with all types of incidents (e.g. spills, explosions or fire) that may occur at the premises or that may be associated with the activities that occur at the premises and which are likely to cause harm to the environment. The PIRMP must be tested at least annually or following a pollution incident.

O5 Processes and management

O5.1 The licensee must take all reasonable measures to prevent the tracking of mud and debris onto the Pacific Highway including, but not limited to, ensuring all vehicles leaving the premises pass through the vehicular wheel wash.

O6 Waste management

O6.1 The licensee must comply with the conditions as specified in this licence or where no specific conditions outlined in this licence, this licensee must comply with the *Protection of the Environment Operations (Waste) Regulation 2014*.

5 Monitoring and Recording Conditions

M1 Monitoring records

M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.

M1.2 All records required to be kept by this licence must be:

- 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.

M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:

- 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.

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M2 Requirement to monitor concentration of pollutants discharged

M2.1 For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:

M2.2 Air Monitoring Requirements

POINT 11

Pollutant	Units of measure	Frequency	Sampling Method
PM10	micrograms per cubic metre	Every 6 days	AM-18

POINT 18,19,20,21

Pollutant	Units of measure	Frequency	Sampling Method
Particulates - Deposited Matter	grams per square metre per month	Monthly	AM-19

M2.3 Water and/ or Land Monitoring Requirements

POINT 1

Pollutant	Units of measure	Frequency	Sampling Method
pH	pH	Each overflow event	Grab sample
Total suspended solids	milligrams per litre	2 times daily during discharge	Grab sample
Turbidity	nephelometric turbidity units	2 times daily during discharge	Grab sample

M3 Testing methods - concentration limits

M3.1 Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this licence must be done in accordance with:

- any methodology which is required by or under the Act to be used for the testing of the concentration of the pollutant; or
- if no such requirement is imposed by or under the Act, any methodology which a condition of this licence requires to be used for that testing; or
- if no such requirement is imposed by or under the Act or by a condition of this licence, any

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methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.

- M3.2 Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.

Note: The *Protection of the Environment Operations (Clean Air) Regulation 2010* requires testing for certain purposes to be conducted in accordance with test methods contained in the publication "Approved Methods for the Sampling and Analysis of Air Pollutants in NSW".

M4 Weather monitoring

- M4.1 At the point(s) identified below, the licensee must monitor (by sampling and obtaining results by analysis) the parameters specified in Column 1 of the table below, using the corresponding sampling method, units of measure, averaging period and sampling frequency, specified opposite in the Columns 2, 3, 4 and 5 respectively.

POINT 4

Parameter	Sampling method	Units of measure	Averaging period	Frequency
Temperature at 10 metres	AM-4	degrees Celsius	1 hour	Continuous
Wind Direction at 10 metres	AM-2 & AM-4	Degrees	15 minutes	Continuous
Wind Speed	AM-2 & AM-4	metres per second	15 minutes	Continuous
Sigma Theta	AM-2 & AM-4	Degrees	15 minutes	Continuous
Rainfall	AM-4	millimetres	15 minutes	Continuous
Relative humidity	AM-4	percent	1 hour	Continuous

- M4.2 Rainfall at the premises must be measured and recorded in millimetres per 24 hour period, at the same time each day.

Note: The rainfall monitoring data collected in compliance with the above condition will assist in interpreting the effectiveness of stormwater management at the quarry.

M5 Recording of pollution complaints

- M5.1 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.

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M5.2 The record must include details of the following:

- 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.

M5.3 The record of a complaint must be kept for at least 4 years after the complaint was made.

M5.4 The record must be produced to any authorised officer of the EPA who asks to see them.

M6 Telephone complaints line

M6.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.

M6.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.

M6.3 The preceding two conditions do not apply until 3 months after: the date of the issue of this licence.

M7 Blasting

M7.1 To determine compliance with the blasting limits of this licence:

- a) Airblast overpressure and ground vibration levels must be measured and electronically recorded for monitoring points 2 and 3 for the parameters specified in Column 1 of the table below; and
- b) The licensee must use the units of measure, sampling method, and sample at the frequency specified opposite in the other columns.

Parameters	Units of Measure	Frequency	Sampling Method
Airblast Overpressure	Decibels (Linear Peak)	All blasts	Australian Standard AS 2187.2-2006
Ground Vibration Peak Particle Velocity	millimetres/second	All blasts	Australian Standard AS 2187.2-2006

M8 Noise monitoring

M8.1 To assess compliance with the noise limits of this licence, attend noise monitoring must be undertaken in accordance with the conditions of this licence and:

- a) during a period of normal quarry operations;

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- b) at each one of the noise monitoring locations listed in the noise limits table of this licence;
- c) occur quarterly in the reporting period; and
- d) occur during the night period as defined in the NSW Noise Policy for Industry, and in conjunction with an asphalt campaign if any such campaign occurs within the quarterly monitoring period.

Note: The extent and frequency of noise monitoring required by this licence will be reviewed upon request after eight quarterly monitoring campaigns.

M8.2 Noise monitoring must be carried out in accordance with Australian Standard AS 2659.1 - 1998: Guide to the use of sound measuring equipment - Portable sound level metres and in accordance with any relevant factors provided in the NSW Noise Policy for Industry.

6 Reporting Conditions

R1 Annual return documents

R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:

1. a Statement of Compliance,
2. a Monitoring and Complaints Summary,
3. a Statement of Compliance - Licence Conditions,
4. a Statement of Compliance - Load based Fee,
5. a Statement of Compliance - Requirement to Prepare Pollution Incident Response Management Plan,
6. a Statement of Compliance - Requirement to Publish Pollution Monitoring Data; and
7. a Statement of Compliance - Environmental Management Systems and Practices.

At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.

R1.2 An Annual Return must be prepared in respect of each reporting period, except as provided below.

Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.

R1.3 Where this licence is transferred from the licensee to a new licensee:

- a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
- b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.

Note: An application to transfer a licence must be made in the approved form for this purpose.

R1.4 Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on:

- a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is

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given; or

b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.

R1.5 The Annual Return for the reporting period must be supplied to the EPA via eConnect *EPA* or by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

R1.6 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.

R1.7 Within the Annual Return, the Statements of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:

a) the licence holder; or

b) by a person approved in writing by the EPA to sign on behalf of the licence holder.

R2 Notification of environmental harm

Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

R2.1 Notifications must be made by telephoning the Environment Line service on 131 555.

R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

R3 Written report

R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:

a) where this licence applies to premises, an event has occurred at the premises; or

b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence,

and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.

R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.

R3.3 The request may require a report which includes any or all of the following information:

a) the cause, time and duration of the event;

b) the type, volume and concentration of every pollutant discharged as a result of the event;

c) 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;

d) 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;

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- e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;
- f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and
- g) any other relevant matters.

R3.4 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 by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

R4 Other reporting conditions

R4.1 Noise Compliance Assessment Report

A noise compliance assessment report(s) must be submitted to the EPA with each Annual Return. The assessment must be prepared by a suitably qualified and experienced acoustical consultant and include:

- a) an assessment of compliance with noise limits detailed in the limit conditions of this licence;
- b) details of all quarrying activities that were occurring during each of the periods of monitoring, and
- c) an outline of any management actions taken within the monitoring period to address any exceedences of the limits detailed in the limit conditions of this licence.

R4.2 Blast Monitoring Report

The licensee must supply, with each Annual Return, a Blast Monitoring Report which must include the following information relating to each blast carried out within the premises during the reporting period covered by the Annual Return:

- a) the date and time of the blast;
- b) the location of the blast on the premises;
- c) the blast monitoring results at each blast monitoring station; and
- d) an explanation for any missing blast monitoring results.

R4.3 The licensee must report any exceedence of the licence blasting limits to the regional office of the EPA as soon as practicable after the exceedence becomes known to the licensee or to one of the licensee's employees or agents.

7 General Conditions

G1 Copy of licence kept at the premises or plant

G1.1 A copy of this licence must be kept at the premises to which the licence applies.

G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.

G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

G2 Other general conditions

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G2.1 Completed Programs

Program	Description	Completed Date
PRP 1: Installation and Use of a Wheel Wash at the Premises	Construction and Utilisation of a vehicular wheel wash for all vehicles exiting the premises.	28-October-2011

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Dictionary

General Dictionary

3DGM [in relation to a concentration limit]	Means the three day geometric mean, which is calculated by multiplying the results of the analysis of three samples collected on consecutive days and then taking the cubed root of that amount. Where one or more of the samples is zero or below the detection limit for the analysis, then 1 or the detection limit respectively should be used in place of those samples
Act	Means the Protection of the Environment Operations Act 1997
activity	Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997
actual load	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
AM	Together with a number, means an ambient air monitoring method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .
AMG	Australian Map Grid
anniversary date	The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
annual return	Is defined in R1.1
Approved Methods Publication	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
assessable pollutants	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
BOD	Means biochemical oxygen demand
CEM	Together with a number, means a continuous emission monitoring method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .
COD	Means chemical oxygen demand
composite sample	Unless otherwise specifically approved in writing by the EPA, a sample consisting of 24 individual samples collected at hourly intervals and each having an equivalent volume.
cond.	Means conductivity
environment	Has the same meaning as in the Protection of the Environment Operations Act 1997
environment protection legislation	Has the same meaning as in the Protection of the Environment Administration Act 1991
EPA	Means Environment Protection Authority of New South Wales.
fee-based activity classification	Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 2009.
general solid waste (non-putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997

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flow weighted composite sample	Means a sample whose composites are sized in proportion to the flow at each composites time of collection.
general solid waste (putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
grab sample	Means a single sample taken at a point at a single time
hazardous waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
licensee	Means the licence holder described at the front of this licence
load calculation protocol	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
local authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
material harm	Has the same meaning as in section 147 Protection of the Environment Operations Act 1997
MBAS	Means methylene blue active substances
Minister	Means the Minister administering the Protection of the Environment Operations Act 1997
mobile plant	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
motor vehicle	Has the same meaning as in the Protection of the Environment Operations Act 1997
O&G	Means oil and grease
percentile [in relation to a concentration limit of a sample]	Means that percentage [eg.50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period of time. In this licence, the specified period of time is the Reporting Period unless otherwise stated in this licence.
plant	Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles.
pollution of waters [or water pollution]	Has the same meaning as in the Protection of the Environment Operations Act 1997
premises	Means the premises described in condition A2.1
public authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
regional office	Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence
reporting period	For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 months. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
restricted solid waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
scheduled activity	Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997
special waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
TM	Together with a number, means a test method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .

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TSP	Means total suspended particles
TSS	Means total suspended solids
Type 1 substance	Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements
Type 2 substance	Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements
utilisation area	Means any area shown as a utilisation area on a map submitted with the application for this licence
waste	Has the same meaning as in the Protection of the Environment Operations Act 1997
waste type	Means liquid, restricted solid waste, general solid waste (putrescible), general solid waste (non - putrescible), special waste or hazardous waste

Mr Nigel Sargent

Environment Protection Authority

(By Delegation)

Date of this edition: 10-March-2000

Environment Protection Licence

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End Notes

- 1 Licence varied by notice 1006152, issued on 21-Feb-2002, which came into effect on 18-Mar-2002.
- 2 Licence varied by notice 1016675, issued on 20-Jun-2002, which came into effect on 15-Jul-2002.
- 3 Licence transferred through application 141653, approved on 19-Dec-2002, which came into effect on 01-Oct-2002.
- 4 Licence varied by notice 1042128, issued on 14-Jan-2005, which came into effect on 08-Feb-2005.
- 5 Condition A1.3 Not applicable varied by notice issued on <issue date> which came into effect on <effective date>
- 6 Licence varied by notice 1106247, issued on 08-Sep-2009, which came into effect on 08-Sep-2009.
- 7 Licence varied by notice 1503538 issued on 04-Jan-2012
- 8 Licence varied by notice 1507470 issued on 26-Sep-2012
- 9 Licence varied by notice 1535107 issued on 17-Oct-2016
- 10 Licence varied by notice 1577456 issued on 12-Jun-2019
- 11 Licence format updated on 18-Jul-2019

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Noise Monitoring Assessment

Jandra Quarry, Possum Brush, NSW
Quarter 2 Ending June 2020.



Document Information

Noise Monitoring Assessment

Jandra Quarry, Possum Brush, NSW

Quarter 2 Ending June 2020

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Document ID	Status	Date	Prepared By	Signed	Reviewed By	Signed
MAC180611-04RP8	Final	15 May 2020	Kristian Allen		Rod Linnett	

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APPENDIX C – EPL VARIATION

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1 Introduction

Muller Acoustic Consulting Pty Ltd (MAC) has been commissioned by Holcim (Australia) Pty Ltd (Holcim) to complete a Noise Monitoring Assessment (NMA) for the quarterly period ending June 2020 for Jandra Quarry (the 'quarry'), Possum Brush, NSW.

Noise monitoring has been conducted in accordance with the Jandra Noise and Blast Management Plan and in accordance with additional clarifications and requirements specified by the EPA in the recent variation (6 November 2019) of the EPL 2796 (EPL).

The following variations have been made to the licence:

- Amendment of condition M8.1 to clarify the requirement to undertake noise monitoring during quarrying operations and to update reference to the contemporary NSW Noise Policy for Industry;
- Amendment of condition M8.2 referencing the contemporary NSW Noise Policy for Industry; and
- Amendment to Condition R4.1 requires that noise monitoring reports contain details of all quarrying activities that were occurring during each of the monitoring periods.

Specifically, the amendment to M8.1 is reproduced below.

M8 Noise monitoring

M8.1 *To assess compliance with the noise limits of this licence, attend noise monitoring must be undertaken in accordance with the conditions of this licence and:*

- a) during a period of normal quarry operations;*
- b) at each one of the noise monitoring locations listed in the noise limits table of this licence;*
- c) occur quarterly in a reporting period, and*
- d) occur during the night period as defined in the NSW Industrial Noise Policy, and in conjunction with an asphalt campaign if any such campaign occurs within the quarterly monitoring period.*

The assessment has been conducted in accordance with the following documents:

- NSW Environment Protection Authority (EPA), Noise Policy for Industry (NPI), 2017;
- Environment Protection Licence (EPL), 2796 and Variation 6 November 2019;
- Jandra Quarry Conditions of Consent (CoC), 2015;
- Jandra Quarry Noise and Blast Management Plan (NBMP), 2015; and
- Australian Standard AS 1055:2018 - Acoustics - Description and measurement of environmental noise - General Procedures.

A glossary of terms, definitions and abbreviations used in this report is provided in **Appendix A**.

The operations log during the noise monitoring is provided in **Appendix B**.

A copy of the recent licence variation is provided in **Appendix C**.

2 Noise Criteria

Section L4 of the Jandra Environment Protection Licence (EPL 2796) presents noise criteria for residential receivers surrounding the quarry site, which are applicable for two different operational modes – quarrying and quarrying plus asphalt production.

Furthermore, Section 5 of the Jandra Noise and Blast Management Plan (NBMP) outlines that noise criteria do not apply at R1, R3, R8, R9, R10. Section 5 of the NBMP states:

- *'Holcim has executed a negotiated agreement with the property owner of R1 which excludes this receptor from the approved noise criteria';*
- *'R3 is not included in the approved noise criteria as this receiver represented road noise and the EA concluded that road noise impacts as a consequence of the development were below guideline thresholds and didn't warrant further assessment'; and*
- *'Receivers R8, R9 & R10 are Holcim owned residences and the approved criteria only apply to privately owned land'.*

Table 1 presents the criteria for the receivers R1 – R10 where compliance is required for both quarry operation and combined quarry and asphalt production operations.

Table 1 Noise Criteria				
Location	Quarry Operations	Quarry Operations and Asphalt Plant Production		
	6am – 10pm	6am – 10pm	10pm – 6am	10pm – 6am
	dB LAeq(15min)	dB LAeq(15min)	dB LAeq(15min)	dB LA1(1min)
EPA13 (R2)	36	40	35	48
EPA14 (R4)	36	40	39	51
EPA15 (R5)	40	41	39	51
EPA16 (R6)	36	40	35	48
EPA17 (R7)	35	36	35	48

Note 1: Noise criteria are not applicable to these receivers as per Section 5 of the NBMP.

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3 Methodology

3.1 Locality

The quarry is located at Possum Brush, NSW approximately 16km south of Taree, NSW. Receivers in the locality surrounding the quarry are primarily rural/residential. The Pacific Highway is situated to the west of the site, with highway traffic a dominant noise source at receivers within its' proximity. To the east, the quarry is bounded by rural properties with noise from The Lakes Way dominating the acoustic environment. The monitoring locations with respect to the quarry and assessed receivers are presented in the locality plan shown in **Figure 1**.

3.2 Noise Monitoring Locations

Noise measurements were conducted at five monitoring locations specified in the EPL on Wednesday 29 April 2020 and Thursday 30 April 2020 during the morning shoulder and daytime periods. The measurement locations are presented in **Figure 1**.

3.3 Assessment Methodology

Attended noise surveys were conducted in general accordance with the procedures described in Australian Standard AS 1055:2018, "Acoustics - Description and Measurement of Environmental Noise" and the EPL. The measurements were carried out using Svantek Type 1, 971 noise analyser on Wednesday 29 April 2020 and Thursday 30 April 2020. The acoustic instrumentation used carries current NATA calibration and complies with AS/NZS IEC 61672.1-2019-Electroacoustics - Sound level meters - Specifications. Calibration of all instrumentation was checked prior to and following measurements. Drift in calibration did not exceed ± 0.5 dBA.

Noise measurements were of 15 minutes in duration and where possible, throughout each survey the operator quantified the contribution of each significant noise source. One measurement was conducted at each of the EPL monitoring locations during the morning shoulder and daytime periods. Monitoring during the evening period was not conducted due to the quarry not being operational.

Extraneous noise sources were excluded from the analysis to determine the LAeq(15min) noise contribution for comparison against the relevant criteria. Where the quarry was inaudible, the contribution is estimated to be at least 10dB below the ambient noise level.



KEY

- EPL Locations
- Jandra Quarry



FIGURE 1
Jandra Quarry EPL Noise Monitoring
REF: MAC180611-04

4 Results

4.1 Assessment Results

The monitored noise level contributions and observed meteorological conditions for each assessment period at location are presented in **Table 2** to **Table 6**.

Table 2 Operator-Attended Noise Survey Results – Location EPA13

Date	Time (hrs)	Descriptor (dBA re 20 µPa)			Meteorology	Description and SPL, dBA
		L _{Amax}	L _{Aeq}	L _{A90}		
29/04/2020	10:13 (Day)	70	46	41	WD: NE WS: 1.5m/s Rain: Nil	Birds 40-51
						Distant Traffic 37-44
						Wind 37-51
						Insects 37-40
						Residential Noise 37-70
						Quarry Not Audible
Jandra Quarry Contribution						<35dB L _{Aeq} (15min)
29/04/2020	06:05 (Morning Shoulder)	64	43	38	WD: N WS: <0.1m/s Rain: Nil	Birds 36-64
						Distant Traffic 36-43
						Dogs 38-44
						Quarry Not Audible
Jandra Quarry Contribution						<35dB L _{Aeq} (15min)
						<45dB L _{A1} (1min)

Note: Morning Shoulder – the period from 6am to 7am Monday to Saturday or 6am to 8am on Sundays and public holidays, Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

Table 3 Operator-Attended Noise Survey Results – Location EPA16

Date	Time (hrs)	Descriptor (dBA re 20 µPa)			Meteorology	Description and SPL, dBA
		L _{Amax}	L _{Aeq}	L _{A90}		
29/04/2020	10:29 (Day)	65	45	39	WD: NE WS: 1.5m/s Rain: Nil	Birds 38-65
						Distant Traffic 36-43
Jandra Quarry Contribution						<35dB LAeq(15min)
29/04/2020	06:21 (Morning Shoulder)	60	43	37	WD: N WS: <0.1m/s Rain: Nil	Birds 34-60
						Distant Traffic 34-48
Jandra Quarry Contribution						<35dB LAeq(15min) <45dB LA1(1min)

Note: Morning Shoulder – the period from 6am to 7am Monday to Saturday or 6am to 8am on Sundays and public holidays, Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

Table 4 Operator-Attended Noise Survey Results – Location EPA14

Date	Time (hrs)	Descriptor (dBA re 20 µPa)			Meteorology	Description and SPL, dBA
		L _{Amax}	L _{Aeq}	L _{A90}		
29/04/2020	11:33 (Day)	80	55	47	WD: NE WS: 2.0m/s Rain: Nil	Highway Traffic 41-55
						Wind 41-50
Jandra Quarry Contribution						<36dB LAeq(15min)
30/04/2020	06:10 (Morning Shoulder)	71	60	47	WD: N WS: 0.5m/s Rain: Nil	Highway Traffic 40-71
						Birds 40-50
Jandra Quarry Contribution						<36dB LAeq(15min) <50 dB LA1(1min)

Note: Morning Shoulder – the period from 6am to 7am Monday to Saturday or 6am to 8am on Sundays and public holidays, Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

Table 5 Operator-Attended Noise Survey Results – Location EPA15

Date	Time (hrs)	Descriptor (dBA re 20 µPa)			Meteorology	Description and SPL, dBA
		L _{Amax}	L _{Aeq}	L _{A90}		
29/04/2020	11:49	60	48	44	WD: NE	Highway Traffic 38-48
	(Day)				WS: 2.0m/s	Birds 38-60
					Rain: Nil	Wind 38-54
						Quarry Not Audible
Jandra Quarry Contribution						<35dB L _{Aeq} (15min)
30/04/2020	06:37	71	48	40	WD: N	Highway Traffic 36-48
	(Morning				WS: 0.5m/s	Birds 38-64
	Shoulder)				Rain: Nil	Insects 36-48
						Operator 71
						Quarry Not Audible
Jandra Quarry Contribution						<30dB L _{Aeq} (15min)
						<45dB L _{A1} (1min)

Note: Morning Shoulder – the period from 6am to 7am Monday to Saturday or 6am to 8am on Sundays and public holidays, Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

Table 6 Operator-Attended Noise Survey Results – Location EPA17

Date	Time (hrs)	Descriptor (dBA re 20 µPa)			Meteorology	Description and SPL, dBA
		L _{Amax}	L _{Aeq}	L _{A90}		
29/04/2020	10:56	66	47	40	WD: NE	Wind 34-50
	(Day)				WS: 1.5m/s	Birds 38-54
					Rain: Nil	Distant Traffic 34-42
						Local Traffic 40-66
						Dogs 42-55
						Residential Noise 38-56
						Quarry Not Audible
Jandra Quarry Contribution						<35dB L _{Aeq} (15min)
29/04/2020	06:45	54	41	38	WD: N	Birds 38-54
	(Morning				WS: <0.1m/s	Distant Traffic 35-44
	Shoulder)				Rain: Nil	Quarry Not Audible
						<35dB L _{Aeq} (15min)
Jandra Quarry Contribution						<45dB L _{A1} (1min)

Note: Morning Shoulder – the period from 6am to 7am Monday to Saturday or 6am to 8am on Sundays and public holidays, Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

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5 Discussion

5.1 Discussion of Results - Location EPA13

Quarry noise was inaudible during the morning shoulder and daytime measurements conducted on Wednesday 29 April 2020. Quarry noise contributions were estimated to satisfy the morning shoulder and daytime noise limits. The quarry was not operational during the evening period and hence, no measurements were conducted for this period.

Non-quarry noise sources observed during the measurements included distant traffic, dogs barking, local residential noise, wind, insects and birds.

5.2 Discussion of Results - Location EPA16

Quarry noise was audible during the morning shoulder and inaudible during daytime measurement conducted on Wednesday 29 April 2020. Quarry noise contributions were estimated to satisfy the morning shoulder and daytime noise limits. The quarry was not operational during the evening period and hence, no measurements were conducted for this period.

Quarry noise sources observed during the measurement were general metal on metal impact noises. Non-quarry noise sources observed during the measurements included distant traffic, insects, birds, dogs barking, wind and local residential noise.

5.3 Discussion of Results - Location EPA14

Quarry noise was inaudible during the morning shoulder and daytime measurements conducted on Wednesday 29 April 2020 and Thursday 30 April 2020. Quarry noise contributions were estimated to satisfy the morning shoulder and daytime noise limits. The quarry was not operational during the evening period and hence, no measurements were conducted for this period.

Non quarry noise sources observed during the measurements included highway traffic, insects, birds, wind and local residential noise.

5.4 Discussion of Results - Location EPA15

Quarry noise was inaudible during the morning shoulder and daytime measurements conducted on Wednesday 29 April 2020 and Thursday 30 April 2020. Quarry noise contributions were estimated to satisfy the morning shoulder and daytime noise limits. The quarry was not operational during the evening period and hence, no measurements were conducted for this period.

Non quarry noise sources observed during the measurements included highway traffic, wind, insects, birds and operator noise.

5.5 Discussion of Results - Location EPA17

Quarry noise was inaudible during the morning shoulder and daytime measurements conducted on Wednesday 29 April 2020. Quarry noise contributions were estimated to satisfy the morning shoulder and daytime noise limits. The quarry was not operational during the evening period and hence, no measurements were conducted for this period.

Non-quarry noise sources observed during the measurements included distant and local traffic, insects, local residential noise, dogs barking, wind and birds.

6 Conclusion

Muller Acoustic Consulting Pty Ltd (MAC) has completed a Noise Monitoring Assessment (NMA) for Holcim (Australia) Pty Ltd at the Jandra Quarry, Possum Brush, NSW. The assessment was completed to determine compliance with the relevant noise criteria for the quarterly period ending June 2020.

Attended noise monitoring was completed on Wednesday 29 April 2020 and Thursday 30 April 2020 at five nominated EPL monitoring locations with quarry noise contributions compared against the relevant criteria. The assessment has identified that noise emissions generated by Holcim Jandra Quarry comply with relevant noise criteria specified in the EPL at all assessed locations.

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Appendix A – Glossary of Terms

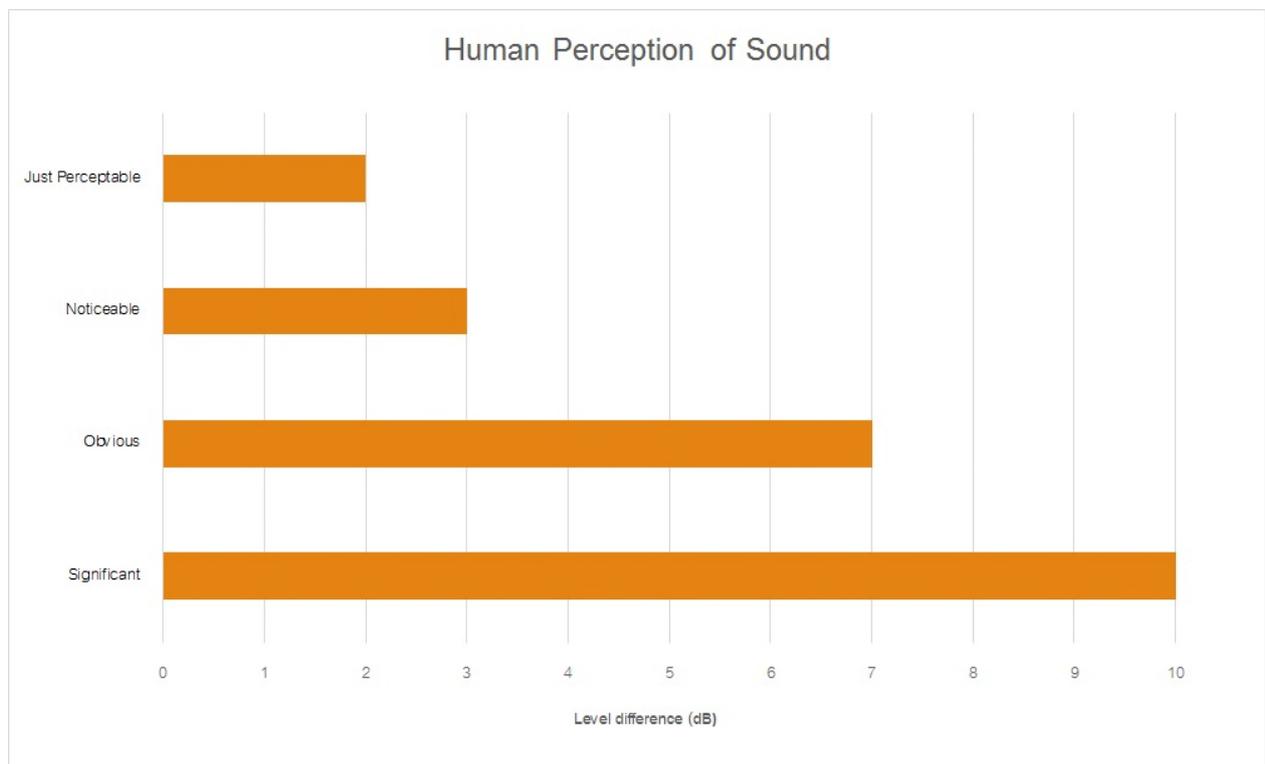
Table A1 provides a number of technical terms have been used in this report.

Table A1 Glossary of Terms	
Term	Description
1/3 Octave	Single octave bands divided into three parts
Octave	A division of the frequency range into bands, the upper frequency limit of each band being twice the lower frequency limit.
ABL	Assessment Background Level (ABL) is defined in the NPI as a single figure background level for each assessment period (day, evening and night). It is the tenth percentile of the measured LA90 statistical noise levels.
Adverse Weather	Weather effects that enhance noise (that is, wind and temperature inversions) that occur at a site for a significant period of time (that is, wind occurring more than 30% of the time in any assessment period in any season and/or temperature inversions occurring more than 30% of the nights in winter).
Ambient Noise	The noise associated with a given environment. Typically a composite of sounds from many sources located both near and far where no particular sound is dominant.
A Weighting	A standard weighting of the audible frequencies designed to reflect the response of the human ear to noise.
dBA	Noise is measured in units called decibels (dB). There are several scales for describing noise, the most common being the 'A-weighted' scale. This attempts to closely approximate the frequency response of the human ear.
dB(Z), dB(L)	Decibels Linear or decibels Z-weighted.
Hertz (Hz)	The measure of frequency of sound wave oscillations per second - 1 oscillation per second equals 1 hertz.
LA10	A noise level which is exceeded 10 % of the time. It is approximately equivalent to the average of maximum noise levels.
LA90	Commonly referred to as the background noise, this is the level exceeded 90 % of the time.
LAeq	The summation of noise over a selected period of time. It is the energy average noise from a source, and is the equivalent continuous sound pressure level over a given period.
LAm _{ax}	The maximum root mean squared (rms) sound pressure level received at the microphone during a measuring interval.
RBL	The Rating Background Level (RBL) is an overall single figure background level representing each assessment period over the whole monitoring period. The RBL is used to determine the intrusiveness criteria for noise assessment purposes and is the median of the ABL's.
Sound power level (LW)	This is a measure of the total power radiated by a source. The sound power of a source is a fundamental location of the source and is independent of the surrounding environment. Or a measure of the energy emitted from a source as sound and is given by : $= 10 \cdot \log_{10} (W/W_0)$ Where : W is the sound power in watts and W ₀ is the sound reference power at 10-12 watts.

Table A2 provides a list of common noise sources and their typical sound level.

Table A2 Common Noise Sources and Their Typical Sound Pressure Levels (SPL), dBA	
Source	Typical Sound Level
Threshold of pain	140
Jet engine	130
Hydraulic hammer	120
Chainsaw	110
Industrial workshop	100
Lawn-mower (operator position)	90
Heavy traffic (footpath)	80
Elevated speech	70
Typical conversation	60
Ambient suburban environment	40
Ambient rural environment	30
Bedroom (night with windows closed)	20
Threshold of hearing	0

Figure A1 – Human Perception of Sound



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Appendix B – Operations Log

Operations Log – Jandra Quarry 29 April 2020

Period ending	Pit	Plant
7:00	Load and haul – 1 excavator and 1 dump truck	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
7:15	Load and haul – 1 excavator and 1 dump truck	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
7:30	Load and haul – 1 excavator and 1 dump truck	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
7:45	Load and haul – 1 excavator and 1 dump truck	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
8:00	Load and haul – 1 excavator and 1 dump truck	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
8:15	Load and haul – 1 excavator and 1 dump truck	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
8:30	Load and haul – 1 excavator and 1 dump truck	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
8:45	Load and haul – 1 excavator and 1 dump truck	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
9:00	Load and haul – 1 excavator and 1 dump truck	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
9:15	Morning Tea	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
9:30	Morning Tea	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
9:45	Load and haul – 1 excavator and 1 dump truck	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
10:00	Load and haul – 1 excavator and 1 dump truck	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
10:15	Load and haul – 1 excavator and 1 dump truck	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
10:30	Load and haul – 1 excavator and 1 dump truck	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
10:45	Load and haul – 1 excavator and 1 dump truck	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
11:00	Load and haul – 1 excavator and 1 dump truck	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
11:15	Load and haul – 1 excavator and 1 dump truck	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks

Period ending	Pit	Plant
11:30	Load and haul – 1 excavator and 1 dump truck	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
11:45	Load and haul – 1 excavator and 1 dump truck	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
12:00	Load and haul – 1 excavator and 1 dump truck	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
12:15	Load and haul – 1 excavator and 1 dump truck	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
12:30	Load and haul – 1 excavator and 1 dump truck	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
12:45	Load and haul – 1 excavator and 1 dump truck	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
13:00	Load and haul – 1 excavator and 1 dump truck	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
13:15	End of Shift	End of Shift

Operations Log – Jandra Quarry 30 April 2020

Period ending	Pit	Plant
7:00	Load and haul – 1 excavator and 1 dump truck	Non-operational maintenance
7:15	Load and haul – 1 excavator and 1 dump truck	Non-operational maintenance
7:30	Load and haul – 1 excavator and 1 dump truck	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
7:45	Load and haul – 1 excavator and 1 dump truck	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
8:00	Load and haul – 1 excavator and 1 dump truck	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
8:15	No load and haul in the pit	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
8:30	No load and haul in the pit	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
8:45	No load and haul in the pit	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
9:00	No load and haul in the pit	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
9:15	Morning Tea	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
9:30	Morning Tea	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
9:45	No load and haul in the pit	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
10:00	No load and haul in the pit	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
10:15	No load and haul in the pit	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
10:30	No load and haul in the pit	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
10:45	No load and haul in the pit	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
11:00	No load and haul in the pit	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
11:15	No load and haul in the pit	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
11:30	No load and haul in the pit	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks

Period ending	Pit	Plant
11:45	No load and haul in the pit	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
12:00	No load and haul in the pit	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
12:15	No load and haul in the pit	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
12:30	No load and haul in the pit	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
12:45	No load and haul in the pit	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
13:00	No load and haul in the pit	Plant crushing rock General Sales – 1 x loader and numerous Road Trucks
13:15	End of Shift	End of Shift

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Appendix C – EPL Variation

Licence Variation



Licence - 2796

HOLCIM (AUSTRALIA) PTY LTD
ABN 87 099 732 297 ACN 099 732 297
LOCKED BAG 5007
BAULKHAM HILLS NSW 1755

Attention: Ian Vernon & Matt Neil

Notice Number 1585343
File Number EF13/3895
Date 06-Nov-2019

The Proper Officer

NOTICE OF VARIATION OF LICENCE NO. 2796

BACKGROUND

- A. HOLCIM (AUSTRALIA) PTY LTD ("the licensee") is the holder of Environment Protection Licence No. 2796 ("the licence") issued under the *Protection of the Environment Operations Act 1997* ("the POEO Act"). The licence authorises the carrying out of activities at PACIFIC HIGHWAY, POSSUM BRUSH, NSW, 2430 ("the premises").
- B. On 3 September 2019, the Environment Protection Authority ("the EPA") conducted a compliance inspection of the premises. During the compliance inspection, the EPA discussed relevant noise conditions with the licensee including the location and timing of noise monitoring.
- C. Condition L4.2 states "noise from the premises during quarrying operations only must not exceed the limits specified in the following table". Noise monitoring at a time when the quarry is operating is required to determine compliance with the noise limits specified at condition L4.2.
- D. Condition M8.1 of the licence outlines the requirements for noise compliance monitoring and includes the requirement to undertake attended noise monitoring that "c) occur during the night period as defined in the NSW Industrial Noise Policy, and in conjunction with an asphalt campaign if any such campaign occurs within the quarterly monitoring period".
- E. During the discussions with the EPA, the licensee's representative advised that the premises does not operate after 4:30pm, however noise compliance monitoring by the licensee's consultant has occurred at times when the quarry is not operating. The licensee's representative also advised that the quarry has not had an asphalt plant for some time, however development consent allows for such a plant.
- F. The EPA has made an amendment to condition M8.1 to clarify the requirement to monitor during quarrying operations and update reference to contemporary noise policy. Condition M8.2 has also been amended to reference the contemporary noise policy.

Licence Variation

- G. The NSW Industrial Noise Policy has been superseded by the NSW Noise Policy for Industry. Definition of the "night" period remains unchanged between the two policy documents.
- H. The EPA has made an amendment to condition R4.1 to require in reports of noise monitoring that details be provided of all quarrying activities that were occurring during each of the periods of monitoring.
- I. This Notice does not authorise a significant increase in the environmental impact of the activities authorised or controlled by the licence.
- J. This variation has been undertaken with consideration of section 45 of the POEO Act.

VARIATION OF LICENCE NO. 2796

- 1. By this Notice the EPA varies the licence. The attached licence document contains all variations that are made to the licence by this notice.
- 2. The following variations have been made to the licence:
 - Amendment of condition M8.1 to clarify the requirement to undertake noise monitoring during quarrying operations and to update reference to the contemporary NSW Noise Policy for Industry.
 - Amendment of condition M8.2 to reference the contemporary NSW Noise Policy for Industry.
 - Amendment to Condition R4.1 to require in reports of noise monitoring that details be provided of all quarrying activities that were occurring during each of the periods of monitoring.



.....
MATTHEW CORRADIN
A/Unit Head Hunter North
Environment Protection Authority
(by Delegation)

INFORMATION ABOUT THIS NOTICE

- This Notice is issued under Section 58(5) of the POEO Act.
- Details provided in this Notice, along with an updated version of the licence, will be available on the EPA's Public Register (<http://www.epa.nsw.gov.au/prpoeo/index.htm>) in accordance with section 308 of the POEO Act.

Licence Variation



Appeals against this decision

- You can appeal to the Land and Environment Court against this decision. The deadline for lodging the appeal is 21 days after you were given notice of this decision.

When this notice begins to operate

- The variations to the licence specified in this Notice begin to operate immediately from the date of this Notice, unless another date is specified in this Notice.
- If an appeal is made against this decision to vary the licence and the Land and Environment Court directs that the decision is stayed the decision does not operate until the stay ceases to have effect or the Land and Environment Court confirms the decision or the appeal is withdrawn (whichever occurs first).

Licence Variation



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Environment Protection Licence

Licence - 2796

Licence Details	
Number:	2796
Anniversary Date:	01-May

Licensee
HOLCIM (AUSTRALIA) PTY LTD
LOCKED BAG 5007
BAULKHAM HILLS NSW 1755

Premises
JANDRA QUARRY
PACIFIC HIGHWAY
POSSUM BRUSH NSW 2430

Scheduled Activity
Crushing, grinding or separating
Extractive activities
Resource recovery
Waste storage

Fee Based Activity	Scale
Crushing, grinding or separating	> 100000-500000 T annual processing capacity
Extractive activities	> 100000-500000 T annual capacity to extract or process
Recovery of general waste	Any general waste recovered
Waste storage - other types of waste	Any other types of waste stored

Region
North - Hunter
Ground Floor, NSW Govt Offices, 117 Bull Street NEWCASTLE WEST NSW 2302
Phone: (02) 4908 6800
Fax: (02) 4908 6810
PO Box 488G NEWCASTLE NSW 2300



Environment Protection Licence

Licence - 2796

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Environment Protection Licence

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Information about this licence

Dictionary

A definition of terms used in the licence can be found in the dictionary at the end of this licence.

Responsibilities of licensee

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 ("the Act") and the Regulations made under the Act. These include obligations to:

- ensure persons associated with you comply with this licence, as set out in section 64 of the Act;
- control the pollution of waters and the pollution of air (see for example sections 120 - 132 of the Act);
- report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

Variation of licence conditions

The licence holder can apply to vary the conditions of this licence. An application form for this purpose is available from the EPA.

The EPA may also vary the conditions of the licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

Duration of licence

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

Licence review

The Act requires that the EPA review your licence at least every 5 years after the issue of the licence, as set out in Part 3.6 and Schedule 5 of the Act. You will receive advance notice of the licence review.

Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).

Environment Protection Licence

Licence - 2796



The EPA publication “A Guide to Licensing” contains information about how to calculate your licence fees. The licence requires that an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints), be submitted to the EPA. The Annual Return must be submitted within 60 days after the end of each reporting period. See condition R1 regarding the Annual Return reporting requirements.

Usually the licence fee period is the same as the reporting period.

Transfer of licence

The licence holder can apply to transfer the licence to another person. An application form for this purpose is available from the EPA.

Public register and access to monitoring data

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- licence applications;
- licence conditions and variations;
- statements of compliance;
- load based licensing information; and
- load reduction agreements.

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

This licence is issued to:

HOLCIM (AUSTRALIA) PTY LTD
LOCKED BAG 5007
BAULKHAM HILLS NSW 1755

subject to the conditions which follow.

Environment Protection Licence

Licence - 2796

1 Administrative Conditions

A1 What the licence authorises and regulates

A1.1 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

Scheduled Activity	Fee Based Activity	Scale
Crushing, grinding or separating	Crushing, grinding or separating	> 100000 - 500000 T annual processing capacity
Extractive activities	Extractive activities	> 100000 - 500000 T annual capacity to extract or process
Resource recovery	Recovery of general waste	Any general waste recovered
Waste storage	Waste storage - other types of waste	Any other types of waste stored

Note: The condition titled "Waste" under the Limit Conditions of this licence restricts what types of waste may be received at the Premises.

A1.2 Notwithstanding the fee scales noted above, the licensee must not:

- (a) extract more than 490,000 tonnes of quarry products from the premises per calendar year; and
- (b) transport more than 475,000 tonnes of quarry products from the premises per calendar year

Note: This condition has been added to be consistent with development consent DA231-10-99 MOD 5.

A2 Premises or plant to which this licence applies

A2.1 The licence applies to the following premises:

Premises Details
JANDRA QUARRY
PACIFIC HIGHWAY
POSSUM BRUSH
NSW 2430
LOT 2 DP 255621, LOT 11 DP 790056, LOT 12 DP 790056, LOT 13 DP 790056, LOT 14 DP 790056, LOT 15 DP 790056

Environment Protection Licence

Licence - 2796

A3 Information supplied to the EPA

- A3.1 Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.

In this condition the reference to "the licence application" includes a reference to:

- a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and
- b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.

2 Discharges to Air and Water and Applications to Land

P1 Location of monitoring/discharge points and areas

- P1.1 The following points referred to in the table below are identified in this licence for the purposes of monitoring and/or the setting of limits for the emission of pollutants to the air from the point.

<i>Air</i>			
EPA identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
11	Ambient PM10 monitoring		Receiver location R1 identified on map titled "Jandra Environmental Monitoring Locations" within the Holcim Environmental Management Strategy - Jandra Quarry. See EPA document DOC16/387391, EF13/3895.
18	Dust deposition monitoring		Dust monitoring point on the northern site boundary identified on "Figure 1 Surrounding land use, residences and environmental monitoring locations" within the Holcim Air Quality Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391.
19	Dust deposition monitoring		Dust monitoring point on southern site boundary identified on "Figure 1 Surrounding land use, residences and environmental monitoring locations" within the Holcim Air Quality Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391.
20	Dust deposition monitoring		Dust monitoring point on the eastern site boundary identified on "Figure 1 Surrounding land use, residences and environmental monitoring locations" within the Holcim Air Quality Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391.

Environment Protection Licence

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21	Dust deposition monitoring	Dust monitoring point on the western site boundary identified on "Figure 1 Surrounding land use, residences and environmental monitoring locations" within the Holcim Air Quality Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391.
----	----------------------------	---

P1.2 The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.

P1.3 The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.

Water and land

EPA Identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
1	Discharge quality monitoring	Discharge quality monitoring	Discharge from final sediment dam as shown in the CSR Readymix Site Photo - Jandra Quarry Water Monitoring Location Figure 1 provided to the EPA 13 May 2002

P1.4 The following points referred to in the table below are identified in this licence for the purposes of weather and/or noise monitoring and/or setting limits for the emission of noise from the premises.

Noise/Weather

EPA identification no.	Type of monitoring point	Location description
2	Air blast overpressure & ground vibration peak particle velocity monitoring	Receiver location R4 in accordance with development consent 231-10-99 MOD 5 and identified on "Figure 1 Surrounding land use, residence and environmental monitoring locations" within the Holcim Noise and Blast Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391, EF13/3895.
3	Air blast overpressure & ground vibration peak particle velocity monitoring	Receiver location R2 in accordance with development consent 231-10-99 MOD 5 and identified on "Figure 1 Surrounding land use, residence and environmental monitoring locations" within the Holcim Noise and Blast Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391, EF13/3895.

Environment Protection Licence

Licence - 2796



4	Meteorological Station – to determine meteorological conditions for noise monitoring	Meteorological station adjacent to the "Main Dam" and identified on "Figure 1 Surrounding land use, residences and environmental monitoring locations" within the Holcim Air Quality Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391, EF13/3895.
13	Noise monitoring	Monitoring location R2 in accordance with development consent 231-10-99 MOD 5 and identified on "Figure 1 Surrounding land use, residences and environmental monitoring locations" within the Holcim Noise and Blast Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391, EF13/3895.
14	Noise monitoring	Monitoring location R4 in accordance with development consent 231-10-99 MOD 5 and identified on "Figure 1 Surrounding land use, residences and environmental monitoring locations" within the Holcim Noise and Blast Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391, EF13/3895.
15	Noise monitoring	Monitoring location R5 in accordance with development consent 231-10-99 MOD 5 and identified on "Figure 1 Surrounding land use, residences and environmental monitoring locations" within the Holcim Noise and Blast Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391, EF13/3895.
16	Noise monitoring	Monitoring location R6 in accordance with development consent 231-10-99 MOD 5 and identified on "Figure 1 Surrounding land use, residences and environmental monitoring locations" within the Holcim Noise and Blast Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391, EF13/3895.
17	Noise monitoring	Monitoring location R7 in accordance with development consent 231-10-99 MOD 5 and identified on "Figure 1 Surrounding land use, residences and environmental monitoring locations" within the Holcim Noise and Blast Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391, EF13/3895.

3 Limit Conditions

Environment Protection Licence

Licence - 2796

L1 Pollution of waters

L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.

L2 Concentration limits

L2.1 For each monitoring/discharge point or utilisation area specified in the table\ below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.

L2.2 Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.

L2.3 To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table\.

L2.4 Water and/or Land Concentration Limits

POINT 1

Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile concentration limit
pH	pH				6.5-8.5
Total suspended solids	milligrams per litre				50

L3 Waste

L3.1 The licensee must not cause, permit or allow any waste to be received at the premises, except concrete "wash-out" waste from concrete batch plants. All other wastes are not permitted on the premises, except as expressly permitted by this licence.

L3.2 The licensee must not:

- Process more than 3000 tonnes of concrete "wash-out" per annum;
- Store more than 1000 tonnes of concrete "wash-out" on the premises at any one time.

L3.3 Concrete 'wash-out' must be stockpiled on site in bunded areas and can be processed and blended with

Environment Protection Licence

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quarry raw product to produce quarry product(s).

L4 Noise limits

L4.1 Noise generated at the premises must not exceed the noise limits in the tables below. The locations referred to in the tables below are indicated in the document titled: "Jandra Quarry Intensification of Production Environmental Assessment (DA 231-10-99 MOD 5)" Dated July 2014

L4.2 Noise from the premises during quarrying operations only must not exceed the limits specified in the following table:

EPA identification no.	Limit dB(A) LAeq(15 min) Shoulder, Day & Evening
15	40
13, 14, 16	36
17	35

L4.3 Noise from the premises during operations including asphalt plant must not exceed the limits specified in the following table:

EPA identification no.	Limit dB(A) LAeq(15 min) Shoulder, Day & Evening	Limit dB(A) LAeq(15 minute) Night	Limit dB(A) LA1(1 minute) Night
15	41	39	51
14	40	39	51
13,16	40	35	48
17	36	35	48

Note:

1. Condition 10 of Schedule 2 of development consent DA 213 -10-99 MOD 5 prohibits quarrying operations during the hours of 10 pm-6 am;
2. Receiver locations are shown on the figure in Appendix 2 of development consent DA 213-10-99 a copy of which has been filed as EPA document DOC15/85830;
3. Noise limits are in accordance with development consent DA 231-10-99 MOD 5;
4. A negotiated agreement is in place for Residence R1 as referred to in development consent DA 231-10-99 MOD 5 & any noise issues from this premises will be addressed by the Department of Planning and Environment.

L4.4 For the purpose of the conditions above:

- Shoulder, Day and Evening is defined as the period from 6am - 10pm

Environment Protection Licence



Licence - 2796

- Night is defined as the period from 10pm - 6am

L4.5 The noise limits set out in the above tables apply under all meteorological conditions except the following:

- a) Wind speeds greater than 3 metres/second at 10 metres above ground level; or
- b) Stability category F temperature inversion conditions and wind speeds greater than 2 metres/second at 10 metres above ground level; or
- c) Stability category G temperature inversion conditions.

L4.6 For the purpose of the conditions above:

- a) Data recorded by the meteorological station identified in this licence must be used to determine meteorological conditions; and
- b) Temperature inversion conditions (stability category) when determined by the sigma-theta method must be determined in accordance with Part E3 of the NSW Industrial Noise Policy. Temperature inversion conditions (determined by vertical temperature gradient in degrees C) are to be determined by direct measurement over a minimum 50m height interval as referred to in Part E2 to the NSW Industrial Noise Policy

L4.7 To determine compliance:

a) with Leq (15 minute) noise limits in this licence, the noise measurement equipment must be located:

- approximately on the property boundary, where any dwelling is situated 30 metres or less from the property boundary closest to the premises; or
- within 30 metres of a dwelling façade, but not closer than 3m, where any dwelling on the property is situated more than 30 metres from the property boundary closest to the premises; or
- where applicable within approximately 50 metres of the boundary of a National Park or a Nature Reserve.

b) With the LA1 (1 minute) noise limits in this licence, the noise measurement equipment must be located within 1 metre of a dwelling façade.

c) with the noise limits in this licence, the noise measurement equipment must be located:

- at the most affected point at a location where there is no dwelling at the location; or
- at the most affected point within an area at a location prescribed by this licence.

L4.8 A non-compliance of the noise limit conditions will still occur where noise generated from the premises in excess of the appropriate limit is measured:

- at a location other than an area prescribed by this licence; and/or
- at a point other than the most affected point at a location

Environment Protection Licence



Licence - 2796

L5 Blasting

- L5.1 Blasting in or on the premises must only be carried out between 9am and 5pm, Monday to Friday and 9am and 3pm, Saturday. Blasting in or on the premises must not take place on Sundays or Public Holidays without the prior approval of the EPA.
- L5.2 The airblast overpressure level from blasting operations in or on the premises must not exceed: 115 dB (Lin Peak) for more than 5% of the total number of blasts during each reporting period; at either monitoring point 2 or 3 of this licence.
- L5.3 The airblast overpressure level from blasting operations in or on the premises must not exceed: 120 dB (Lin Peak) at any time; at either monitoring point 2 or 3 of this licence.
- L5.4 The ground vibration peak particle velocity from blasting operations carried out in or on the premises must not exceed: 5 mm/second for more than 5% of the total number of blasts during each reporting period; at either monitoring point 2 or 3 of this licence.
- L5.5 The ground vibration peak particle velocity from blasting operations carried out in or on the premises must not exceed: 10 mm/second at any time; at either monitoring point 2 or 3 of this licence.
- L5.6 Error margins associated with any monitoring equipment used to measure blasts must not be taken into account when determining whether or not the limit has been exceeded.
- L5.7 Offensive blast fume must not be emitted from the premises.

Definition:

Offensive blast fume means post-blast gases from the detonation of explosives at the premises that by reason of their nature, duration, character or quality, or the time at which they are emitted, or any other circumstances:

- 1. are harmful to (or likely to be harmful to) a person that is outside the premises from which it is emitted, or*
- 2. interferes unreasonably with (or is likely to interfere unreasonably with) the comfort or repose of a person who is outside the premises from which it is emitted.*

L6 Hours of operation

- L6.1 In accordance with development consent DA 231-10-99 MOD 5, hours of operation for the premises are specified in the table below:

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Day	Extraction and processing operations	Transportation operations	Asphalt Plant & associated transport (campaigns)
Monday - Friday	6am to 10pm	6am to 10pm	24 hours a day
Saturday	6am to 6pm	6am to 10 pm	24 hours a day
Sunday and Public Holidays	None	None	24 hours a day

- L6.2 In accordance with development consent DA 231-10-99 MOD 5, the following activities may be conducted at the premises outside the hours specified in the table above:
- (a) return of trucks to the premises prior to midnight Monday to Saturday;
 - (b) delivery or dispatch of materials as requested by Police, Fire Brigade or other similar authorities;
 - (c) emergency work to avoid the loss of lives, property and/or prevent environmental harm; and
 - (d) maintenance activities provided it is inaudible at residential premises.
- In circumstances outlines in (b) and (c), the Licensee shall notify affected residents prior to undertaking the activities, or as soon as practical thereafter

L7 Potentially offensive odour

- L7.1 The licensee must not cause or permit the emission of offensive odour beyond the boundary of the premises.

4 Operating Conditions

O1 Activities must be carried out in a competent manner

- O1.1 Licensed activities must be carried out in a competent manner.
This includes:
- a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
 - b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

O2 Maintenance of plant and equipment

- O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:
- a) must be maintained in a proper and efficient condition; and
 - b) must be operated in a proper and efficient manner.

O3 Dust

- O3.1 The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.

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O4 Emergency response

Note: The licensee must maintain, and implement as necessary, a current Pollution Incident Response Management Plan (PIRMP) for the premises. The PIRMP must be developed in accordance with the requirements in Part 5.7A of the POEO Act and Regulations.

The licensee must keep the PIRMP on the premises at all times. The PIRMP must document systems and procedures to deal with all types of incidents (e.g. spills, explosions or fire) that may occur at the premises or that may be associated with the activities that occur at the premises and which are likely to cause harm to the environment. The PIRMP must be tested at least annually or following a pollution incident.

O5 Processes and management

O5.1 The licensee must take all reasonable measures to prevent the tracking of mud and debris onto the Pacific Highway including, but not limited to, ensuring all vehicles leaving the premises pass through the vehicular wheel wash.

O6 Waste management

O6.1 The licensee must comply with the conditions as specified in this licence or where no specific conditions outlined in this licence, this licensee must comply with the *Protection of the Environment Operations (Waste) Regulation 2014*.

5 Monitoring and Recording Conditions

M1 Monitoring records

M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.

M1.2 All records required to be kept by this licence must be:

- 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.

M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:

- 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.

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M2 Requirement to monitor concentration of pollutants discharged

M2.1 For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:

M2.2 Air Monitoring Requirements

POINT 11

Pollutant	Units of measure	Frequency	Sampling Method
PM10	micrograms per cubic metre	Every 6 days	AM-18

POINT 18,19,20,21

Pollutant	Units of measure	Frequency	Sampling Method
Particulates - Deposited Matter	grams per square metre per month	Monthly	AM-19

M2.3 Water and/ or Land Monitoring Requirements

POINT 1

Pollutant	Units of measure	Frequency	Sampling Method
pH	pH	Each overflow event	Grab sample
Total suspended solids	milligrams per litre	2 times daily during discharge	Grab sample
Turbidity	nephelometric turbidity units	2 times daily during discharge	Grab sample

M3 Testing methods - concentration limits

M3.1 Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this licence must be done in accordance with:

- any methodology which is required by or under the Act to be used for the testing of the concentration of the pollutant; or
- if no such requirement is imposed by or under the Act, any methodology which a condition of this licence requires to be used for that testing; or
- if no such requirement is imposed by or under the Act or by a condition of this licence, any

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methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.

- M3.2 Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.

Note: The *Protection of the Environment Operations (Clean Air) Regulation 2010* requires testing for certain purposes to be conducted in accordance with test methods contained in the publication "Approved Methods for the Sampling and Analysis of Air Pollutants in NSW".

M4 Weather monitoring

- M4.1 At the point(s) identified below, the licensee must monitor (by sampling and obtaining results by analysis) the parameters specified in Column 1 of the table below, using the corresponding sampling method, units of measure, averaging period and sampling frequency, specified opposite in the Columns 2, 3, 4 and 5 respectively.

POINT 4

Parameter	Sampling method	Units of measure	Averaging period	Frequency
Temperature at 10 metres	AM-4	degrees Celsius	1 hour	Continuous
Wind Direction at 10 metres	AM-2 & AM-4	Degrees	15 minutes	Continuous
Wind Speed	AM-2 & AM-4	metres per second	15 minutes	Continuous
Sigma Theta	AM-2 & AM-4	Degrees	15 minutes	Continuous
Rainfall	AM-4	millimetres	15 minutes	Continuous
Relative humidity	AM-4	percent	1 hour	Continuous

- M4.2 Rainfall at the premises must be measured and recorded in millimetres per 24 hour period, at the same time each day.

Note: The rainfall monitoring data collected in compliance with the above condition will assist in interpreting the effectiveness of stormwater management at the quarry.

M5 Recording of pollution complaints

- M5.1 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.

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M5.2 The record must include details of the following:

- 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.

M5.3 The record of a complaint must be kept for at least 4 years after the complaint was made.

M5.4 The record must be produced to any authorised officer of the EPA who asks to see them.

M6 Telephone complaints line

M6.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.

M6.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.

M6.3 The preceding two conditions do not apply until 3 months after: the date of the issue of this licence.

M7 Blasting

M7.1 To determine compliance with the blasting limits of this licence:

- a) Airblast overpressure and ground vibration levels must be measured and electronically recorded for monitoring points 2 and 3 for the parameters specified in Column 1 of the table below; and
- b) The licensee must use the units of measure, sampling method, and sample at the frequency specified opposite in the other columns.

Parameters	Units of Measure	Frequency	Sampling Method
Airblast Overpressure	Decibels (Linear Peak)	All blasts	Australian Standard AS 2187.2-2006
Ground Vibration Peak Particle Velocity	millimetres/second	All blasts	Australian Standard AS 2187.2-2006

M8 Noise monitoring

M8.1 To assess compliance with the noise limits of this licence, attend noise monitoring must be undertaken in accordance with the conditions of this licence and:

- a) during a period of normal quarry operations;

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- b) at each one of the noise monitoring locations listed in the noise limits table of this licence;
- c) occur quarterly in the reporting period; and
- d) occur during the night period as defined in the NSW Noise Policy for Industry, and in conjunction with an asphalt campaign if any such campaign occurs within the quarterly monitoring period.

Note: The extent and frequency of noise monitoring required by this licence will be reviewed upon request after eight quarterly monitoring campaigns.

M8.2 Noise monitoring must be carried out in accordance with Australian Standard AS 2659.1 - 1998: Guide to the use of sound measuring equipment - Portable sound level metres and in accordance with any relevant factors provided in the NSW Noise Policy for Industry.

6 Reporting Conditions

R1 Annual return documents

R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:

1. a Statement of Compliance,
2. a Monitoring and Complaints Summary,
3. a Statement of Compliance - Licence Conditions,
4. a Statement of Compliance - Load based Fee,
5. a Statement of Compliance - Requirement to Prepare Pollution Incident Response Management Plan,
6. a Statement of Compliance - Requirement to Publish Pollution Monitoring Data; and
7. a Statement of Compliance - Environmental Management Systems and Practices.

At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.

R1.2 An Annual Return must be prepared in respect of each reporting period, except as provided below.

Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.

R1.3 Where this licence is transferred from the licensee to a new licensee:

- a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
- b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.

Note: An application to transfer a licence must be made in the approved form for this purpose.

R1.4 Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on:

- a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is

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given; or

b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.

R1.5 The Annual Return for the reporting period must be supplied to the EPA via eConnect *EPA* or by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

R1.6 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.

R1.7 Within the Annual Return, the Statements of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:

a) the licence holder; or

b) by a person approved in writing by the EPA to sign on behalf of the licence holder.

R2 Notification of environmental harm

Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

R2.1 Notifications must be made by telephoning the Environment Line service on 131 555.

R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

R3 Written report

R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:

a) where this licence applies to premises, an event has occurred at the premises; or

b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence,

and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.

R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.

R3.3 The request may require a report which includes any or all of the following information:

a) the cause, time and duration of the event;

b) the type, volume and concentration of every pollutant discharged as a result of the event;

c) 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;

d) 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;

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- e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;
- f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and
- g) any other relevant matters.

R3.4 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 by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

R4 Other reporting conditions

R4.1 Noise Compliance Assessment Report

A noise compliance assessment report(s) must be submitted to the EPA with each Annual Return. The assessment must be prepared by a suitably qualified and experienced acoustical consultant and include:

- a) an assessment of compliance with noise limits detailed in the limit conditions of this licence;
- b) details of all quarrying activities that were occurring during each of the periods of monitoring, and
- c) an outline of any management actions taken within the monitoring period to address any exceedences of the limits detailed in the limit conditions of this licence.

R4.2 Blast Monitoring Report

The licensee must supply, with each Annual Return, a Blast Monitoring Report which must include the following information relating to each blast carried out within the premises during the reporting period covered by the Annual Return:

- a) the date and time of the blast;
- b) the location of the blast on the premises;
- c) the blast monitoring results at each blast monitoring station; and
- d) an explanation for any missing blast monitoring results.

R4.3 The licensee must report any exceedence of the licence blasting limits to the regional office of the EPA as soon as practicable after the exceedence becomes known to the licensee or to one of the licensee's employees or agents.

7 General Conditions

G1 Copy of licence kept at the premises or plant

G1.1 A copy of this licence must be kept at the premises to which the licence applies.

G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.

G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

G2 Other general conditions

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G2.1 Completed Programs

Program	Description	Completed Date
PRP 1: Installation and Use of a Wheel Wash at the Premises	Construction and Utilisation of a vehicular wheel wash for all vehicles exiting the premises.	28-October-2011

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Dictionary

General Dictionary

3DGM [in relation to a concentration limit]	Means the three day geometric mean, which is calculated by multiplying the results of the analysis of three samples collected on consecutive days and then taking the cubed root of that amount. Where one or more of the samples is zero or below the detection limit for the analysis, then 1 or the detection limit respectively should be used in place of those samples
Act	Means the Protection of the Environment Operations Act 1997
activity	Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997
actual load	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
AM	Together with a number, means an ambient air monitoring method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .
AMG	Australian Map Grid
anniversary date	The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
annual return	Is defined in R1.1
Approved Methods Publication	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
assessable pollutants	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
BOD	Means biochemical oxygen demand
CEM	Together with a number, means a continuous emission monitoring method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .
COD	Means chemical oxygen demand
composite sample	Unless otherwise specifically approved in writing by the EPA, a sample consisting of 24 individual samples collected at hourly intervals and each having an equivalent volume.
cond.	Means conductivity
environment	Has the same meaning as in the Protection of the Environment Operations Act 1997
environment protection legislation	Has the same meaning as in the Protection of the Environment Administration Act 1991
EPA	Means Environment Protection Authority of New South Wales.
fee-based activity classification	Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 2009.
general solid waste (non-putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997

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flow weighted composite sample	Means a sample whose composites are sized in proportion to the flow at each composites time of collection.
general solid waste (putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
grab sample	Means a single sample taken at a point at a single time
hazardous waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
licensee	Means the licence holder described at the front of this licence
load calculation protocol	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
local authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
material harm	Has the same meaning as in section 147 Protection of the Environment Operations Act 1997
MBAS	Means methylene blue active substances
Minister	Means the Minister administering the Protection of the Environment Operations Act 1997
mobile plant	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
motor vehicle	Has the same meaning as in the Protection of the Environment Operations Act 1997
O&G	Means oil and grease
percentile [in relation to a concentration limit of a sample]	Means that percentage [eg.50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period of time. In this licence, the specified period of time is the Reporting Period unless otherwise stated in this licence.
plant	Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles.
pollution of waters [or water pollution]	Has the same meaning as in the Protection of the Environment Operations Act 1997
premises	Means the premises described in condition A2.1
public authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
regional office	Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence
reporting period	For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 months. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
restricted solid waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
scheduled activity	Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997
special waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
TM	Together with a number, means a test method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .

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TSP	Means total suspended particles
TSS	Means total suspended solids
Type 1 substance	Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements
Type 2 substance	Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements
utilisation area	Means any area shown as a utilisation area on a map submitted with the application for this licence
waste	Has the same meaning as in the Protection of the Environment Operations Act 1997
waste type	Means liquid, restricted solid waste, general solid waste (putrescible), general solid waste (non - putrescible), special waste or hazardous waste

Mr Nigel Sargent

Environment Protection Authority

(By Delegation)

Date of this edition: 10-March-2000

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End Notes

- 1 Licence varied by notice 1006152, issued on 21-Feb-2002, which came into effect on 18-Mar-2002.
- 2 Licence varied by notice 1016675, issued on 20-Jun-2002, which came into effect on 15-Jul-2002.
- 3 Licence transferred through application 141653, approved on 19-Dec-2002, which came into effect on 01-Oct-2002.
- 4 Licence varied by notice 1042128, issued on 14-Jan-2005, which came into effect on 08-Feb-2005.
- 5 Condition A1.3 Not applicable varied by notice issued on <issue date> which came into effect on <effective date>
- 6 Licence varied by notice 1106247, issued on 08-Sep-2009, which came into effect on 08-Sep-2009.
- 7 Licence varied by notice 1503538 issued on 04-Jan-2012
- 8 Licence varied by notice 1507470 issued on 26-Sep-2012
- 9 Licence varied by notice 1535107 issued on 17-Oct-2016
- 10 Licence varied by notice 1577456 issued on 12-Jun-2019
- 11 Licence format updated on 18-Jul-2019

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Noise Monitoring Assessment

Jandra Quarry, Possum Brush, NSW
Quarter 3 Ending September 2020.

Document Information

Noise Monitoring Assessment

Jandra Quarry, Possum Brush, NSW

Quarter 3 Ending September 2020

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1 Introduction

Muller Acoustic Consulting Pty Ltd (MAC) has been commissioned by Holcim (Australia) Pty Ltd (Holcim) to complete a Noise Monitoring Assessment (NMA) for the quarterly period ending September 2020 for Jandra Quarry (the 'quarry'), Possum Brush, NSW.

Noise monitoring has been conducted in accordance with the Jandra Noise and Blast Management Plan and in accordance with additional clarifications and requirements specified by the EPA in the recent variation (6 November 2019) of the EPL 2796 (EPL).

The following variations have been made to the licence:

- Amendment of condition M8.1 to clarify the requirement to undertake noise monitoring during quarrying operations and to update reference to the contemporary NSW Noise Policy for Industry;
- Amendment of condition M8.2 referencing the contemporary NSW Noise Policy for Industry; and
- Amendment to Condition R4.1 requires that noise monitoring reports contain details of all quarrying activities that were occurring during each of the monitoring periods.

Specifically, the amendment to M8.1 is reproduced below.

M8 Noise monitoring

M8.1 *To assess compliance with the noise limits of this licence, attend noise monitoring must be undertaken in accordance with the conditions of this licence and:*

- a) during a period of normal quarry operations;*
- b) at each one of the noise monitoring locations listed in the noise limits table of this licence;*
- c) occur quarterly in a reporting period, and*
- d) occur during the night period as defined in the NSW Industrial Noise Policy, and in conjunction with an asphalt campaign if any such campaign occurs within the quarterly monitoring period.*

The assessment has been conducted in accordance with the following documents:

- NSW Environment Protection Authority (EPA), Noise Policy for Industry (NPI), 2017;
- Environment Protection Licence (EPL), 2796 and Variation 6 November 2019;
- Jandra Quarry Conditions of Consent (CoC), 2015;
- Jandra Quarry Noise and Blast Management Plan (NBMP), 2015; and
- Australian Standard AS 1055:2018 - Acoustics - Description and measurement of environmental noise - General Procedures.

A glossary of terms, definitions and abbreviations used in this report is provided in **Appendix A**.

The operations log during the noise monitoring is provided in **Appendix B**.

A copy of the recent licence variation is provided in **Appendix C**.

2 Noise Criteria

Section L4 of the Jandra Environment Protection Licence (EPL 2796) presents noise criteria for residential receivers surrounding the quarry site, which are applicable for two different operational modes – quarrying and quarrying plus asphalt production.

Furthermore, Section 5 of the Jandra Noise and Blast Management Plan (NBMP) outlines that noise criteria do not apply at R1, R3, R8, R9, R10. Section 5 of the NBMP states:

- *'Holcim has executed a negotiated agreement with the property owner of R1 which excludes this receptor from the approved noise criteria';*
- *'R3 is not included in the approved noise criteria as this receiver represented road noise and the EA concluded that road noise impacts as a consequence of the development were below guideline thresholds and didn't warrant further assessment'; and*
- *'Receivers R8, R9 & R10 are Holcim owned residences and the approved criteria only apply to privately owned land'.*

Table 1 presents the criteria for the receivers R1 – R10 where compliance is required for both quarry operation and combined quarry and asphalt production operations.

Table 1 Noise Criteria				
Location	Quarry Operations	Quarry Operations and Asphalt Plant Production		
	6am – 10pm	6am – 10pm	10pm – 6am	10pm – 6am
	dB LAeq(15min)	dB LAeq(15min)	dB LAeq(15min)	dB LA1(1min)
EPA13 (R2)	36	40	35	48
EPA14 (R4)	36	40	39	51
EPA15 (R5)	40	41	39	51
EPA16 (R6)	36	40	35	48
EPA17 (R7)	35	36	35	48

Note 1: Noise criteria are not applicable to these receivers as per Section 5 of the NBMP.

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3 Methodology

3.1 Locality

The quarry is located at Possum Brush, NSW approximately 16km south of Taree, NSW. Receivers in the locality surrounding the quarry are primarily rural/residential. The Pacific Highway is situated to the west of the site, with highway traffic a dominant noise source at receivers within its' proximity. To the east, the quarry is bounded by rural properties with noise from The Lakes Way dominating the acoustic environment. The monitoring locations with respect to the quarry and assessed receivers are presented in the locality plan shown in **Figure 1**.

3.2 Noise Monitoring Locations

Noise measurements were conducted at five monitoring locations specified in the EPL on Wednesday 2 September 2020 and Thursday 3 September 2020 during the morning shoulder and daytime periods. The measurement locations are presented in **Figure 1**.

3.3 Assessment Methodology

Attended noise surveys were conducted in general accordance with the procedures described in Australian Standard AS 1055:2018, "Acoustics - Description and Measurement of Environmental Noise" and the EPL. The measurements were carried out using Svantek Type 1, 971 noise analyser on Wednesday 2 September 2020 and Thursday 3 September 2020. The acoustic instrumentation used carries current NATA calibration and complies with AS/NZS IEC 61672.1-2019-Electroacoustics - Sound level meters - Specifications. Calibration of all instrumentation was checked prior to and following measurements. Drift in calibration did not exceed ± 0.5 dBA.

Noise measurements were of 15 minutes in duration and where possible, throughout each survey the operator quantified the contribution of each significant noise source. One measurement was conducted at each of the EPL monitoring locations during the morning shoulder and daytime periods. Monitoring during the evening period was not conducted due to the quarry not being operational.

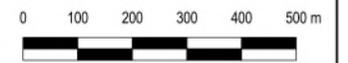
Extraneous noise sources were excluded from the analysis to determine the LAeq(15min) noise contribution for comparison against the relevant criteria. Where the quarry was inaudible, the contribution is estimated to be at least 10dB below the ambient noise level.



FIGURE 1
Site Locality
MAC180611-04
Holcim Jandra Quarry

KEY

● Noise Monitoring Locations



4 Results

4.1 Assessment Results

The monitored noise level contributions and observed meteorological conditions for each assessment period at location are presented in **Table 2** to **Table 6**.

Table 2 Operator-Attended Noise Survey Results – Location EPA13

Date	Time (hrs)	Descriptor (dBA re 20 μ Pa)			Meteorology	Description and SPL, dBA
		L _{Amax}	L _{Aeq}	L _{A90}		
02/09/2020	07:53 (Day)	66	46	41	WD: N WS: 0.5m/s Rain: Nil	Distant Traffic 36-47
						Birds 38-66
						Dogs 36-42
						Quarry Trucks <36 (<4 minutes duration)
Jandra Quarry Contribution						<36 L _{Aeq} (15min)
02/09/2020	06:02 (Morning Shoulder)	69	50	40	WD: N WS: 0.5m/s Rain: Nil	Distant Traffic 36-46
						Birds 34-69
						Dogs 40-51
						Insects <36 Quarry Not Audible
Jandra Quarry Contribution						<36 L _{Aeq} (15min) <45 L _{A1} (1min)

Note: Morning Shoulder – the period from 6am to 7am Monday to Saturday or 6am to 8am on Sundays and public holidays, Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

Table 3 Operator-Attended Noise Survey Results – Location EPA14

Date	Time (hrs)	Descriptor (dBA re 20 µPa)			Meteorology	Description and SPL, dBA
		L _{Amax}	L _{Aeq}	L _{A90}		
02/09/2020	09:15 (Day)	67	52	47	WD: NW	Highway Traffic 42-60
					WS: 1.0m/s	Birds 40-67
					Rain: Nil	Quarry Not Audible
Jandra Quarry Contribution						<36 L _{Aeq} (15min)
03/09/2020	06:01 (Morning Shoulder)	67	55	48	WD: N	Highway Traffic 41-63
					WS: 0.1m/s	Birds 38-67
					Rain: Nil	Quarry Not Audible
Jandra Quarry Contribution						<36 L _{Aeq} (15min)
						<50 dB L _{A1} (1min)

Note: Morning Shoulder – the period from 6am to 7am Monday to Saturday or 6am to 8am on Sundays and public holidays, Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

Table 4 Operator-Attended Noise Survey Results – Location EPA15

Date	Time (hrs)	Descriptor (dBA re 20 µPa)			Meteorology	Description and SPL, dBA
		L _{Amax}	L _{Aeq}	L _{A90}		
02/09/2020	09:35 (Day)	75	48	41	WD: NW	Highway Traffic 38-51
					WS: 1.5m/s	Birds 35-75
					Rain: Nil	Wind <35-48
Jandra Quarry Contribution						Quarry Not Audible
Jandra Quarry Contribution						<40 L _{Aeq} (15min)
03/09/2020	06:20 (Morning Shoulder)	71	52	46	WD: N	Highway Traffic 41-54
					WS: 0.1m/s	Birds 38-71
					Rain: Nil	Quarry Not Audible
Jandra Quarry Contribution						<40 L _{Aeq} (15min)
						<50 L _{A1} (1min)

Note: Morning Shoulder – the period from 6am to 7am Monday to Saturday or 6am to 8am on Sundays and public holidays, Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

Table 5 Operator-Attended Noise Survey Results – Location EPA16

Date	Time (hrs)	Descriptor (dBA re 20 µPa)			Meteorology	Description and SPL, dBA
		L _{Amax}	L _{Aeq}	L _{A90}		
02/09/2020	8:11	66	45	39	WD: N WS: 0.5m/s Rain: Nil	Distant Traffic 37-48
	(Day)					Birds 34-66 Quarry Trucks <36 (<4 minutes duration)
Jandra Quarry Contribution						<36 L _{Aeq} (15min)
02/09/2020	06:21	65	46	41	WD: N WS: 0.5m/s Rain: Nil	Distant Traffic 36-48
	(Morning Shoulder)					Birds 33-65 Insects <37 Quarry Not Audible
Jandra Quarry Contribution						<36 L _{Aeq} (15min) <45 L _{A1} (1min)

Note: Morning Shoulder – the period from 6am to 7am Monday to Saturday or 6am to 8am on Sundays and public holidays, Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

Table 6 Operator-Attended Noise Survey Results – Location EPA17

Date	Time (hrs)	Descriptor (dBA re 20 µPa)			Meteorology	Description and SPL, dBA
		L _{Amax}	L _{Aeq}	L _{A90}		
02/09/2020	08:38	71	47	37	WD: N WS: 1.0m/s Rain: Nil	Distant Traffic 33-45
	(Day)					Birds 30-71 Residential noise 35-45 Quarry Not Audible
Jandra Quarry Contribution						<35dB L _{Aeq} (15min)
02/09/2020	06:45	70	48	41	WD: N WS: 0.1m/s Rain: Nil	Distant Traffic 38-46
	(Morning Shoulder)					Birds 35-70 Quarry Not Audible
Jandra Quarry Contribution						<35 L _{Aeq} (15min) <45 L _{A1} (1min)

Note: Morning Shoulder – the period from 6am to 7am Monday to Saturday or 6am to 8am on Sundays and public holidays, Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

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5 Discussion

5.1 Discussion of Results - Location EPA13

Quarry noise was inaudible during the morning shoulder measurement and just audible for short periods during the daytime measurement conducted on Wednesday 2 September 2020. Quarry noise contributions were estimated to satisfy the morning shoulder and daytime noise limits. The quarry was not operational during the evening period and hence, no measurements were conducted for this period.

Quarry noise sources observed during the measurement were truck movements. Non-quarry noise sources observed during the measurements included distant traffic, dogs barking, insects and birds.

5.2 Discussion of Results - Location EPA14

Quarry noise was inaudible during the morning shoulder and daytime measurements conducted on Wednesday 2 September 2020 and Thursday 3 September 2020. Quarry noise contributions were estimated to satisfy the morning shoulder and daytime noise limits. The quarry was not operational during the evening period and hence, no measurements were conducted for this period.

Non quarry noise sources observed during the measurements included highway traffic and birds

5.3 Discussion of Results - Location EPA15

Quarry noise was inaudible during the morning shoulder and daytime measurements conducted on Wednesday 2 September 2020 and Thursday 3 September 2020. Quarry noise contributions were estimated to satisfy the morning shoulder and daytime noise limits. The quarry was not operational during the evening period and hence, no measurements were conducted for this period.

Non quarry noise sources observed during the measurements included highway traffic, wind and birds

5.4 Discussion of Results - Location EPA16

Quarry noise was inaudible during the morning shoulder measurement and just audible for short periods during daytime measurement conducted on Wednesday 2 September 2020. Quarry noise contributions were estimated to satisfy the morning shoulder and daytime noise limits. The quarry was not operational during the evening period and hence, no measurements were conducted for this period.

Quarry noise sources observed during the measurement were truck movements. Non-quarry noise sources observed during the measurements included distant traffic, insects and birds.

5.5 Discussion of Results - Location EPA17

Quarry noise was inaudible during the morning shoulder and daytime measurements conducted on Wednesday 2 September 2020. Quarry noise contributions were estimated to satisfy the morning shoulder and daytime noise limits. The quarry was not operational during the evening period and hence, no measurements were conducted for this period.

Non-quarry noise sources observed during the measurements included distant traffic, residential noise, and dogs barking.

6 Conclusion

Muller Acoustic Consulting Pty Ltd (MAC) has completed a Noise Monitoring Assessment (NMA) for Holcim (Australia) Pty Ltd at the Jandra Quarry, Possum Brush, NSW. The assessment was completed to determine compliance with the relevant noise criteria for the quarterly period ending September 2020.

Attended noise monitoring was completed on Wednesday 2 September 2020 and Thursday 3 September 2020 at five nominated EPL monitoring locations with quarry noise contributions compared against the relevant criteria. The assessment has identified that noise emissions generated by Holcim Jandra Quarry comply with relevant noise criteria specified in the EPL at all assessed locations.

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Appendix A – Glossary of Terms

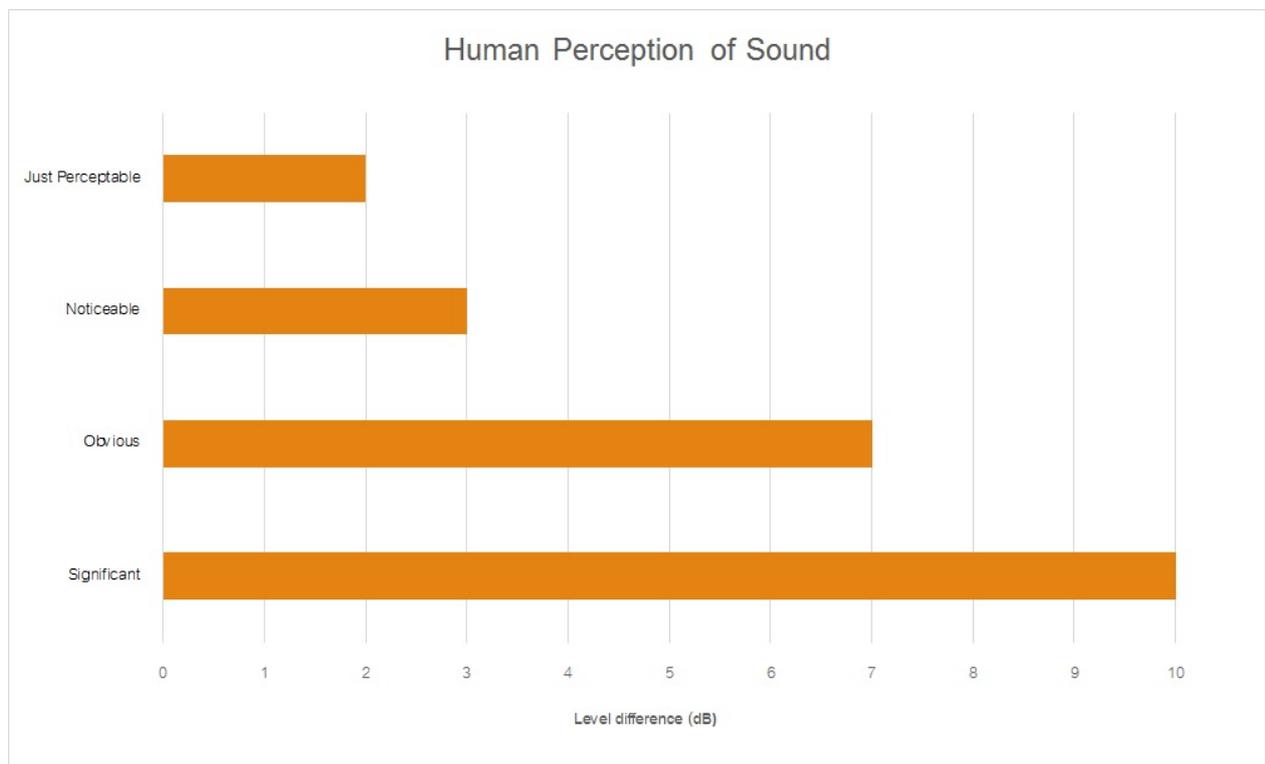
Table A1 provides a number of technical terms have been used in this report.

Table A1 Glossary of Terms	
Term	Description
1/3 Octave	Single octave bands divided into three parts
Octave	A division of the frequency range into bands, the upper frequency limit of each band being twice the lower frequency limit.
ABL	Assessment Background Level (ABL) is defined in the NPI as a single figure background level for each assessment period (day, evening and night). It is the tenth percentile of the measured LA90 statistical noise levels.
Adverse Weather	Weather effects that enhance noise (that is, wind and temperature inversions) that occur at a site for a significant period of time (that is, wind occurring more than 30% of the time in any assessment period in any season and/or temperature inversions occurring more than 30% of the nights in winter).
Ambient Noise	The noise associated with a given environment. Typically a composite of sounds from many sources located both near and far where no particular sound is dominant.
A Weighting	A standard weighting of the audible frequencies designed to reflect the response of the human ear to noise.
dBA	Noise is measured in units called decibels (dB). There are several scales for describing noise, the most common being the 'A-weighted' scale. This attempts to closely approximate the frequency response of the human ear.
dB(Z), dB(L)	Decibels Linear or decibels Z-weighted.
Hertz (Hz)	The measure of frequency of sound wave oscillations per second - 1 oscillation per second equals 1 hertz.
LA10	A noise level which is exceeded 10 % of the time. It is approximately equivalent to the average of maximum noise levels.
LA90	Commonly referred to as the background noise, this is the level exceeded 90 % of the time.
LAeq	The summation of noise over a selected period of time. It is the energy average noise from a source, and is the equivalent continuous sound pressure level over a given period.
LAm _{ax}	The maximum root mean squared (rms) sound pressure level received at the microphone during a measuring interval.
RBL	The Rating Background Level (RBL) is an overall single figure background level representing each assessment period over the whole monitoring period. The RBL is used to determine the intrusiveness criteria for noise assessment purposes and is the median of the ABL's.
Sound power level (LW)	This is a measure of the total power radiated by a source. The sound power of a source is a fundamental location of the source and is independent of the surrounding environment. Or a measure of the energy emitted from a source as sound and is given by : $= 10 \cdot \log_{10} (W/W_0)$ Where : W is the sound power in watts and W ₀ is the sound reference power at 10-12 watts.

Table A2 provides a list of common noise sources and their typical sound level.

Table A2 Common Noise Sources and Their Typical Sound Pressure Levels (SPL), dBA	
Source	Typical Sound Level
Threshold of pain	140
Jet engine	130
Hydraulic hammer	120
Chainsaw	110
Industrial workshop	100
Lawn-mower (operator position)	90
Heavy traffic (footpath)	80
Elevated speech	70
Typical conversation	60
Ambient suburban environment	40
Ambient rural environment	30
Bedroom (night with windows closed)	20
Threshold of hearing	0

Figure A1 – Human Perception of Sound



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Appendix B – Operations Log

Operations Log – Jandra Quarry 2 September 2020

Period ending	Pit	Plant
6:00	N/A	N/A
6:15	N/A	N/A
6:30	Load and haul CAT775 and CAT349 RL35 to ROM	Production Sales Loader Road Trucks
6:45	Load and haul CAT775 and CAT349 RL35 to ROM	Production Sales Loader Road Trucks
7:00	Load and haul CAT775 and CAT349 RL35 to ROM Water Cart	Production Sales Loader Road Trucks
7:15	Load and haul CAT775 and CAT349 RL35 to ROM Water Cart	Production Sales Loader Road Trucks
7:30	Load and haul CAT775 and CAT349 RL35 to ROM	Production Sales Loader Road Trucks
7:45	Load and haul CAT775 and CAT349 RL35 to ROM	Production Sales Loader Road Trucks
8:00	Load and haul CAT775 and CAT349 RL35 to ROM	Production Sales Loader Road Trucks
8:15	Load and haul CAT775 and CAT349 RL35 to ROM Water Cart	Production Sales Loader Road Trucks
8:30	Load and haul CAT775 and CAT349 RL35 to ROM Water Cart	Production Sales Loader Road Trucks
8:45	Load and haul CAT775 and CAT349 RL35 to ROM	Production Sales Loader Road Trucks
9:00	Load and haul CAT775 and CAT349 RL35 to ROM	Production Sales Loader Road Trucks

Period ending	Pit	Plant
9:15	Morning Tea	Production Sales Loader Road Trucks
9:30	Morning Tea	Production Sales Loader Road Trucks
9:45	Load and haul CAT775 and CAT349 RL35 to ROM	Production Sales Loader Road Trucks
10:00	Load and haul CAT775 and CAT349 RL35 to ROM	Production Sales Loader Road Trucks
10:15	Load and haul CAT775 and CAT349 RL35 to ROM	Production Sales Loader Road Trucks
10:30	Load and haul CAT775 and CAT349 RL35 to ROM	Production Sales Loader Road Trucks
10:45	Load and haul CAT775 and CAT349 RL35 to ROM	Production Sales Loader Road Trucks
11:00	Load and haul CAT775 and CAT349 RL35 to ROM truck	Production Sales Loader Road Trucks

Operations Log – Jandra Quarry 3 September 2020

Period ending	Pit	Plant
6:00	N/A	N/A
6:15	N/A	Production Sales Loader Road Trucks
6:30	Load and haul CAT775 and CAT349 RL35 to ROM	Production Sales Loader Road Trucks
6:45	Load and haul CAT775 and CAT349 RL35 to ROM	Production Sales Loader Road Trucks
7:00	Load and haul CAT775 and CAT349 RL35 to ROM Water Cart	Production Sales Loader Road Trucks
7:15	Load and haul CAT775 and CAT349 RL35 to ROM Water Cart	Production Sales Loader Road Trucks
7:30	Load and haul CAT775 and CAT349 RL35 to ROM	Production Sales Loader Road Trucks
7:45	Load and haul CAT775 and CAT349 RL35 to ROM	Production Sales Loader Road Trucks
8:00	Load and haul CAT775 and CAT349 RL35 to ROM	Production Sales Loader Road Trucks

Appendix C – EPL Variation

Licence Variation



Licence - 2796

HOLCIM (AUSTRALIA) PTY LTD
ABN 87 099 732 297 ACN 099 732 297
LOCKED BAG 5007
BAULKHAM HILLS NSW 1755

Attention: Ian Vernon & Matt Neil

Notice Number 1585343
File Number EF13/3895
Date 06-Nov-2019

The Proper Officer

NOTICE OF VARIATION OF LICENCE NO. 2796

BACKGROUND

- A. HOLCIM (AUSTRALIA) PTY LTD ("the licensee") is the holder of Environment Protection Licence No. 2796 ("the licence") issued under the *Protection of the Environment Operations Act 1997* ("the POEO Act"). The licence authorises the carrying out of activities at PACIFIC HIGHWAY, POSSUM BRUSH, NSW, 2430 ("the premises").
- B. On 3 September 2019, the Environment Protection Authority ("the EPA") conducted a compliance inspection of the premises. During the compliance inspection, the EPA discussed relevant noise conditions with the licensee including the location and timing of noise monitoring.
- C. Condition L4.2 states "noise from the premises during quarrying operations only must not exceed the limits specified in the following table". Noise monitoring at a time when the quarry is operating is required to determine compliance with the noise limits specified at condition L4.2.
- D. Condition M8.1 of the licence outlines the requirements for noise compliance monitoring and includes the requirement to undertake attended noise monitoring that "c) occur during the night period as defined in the NSW Industrial Noise Policy, and in conjunction with an asphalt campaign if any such campaign occurs within the quarterly monitoring period".
- E. During the discussions with the EPA, the licensee's representative advised that the premises does not operate after 4:30pm, however noise compliance monitoring by the licensee's consultant has occurred at times when the quarry is not operating. The licensee's representative also advised that the quarry has not had an asphalt plant for some time, however development consent allows for such a plant.
- F. The EPA has made an amendment to condition M8.1 to clarify the requirement to monitor during quarrying operations and update reference to contemporary noise policy. Condition M8.2 has also been amended to reference the contemporary noise policy.

Licence Variation

- G. The NSW Industrial Noise Policy has been superseded by the NSW Noise Policy for Industry. Definition of the "night" period remains unchanged between the two policy documents.
- H. The EPA has made an amendment to condition R4.1 to require in reports of noise monitoring that details be provided of all quarrying activities that were occurring during each of the periods of monitoring.
- I. This Notice does not authorise a significant increase in the environmental impact of the activities authorised or controlled by the licence.
- J. This variation has been undertaken with consideration of section 45 of the POEO Act.

VARIATION OF LICENCE NO. 2796

- 1. By this Notice the EPA varies the licence. The attached licence document contains all variations that are made to the licence by this notice.
- 2. The following variations have been made to the licence:
 - Amendment of condition M8.1 to clarify the requirement to undertake noise monitoring during quarrying operations and to update reference to the contemporary NSW Noise Policy for Industry.
 - Amendment of condition M8.2 to reference the contemporary NSW Noise Policy for Industry.
 - Amendment to Condition R4.1 to require in reports of noise monitoring that details be provided of all quarrying activities that were occurring during each of the periods of monitoring.



.....
MATTHEW CORRADIN
A/Unit Head Hunter North
Environment Protection Authority
(by Delegation)

INFORMATION ABOUT THIS NOTICE

- This Notice is issued under Section 58(5) of the POEO Act.
- Details provided in this Notice, along with an updated version of the licence, will be available on the EPA's Public Register (<http://www.epa.nsw.gov.au/prpoeo/index.htm>) in accordance with section 308 of the POEO Act.

Licence Variation



Appeals against this decision

- You can appeal to the Land and Environment Court against this decision. The deadline for lodging the appeal is 21 days after you were given notice of this decision.

When this notice begins to operate

- The variations to the licence specified in this Notice begin to operate immediately from the date of this Notice, unless another date is specified in this Notice.
- If an appeal is made against this decision to vary the licence and the Land and Environment Court directs that the decision is stayed the decision does not operate until the stay ceases to have effect or the Land and Environment Court confirms the decision or the appeal is withdrawn (whichever occurs first).

Licence Variation



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Environment Protection Licence

Licence - 2796

Licence Details	
Number:	2796
Anniversary Date:	01-May

Licensee
HOLCIM (AUSTRALIA) PTY LTD
LOCKED BAG 5007
BAULKHAM HILLS NSW 1755

Premises
JANDRA QUARRY
PACIFIC HIGHWAY
POSSUM BRUSH NSW 2430

Scheduled Activity
Crushing, grinding or separating
Extractive activities
Resource recovery
Waste storage

Fee Based Activity	Scale
Crushing, grinding or separating	> 100000-500000 T annual processing capacity
Extractive activities	> 100000-500000 T annual capacity to extract or process
Recovery of general waste	Any general waste recovered
Waste storage - other types of waste	Any other types of waste stored

Region
North - Hunter
Ground Floor, NSW Govt Offices, 117 Bull Street NEWCASTLE WEST NSW 2302
Phone: (02) 4908 6800
Fax: (02) 4908 6810
PO Box 488G NEWCASTLE NSW 2300



Environment Protection Licence

Licence - 2796

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Environment Protection Licence



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Environment Protection Licence

Licence - 2796



Information about this licence

Dictionary

A definition of terms used in the licence can be found in the dictionary at the end of this licence.

Responsibilities of licensee

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 ("the Act") and the Regulations made under the Act. These include obligations to:

- ensure persons associated with you comply with this licence, as set out in section 64 of the Act;
- control the pollution of waters and the pollution of air (see for example sections 120 - 132 of the Act);
- report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

Variation of licence conditions

The licence holder can apply to vary the conditions of this licence. An application form for this purpose is available from the EPA.

The EPA may also vary the conditions of the licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

Duration of licence

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

Licence review

The Act requires that the EPA review your licence at least every 5 years after the issue of the licence, as set out in Part 3.6 and Schedule 5 of the Act. You will receive advance notice of the licence review.

Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).

Environment Protection Licence

Licence - 2796



The EPA publication “A Guide to Licensing” contains information about how to calculate your licence fees. The licence requires that an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints), be submitted to the EPA. The Annual Return must be submitted within 60 days after the end of each reporting period. See condition R1 regarding the Annual Return reporting requirements.

Usually the licence fee period is the same as the reporting period.

Transfer of licence

The licence holder can apply to transfer the licence to another person. An application form for this purpose is available from the EPA.

Public register and access to monitoring data

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- licence applications;
- licence conditions and variations;
- statements of compliance;
- load based licensing information; and
- load reduction agreements.

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

This licence is issued to:

HOLCIM (AUSTRALIA) PTY LTD
LOCKED BAG 5007
BAULKHAM HILLS NSW 1755

subject to the conditions which follow.

Environment Protection Licence

Licence - 2796

1 Administrative Conditions

A1 What the licence authorises and regulates

A1.1 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

Scheduled Activity	Fee Based Activity	Scale
Crushing, grinding or separating	Crushing, grinding or separating	> 100000 - 500000 T annual processing capacity
Extractive activities	Extractive activities	> 100000 - 500000 T annual capacity to extract or process
Resource recovery	Recovery of general waste	Any general waste recovered
Waste storage	Waste storage - other types of waste	Any other types of waste stored

Note: The condition titled "Waste" under the Limit Conditions of this licence restricts what types of waste may be received at the Premises.

A1.2 Notwithstanding the fee scales noted above, the licensee must not:

- (a) extract more than 490,000 tonnes of quarry products from the premises per calendar year; and
- (b) transport more than 475,000 tonnes of quarry products from the premises per calendar year

Note: This condition has been added to be consistent with development consent DA231-10-99 MOD 5.

A2 Premises or plant to which this licence applies

A2.1 The licence applies to the following premises:

Premises Details
JANDRA QUARRY
PACIFIC HIGHWAY
POSSUM BRUSH
NSW 2430
LOT 2 DP 255621, LOT 11 DP 790056, LOT 12 DP 790056, LOT 13 DP 790056, LOT 14 DP 790056, LOT 15 DP 790056

Environment Protection Licence

Licence - 2796

A3 Information supplied to the EPA

- A3.1 Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.

In this condition the reference to "the licence application" includes a reference to:

- a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and
- b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.

2 Discharges to Air and Water and Applications to Land

P1 Location of monitoring/discharge points and areas

- P1.1 The following points referred to in the table below are identified in this licence for the purposes of monitoring and/or the setting of limits for the emission of pollutants to the air from the point.

<i>Air</i>			
EPA identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
11	Ambient PM10 monitoring		Receiver location R1 identified on map titled "Jandra Environmental Monitoring Locations" within the Holcim Environmental Management Strategy - Jandra Quarry. See EPA document DOC16/387391, EF13/3895.
18	Dust deposition monitoring		Dust monitoring point on the northern site boundary identified on "Figure 1 Surrounding land use, residences and environmental monitoring locations" within the Holcim Air Quality Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391.
19	Dust deposition monitoring		Dust monitoring point on southern site boundary identified on "Figure 1 Surrounding land use, residences and environmental monitoring locations" within the Holcim Air Quality Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391.
20	Dust deposition monitoring		Dust monitoring point on the eastern site boundary identified on "Figure 1 Surrounding land use, residences and environmental monitoring locations" within the Holcim Air Quality Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391.

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21	Dust deposition monitoring	Dust monitoring point on the western site boundary identified on "Figure 1 Surrounding land use, residences and environmental monitoring locations" within the Holcim Air Quality Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391.
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P1.2 The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.

P1.3 The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.

Water and land

EPA Identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
1	Discharge quality monitoring	Discharge quality monitoring	Discharge from final sediment dam as shown in the CSR Readymix Site Photo - Jandra Quarry Water Monitoring Location Figure 1 provided to the EPA 13 May 2002

P1.4 The following points referred to in the table below are identified in this licence for the purposes of weather and/or noise monitoring and/or setting limits for the emission of noise from the premises.

Noise/Weather

EPA identification no.	Type of monitoring point	Location description
2	Air blast overpressure & ground vibration peak particle velocity monitoring	Receiver location R4 in accordance with development consent 231-10-99 MOD 5 and identified on "Figure 1 Surrounding land use, residence and environmental monitoring locations" within the Holcim Noise and Blast Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391, EF13/3895.
3	Air blast overpressure & ground vibration peak particle velocity monitoring	Receiver location R2 in accordance with development consent 231-10-99 MOD 5 and identified on "Figure 1 Surrounding land use, residence and environmental monitoring locations" within the Holcim Noise and Blast Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391, EF13/3895.

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4	Meteorological Station – to determine meteorological conditions for noise monitoring	Meteorological station adjacent to the "Main Dam" and identified on "Figure 1 Surrounding land use, residences and environmental monitoring locations" within the Holcim Air Quality Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391, EF13/3895.
13	Noise monitoring	Monitoring location R2 in accordance with development consent 231-10-99 MOD 5 and identified on "Figure 1 Surrounding land use, residences and environmental monitoring locations" within the Holcim Noise and Blast Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391, EF13/3895.
14	Noise monitoring	Monitoring location R4 in accordance with development consent 231-10-99 MOD 5 and identified on "Figure 1 Surrounding land use, residences and environmental monitoring locations" within the Holcim Noise and Blast Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391, EF13/3895.
15	Noise monitoring	Monitoring location R5 in accordance with development consent 231-10-99 MOD 5 and identified on "Figure 1 Surrounding land use, residences and environmental monitoring locations" within the Holcim Noise and Blast Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391, EF13/3895.
16	Noise monitoring	Monitoring location R6 in accordance with development consent 231-10-99 MOD 5 and identified on "Figure 1 Surrounding land use, residences and environmental monitoring locations" within the Holcim Noise and Blast Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391, EF13/3895.
17	Noise monitoring	Monitoring location R7 in accordance with development consent 231-10-99 MOD 5 and identified on "Figure 1 Surrounding land use, residences and environmental monitoring locations" within the Holcim Noise and Blast Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391, EF13/3895.

3 Limit Conditions

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L1 Pollution of waters

L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.

L2 Concentration limits

L2.1 For each monitoring/discharge point or utilisation area specified in the table\ below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.

L2.2 Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.

L2.3 To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table\.

L2.4 Water and/or Land Concentration Limits

POINT 1

Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile concentration limit
pH	pH				6.5-8.5
Total suspended solids	milligrams per litre				50

L3 Waste

L3.1 The licensee must not cause, permit or allow any waste to be received at the premises, except concrete "wash-out" waste from concrete batch plants. All other wastes are not permitted on the premises, except as expressly permitted by this licence.

L3.2 The licensee must not:

- Process more than 3000 tonnes of concrete "wash-out" per annum;
- Store more than 1000 tonnes of concrete "wash-out" on the premises at any one time.

L3.3 Concrete 'wash-out' must be stockpiled on site in bunded areas and can be processed and blended with

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quarry raw product to produce quarry product(s).

L4 Noise limits

L4.1 Noise generated at the premises must not exceed the noise limits in the tables below. The locations referred to in the tables below are indicated in the document titled: "Jandra Quarry Intensification of Production Environmental Assessment (DA 231-10-99 MOD 5)" Dated July 2014

L4.2 Noise from the premises during quarrying operations only must not exceed the limits specified in the following table:

EPA identification no.	Limit dB(A) LAeq(15 min) Shoulder, Day & Evening
15	40
13, 14, 16	36
17	35

L4.3 Noise from the premises during operations including asphalt plant must not exceed the limits specified in the following table:

EPA identification no.	Limit dB(A) LAeq(15 min) Shoulder, Day & Evening	Limit dB(A) LAeq(15 minute) Night	Limit dB(A) LA1(1 minute) Night
15	41	39	51
14	40	39	51
13,16	40	35	48
17	36	35	48

Note:

1. Condition 10 of Schedule 2 of development consent DA 213 -10-99 MOD 5 prohibits quarrying operations during the hours of 10 pm-6 am;
2. Receiver locations are shown on the figure in Appendix 2 of development consent DA 213-10-99 a copy of which has been filed as EPA document DOC15/85830;
3. Noise limits are in accordance with development consent DA 231-10-99 MOD 5;
4. A negotiated agreement is in place for Residence R1 as referred to in development consent DA 231-10-99 MOD 5 & any noise issues from this premises will be addressed by the Department of Planning and Environment.

L4.4 For the purpose of the conditions above:

- Shoulder, Day and Evening is defined as the period from 6am - 10pm

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- Night is defined as the period from 10pm - 6am

L4.5 The noise limits set out in the above tables apply under all meteorological conditions except the following:

- a) Wind speeds greater than 3 metres/second at 10 metres above ground level; or
- b) Stability category F temperature inversion conditions and wind speeds greater than 2 metres/second at 10 metres above ground level; or
- c) Stability category G temperature inversion conditions.

L4.6 For the purpose of the conditions above:

- a) Data recorded by the meteorological station identified in this licence must be used to determine meteorological conditions; and
- b) Temperature inversion conditions (stability category) when determined by the sigma-theta method must be determined in accordance with Part E3 of the NSW Industrial Noise Policy. Temperature inversion conditions (determined by vertical temperature gradient in degrees C) are to be determined by direct measurement over a minimum 50m height interval as referred to in Part E2 to the NSW Industrial Noise Policy

L4.7 To determine compliance:

a) with Leq (15 minute) noise limits in this licence, the noise measurement equipment must be located:

- approximately on the property boundary, where any dwelling is situated 30 metres or less from the property boundary closest to the premises; or
- within 30 metres of a dwelling façade, but not closer than 3m, where any dwelling on the property is situated more than 30 metres from the property boundary closest to the premises; or
- where applicable within approximately 50 metres of the boundary of a National Park or a Nature Reserve.

b) With the LA1 (1 minute) noise limits in this licence, the noise measurement equipment must be located within 1 metre of a dwelling façade.

c) with the noise limits in this licence, the noise measurement equipment must be located:

- at the most affected point at a location where there is no dwelling at the location; or
- at the most affected point within an area at a location prescribed by this licence.

L4.8 A non-compliance of the noise limit conditions will still occur where noise generated from the premises in excess of the appropriate limit is measured:

- at a location other than an area prescribed by this licence; and/or
- at a point other than the most affected point at a location

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L5 Blasting

- L5.1 Blasting in or on the premises must only be carried out between 9am and 5pm, Monday to Friday and 9am and 3pm, Saturday. Blasting in or on the premises must not take place on Sundays or Public Holidays without the prior approval of the EPA.
- L5.2 The airblast overpressure level from blasting operations in or on the premises must not exceed: 115 dB (Lin Peak) for more than 5% of the total number of blasts during each reporting period; at either monitoring point 2 or 3 of this licence.
- L5.3 The airblast overpressure level from blasting operations in or on the premises must not exceed: 120 dB (Lin Peak) at any time; at either monitoring point 2 or 3 of this licence.
- L5.4 The ground vibration peak particle velocity from blasting operations carried out in or on the premises must not exceed: 5 mm/second for more than 5% of the total number of blasts during each reporting period; at either monitoring point 2 or 3 of this licence.
- L5.5 The ground vibration peak particle velocity from blasting operations carried out in or on the premises must not exceed: 10 mm/second at any time; at either monitoring point 2 or 3 of this licence.
- L5.6 Error margins associated with any monitoring equipment used to measure blasts must not be taken into account when determining whether or not the limit has been exceeded.
- L5.7 Offensive blast fume must not be emitted from the premises.

Definition:

Offensive blast fume means post-blast gases from the detonation of explosives at the premises that by reason of their nature, duration, character or quality, or the time at which they are emitted, or any other circumstances:

- 1. are harmful to (or likely to be harmful to) a person that is outside the premises from which it is emitted, or*
- 2. interferes unreasonably with (or is likely to interfere unreasonably with) the comfort or repose of a person who is outside the premises from which it is emitted.*

L6 Hours of operation

- L6.1 In accordance with development consent DA 231-10-99 MOD 5, hours of operation for the premises are specified in the table below:

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Day	Extraction and processing operations	Transportation operations	Asphalt Plant & associated transport (campaigns)
Monday - Friday	6am to 10pm	6am to 10pm	24 hours a day
Saturday	6am to 6pm	6am to 10 pm	24 hours a day
Sunday and Public Holidays	None	None	24 hours a day

- L6.2 In accordance with development consent DA 231-10-99 MOD 5, the following activities may be conducted at the premises outside the hours specified in the table above:
- (a) return of trucks to the premises prior to midnight Monday to Saturday;
 - (b) delivery or dispatch of materials as requested by Police, Fire Brigade or other similar authorities;
 - (c) emergency work to avoid the loss of lives, property and/or prevent environmental harm; and
 - (d) maintenance activities provided it is inaudible at residential premises.
- In circumstances outlines in (b) and (c), the Licensee shall notify affected residents prior to undertaking the activities, or as soon as practical thereafter

L7 Potentially offensive odour

- L7.1 The licensee must not cause or permit the emission of offensive odour beyond the boundary of the premises.

4 Operating Conditions

O1 Activities must be carried out in a competent manner

- O1.1 Licensed activities must be carried out in a competent manner.
This includes:
- a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
 - b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

O2 Maintenance of plant and equipment

- O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:
- a) must be maintained in a proper and efficient condition; and
 - b) must be operated in a proper and efficient manner.

O3 Dust

- O3.1 The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.

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O4 Emergency response

Note: The licensee must maintain, and implement as necessary, a current Pollution Incident Response Management Plan (PIRMP) for the premises. The PIRMP must be developed in accordance with the requirements in Part 5.7A of the POEO Act and Regulations.

The licensee must keep the PIRMP on the premises at all times. The PIRMP must document systems and procedures to deal with all types of incidents (e.g. spills, explosions or fire) that may occur at the premises or that may be associated with the activities that occur at the premises and which are likely to cause harm to the environment. The PIRMP must be tested at least annually or following a pollution incident.

O5 Processes and management

O5.1 The licensee must take all reasonable measures to prevent the tracking of mud and debris onto the Pacific Highway including, but not limited to, ensuring all vehicles leaving the premises pass through the vehicular wheel wash.

O6 Waste management

O6.1 The licensee must comply with the conditions as specified in this licence or where no specific conditions outlined in this licence, this licensee must comply with the *Protection of the Environment Operations (Waste) Regulation 2014*.

5 Monitoring and Recording Conditions

M1 Monitoring records

M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.

M1.2 All records required to be kept by this licence must be:

- 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.

M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:

- 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.

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M2 Requirement to monitor concentration of pollutants discharged

M2.1 For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:

M2.2 Air Monitoring Requirements

POINT 11

Pollutant	Units of measure	Frequency	Sampling Method
PM10	micrograms per cubic metre	Every 6 days	AM-18

POINT 18,19,20,21

Pollutant	Units of measure	Frequency	Sampling Method
Particulates - Deposited Matter	grams per square metre per month	Monthly	AM-19

M2.3 Water and/ or Land Monitoring Requirements

POINT 1

Pollutant	Units of measure	Frequency	Sampling Method
pH	pH	Each overflow event	Grab sample
Total suspended solids	milligrams per litre	2 times daily during discharge	Grab sample
Turbidity	nephelometric turbidity units	2 times daily during discharge	Grab sample

M3 Testing methods - concentration limits

M3.1 Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this licence must be done in accordance with:

- any methodology which is required by or under the Act to be used for the testing of the concentration of the pollutant; or
- if no such requirement is imposed by or under the Act, any methodology which a condition of this licence requires to be used for that testing; or
- if no such requirement is imposed by or under the Act or by a condition of this licence, any

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methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.

- M3.2 Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.

Note: The *Protection of the Environment Operations (Clean Air) Regulation 2010* requires testing for certain purposes to be conducted in accordance with test methods contained in the publication "Approved Methods for the Sampling and Analysis of Air Pollutants in NSW".

M4 Weather monitoring

- M4.1 At the point(s) identified below, the licensee must monitor (by sampling and obtaining results by analysis) the parameters specified in Column 1 of the table below, using the corresponding sampling method, units of measure, averaging period and sampling frequency, specified opposite in the Columns 2, 3, 4 and 5 respectively.

POINT 4

Parameter	Sampling method	Units of measure	Averaging period	Frequency
Temperature at 10 metres	AM-4	degrees Celsius	1 hour	Continuous
Wind Direction at 10 metres	AM-2 & AM-4	Degrees	15 minutes	Continuous
Wind Speed	AM-2 & AM-4	metres per second	15 minutes	Continuous
Sigma Theta	AM-2 & AM-4	Degrees	15 minutes	Continuous
Rainfall	AM-4	millimetres	15 minutes	Continuous
Relative humidity	AM-4	percent	1 hour	Continuous

- M4.2 Rainfall at the premises must be measured and recorded in millimetres per 24 hour period, at the same time each day.

Note: The rainfall monitoring data collected in compliance with the above condition will assist in interpreting the effectiveness of stormwater management at the quarry.

M5 Recording of pollution complaints

- M5.1 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.

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M5.2 The record must include details of the following:

- 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.

M5.3 The record of a complaint must be kept for at least 4 years after the complaint was made.

M5.4 The record must be produced to any authorised officer of the EPA who asks to see them.

M6 Telephone complaints line

M6.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.

M6.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.

M6.3 The preceding two conditions do not apply until 3 months after: the date of the issue of this licence.

M7 Blasting

M7.1 To determine compliance with the blasting limits of this licence:

- a) Airblast overpressure and ground vibration levels must be measured and electronically recorded for monitoring points 2 and 3 for the parameters specified in Column 1 of the table below; and
- b) The licensee must use the units of measure, sampling method, and sample at the frequency specified opposite in the other columns.

Parameters	Units of Measure	Frequency	Sampling Method
Airblast Overpressure	Decibels (Linear Peak)	All blasts	Australian Standard AS 2187.2-2006
Ground Vibration Peak Particle Velocity	millimetres/second	All blasts	Australian Standard AS 2187.2-2006

M8 Noise monitoring

M8.1 To assess compliance with the noise limits of this licence, attend noise monitoring must be undertaken in accordance with the conditions of this licence and:

- a) during a period of normal quarry operations;

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- b) at each one of the noise monitoring locations listed in the noise limits table of this licence;
- c) occur quarterly in the reporting period; and
- d) occur during the night period as defined in the NSW Noise Policy for Industry, and in conjunction with an asphalt campaign if any such campaign occurs within the quarterly monitoring period.

Note: The extent and frequency of noise monitoring required by this licence will be reviewed upon request after eight quarterly monitoring campaigns.

M8.2 Noise monitoring must be carried out in accordance with Australian Standard AS 2659.1 - 1998: Guide to the use of sound measuring equipment - Portable sound level metres and in accordance with any relevant factors provided in the NSW Noise Policy for Industry.

6 Reporting Conditions

R1 Annual return documents

R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:

1. a Statement of Compliance,
2. a Monitoring and Complaints Summary,
3. a Statement of Compliance - Licence Conditions,
4. a Statement of Compliance - Load based Fee,
5. a Statement of Compliance - Requirement to Prepare Pollution Incident Response Management Plan,
6. a Statement of Compliance - Requirement to Publish Pollution Monitoring Data; and
7. a Statement of Compliance - Environmental Management Systems and Practices.

At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.

R1.2 An Annual Return must be prepared in respect of each reporting period, except as provided below.

Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.

R1.3 Where this licence is transferred from the licensee to a new licensee:

- a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
- b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.

Note: An application to transfer a licence must be made in the approved form for this purpose.

R1.4 Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on:

- a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is

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given; or

b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.

R1.5 The Annual Return for the reporting period must be supplied to the EPA via eConnect *EPA* or by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

R1.6 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.

R1.7 Within the Annual Return, the Statements of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:

a) the licence holder; or

b) by a person approved in writing by the EPA to sign on behalf of the licence holder.

R2 Notification of environmental harm

Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

R2.1 Notifications must be made by telephoning the Environment Line service on 131 555.

R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

R3 Written report

R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:

a) where this licence applies to premises, an event has occurred at the premises; or

b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence,

and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.

R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.

R3.3 The request may require a report which includes any or all of the following information:

a) the cause, time and duration of the event;

b) the type, volume and concentration of every pollutant discharged as a result of the event;

c) 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;

d) 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;

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- e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;
- f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and
- g) any other relevant matters.

R3.4 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 by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

R4 Other reporting conditions

R4.1 Noise Compliance Assessment Report

A noise compliance assessment report(s) must be submitted to the EPA with each Annual Return. The assessment must be prepared by a suitably qualified and experienced acoustical consultant and include:

- a) an assessment of compliance with noise limits detailed in the limit conditions of this licence;
- b) details of all quarrying activities that were occurring during each of the periods of monitoring, and
- c) an outline of any management actions taken within the monitoring period to address any exceedences of the limits detailed in the limit conditions of this licence.

R4.2 Blast Monitoring Report

The licensee must supply, with each Annual Return, a Blast Monitoring Report which must include the following information relating to each blast carried out within the premises during the reporting period covered by the Annual Return:

- a) the date and time of the blast;
- b) the location of the blast on the premises;
- c) the blast monitoring results at each blast monitoring station; and
- d) an explanation for any missing blast monitoring results.

R4.3 The licensee must report any exceedence of the licence blasting limits to the regional office of the EPA as soon as practicable after the exceedence becomes known to the licensee or to one of the licensee's employees or agents.

7 General Conditions

G1 Copy of licence kept at the premises or plant

G1.1 A copy of this licence must be kept at the premises to which the licence applies.

G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.

G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

G2 Other general conditions

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G2.1 Completed Programs

Program	Description	Completed Date
PRP 1: Installation and Use of a Wheel Wash at the Premises	Construction and Utilisation of a vehicular wheel wash for all vehicles exiting the premises.	28-October-2011

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Dictionary

General Dictionary

3DGM [in relation to a concentration limit]	Means the three day geometric mean, which is calculated by multiplying the results of the analysis of three samples collected on consecutive days and then taking the cubed root of that amount. Where one or more of the samples is zero or below the detection limit for the analysis, then 1 or the detection limit respectively should be used in place of those samples
Act	Means the Protection of the Environment Operations Act 1997
activity	Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997
actual load	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
AM	Together with a number, means an ambient air monitoring method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .
AMG	Australian Map Grid
anniversary date	The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
annual return	Is defined in R1.1
Approved Methods Publication	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
assessable pollutants	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
BOD	Means biochemical oxygen demand
CEM	Together with a number, means a continuous emission monitoring method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .
COD	Means chemical oxygen demand
composite sample	Unless otherwise specifically approved in writing by the EPA, a sample consisting of 24 individual samples collected at hourly intervals and each having an equivalent volume.
cond.	Means conductivity
environment	Has the same meaning as in the Protection of the Environment Operations Act 1997
environment protection legislation	Has the same meaning as in the Protection of the Environment Administration Act 1991
EPA	Means Environment Protection Authority of New South Wales.
fee-based activity classification	Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 2009.
general solid waste (non-putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997

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flow weighted composite sample	Means a sample whose composites are sized in proportion to the flow at each composites time of collection.
general solid waste (putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
grab sample	Means a single sample taken at a point at a single time
hazardous waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
licensee	Means the licence holder described at the front of this licence
load calculation protocol	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
local authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
material harm	Has the same meaning as in section 147 Protection of the Environment Operations Act 1997
MBAS	Means methylene blue active substances
Minister	Means the Minister administering the Protection of the Environment Operations Act 1997
mobile plant	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
motor vehicle	Has the same meaning as in the Protection of the Environment Operations Act 1997
O&G	Means oil and grease
percentile [in relation to a concentration limit of a sample]	Means that percentage [eg.50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period of time. In this licence, the specified period of time is the Reporting Period unless otherwise stated in this licence.
plant	Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles.
pollution of waters [or water pollution]	Has the same meaning as in the Protection of the Environment Operations Act 1997
premises	Means the premises described in condition A2.1
public authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
regional office	Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence
reporting period	For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 months. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
restricted solid waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
scheduled activity	Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997
special waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
TM	Together with a number, means a test method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .

Environment Protection Licence



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TSP	Means total suspended particles
TSS	Means total suspended solids
Type 1 substance	Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements
Type 2 substance	Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements
utilisation area	Means any area shown as a utilisation area on a map submitted with the application for this licence
waste	Has the same meaning as in the Protection of the Environment Operations Act 1997
waste type	Means liquid, restricted solid waste, general solid waste (putrescible), general solid waste (non - putrescible), special waste or hazardous waste

Mr Nigel Sargent

Environment Protection Authority

(By Delegation)

Date of this edition: 10-March-2000

Environment Protection Licence

Licence - 2796



End Notes

- 1 Licence varied by notice 1006152, issued on 21-Feb-2002, which came into effect on 18-Mar-2002.
- 2 Licence varied by notice 1016675, issued on 20-Jun-2002, which came into effect on 15-Jul-2002.
- 3 Licence transferred through application 141653, approved on 19-Dec-2002, which came into effect on 01-Oct-2002.
- 4 Licence varied by notice 1042128, issued on 14-Jan-2005, which came into effect on 08-Feb-2005.
- 5 Condition A1.3 Not applicable varied by notice issued on <issue date> which came into effect on <effective date>
- 6 Licence varied by notice 1106247, issued on 08-Sep-2009, which came into effect on 08-Sep-2009.
- 7 Licence varied by notice 1503538 issued on 04-Jan-2012
- 8 Licence varied by notice 1507470 issued on 26-Sep-2012
- 9 Licence varied by notice 1535107 issued on 17-Oct-2016
- 10 Licence varied by notice 1577456 issued on 12-Jun-2019
- 11 Licence format updated on 18-Jul-2019

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Noise Monitoring Assessment

Jandra Quarry, Possum Brush, NSW
Quarter 4 Ending December 2020.



Document Information

Noise Monitoring Assessment

Jandra Quarry, Possum Brush, NSW

Quarter 4 Ending December 2020

Prepared for: Holcim (Australia) Pty Ltd

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Document ID	Status	Date	Prepared By	Signed	Reviewed By	Signed
MAC180611-04RP10	Final	19 January 2021	Kristian Allen		Rod Linnett	

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APPENDIX B – OPERATIONS LOG

APPENDIX C – EPL VARIATION

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1 Introduction

Muller Acoustic Consulting Pty Ltd (MAC) has been commissioned by Holcim (Australia) Pty Ltd (Holcim) to complete a Noise Monitoring Assessment (NMA) for the quarterly period ending December 2020 for Jandra Quarry (the 'quarry'), Possum Brush, NSW.

Noise monitoring has been conducted in accordance with the Jandra Noise and Blast Management Plan and in accordance with additional clarifications and requirements specified by the EPA in the recent variation (6 November 2019) of the EPL 2796 (EPL).

The following variations have been made to the licence:

- Amendment of condition M8.1 to clarify the requirement to undertake noise monitoring during quarrying operations and to update reference to the contemporary NSW Noise Policy for Industry;
- Amendment of condition M8.2 referencing the contemporary NSW Noise Policy for Industry; and
- Amendment to Condition R4.1 requires that noise monitoring reports contain details of all quarrying activities that were occurring during each of the monitoring periods.

Specifically, the amendment to M8.1 is reproduced below.

M8 Noise monitoring

M8.1 *To assess compliance with the noise limits of this licence, attend noise monitoring must be undertaken in accordance with the conditions of this licence and:*

- a) during a period of normal quarry operations;*
- b) at each one of the noise monitoring locations listed in the noise limits table of this licence;*
- c) occur quarterly in a reporting period, and*
- d) occur during the night period as defined in the NSW Industrial Noise Policy, and in conjunction with an asphalt campaign if any such campaign occurs within the quarterly monitoring period.*

The assessment has been conducted in accordance with the following documents:

- NSW Environment Protection Authority (EPA), Noise Policy for Industry (NPI), 2017;
- Environment Protection Licence (EPL), 2796 and Variation 6 November 2019;
- Jandra Quarry Conditions of Consent (CoC), 2015;
- Jandra Quarry Noise and Blast Management Plan (NBMP), 2015; and
- Australian Standard AS 1055:2018 - Acoustics - Description and measurement of environmental noise - General Procedures.

A glossary of terms, definitions and abbreviations used in this report is provided in **Appendix A**.

The operations log during the noise monitoring is provided in **Appendix B**.

A copy of the recent licence variation is provided in **Appendix C**.

2 Noise Criteria

Section L4 of the Jandra Environment Protection Licence (EPL 2796) presents noise criteria for residential receivers surrounding the quarry site, which are applicable for two different operational modes – quarrying and quarrying plus asphalt production.

Furthermore, Section 5 of the Jandra Noise and Blast Management Plan (NBMP) outlines that noise criteria do not apply at R1, R3, R8, R9, R10. Section 5 of the NBMP states:

- *'Holcim has executed a negotiated agreement with the property owner of R1 which excludes this receptor from the approved noise criteria';*
- *'R3 is not included in the approved noise criteria as this receiver represented road noise and the EA concluded that road noise impacts as a consequence of the development were below guideline thresholds and didn't warrant further assessment'; and*
- *'Receivers R8, R9 & R10 are Holcim owned residences and the approved criteria only apply to privately owned land'.*

Table 1 presents the criteria for the receivers R1 – R10 where compliance is required for both quarry operation and combined quarry and asphalt production operations.

Table 1 Noise Criteria				
Location	Quarry Operations	Quarry Operations and Asphalt Plant Production		
	6am – 10pm	6am – 10pm	10pm – 6am	10pm – 6am
	dB LAeq(15min)	dB LAeq(15min)	dB LAeq(15min)	dB LA1(1min)
EPA13 (R2)	36	40	35	48
EPA14 (R4)	36	40	39	51
EPA15 (R5)	40	41	39	51
EPA16 (R6)	36	40	35	48
EPA17 (R7)	35	36	35	48

Note 1: Noise criteria are not applicable to these receivers as per Section 5 of the NBMP.

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3 Methodology

3.1 Locality

The quarry is located at Possum Brush, NSW approximately 16km south of Taree, NSW. Receivers in the locality surrounding the quarry are primarily rural/residential. The Pacific Highway is situated to the west of the site, with highway traffic a dominant noise source at receivers within its' proximity. To the east, the quarry is bounded by rural properties with noise from The Lakes Way dominating the acoustic environment. The monitoring locations with respect to the quarry and assessed receivers are presented in the locality plan shown in **Figure 1**.

3.2 Noise Monitoring Locations

Noise measurements were conducted at five monitoring locations specified in the EPL on Tuesday 8 December 2020 and Wednesday 9 December 2020 during the morning shoulder and daytime periods. The measurement locations are presented in **Figure 1**.

3.3 Assessment Methodology

Attended noise surveys were conducted in general accordance with the procedures described in Australian Standard AS 1055:2018, "Acoustics - Description and Measurement of Environmental Noise" and the EPL. The measurements were carried out using Svantek Type 1, 971 noise analyser on Tuesday 8 December 2020 and Wednesday 9 December 2020. The acoustic instrumentation used carries current NATA calibration and complies with AS/NZS IEC 61672.1-2019-Electroacoustics - Sound level meters - Specifications. Calibration of all instrumentation was checked prior to and following measurements. Drift in calibration did not exceed ± 0.5 dBA.

Noise measurements were of 15 minutes in duration and where possible, throughout each survey the operator quantified the contribution of each significant noise source. One measurement was conducted at each of the EPL monitoring locations during the morning shoulder and daytime periods. Monitoring during the evening period was not conducted due to the quarry not being operational.

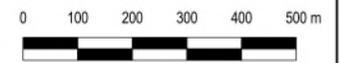
Extraneous noise sources were excluded from the analysis to determine the LAeq(15min) noise contribution for comparison against the relevant criteria. Where the quarry was inaudible, the contribution is estimated to be at least 10dB below the ambient noise level.



FIGURE 1
Site Locality
MAC180611-04
Holcim Jandra Quarry

KEY

● Noise Monitoring Locations



4 Results

4.1 Assessment Results

The monitored noise level contributions and observed meteorological conditions for each assessment period at location are presented in **Table 2** to **Table 6**.

Table 2 Operator-Attended Noise Survey Results – Location EPA13

Date	Time (hrs)	Descriptor (dBA re 20 µPa)			Meteorology	Description and SPL, dBA					
		LA _{max}	LA _{eq}	LA ₉₀							
08/12/2020	07:52 (Day)	64	48	45	WD: S WS: 1.5m/s Rain: Nil	Birds 39-64					
						Distant Traffic <39-46					
						Insects 42-48					
						Dogs 40-46					
						Wind 39-54					
Quarry Not Audible											
Jandra Quarry Contribution											
<36 LA _{eq} (15min)											
08/12/2020	06:02 (Morning Shoulder)	78	56	37	WD: W WS: 0.5m/s Rain: Nil	Birds 32-78					
						Distant Traffic 35-46					
						Insects <30-35					
						Quarry Not Audible					
						Jandra Quarry Contribution					
<36 LA _{eq} (15min)											
<45 LA ₁ (1min)											

Note: Morning Shoulder – the period from 6am to 7am Monday to Saturday or 6am to 8am on Sundays and public holidays, Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

Table 3 Operator-Attended Noise Survey Results – Location EPA14

Date	Time (hrs)	Descriptor (dBA re 20 µPa)			Meteorology	Description and SPL, dBA					
		LA _{max}	LA _{eq}	LA ₉₀							
09/12/2020	07:00 (Day)	62	54	46	WD: NW WS: 0.5m/s Rain: Nil	Highway Traffic 40-58					
						Birds 37-61					
						Insects <37-62					
						Quarry Not Audible					
						Jandra Quarry Contribution					
<36 LA _{eq} (15min)											
09/12/2020	06:09 (Morning Shoulder)	64	50	43	WD: NW WS: <0.5m/s Rain: Nil	Highway Traffic 39-59					
						Birds 36-64					
						Quarry Not Audible					
						Jandra Quarry Contribution					
						<36 LA _{eq} (15min)					
<50 dB LA ₁ (1min)											

Note: Morning Shoulder – the period from 6am to 7am Monday to Saturday or 6am to 8am on Sundays and public holidays, Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

Table 4 Operator-Attended Noise Survey Results – Location EPA15

Date	Time (hrs)	Descriptor (dBA re 20 µPa)			Meteorology	Description and SPL, dBA
		L _{Amax}	L _{Aeq}	L _{A90}		
09/12/2020	07:17	74	61	59	WD: NW	Insects 56-65
	(Day)				WS: 0.5m/s	Highway Traffic <50
					Rain: Nil	Birds <53-74
						Quarry Not Audible
Jandra Quarry Contribution						<40 L _{Aeq} (15min)
09/12/2020	06:26	73	47	40	WD: NW	Birds 34-73
	(Morning				WS: <0.5m/s	Highway Traffic 37-46
					Rain: Nil	Livestock 40-53
						Quarry Not Audible
Jandra Quarry Contribution						<40 L _{Aeq} (15min)
						<50 L _{A1} (1min)

Note: Morning Shoulder – the period from 6am to 7am Monday to Saturday or 6am to 8am on Sundays and public holidays, Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

Table 5 Operator-Attended Noise Survey Results – Location EPA16

Date	Time (hrs)	Descriptor (dBA re 20 µPa)			Meteorology	Description and SPL, dBA
		L _{Amax}	L _{Aeq}	L _{A90}		
08/12/2020	08:09	61	49	47	WD: SW	Insects 44-53
	(Day)				WS: 2.0m/s	Birds <41-61
					Rain: Nil	Distant Traffic <41-48
						Wind in Trees 41-53
						Quarry Not Audible
Jandra Quarry Contribution						<36 L _{Aeq} (15min)
08/12/2020	06:19	79	60	39	WD:	Birds 33-79
	(Morning				WS: m/s	Distant Traffic 33-51
					Rain: Nil	Insects 36-43
						Quarry Not Audible
Jandra Quarry Contribution						<36 L _{Aeq} (15min)
						<45 L _{A1} (1min)

Note: Morning Shoulder – the period from 6am to 7am Monday to Saturday or 6am to 8am on Sundays and public holidays, Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

Table 6 Operator-Attended Noise Survey Results – Location EPA17

Date	Time (hrs)	Descriptor (dBA re 20 µPa)			Meteorology	Description and SPL, dBA
		L _{Amax}	L _{Aeq}	L _{A90}		
09/12/2020	07:47	61	48	42	WD: NW WS: 0.5m/s Rain: Nil	Insects 39-53
	(Day)					Birds 36-61 Distant Traffic <36-45 Quarry Not Audible
Jandra Quarry Contribution						<35dB L _{Aeq} (15min)
08/12/2020	06:45	67	50	45	WD: SW WS: 0.5m/s Rain: Nil	Truck Idle 40-61
	(Morning Shoulder)					Insects 41-52 Birds 38-67 Distant Traffic 36-45 Quarry Not Audible
Jandra Quarry Contribution						<35 L _{Aeq} (15min)
						<45 L _{A1} (1min)

Note: Morning Shoulder – the period from 6am to 7am Monday to Saturday or 6am to 8am on Sundays and public holidays, Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

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5 Discussion

5.1 Discussion of Results - Location EPA13

Quarry noise was inaudible during the morning shoulder and daytime measurement conducted on Tuesday 8 December 2020. Quarry noise contributions were estimated to satisfy the morning shoulder and daytime noise limits. The quarry was not operational during the evening period and hence, no measurements were conducted for this period.

Non-quarry noise sources observed during the measurements included distant traffic, dogs barking, insects, wind and birds.

5.2 Discussion of Results - Location EPA14

Quarry noise was inaudible during the morning shoulder and daytime measurements conducted on Wednesday 9 December 2020, with background noise levels dominated by insect noise during the daytime measurement. Quarry noise contributions were estimated to satisfy the morning shoulder and daytime noise limits. The quarry was not operational during the evening period and hence, no measurements were conducted for this period.

Non quarry noise sources observed during the measurements included highway traffic, insects and birds.

5.3 Discussion of Results - Location EPA15

Quarry noise was inaudible during the morning shoulder and daytime measurements conducted on Wednesday 9 December 2020, with background noise levels dominated by insect noise during the daytime measurement. Due to constant the contribution from insect noise during the day period, the measured value from EPA14 (100m to the ESE) was used to quantify quarry contribution for this location during the daytime measurement period, therefore quarry noise contributions were estimated to satisfy the morning shoulder and daytime noise limits. The quarry was not operational during the evening period and hence, no measurements were conducted for this period.

Non quarry noise sources observed during the measurements included highway traffic, insects, livestock and birds.

5.4 Discussion of Results - Location EPA16

Quarry noise was inaudible during the morning shoulder and daytime measurement conducted on Tuesday 8 December 2020, with background noise levels dominated by insect noise during the daytime measurement. Quarry noise contributions were estimated to satisfy the morning shoulder and daytime noise limits. The quarry was not operational during the evening period and hence, no measurements were conducted for this period.

Quarry noise sources observed during the measurement were truck movements. Non-quarry noise sources observed during the measurements included distant traffic, wind, insects and birds.

5.5 Discussion of Results - Location EPA17

Quarry noise was inaudible during the morning shoulder and daytime measurements conducted on Tuesday 8 December 2020 and Wednesday 9 December 2020. Quarry noise contributions were estimated to satisfy the morning shoulder and daytime noise limits. The quarry was not operational during the evening period and hence, no measurements were conducted for this period.

Non-quarry noise sources observed during the measurements included distant traffic, truck idling, insects, wind, birds and dogs barking.

6 Conclusion

Muller Acoustic Consulting Pty Ltd (MAC) has completed a Noise Monitoring Assessment (NMA) for Holcim (Australia) Pty Ltd at the Jandra Quarry, Possum Brush, NSW. The assessment was completed to determine compliance with the relevant noise criteria for the quarterly period ending December 2020.

Attended noise monitoring was completed on Tuesday 8 December 2020 and Wednesday 9 December 2020 at five nominated EPL monitoring locations with quarry noise contributions compared against the relevant criteria. The assessment has identified that noise emissions generated by Holcim Jandra Quarry comply with relevant noise criteria specified in the EPL at all assessed locations.

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Appendix A – Glossary of Terms

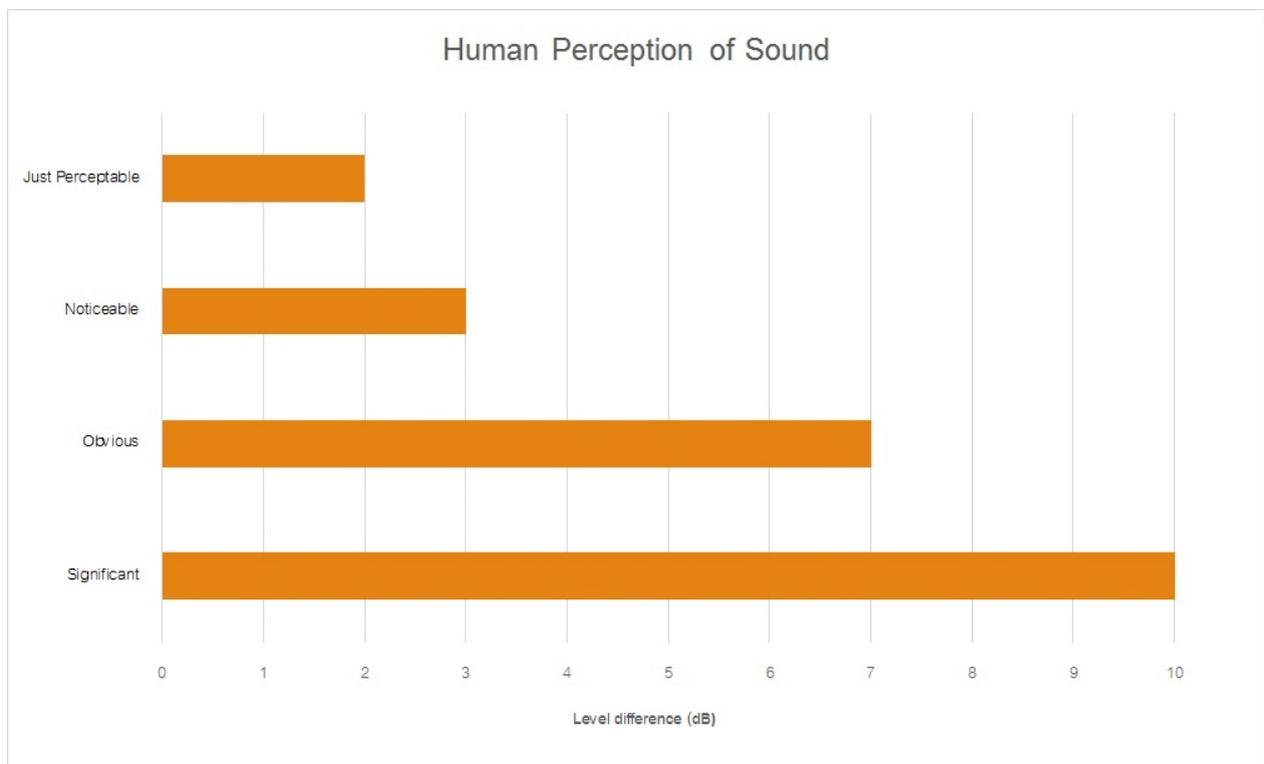
Table A1 provides a number of technical terms have been used in this report.

Table A1 Glossary of Terms	
Term	Description
1/3 Octave	Single octave bands divided into three parts
Octave	A division of the frequency range into bands, the upper frequency limit of each band being twice the lower frequency limit.
ABL	Assessment Background Level (ABL) is defined in the NPI as a single figure background level for each assessment period (day, evening and night). It is the tenth percentile of the measured LA90 statistical noise levels.
Adverse Weather	Weather effects that enhance noise (that is, wind and temperature inversions) that occur at a site for a significant period of time (that is, wind occurring more than 30% of the time in any assessment period in any season and/or temperature inversions occurring more than 30% of the nights in winter).
Ambient Noise	The noise associated with a given environment. Typically a composite of sounds from many sources located both near and far where no particular sound is dominant.
A Weighting	A standard weighting of the audible frequencies designed to reflect the response of the human ear to noise.
dBA	Noise is measured in units called decibels (dB). There are several scales for describing noise, the most common being the 'A-weighted' scale. This attempts to closely approximate the frequency response of the human ear.
dB(Z), dB(L)	Decibels Linear or decibels Z-weighted.
Hertz (Hz)	The measure of frequency of sound wave oscillations per second - 1 oscillation per second equals 1 hertz.
LA10	A noise level which is exceeded 10 % of the time. It is approximately equivalent to the average of maximum noise levels.
LA90	Commonly referred to as the background noise, this is the level exceeded 90 % of the time.
LAeq	The summation of noise over a selected period of time. It is the energy average noise from a source, and is the equivalent continuous sound pressure level over a given period.
LAm _{ax}	The maximum root mean squared (rms) sound pressure level received at the microphone during a measuring interval.
RBL	The Rating Background Level (RBL) is an overall single figure background level representing each assessment period over the whole monitoring period. The RBL is used to determine the intrusiveness criteria for noise assessment purposes and is the median of the ABL's.
Sound power level (LW)	This is a measure of the total power radiated by a source. The sound power of a source is a fundamental location of the source and is independent of the surrounding environment. Or a measure of the energy emitted from a source as sound and is given by : $= 10 \cdot \log_{10} (W/W_0)$ Where : W is the sound power in watts and W ₀ is the sound reference power at 10-12 watts.

Table A2 provides a list of common noise sources and their typical sound level.

Table A2 Common Noise Sources and Their Typical Sound Pressure Levels (SPL), dBA	
Source	Typical Sound Level
Threshold of pain	140
Jet engine	130
Hydraulic hammer	120
Chainsaw	110
Industrial workshop	100
Lawn-mower (operator position)	90
Heavy traffic (footpath)	80
Elevated speech	70
Typical conversation	60
Ambient suburban environment	40
Ambient rural environment	30
Bedroom (night with windows closed)	20
Threshold of hearing	0

Figure A1 – Human Perception of Sound



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Appendix B – Operations Log

Operations Log – Jandra Quarry 8 December 2020

Period ending	Pit	Plant
6:00	NA – Prestart meeting	NA – Prestart meeting
6:15	NA – Prestart meeting	NA – Prestart meeting
6:30	Load and Haul – RL35 Excavator and Haul truck Sales from overburden	Sales – loader loading road trucks
6:45	Load and Haul – RL35 Excavator and Haul truck Sales from overburden	Sales – loader loading road trucks
7:00	Load and Haul – RL35 Excavator and Haul truck Sales from overburden	Sales – loader loading road trucks
7:15	Load and Haul – RL35 Excavator and Haul truck Sales from overburden	Sales – loader loading road trucks Plant producing aggregates.
7:30	Load and Haul – RL35 Excavator and Haul truck Sales from overburden	Sales – loader loading road trucks Plant producing aggregates
7:45	Load and Haul – RL35 Excavator and Haul truck Sales from overburden	Sales – loader loading road trucks Plant producing aggregates
8:00	Load and Haul – RL35 Excavator and Haul truck Sales from overburden	Sales – loader loading road trucks Plant producing aggregates
8:15	Load and Haul – RL35 Excavator and Haul truck Sales from overburden	Sales – loader loading road trucks Plant producing aggregates
8:30	Load and Haul – RL35 Excavator and Haul truck Sales from overburden	Sales – loader loading road trucks Plant producing aggregates

Period ending	Pit	Plant
8:45	Load and Haul – RL35 Excavator and Haul truck Sales from overburden	Sales – loader loading road trucks Plant producing aggregates
9:00	Load and Haul – RL35 Excavator and Haul truck Sales from overburden	Sales – loader loading road trucks Plant producing aggregates
9:15	Morning Tea	Sales – loader loading road trucks Plant producing aggregates
9:30	Morning Tea	Sales – loader loading road trucks Plant producing aggregates
9:45	Load and Haul – RL35 Excavator and Haul truck Sales from overburden	Sales – loader loading road trucks Plant producing aggregates
10:00	Load and Haul – RL35 Excavator and Haul truck Sales from overburden	Sales – loader loading road trucks Plant producing aggregates
10:15	Load and Haul – RL35 Excavator and Haul truck Sales from overburden	Sales – loader loading road trucks Plant producing aggregates
10:30	Load and Haul – RL35 Excavator and Haul truck Sales from overburden	Sales – loader loading road trucks Plant producing aggregates
10:45	Load and Haul – RL35 Excavator and Haul truck Sales from overburden	Sales – loader loading road trucks Plant producing aggregates
11:00	Load and Haul – RL35 Excavator and Haul truck Sales from overburden	Sales – loader loading road trucks Plant producing aggregates
11:15	Load and Haul – RL35 Excavator and Haul truck Sales from overburden	Sales – loader loading road trucks Plant producing aggregates

Period ending	Pit	Plant
11:30	Load and Haul – RL35 Excavator and Haul truck Sales from overburden	Sales – loader loading road trucks Plant producing aggregates
11:45	Load and Haul – RL35 Excavator and Haul truck Sales from overburden	Sales – loader loading road trucks Plant producing aggregates
12:00	Load and Haul – RL35 Excavator and Haul truck Sales from overburden	Sales – loader loading road trucks Plant producing aggregates

Operations Log – Jandra Quarry 9 December 2020

Period ending	Pit	Plant
6:00	NA – Prestart meeting	NA – Prestart meeting
6:15	NA – Prestart meeting	NA – Prestart meeting
6:30	Load and Haul – RL74 Excavator and Haul truck Sales from overburden	Sales – loader loading road trucks
6:45	Load and Haul – RL74 Excavator and Haul truck Sales from overburden	Sales – loader loading road trucks
7:00	Load and Haul – RL74 Excavator and Haul truck Sales from overburden	Sales – loader loading road trucks
7:15	Load and Haul – RL74 Excavator and Haul truck Sales from overburden	Sales – loader loading road trucks Plant producing road base.
7:30	Load and Haul – RL74 Excavator and Haul truck Sales from overburden	Sales – loader loading road trucks Plant producing road base.
7:45	Load and Haul – RL74 Excavator and Haul truck Sales from overburden	Sales – loader loading road trucks Plant producing road base.
8:00	Load and Haul – RL74 Excavator and Haul truck Sales from overburden	Sales – loader loading road trucks Plant producing road base.
8:15	Load and Haul – RL74 Excavator and Haul truck Sales from overburden	Sales – loader loading road trucks Plant producing road base.
8:30	Load and Haul – RL74 Excavator and Haul truck Sales from overburden	Sales – loader loading road trucks Plant producing road base.

Period ending	Pit	Plant
8:45	Load and Haul – RL74 Excavator and Haul truck Sales from overburden	Sales – loader loading road trucks Plant producing road base.
9:00	Load and Haul – RL74 Excavator and Haul truck Sales from overburden	Sales – loader loading road trucks Plant producing road base.

Appendix C – EPL Variation

Licence Variation



Licence - 2796

HOLCIM (AUSTRALIA) PTY LTD
ABN 87 099 732 297 ACN 099 732 297
LOCKED BAG 5007
BAULKHAM HILLS NSW 1755

Attention: Ian Vernon & Matt Neil

Notice Number 1585343
File Number EF13/3895
Date 06-Nov-2019

The Proper Officer

NOTICE OF VARIATION OF LICENCE NO. 2796

BACKGROUND

- A. HOLCIM (AUSTRALIA) PTY LTD ("the licensee") is the holder of Environment Protection Licence No. 2796 ("the licence") issued under the *Protection of the Environment Operations Act 1997* ("the POEO Act"). The licence authorises the carrying out of activities at PACIFIC HIGHWAY, POSSUM BRUSH, NSW, 2430 ("the premises").
- B. On 3 September 2019, the Environment Protection Authority ("the EPA") conducted a compliance inspection of the premises. During the compliance inspection, the EPA discussed relevant noise conditions with the licensee including the location and timing of noise monitoring.
- C. Condition L4.2 states "noise from the premises during quarrying operations only must not exceed the limits specified in the following table". Noise monitoring at a time when the quarry is operating is required to determine compliance with the noise limits specified at condition L4.2.
- D. Condition M8.1 of the licence outlines the requirements for noise compliance monitoring and includes the requirement to undertake attended noise monitoring that "c) occur during the night period as defined in the NSW Industrial Noise Policy, and in conjunction with an asphalt campaign if any such campaign occurs within the quarterly monitoring period".
- E. During the discussions with the EPA, the licensee's representative advised that the premises does not operate after 4:30pm, however noise compliance monitoring by the licensee's consultant has occurred at times when the quarry is not operating. The licensee's representative also advised that the quarry has not had an asphalt plant for some time, however development consent allows for such a plant.
- F. The EPA has made an amendment to condition M8.1 to clarify the requirement to monitor during quarrying operations and update reference to contemporary noise policy. Condition M8.2 has also been amended to reference the contemporary noise policy.

Licence Variation

- G. The NSW Industrial Noise Policy has been superseded by the NSW Noise Policy for Industry. Definition of the "night" period remains unchanged between the two policy documents.
- H. The EPA has made an amendment to condition R4.1 to require in reports of noise monitoring that details be provided of all quarrying activities that were occurring during each of the periods of monitoring.
- I. This Notice does not authorise a significant increase in the environmental impact of the activities authorised or controlled by the licence.
- J. This variation has been undertaken with consideration of section 45 of the POEO Act.

VARIATION OF LICENCE NO. 2796

- 1. By this Notice the EPA varies the licence. The attached licence document contains all variations that are made to the licence by this notice.
- 2. The following variations have been made to the licence:
 - Amendment of condition M8.1 to clarify the requirement to undertake noise monitoring during quarrying operations and to update reference to the contemporary NSW Noise Policy for Industry.
 - Amendment of condition M8.2 to reference the contemporary NSW Noise Policy for Industry.
 - Amendment to Condition R4.1 to require in reports of noise monitoring that details be provided of all quarrying activities that were occurring during each of the periods of monitoring.



.....
MATTHEW CORRADIN
A/Unit Head Hunter North
Environment Protection Authority
(by Delegation)

INFORMATION ABOUT THIS NOTICE

- This Notice is issued under Section 58(5) of the POEO Act.
- Details provided in this Notice, along with an updated version of the licence, will be available on the EPA's Public Register (<http://www.epa.nsw.gov.au/prpoeo/index.htm>) in accordance with section 308 of the POEO Act.

Licence Variation



Appeals against this decision

- You can appeal to the Land and Environment Court against this decision. The deadline for lodging the appeal is 21 days after you were given notice of this decision.

When this notice begins to operate

- The variations to the licence specified in this Notice begin to operate immediately from the date of this Notice, unless another date is specified in this Notice.
- If an appeal is made against this decision to vary the licence and the Land and Environment Court directs that the decision is stayed the decision does not operate until the stay ceases to have effect or the Land and Environment Court confirms the decision or the appeal is withdrawn (whichever occurs first).

Licence Variation



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Environment Protection Licence

Licence - 2796

Licence Details	
Number:	2796
Anniversary Date:	01-May

Licensee
HOLCIM (AUSTRALIA) PTY LTD
LOCKED BAG 5007
BAULKHAM HILLS NSW 1755

Premises
JANDRA QUARRY
PACIFIC HIGHWAY
POSSUM BRUSH NSW 2430

Scheduled Activity
Crushing, grinding or separating
Extractive activities
Resource recovery
Waste storage

Fee Based Activity	Scale
Crushing, grinding or separating	> 100000-500000 T annual processing capacity
Extractive activities	> 100000-500000 T annual capacity to extract or process
Recovery of general waste	Any general waste recovered
Waste storage - other types of waste	Any other types of waste stored

Region
North - Hunter
Ground Floor, NSW Govt Offices, 117 Bull Street NEWCASTLE WEST NSW 2302
Phone: (02) 4908 6800
Fax: (02) 4908 6810
PO Box 488G NEWCASTLE NSW 2300



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Information about this licence

Dictionary

A definition of terms used in the licence can be found in the dictionary at the end of this licence.

Responsibilities of licensee

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 ("the Act") and the Regulations made under the Act. These include obligations to:

- ensure persons associated with you comply with this licence, as set out in section 64 of the Act;
- control the pollution of waters and the pollution of air (see for example sections 120 - 132 of the Act);
- report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

Variation of licence conditions

The licence holder can apply to vary the conditions of this licence. An application form for this purpose is available from the EPA.

The EPA may also vary the conditions of the licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

Duration of licence

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

Licence review

The Act requires that the EPA review your licence at least every 5 years after the issue of the licence, as set out in Part 3.6 and Schedule 5 of the Act. You will receive advance notice of the licence review.

Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).

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The EPA publication “A Guide to Licensing” contains information about how to calculate your licence fees. The licence requires that an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints), be submitted to the EPA. The Annual Return must be submitted within 60 days after the end of each reporting period. See condition R1 regarding the Annual Return reporting requirements.

Usually the licence fee period is the same as the reporting period.

Transfer of licence

The licence holder can apply to transfer the licence to another person. An application form for this purpose is available from the EPA.

Public register and access to monitoring data

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- licence applications;
- licence conditions and variations;
- statements of compliance;
- load based licensing information; and
- load reduction agreements.

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

This licence is issued to:

HOLCIM (AUSTRALIA) PTY LTD
LOCKED BAG 5007
BAULKHAM HILLS NSW 1755

subject to the conditions which follow.

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1 Administrative Conditions

A1 What the licence authorises and regulates

A1.1 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

Scheduled Activity	Fee Based Activity	Scale
Crushing, grinding or separating	Crushing, grinding or separating	> 100000 - 500000 T annual processing capacity
Extractive activities	Extractive activities	> 100000 - 500000 T annual capacity to extract or process
Resource recovery	Recovery of general waste	Any general waste recovered
Waste storage	Waste storage - other types of waste	Any other types of waste stored

Note: The condition titled "Waste" under the Limit Conditions of this licence restricts what types of waste may be received at the Premises.

A1.2 Notwithstanding the fee scales noted above, the licensee must not:

- (a) extract more than 490,000 tonnes of quarry products from the premises per calendar year; and
- (b) transport more than 475,000 tonnes of quarry products from the premises per calendar year

Note: This condition has been added to be consistent with development consent DA231-10-99 MOD 5.

A2 Premises or plant to which this licence applies

A2.1 The licence applies to the following premises:

Premises Details
JANDRA QUARRY
PACIFIC HIGHWAY
POSSUM BRUSH
NSW 2430
LOT 2 DP 255621, LOT 11 DP 790056, LOT 12 DP 790056, LOT 13 DP 790056, LOT 14 DP 790056, LOT 15 DP 790056

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A3 Information supplied to the EPA

- A3.1 Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.

In this condition the reference to "the licence application" includes a reference to:

- a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and
- b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.

2 Discharges to Air and Water and Applications to Land

P1 Location of monitoring/discharge points and areas

- P1.1 The following points referred to in the table below are identified in this licence for the purposes of monitoring and/or the setting of limits for the emission of pollutants to the air from the point.

<i>Air</i>			
EPA identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
11	Ambient PM10 monitoring		Receiver location R1 identified on map titled "Jandra Environmental Monitoring Locations" within the Holcim Environmental Management Strategy - Jandra Quarry. See EPA document DOC16/387391, EF13/3895.
18	Dust deposition monitoring		Dust monitoring point on the northern site boundary identified on "Figure 1 Surrounding land use, residences and environmental monitoring locations" within the Holcim Air Quality Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391.
19	Dust deposition monitoring		Dust monitoring point on southern site boundary identified on "Figure 1 Surrounding land use, residences and environmental monitoring locations" within the Holcim Air Quality Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391.
20	Dust deposition monitoring		Dust monitoring point on the eastern site boundary identified on "Figure 1 Surrounding land use, residences and environmental monitoring locations" within the Holcim Air Quality Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391.

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21	Dust deposition monitoring	Dust monitoring point on the western site boundary identified on "Figure 1 Surrounding land use, residences and environmental monitoring locations" within the Holcim Air Quality Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391.
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P1.2 The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.

P1.3 The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.

Water and land

EPA Identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
1	Discharge quality monitoring	Discharge quality monitoring	Discharge from final sediment dam as shown in the CSR Readymix Site Photo - Jandra Quarry Water Monitoring Location Figure 1 provided to the EPA 13 May 2002

P1.4 The following points referred to in the table below are identified in this licence for the purposes of weather and/or noise monitoring and/or setting limits for the emission of noise from the premises.

Noise/Weather

EPA identification no.	Type of monitoring point	Location description
2	Air blast overpressure & ground vibration peak particle velocity monitoring	Receiver location R4 in accordance with development consent 231-10-99 MOD 5 and identified on "Figure 1 Surrounding land use, residence and environmental monitoring locations" within the Holcim Noise and Blast Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391, EF13/3895.
3	Air blast overpressure & ground vibration peak particle velocity monitoring	Receiver location R2 in accordance with development consent 231-10-99 MOD 5 and identified on "Figure 1 Surrounding land use, residence and environmental monitoring locations" within the Holcim Noise and Blast Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391, EF13/3895.

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4	Meteorological Station – to determine meteorological conditions for noise monitoring	Meteorological station adjacent to the "Main Dam" and identified on "Figure 1 Surrounding land use, residences and environmental monitoring locations" within the Holcim Air Quality Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391, EF13/3895.
13	Noise monitoring	Monitoring location R2 in accordance with development consent 231-10-99 MOD 5 and identified on "Figure 1 Surrounding land use, residences and environmental monitoring locations" within the Holcim Noise and Blast Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391, EF13/3895.
14	Noise monitoring	Monitoring location R4 in accordance with development consent 231-10-99 MOD 5 and identified on "Figure 1 Surrounding land use, residences and environmental monitoring locations" within the Holcim Noise and Blast Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391, EF13/3895.
15	Noise monitoring	Monitoring location R5 in accordance with development consent 231-10-99 MOD 5 and identified on "Figure 1 Surrounding land use, residences and environmental monitoring locations" within the Holcim Noise and Blast Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391, EF13/3895.
16	Noise monitoring	Monitoring location R6 in accordance with development consent 231-10-99 MOD 5 and identified on "Figure 1 Surrounding land use, residences and environmental monitoring locations" within the Holcim Noise and Blast Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391, EF13/3895.
17	Noise monitoring	Monitoring location R7 in accordance with development consent 231-10-99 MOD 5 and identified on "Figure 1 Surrounding land use, residences and environmental monitoring locations" within the Holcim Noise and Blast Management Plan, Jandra Quarry 31/08/2015. See EPA document DOC16/387391, EF13/3895.

3 Limit Conditions

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L1 Pollution of waters

L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.

L2 Concentration limits

L2.1 For each monitoring/discharge point or utilisation area specified in the table\ below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.

L2.2 Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.

L2.3 To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table\.

L2.4 Water and/or Land Concentration Limits

POINT 1

Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile concentration limit
pH	pH				6.5-8.5
Total suspended solids	milligrams per litre				50

L3 Waste

L3.1 The licensee must not cause, permit or allow any waste to be received at the premises, except concrete "wash-out" waste from concrete batch plants. All other wastes are not permitted on the premises, except as expressly permitted by this licence.

L3.2 The licensee must not:

- Process more than 3000 tonnes of concrete "wash-out" per annum;
- Store more than 1000 tonnes of concrete "wash-out" on the premises at any one time.

L3.3 Concrete 'wash-out' must be stockpiled on site in bunded areas and can be processed and blended with

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quarry raw product to produce quarry product(s).

L4 Noise limits

L4.1 Noise generated at the premises must not exceed the noise limits in the tables below. The locations referred to in the tables below are indicated in the document titled: "Jandra Quarry Intensification of Production Environmental Assessment (DA 231-10-99 MOD 5)" Dated July 2014

L4.2 Noise from the premises during quarrying operations only must not exceed the limits specified in the following table:

EPA identification no.	Limit dB(A) LAeq(15 min) Shoulder, Day & Evening
15	40
13, 14, 16	36
17	35

L4.3 Noise from the premises during operations including asphalt plant must not exceed the limits specified in the following table:

EPA identification no.	Limit dB(A) LAeq(15 min) Shoulder, Day & Evening	Limit dB(A) LAeq(15 minute) Night	Limit dB(A) LA1(1 minute) Night
15	41	39	51
14	40	39	51
13,16	40	35	48
17	36	35	48

Note:

1. Condition 10 of Schedule 2 of development consent DA 213 -10-99 MOD 5 prohibits quarrying operations during the hours of 10 pm-6 am;
2. Receiver locations are shown on the figure in Appendix 2 of development consent DA 213-10-99 a copy of which has been filed as EPA document DOC15/85830;
3. Noise limits are in accordance with development consent DA 231-10-99 MOD 5;
4. A negotiated agreement is in place for Residence R1 as referred to in development consent DA 231-10-99 MOD 5 & any noise issues from this premises will be addressed by the Department of Planning and Environment.

L4.4 For the purpose of the conditions above:

- Shoulder, Day and Evening is defined as the period from 6am - 10pm

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- Night is defined as the period from 10pm - 6am

L4.5 The noise limits set out in the above tables apply under all meteorological conditions except the following:

- a) Wind speeds greater than 3 metres/second at 10 metres above ground level; or
- b) Stability category F temperature inversion conditions and wind speeds greater than 2 metres/second at 10 metres above ground level; or
- c) Stability category G temperature inversion conditions.

L4.6 For the purpose of the conditions above:

- a) Data recorded by the meteorological station identified in this licence must be used to determine meteorological conditions; and
- b) Temperature inversion conditions (stability category) when determined by the sigma-theta method must be determined in accordance with Part E3 of the NSW Industrial Noise Policy. Temperature inversion conditions (determined by vertical temperature gradient in degrees C) are to be determined by direct measurement over a minimum 50m height interval as referred to in Part E2 to the NSW Industrial Noise Policy

L4.7 To determine compliance:

a) with Leq (15 minute) noise limits in this licence, the noise measurement equipment must be located:

- approximately on the property boundary, where any dwelling is situated 30 metres or less from the property boundary closest to the premises; or
- within 30 metres of a dwelling façade, but not closer than 3m, where any dwelling on the property is situated more than 30 metres from the property boundary closest to the premises; or
- where applicable within approximately 50 metres of the boundary of a National Park or a Nature Reserve.

b) With the LA1 (1 minute) noise limits in this licence, the noise measurement equipment must be located within 1 metre of a dwelling façade.

c) with the noise limits in this licence, the noise measurement equipment must be located:

- at the most affected point at a location where there is no dwelling at the location; or
- at the most affected point within an area at a location prescribed by this licence.

L4.8 A non-compliance of the noise limit conditions will still occur where noise generated from the premises in excess of the appropriate limit is measured:

- at a location other than an area prescribed by this licence; and/or
- at a point other than the most affected point at a location

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L5 Blasting

- L5.1 Blasting in or on the premises must only be carried out between 9am and 5pm, Monday to Friday and 9am and 3pm, Saturday. Blasting in or on the premises must not take place on Sundays or Public Holidays without the prior approval of the EPA.
- L5.2 The airblast overpressure level from blasting operations in or on the premises must not exceed: 115 dB (Lin Peak) for more than 5% of the total number of blasts during each reporting period; at either monitoring point 2 or 3 of this licence.
- L5.3 The airblast overpressure level from blasting operations in or on the premises must not exceed: 120 dB (Lin Peak) at any time; at either monitoring point 2 or 3 of this licence.
- L5.4 The ground vibration peak particle velocity from blasting operations carried out in or on the premises must not exceed: 5 mm/second for more than 5% of the total number of blasts during each reporting period; at either monitoring point 2 or 3 of this licence.
- L5.5 The ground vibration peak particle velocity from blasting operations carried out in or on the premises must not exceed: 10 mm/second at any time; at either monitoring point 2 or 3 of this licence.
- L5.6 Error margins associated with any monitoring equipment used to measure blasts must not be taken into account when determining whether or not the limit has been exceeded.
- L5.7 Offensive blast fume must not be emitted from the premises.

Definition:

Offensive blast fume means post-blast gases from the detonation of explosives at the premises that by reason of their nature, duration, character or quality, or the time at which they are emitted, or any other circumstances:

- 1. are harmful to (or likely to be harmful to) a person that is outside the premises from which it is emitted, or*
- 2. interferes unreasonably with (or is likely to interfere unreasonably with) the comfort or repose of a person who is outside the premises from which it is emitted.*

L6 Hours of operation

- L6.1 In accordance with development consent DA 231-10-99 MOD 5, hours of operation for the premises are specified in the table below:

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Day	Extraction and processing operations	Transportation operations	Asphalt Plant & associated transport (campaigns)
Monday - Friday	6am to 10pm	6am to 10pm	24 hours a day
Saturday	6am to 6pm	6am to 10 pm	24 hours a day
Sunday and Public Holidays	None	None	24 hours a day

- L6.2 In accordance with development consent DA 231-10-99 MOD 5, the following activities may be conducted at the premises outside the hours specified in the table above:
- (a) return of trucks to the premises prior to midnight Monday to Saturday;
 - (b) delivery or dispatch of materials as requested by Police, Fire Brigade or other similar authorities;
 - (c) emergency work to avoid the loss of lives, property and/or prevent environmental harm; and
 - (d) maintenance activities provided it is inaudible at residential premises.
- In circumstances outlines in (b) and (c), the Licensee shall notify affected residents prior to undertaking the activities, or as soon as practical thereafter

L7 Potentially offensive odour

- L7.1 The licensee must not cause or permit the emission of offensive odour beyond the boundary of the premises.

4 Operating Conditions

O1 Activities must be carried out in a competent manner

- O1.1 Licensed activities must be carried out in a competent manner.
This includes:
- a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
 - b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

O2 Maintenance of plant and equipment

- O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:
- a) must be maintained in a proper and efficient condition; and
 - b) must be operated in a proper and efficient manner.

O3 Dust

- O3.1 The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.

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O4 Emergency response

Note: The licensee must maintain, and implement as necessary, a current Pollution Incident Response Management Plan (PIRMP) for the premises. The PIRMP must be developed in accordance with the requirements in Part 5.7A of the POEO Act and Regulations.

The licensee must keep the PIRMP on the premises at all times. The PIRMP must document systems and procedures to deal with all types of incidents (e.g. spills, explosions or fire) that may occur at the premises or that may be associated with the activities that occur at the premises and which are likely to cause harm to the environment. The PIRMP must be tested at least annually or following a pollution incident.

O5 Processes and management

O5.1 The licensee must take all reasonable measures to prevent the tracking of mud and debris onto the Pacific Highway including, but not limited to, ensuring all vehicles leaving the premises pass through the vehicular wheel wash.

O6 Waste management

O6.1 The licensee must comply with the conditions as specified in this licence or where no specific conditions outlined in this licence, this licensee must comply with the *Protection of the Environment Operations (Waste) Regulation 2014*.

5 Monitoring and Recording Conditions

M1 Monitoring records

M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.

M1.2 All records required to be kept by this licence must be:

- 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.

M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:

- 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.

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M2 Requirement to monitor concentration of pollutants discharged

M2.1 For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:

M2.2 Air Monitoring Requirements

POINT 11

Pollutant	Units of measure	Frequency	Sampling Method
PM10	micrograms per cubic metre	Every 6 days	AM-18

POINT 18,19,20,21

Pollutant	Units of measure	Frequency	Sampling Method
Particulates - Deposited Matter	grams per square metre per month	Monthly	AM-19

M2.3 Water and/ or Land Monitoring Requirements

POINT 1

Pollutant	Units of measure	Frequency	Sampling Method
pH	pH	Each overflow event	Grab sample
Total suspended solids	milligrams per litre	2 times daily during discharge	Grab sample
Turbidity	nephelometric turbidity units	2 times daily during discharge	Grab sample

M3 Testing methods - concentration limits

M3.1 Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this licence must be done in accordance with:

- any methodology which is required by or under the Act to be used for the testing of the concentration of the pollutant; or
- if no such requirement is imposed by or under the Act, any methodology which a condition of this licence requires to be used for that testing; or
- if no such requirement is imposed by or under the Act or by a condition of this licence, any

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methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.

- M3.2 Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.

Note: The *Protection of the Environment Operations (Clean Air) Regulation 2010* requires testing for certain purposes to be conducted in accordance with test methods contained in the publication "Approved Methods for the Sampling and Analysis of Air Pollutants in NSW".

M4 Weather monitoring

- M4.1 At the point(s) identified below, the licensee must monitor (by sampling and obtaining results by analysis) the parameters specified in Column 1 of the table below, using the corresponding sampling method, units of measure, averaging period and sampling frequency, specified opposite in the Columns 2, 3, 4 and 5 respectively.

POINT 4

Parameter	Sampling method	Units of measure	Averaging period	Frequency
Temperature at 10 metres	AM-4	degrees Celsius	1 hour	Continuous
Wind Direction at 10 metres	AM-2 & AM-4	Degrees	15 minutes	Continuous
Wind Speed	AM-2 & AM-4	metres per second	15 minutes	Continuous
Sigma Theta	AM-2 & AM-4	Degrees	15 minutes	Continuous
Rainfall	AM-4	millimetres	15 minutes	Continuous
Relative humidity	AM-4	percent	1 hour	Continuous

- M4.2 Rainfall at the premises must be measured and recorded in millimetres per 24 hour period, at the same time each day.

Note: The rainfall monitoring data collected in compliance with the above condition will assist in interpreting the effectiveness of stormwater management at the quarry.

M5 Recording of pollution complaints

- M5.1 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.

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M5.2 The record must include details of the following:

- 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.

M5.3 The record of a complaint must be kept for at least 4 years after the complaint was made.

M5.4 The record must be produced to any authorised officer of the EPA who asks to see them.

M6 Telephone complaints line

M6.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.

M6.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.

M6.3 The preceding two conditions do not apply until 3 months after: the date of the issue of this licence.

M7 Blasting

M7.1 To determine compliance with the blasting limits of this licence:

- a) Airblast overpressure and ground vibration levels must be measured and electronically recorded for monitoring points 2 and 3 for the parameters specified in Column 1 of the table below; and
- b) The licensee must use the units of measure, sampling method, and sample at the frequency specified opposite in the other columns.

Parameters	Units of Measure	Frequency	Sampling Method
Airblast Overpressure	Decibels (Linear Peak)	All blasts	Australian Standard AS 2187.2-2006
Ground Vibration Peak Particle Velocity	millimetres/second	All blasts	Australian Standard AS 2187.2-2006

M8 Noise monitoring

M8.1 To assess compliance with the noise limits of this licence, attend noise monitoring must be undertaken in accordance with the conditions of this licence and:

- a) during a period of normal quarry operations;

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- b) at each one of the noise monitoring locations listed in the noise limits table of this licence;
- c) occur quarterly in the reporting period; and
- d) occur during the night period as defined in the NSW Noise Policy for Industry, and in conjunction with an asphalt campaign if any such campaign occurs within the quarterly monitoring period.

Note: The extent and frequency of noise monitoring required by this licence will be reviewed upon request after eight quarterly monitoring campaigns.

M8.2 Noise monitoring must be carried out in accordance with Australian Standard AS 2659.1 - 1998: Guide to the use of sound measuring equipment - Portable sound level metres and in accordance with any relevant factors provided in the NSW Noise Policy for Industry.

6 Reporting Conditions

R1 Annual return documents

R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:

1. a Statement of Compliance,
2. a Monitoring and Complaints Summary,
3. a Statement of Compliance - Licence Conditions,
4. a Statement of Compliance - Load based Fee,
5. a Statement of Compliance - Requirement to Prepare Pollution Incident Response Management Plan,
6. a Statement of Compliance - Requirement to Publish Pollution Monitoring Data; and
7. a Statement of Compliance - Environmental Management Systems and Practices.

At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.

R1.2 An Annual Return must be prepared in respect of each reporting period, except as provided below.

Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.

R1.3 Where this licence is transferred from the licensee to a new licensee:

- a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
- b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.

Note: An application to transfer a licence must be made in the approved form for this purpose.

R1.4 Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on:

- a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is

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given; or

b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.

R1.5 The Annual Return for the reporting period must be supplied to the EPA via eConnect *EPA* or by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

R1.6 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.

R1.7 Within the Annual Return, the Statements of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:

a) the licence holder; or

b) by a person approved in writing by the EPA to sign on behalf of the licence holder.

R2 Notification of environmental harm

Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

R2.1 Notifications must be made by telephoning the Environment Line service on 131 555.

R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

R3 Written report

R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:

a) where this licence applies to premises, an event has occurred at the premises; or

b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence,

and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.

R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.

R3.3 The request may require a report which includes any or all of the following information:

a) the cause, time and duration of the event;

b) the type, volume and concentration of every pollutant discharged as a result of the event;

c) 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;

d) 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;

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- e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;
- f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and
- g) any other relevant matters.

R3.4 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 by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

R4 Other reporting conditions

R4.1 Noise Compliance Assessment Report

A noise compliance assessment report(s) must be submitted to the EPA with each Annual Return. The assessment must be prepared by a suitably qualified and experienced acoustical consultant and include:

- a) an assessment of compliance with noise limits detailed in the limit conditions of this licence;
- b) details of all quarrying activities that were occurring during each of the periods of monitoring, and
- c) an outline of any management actions taken within the monitoring period to address any exceedences of the limits detailed in the limit conditions of this licence.

R4.2 Blast Monitoring Report

The licensee must supply, with each Annual Return, a Blast Monitoring Report which must include the following information relating to each blast carried out within the premises during the reporting period covered by the Annual Return:

- a) the date and time of the blast;
- b) the location of the blast on the premises;
- c) the blast monitoring results at each blast monitoring station; and
- d) an explanation for any missing blast monitoring results.

R4.3 The licensee must report any exceedence of the licence blasting limits to the regional office of the EPA as soon as practicable after the exceedence becomes known to the licensee or to one of the licensee's employees or agents.

7 General Conditions

G1 Copy of licence kept at the premises or plant

G1.1 A copy of this licence must be kept at the premises to which the licence applies.

G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.

G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

G2 Other general conditions

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G2.1 Completed Programs

Program	Description	Completed Date
PRP 1: Installation and Use of a Wheel Wash at the Premises	Construction and Utilisation of a vehicular wheel wash for all vehicles exiting the premises.	28-October-2011

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Dictionary

General Dictionary

3DGM [in relation to a concentration limit]	Means the three day geometric mean, which is calculated by multiplying the results of the analysis of three samples collected on consecutive days and then taking the cubed root of that amount. Where one or more of the samples is zero or below the detection limit for the analysis, then 1 or the detection limit respectively should be used in place of those samples
Act	Means the Protection of the Environment Operations Act 1997
activity	Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997
actual load	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
AM	Together with a number, means an ambient air monitoring method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .
AMG	Australian Map Grid
anniversary date	The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
annual return	Is defined in R1.1
Approved Methods Publication	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
assessable pollutants	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
BOD	Means biochemical oxygen demand
CEM	Together with a number, means a continuous emission monitoring method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .
COD	Means chemical oxygen demand
composite sample	Unless otherwise specifically approved in writing by the EPA, a sample consisting of 24 individual samples collected at hourly intervals and each having an equivalent volume.
cond.	Means conductivity
environment	Has the same meaning as in the Protection of the Environment Operations Act 1997
environment protection legislation	Has the same meaning as in the Protection of the Environment Administration Act 1991
EPA	Means Environment Protection Authority of New South Wales.
fee-based activity classification	Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 2009.
general solid waste (non-putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997

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flow weighted composite sample	Means a sample whose composites are sized in proportion to the flow at each composites time of collection.
general solid waste (putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
grab sample	Means a single sample taken at a point at a single time
hazardous waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
licensee	Means the licence holder described at the front of this licence
load calculation protocol	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
local authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
material harm	Has the same meaning as in section 147 Protection of the Environment Operations Act 1997
MBAS	Means methylene blue active substances
Minister	Means the Minister administering the Protection of the Environment Operations Act 1997
mobile plant	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
motor vehicle	Has the same meaning as in the Protection of the Environment Operations Act 1997
O&G	Means oil and grease
percentile [in relation to a concentration limit of a sample]	Means that percentage [eg.50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period of time. In this licence, the specified period of time is the Reporting Period unless otherwise stated in this licence.
plant	Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles.
pollution of waters [or water pollution]	Has the same meaning as in the Protection of the Environment Operations Act 1997
premises	Means the premises described in condition A2.1
public authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
regional office	Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence
reporting period	For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 months. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
restricted solid waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
scheduled activity	Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997
special waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
TM	Together with a number, means a test method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .

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TSP	Means total suspended particles
TSS	Means total suspended solids
Type 1 substance	Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements
Type 2 substance	Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements
utilisation area	Means any area shown as a utilisation area on a map submitted with the application for this licence
waste	Has the same meaning as in the Protection of the Environment Operations Act 1997
waste type	Means liquid, restricted solid waste, general solid waste (putrescible), general solid waste (non - putrescible), special waste or hazardous waste

Mr Nigel Sargent

Environment Protection Authority

(By Delegation)

Date of this edition: 10-March-2000

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End Notes

- 1 Licence varied by notice 1006152, issued on 21-Feb-2002, which came into effect on 18-Mar-2002.
- 2 Licence varied by notice 1016675, issued on 20-Jun-2002, which came into effect on 15-Jul-2002.
- 3 Licence transferred through application 141653, approved on 19-Dec-2002, which came into effect on 01-Oct-2002.
- 4 Licence varied by notice 1042128, issued on 14-Jan-2005, which came into effect on 08-Feb-2005.
- 5 Condition A1.3 Not applicable varied by notice issued on <issue date> which came into effect on <effective date>
- 6 Licence varied by notice 1106247, issued on 08-Sep-2009, which came into effect on 08-Sep-2009.
- 7 Licence varied by notice 1503538 issued on 04-Jan-2012
- 8 Licence varied by notice 1507470 issued on 26-Sep-2012
- 9 Licence varied by notice 1535107 issued on 17-Oct-2016
- 10 Licence varied by notice 1577456 issued on 12-Jun-2019
- 11 Licence format updated on 18-Jul-2019

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