



**Adelaide Brighton Cement Ltd**

an **ADBRI** company

**adelaidebrighton.com.au**

Adelaide Brighton Cement Ltd  
ABN 96 007 870 199  
PO Box 77  
Port Adelaide SA 5015  
+61 8 8300 0300

## QUARTERLY NOISE MANAGEMENT REPORT FOR BIRKENHEAD WORKS

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**COMPLIANCE DATE: 14/05/2021– Quarter 1 2021**  
**EPA Licence 1126: Noise Management Plan (U-787)**

**Licensed site: Adelaide Brighton Cement, Birkenhead Works**

**62 Elder Road, Birkenhead, SA 5015**

**Date of Submission: 14 May 2021**

**Version Number: 1**

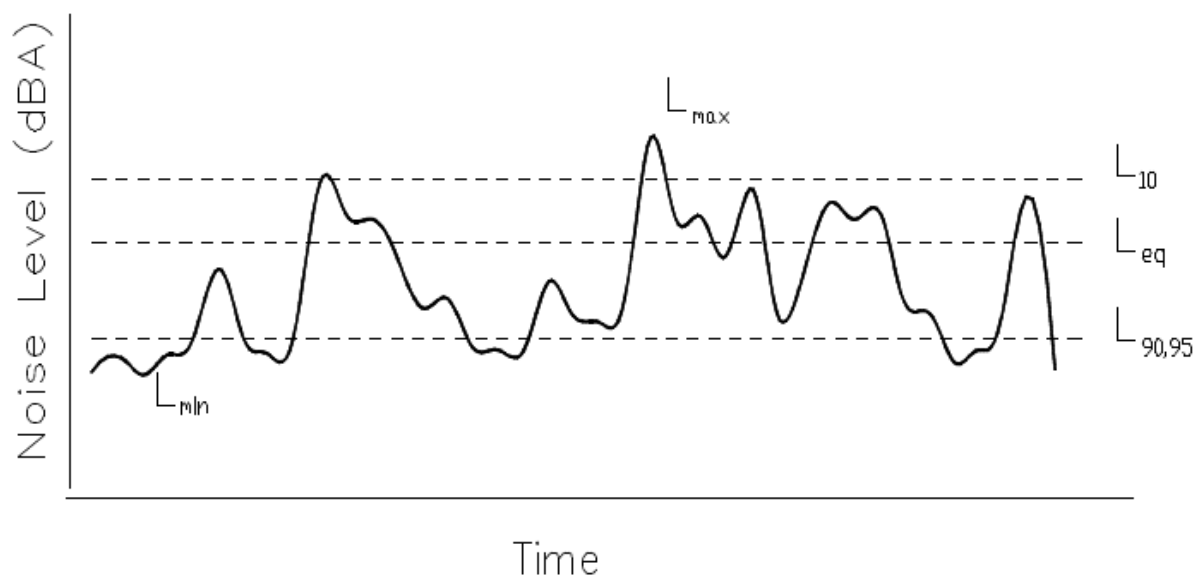


Report Submitted by: Sustainability/Environmental Engineer

*I certify that to the best of my knowledge and ability all the information in this report is a true and accurate reflection of the regulatory monitoring performed.*

## Glossary of acoustic terminology

- dB(A)** A unit of measurement, decibels(A), of sound pressure level which has its frequency characteristics modified by a filter ("A-weighted") so as to more closely approximate the frequency response of the human ear.
- L<sub>1</sub>** The noise level which is equalled or exceeded for 1% of the measurement period. L<sub>1</sub> is an indicator of the impulse noise level, and is used in Australia as the descriptor for intrusive noise (usually in dBA).
- L<sub>10</sub>** The noise level which is equalled or exceeded for 10% of the measurement period. L<sub>10</sub> is an indicator of the mean maximum noise level, and is used in Australia as the descriptor for intrusive noise (usually in dBA).
- L<sub>90</sub>** The noise level which is equalled or exceeded for 90% of the measurement period. L<sub>90</sub> is an indicator of the mean minimum noise level, and is used in Australia as the descriptor for background or ambient noise (usually in dBA).
- L<sub>eq</sub>** The equivalent continuous noise level for the measurement period. L<sub>eq</sub> is an indicator of the average noise level (usually in dBA).
- L<sub>max</sub>** The maximum noise level for the measurement period (usually in dBA).



**Note:** *The subjective reaction or response to changes in noise levels can be summarised as follows:*

A 3 dB(A) increase in sound pressure level is required for the average human ear to notice a change; a 5 dB(A) increase is quite noticeable and a 10 dB(A) increase is typically perceived as a doubling in loudness

<b>Monitoring Objective</b>	<p>The quarterly report will include where applicable:</p> <p>Details of noise complaints (excluding complainant name and identifying address details for reasons of confidentiality), received during the quarter including the outcomes of the complaint investigation and where applicable, corrective actions implemented.</p> <p>Details on the progress of noise attenuation projects including effectiveness.</p> <p>Details of noise monitoring reports.</p> <p>Details of noise minimisation activities.</p>																											
<b>Monitoring Plan</b>	<p>This monitoring report complies with the Noise Management Plan approved on 16 August 2018 by the SA EPA.</p> <p>The Plan is available on the ABC Birkenhead Community Website:  <a href="https://adelaidebrightoncommunity.com.au/">https://adelaidebrightoncommunity.com.au/</a></p>																											
<b>Noise Complaints Summary</b>	<p>Most of the complaints this reporting period were related to the annual plant shutdown between 18/2/2021 to 5/4/2021. This was a much longer shutdown than normal and involved a significant amount of additional work and included :</p> <ul style="list-style-type: none"> <li>• Replacement of the kiln tyres and sections of the kiln shell</li> <li>• Kiln refractory demolition using remote controlled pneumatic breaker</li> <li>• Installation of a 14m high noise barrier to mitigate kiln refractory demolition noise</li> <li>• Construction/ installation of Tertiary recycle project</li> <li>• Kiln cooling water upgrade</li> <li>• Plant equipment repairs and maintenance</li> <li>• On-site work activities 24/7</li> <li>• 350 + contractors onsite</li> <li>• Daily team briefing / HSE tool box meetings including <ul style="list-style-type: none"> <li>• community impact awareness</li> <li>• community interactions</li> </ul> </li> </ul> <p>The table below summarises the noise complaints by description.</p> <table border="1" data-bbox="363 1205 1374 2024"> <thead> <tr> <th data-bbox="363 1205 555 1272">Number of Complaints</th> <th data-bbox="555 1205 804 1272">Description</th> <th data-bbox="804 1205 1374 1272">Cause / Action Taken</th> </tr> </thead> <tbody> <tr> <td data-bbox="363 1272 555 1346">1</td> <td data-bbox="555 1272 804 1346">Vibration</td> <td data-bbox="804 1272 1374 1346">Could not identify source - no contact details given</td> </tr> <tr> <td data-bbox="363 1346 555 1420">1</td> <td data-bbox="555 1346 804 1420">High pitched noise</td> <td data-bbox="804 1346 1374 1420">Possibly concrete cutting in preheater tower</td> </tr> <tr> <td data-bbox="363 1420 555 1525">1</td> <td data-bbox="555 1420 804 1525">Alarm</td> <td data-bbox="804 1420 1374 1525">4A load centre fire alarm triggered when the alarm was being deisolated - Difficulty experienced in resetting alarm</td> </tr> <tr> <td data-bbox="363 1525 555 1671">2</td> <td data-bbox="555 1525 804 1671">Whistling noise</td> <td data-bbox="804 1525 1374 1671">4B Conditioning Tower spray nozzles Adjust sprays if possible, to reduce noise Ongoing trials to find an effective noise attenuating barrier</td> </tr> <tr> <td data-bbox="363 1671 555 1883">8</td> <td data-bbox="555 1671 804 1883">Jack hammering</td> <td data-bbox="804 1671 1374 1883">Kiln refractory demolition activities - noisiest activities stopped at 22:00 Noise barrier and other controls in place Noise survey and monitoring results indicate the activity was intermittently audible but no apparent increase in background noise levels</td> </tr> <tr> <td data-bbox="363 1883 555 1917">2</td> <td data-bbox="555 1883 804 1917">Pulsating noise</td> <td data-bbox="804 1883 1374 1917">Hydro jet cleaning activities - activity stopped</td> </tr> <tr> <td data-bbox="363 1917 555 1991">6</td> <td data-bbox="555 1917 804 1991">Constant humming noise</td> <td data-bbox="804 1917 1374 1991">Industrial Vacuum truck use for cleaning activities - late night activity stopped</td> </tr> <tr> <td data-bbox="363 1991 555 2024">3</td> <td data-bbox="555 1991 804 2024">Hammering</td> <td data-bbox="804 1991 1374 2024">Use of hammers on steel - activity stopped</td> </tr> </tbody> </table> <p>Details of each individual noise complaint is provided in the following tables.</p>	Number of Complaints	Description	Cause / Action Taken	1	Vibration	Could not identify source - no contact details given	1	High pitched noise	Possibly concrete cutting in preheater tower	1	Alarm	4A load centre fire alarm triggered when the alarm was being deisolated - Difficulty experienced in resetting alarm	2	Whistling noise	4B Conditioning Tower spray nozzles Adjust sprays if possible, to reduce noise Ongoing trials to find an effective noise attenuating barrier	8	Jack hammering	Kiln refractory demolition activities - noisiest activities stopped at 22:00 Noise barrier and other controls in place Noise survey and monitoring results indicate the activity was intermittently audible but no apparent increase in background noise levels	2	Pulsating noise	Hydro jet cleaning activities - activity stopped	6	Constant humming noise	Industrial Vacuum truck use for cleaning activities - late night activity stopped	3	Hammering	Use of hammers on steel - activity stopped
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Date and Time	Location	Description	Cause / Action Taken
13/01/2021 09:01	Alfred street	High pitched noise	This may be related to concrete cutting in the preheater tower
16/01/2021 23:10	Alfred Street	Whistling noise from plant.	Source of noise was possibly from 4B Conditioning Tower spray nozzles Flow rate adjusted, and noise reduced -2 checks were done in Alfred St. to confirm that this was effective.
21/01/2021 08:53	Alfred street	Whistling noise coming from Plant	4B Conditioning Tower spray override was on at the time Immediately turned sprays off. New alarm to be installed to alert operators when low water flow rate conditions occur. Alternative sound attenuation material identified and new spray nozzle shroud to be fabricated/tested
7/02/2021 9:05	Anonymous	House vibrating	Site investigation - could not find a source. Caller did not give address or contact details - hard to investigate
16/02/2021 09:10	Hilton Street	Loud humming noise - sounds like a large fan in a steel tube	Vacuum Truck cleaning the weigh building close to site boundary and Hilton Street. Source verified by stopping the activity. Noise levels measured and not excessively loud 64dBA at 6m from truck - different to normal background noise sources. Passing traffic (trucks) on Victoria Road measured at 70-74dBA
24/02/2021 05:50	Mary Street	Jackhammering noise	Kiln refractory demolition - activity stopped immediately. EPA follow up as also notified.
24/02/2021 23:18	Mary Street	Jackhammering noise	Kiln refractory and tertiary air duct refractory demolition - activity stopped immediately.
25/02/2021 16:02	Hilton Street	Loud pulsing noise coming the south end of the plant	Weigh building silo cleaning (near site boundary close to Hilton Street) with a hydro jet truck. Hydro jet truck repositioned behind building to attenuate noise - resident happy with the response.
25/02/2021 21:33	Hargrave Street	Jackhammering noise	Refractory demolition - resident advised activity would be stopped at 22:00

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25/02/2021 22:21 22:26 23:15	Mary Street	Jackhammering noise (3 calls in 1hr from the same resident )	Refractory demolition in preheater tower had stopped at 22:00. Refractory demolition inside kiln still in progress. Jackhammering noise was just noticeable in Mary St, when there was no passing traffic on Victoria Road. Activity stopped.
26/02/2021 23:37	Hilton Street	Loud pulsing noise coming the south end of the plant	Weigh building silo cleaning (near site boundary close to Hilton Street) with a hydro jet truck. Hydro jet truck repositioned behind building to attenuate noise - resident happy with the response.
27/02/2021 02:24	Victoria Road	Ongoing machinery noise	Resident did not want a call back
27/02/2021 20:55	Gilbert Street	Jack hammering noise	Kiln refractory demolition - resident advised activity to be stopped at 22:00
27/02/2021 21:06	Anonymous	Hammering noise last few days	Kiln refractory demolition - activity curfew of 22:00
28/02/2021 05:38 05:47	Victoria Road	Humming noise over the weekend. At the time it was associated with vacuum truck operations cleaning in weigh building.	Vacuum truck activity stopped
4/03/2021 00:19	Victoria Road	Resident called about noise - vacuum truck in main carpark	Vacuum truck activity stopped.
4/03/2021 01:55	Mary Street	Intermittent hammering all evening	Contractor working on kiln shell section replacement-Hammering intermittently on shell during cutting operations. Hammering activity stopped immediately.
4/03/2021 18:28	Little Craige street	Alarm going for last 15 minutes	4A load centre fire alarm triggered when the alarm was being deisolated - Difficulty experienced in resetting alarm
11/03/2021 00:18	Victoria Road	Ongoing continuous noise	Vacuum truck cleaning iron stone bin in weigh building near Victoria road. Activity stopped.

Date and Time	Location	Description	Cause / Action Taken
11/03/2021 11:00	Victoria Road	Resident called about constant humming noises for several hours at a time over last 10 days. In particular 10/3/2021 up to 11.30 pm and 11/3/2021 (9.30 am to 1pm).	Vacuum truck use for cleaning operations in weigh building near Victoria road.
15/03/2021 23:44	Mary Street	Hammering noise	Vacuum truck operator using a sledgehammer to clear a blockage in a vacuum pipe in the preheater tower. Activity stopped.
17/03/2021 23:19	Mary Street	Hammering noise	Contractor working on steel work, found using a hammer to remove welding slag. Supervisor reported checks had indicated noise was not excessively loud. Activity stopped.

**Noise Minimisation Activities**

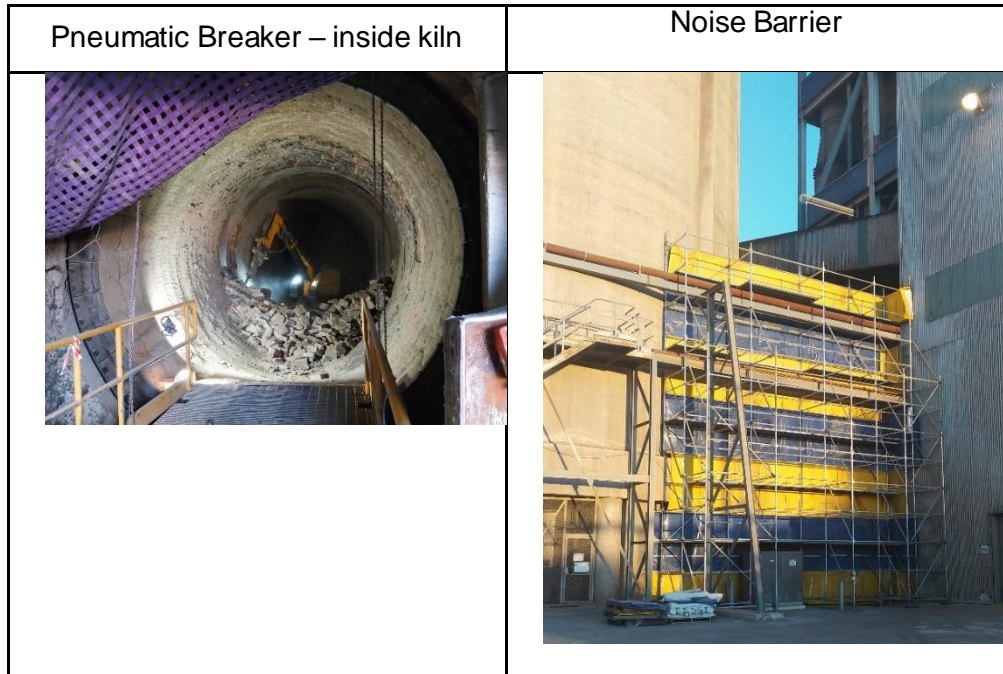
Annual Plant Shutdown:

During the annual plant shutdown, the following controls were put in place to reduce the noise associated with kiln refractory demolition

- Remote controlled pneumatic breaker (Brokk) – allows for better control of the activity
- A 14m high noise barrier was installed
- Noisiest activities scheduled during the daytime period and stopped at 10 pm
- Daily team briefing / HSE toolbox meetings including
  - community impact awareness
  - community interactions

Attended noise surveys by acoustic consultants over 3 nights to assess refractory demolition noise impacts showed that

- Demolition noise was detected intermittently in some areas of the community, however sound levels were below night-time noise criteria in most areas.
- Some areas were influenced by nearby traffic and other ambient sources
- The acoustic survey shows that while demolition activity is audible there is no apparent increase in noise levels



Whistling noise from 4B Conditioning Tower Sprays:

Investigation into a resident's complaint of an intermittent whistling noise, identified the source of the noise to be associated with the operation of the 4B Conditioning Tower water sprays.

Initial response to the complaint was to wrap the spray nozzles with Kaowool insulation blanket, which addressed the noise complaint at the time.

Acoustic treatments are being evaluated to determine a suitable long-term noise abatement solution.

Moulded rubber shrouds were manufactured and installed on the spray nozzles, initial results were promising, but reoccurrence of the complaint has occurred.

Pyrotech Soundlag 4525C (a highly flexible foam-based composite acoustic pipe lagging product), has been installed on the spray nozzle pipework and is currently being evaluated for effectiveness.



Spray nozzle lagged with Pyrotech Soundlag 4525C