



**Adelaide Brighton Cement Ltd**

an **ADBRI** company

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## QUARTERLY NOISE MANAGEMENT REPORT FOR BIRKENHEAD WORKS

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**COMPLIANCE DATE: 15/05/2022– Quarter 1 2022**  
**EPA Licence 1126: Noise Management Plan (U-787)**

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

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

**Date of Submission: 15 May 2022**

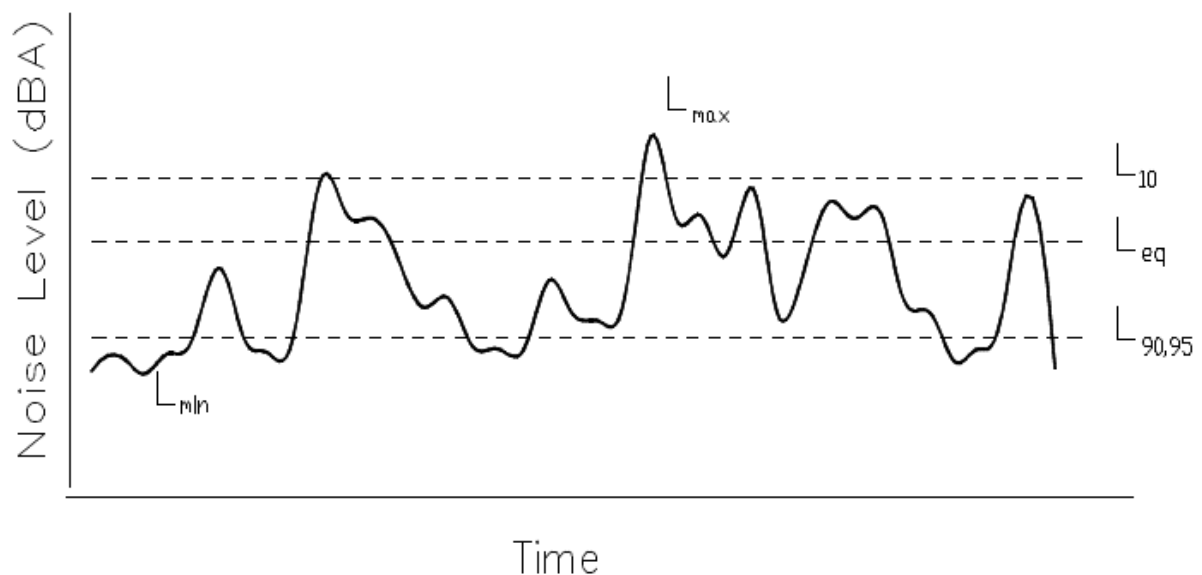
**Version Number: 1**



Report Submitted by: Advisor Environment - C&L (SA/NSW/NT)

## 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> <ul style="list-style-type: none"> <li>• 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.</li> <li>• Details on the progress of noise attenuation projects including effectiveness.</li> <li>• Details of noise monitoring reports.</li> <li>• Details of noise minimisation activities.</li> </ul>																																				
<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>The table below summarises the noise complaints for the reporting period.</p> <table border="1" data-bbox="336 752 1522 1794"> <thead> <tr> <th data-bbox="336 752 512 857">Date and Time</th> <th data-bbox="512 752 695 857">Location</th> <th data-bbox="695 752 979 857">Description</th> <th data-bbox="979 752 1522 857">Action Taken</th> </tr> </thead> <tbody> <tr> <td data-bbox="336 857 512 965">23/01/2022 14:00</td> <td data-bbox="512 857 695 965">Not provided</td> <td data-bbox="695 857 979 965">Alarm sounding</td> <td data-bbox="979 857 1522 965">Early warning fire alarm (old control room) activated. MFS attended, alarm silenced, and sensor reset.</td> </tr> <tr> <td data-bbox="336 965 512 1106">01/02/2022 07:30</td> <td data-bbox="512 965 695 1106">Alfred street Peterhead</td> <td data-bbox="695 965 979 1106">Underlying humming noise in one of your machines.</td> <td data-bbox="979 965 1522 1106">Clinker kiln warm up and start up after annual plant shut down. Normal start up – source not identified.</td> </tr> <tr> <td data-bbox="336 1106 512 1247">07/02/2022 22:30</td> <td data-bbox="512 1106 695 1247">Alfred street Peterhead</td> <td data-bbox="695 1106 979 1247">Rumbling and humming noise all night</td> <td data-bbox="979 1106 1522 1247">Clinker kiln start up on 7/2, after shutdown on 3/2. Normal plant operations at time of complaint. Investigations did not identify a source.</td> </tr> <tr> <td data-bbox="336 1247 512 1388">19/02/2022 00:20</td> <td data-bbox="512 1247 695 1388">Alfred street Peterhead</td> <td data-bbox="695 1247 979 1388">Crushing noise</td> <td data-bbox="979 1247 1522 1388">Bearing failure in Bypass lump breaker. Operators were shutting down the lump breaker for repair when the complaint was received.</td> </tr> <tr> <td data-bbox="336 1388 512 1476">5/03/2022 11:41</td> <td data-bbox="512 1388 695 1476">Alfred street Peterhead</td> <td data-bbox="695 1388 979 1476">Ringing noise.</td> <td data-bbox="979 1388 1522 1476">Identified two noisy water sprays on 4B Conditioning Tower which were isolated.</td> </tr> <tr> <td data-bbox="336 1476 512 1563">17/03/2022 09:00</td> <td data-bbox="512 1476 695 1563">Alfred street Peterhead</td> <td data-bbox="695 1476 979 1563">Squealing noise</td> <td data-bbox="979 1476 1522 1563">Investigation found TAD screw was rubbing on guard - rectified</td> </tr> <tr> <td data-bbox="336 1563 512 1650">19/03/2022 08:10</td> <td data-bbox="512 1563 695 1650">Not provided</td> <td data-bbox="695 1563 979 1650">Squealing noise</td> <td data-bbox="979 1563 1522 1650">Investigation found TAD screw was rubbing on guard - rectified</td> </tr> <tr> <td data-bbox="336 1650 512 1794">23/03/2022 03:00</td> <td data-bbox="512 1650 695 1794">Alfred street Peterhead</td> <td data-bbox="695 1650 979 1794">Low frequency droning noise like an idling truck</td> <td data-bbox="979 1650 1522 1794">Investigation could not identify a source. Plant staff visited the neighbouring streets /area several times and could not hear the noise.</td> </tr> </tbody> </table>	Date and Time	Location	Description	Action Taken	23/01/2022 14:00	Not provided	Alarm sounding	Early warning fire alarm (old control room) activated. MFS attended, alarm silenced, and sensor reset.	01/02/2022 07:30	Alfred street Peterhead	Underlying humming noise in one of your machines.	Clinker kiln warm up and start up after annual plant shut down. Normal start up – source not identified.	07/02/2022 22:30	Alfred street Peterhead	Rumbling and humming noise all night	Clinker kiln start up on 7/2, after shutdown on 3/2. Normal plant operations at time of complaint. Investigations did not identify a source.	19/02/2022 00:20	Alfred street Peterhead	Crushing noise	Bearing failure in Bypass lump breaker. Operators were shutting down the lump breaker for repair when the complaint was received.	5/03/2022 11:41	Alfred street Peterhead	Ringing noise.	Identified two noisy water sprays on 4B Conditioning Tower which were isolated.	17/03/2022 09:00	Alfred street Peterhead	Squealing noise	Investigation found TAD screw was rubbing on guard - rectified	19/03/2022 08:10	Not provided	Squealing noise	Investigation found TAD screw was rubbing on guard - rectified	23/03/2022 03:00	Alfred street Peterhead	Low frequency droning noise like an idling truck	Investigation could not identify a source. Plant staff visited the neighbouring streets /area several times and could not hear the noise.
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Summary:

- Most of these complaints have been from one resident.
- No complaints related to annual plant shutdown activities (6/1/2022 to 1/2/2022)
- Two complaints occurred on start up of the clinker plant following the annual plant shutdown, and appear to be associated with a perceived change in background noise level.
- One complaint appears to be associated with noise from 4B Conditioning Tower water spray nozzles.
- Three complaints are related to a mechanical issue with equipment (bearing failure and safety guard).

**Noise Minimisation Activities**

4B Conditioning Tower sprays

Increasing or decreasing water flow rate to the spray nozzles appears to resolve the noise complaint at the time.

The intermittent and variable nature of this noise source makes it difficult to find an effective solution.

Various acoustic treatments have been installed on the spray nozzles. The last treatment Pyrotech Soundlag 4525C (a highly flexible foam-based composite acoustic pipe lagging product), was installed on the spray nozzle pipework in January 2021.

This solution appeared to be effective until recurrence of complaints from 30/10/2021.

ABC is trialling noise abatement curtains in addition to the spray nozzle insulation.



Pyrotech Soundlag 4525C installed on the spray nozzle pipework



Noise abatement curtains placed in front of spray nozzles.

### Annual Plant Shut Down

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



Photo of noise attenuation barrier and pneumatic breaker in the kiln