



Adelaide Brighton Cement Ltd

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QUARTERLY STACK PARTICULATE REPORT FOR BIRKENHEAD WORKS

COMPLIANCE DATE: 31/10/23 – Quarter 3, 2023

EPA Licence 1126: Stack Particulate Management Plan (U - 1556)

Licensed site: Adelaide Brighton Cement, Birkenhead Works

62 Elder Road, Birkenhead, SA 5015

Date of Submission: 31 October 2023

Version Number: 1



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

Glossary

Term	Definition
$\mu\text{g}/\text{m}^3$	micrograms per cubic metre
mg/m^3	milligrams per cubic metre
m	metre
m^3	cubic metres
m^3/s	cubic metres per second
Nm^3	Gas volume in dry cubic metres at STP dry basis
Abbreviations	Definition
Air EPP	Environment Protection (Air Quality) Policy 2016
ESP	Electrostatic Precipitator
SA EPA	South Australian Environment Protection Authority
STP dry basis	Standard Temperature and Pressure (zero degrees Celsius and 101.3 kilo Pascals absolute)
TSP	Total Suspended Particulates
SPMP	Stack Particulate Management Plan

Monitoring Objective	<p>All stack particulate emissions events for the reporting quarter, where levels have exceeded the reporting thresholds:</p> <p>In line with the EPA licence issued on the 1/11/2022, the 1-hr reporting thresholds for stack particulate emission events was reduced as follows:</p> <ul style="list-style-type: none"> • from 100 to 80 mg/Nm³ (1 hour averaging period) on Kiln Stack 4A • from 60 to 50 mg/Nm³ (1 hour averaging period) on Pre calciner Stack 4B <p>Particulate Emissions will be reported in a table format providing the following details:</p> <ul style="list-style-type: none"> • date, time and duration • the measured particulate concentration mg/Nm³ (STP-dry) • immediate actions taken to reduce particulate emissions • cause and corrective actions taken to prevent future reoccurrence
Monitoring Plan	<p>This monitoring report has been prepared in compliance with Stack Particulate Management Plan, approved 13 September 2019, by SA EPA.</p> <p>The Plan is available on the ABC Birkenhead Community Website: https://adelaidebrightoncommunity.com.au/</p>

One Hour Stack Particulate Reporting Events

4A Stack
1 hr > 80
mg/Nm³
Rolling
1hr
average

Date	Time start	Time finish	Duration (min)	Magnitude mg/Nm3	Cause	Immediate Actions Taken	Actions Taken to Prevent a Reoccurrence
31/08/2023	20:57	21:12	15	83	<p>Kiln had been off for 13 hours, following a cyclone blockage.</p> <p>Blockage cleaning activities resulted in particulate emissions.</p> <p>Seized feed flap was identified as likely root cause of blockage.</p>	<p>During cleaning activities, 4A preheater & main fan dampers are kept to minimum, to try and curb dust emissions. Fan dampers must be kept open to provide suction to keep cleaning crews safe from heat and dust.</p> <p>Clearing a cyclone blockage often results in surges of material being released into the kiln, which can cause emission spikes.</p> <p>Cleaning crews cannot always control the magnitude of the surges being released.</p> <p>Control room operators communicated with cleaning crews via radio to advise of emission issues in order to stop the task if required.</p> <p>Seized feed flap removed</p>	<p>Feed flap design to reduce chance of seizing in closed position is being investigated for implementation in 2024 kiln shutdown</p> <p>Review procedure for clearing blockages & ensure adequate instructions for monitoring and controlling emissions are clear and present.</p>

4B Stack
1 hr >
50mg/Nm³
Rolling
1hr
average

Date	Time start	Time finish	Duration (min)	Magnitude mg/Nm3	Cause	Immediate Actions Taken	Actions Taken to Prevent a Reoccurrence
02/09/2023	16:42	17:48	66	100.9	4B conditioning tower water sprays air pressure regulator bulb failed resulting in malfunction of the spray system, increasing 4B ESP operating temperature and increase in particulate emissions.	4B Raw Mill could not be restarted due to metal detector fault. Fitter replaced air pressure regulator	Implement progressive replacement of site air regulator plastic bulbs with more durable option, starting with units exposed to the elements.