



Building something great™

# Boral Cement Berrima - POELA Act 2011 Monitoring Data

New Berrima, NSW - Environmental Protection Licence No. 1698

Record updated on: 08 July 2022

Further analysis of monitoring data can be found within the Annual Environmental Management Reports prepared for Kiln 6 within public reporting.

<https://www.boral.com.au/locations/boral-cement-works-berrima>

## 1. Stack emission monitoring (Standard Fuels)

### 1.1 Continuous Monitoring

#### Solid Particles Concentration (milligrams per cubic metre)

Licence limit: 50 milligrams per cubic metre; based on 24 hours averaging period

Date published	08/05/18	08/06/18	08/07/18
Date	Apr-18	May-18	June-18
1	15.9	26.0	10.2
2	15.9	17.2	11.3
3	13.6	13.1	13.2
4	17.9	12.5	16.6
5	18.4	12.0	15.1
6	20.4	11.4	13.7
7	27.1	11.6	11.1
8	37.0	13.3	12.7
9	29.7	20.8	13.9
10	11.4	15.2	13.1
11	11.0	16.5	13.3
12	10.7	14.7	15.3
13	10.5	13.4	15.0
14	10.2	13.0	15.9
15	12.7	12.2	14.9
16	14.8	13.3	14.5
17	14.4	18.0	15.2
18	11.8	18.9	14.9
19	16.4	18.4	15.0
20	16.3	16.3	21.3
21	17.1	16.6	27.7
22	17.8	16.6	22.7
23	21.1	16.3	35.2
24	20.0	15.3	29.8
25	18.9	13.7	20.2
26	20.4	13.1	39.2
27	20.8	14.1	29.8
28	22.1	13.7	20.5
29	23.7	13.5	18.4
30	24.8	12.9	21.1
31	x	10.9	x



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Date published	08/08/18	08/09/18	08/10/18	08/11/18	08/12/18	08/01/19	08/02/19	08/03/19
Date	July-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19
1	19.4	21.9	18.3	20.7	13.1	0.0	23.6	0.0
2	17.2	24.5	21.3	16.3	11.4	0.0	9.6	0.0
3	17.3	17.3	18.9	14.2	11.2	8.9	9.2	0.0
4	0.0	19.3	21.2	13.8	12.8	8.0	10.5	0.0
5	0.0	21.8	18.6	13.0	10.8	6.4	10.6	13.0
6	0.0	23.2	11.5	9.7	13.3	8.9	7.7	5.0
7	16.5	23.6	0.0	10.3	12.5	11.2	12.2	8.1
8	17.5	17.3	0.0	10.4	14.7	9.4	11.5	7.3
9	15.6	23.0	0.0	10.7	13.2	12.2	8.9	16.1
10	16.1	21.8	18.9	15.3	9.1	25.7	7.2	10.6
11	15.8	23.2	19.5	15.8	8.3	45.7	7.5	13.2
12	17.5	26.5	19.5	19.3	11.2	39.7	0.0	15.6
13	17.5	26.6	19.5	15.3	0.0	22.5	0.0	10.8
14	12.9	23.3	19.5	14.6	12.3	27.1	0.0	11.7
15	10.6	27.4	0.0	12.1	13.2	21.4	0.0	8.5
16	11.1	29.4	0.0	11.4	12.5	24.1	0.0	8.7
17	15.4	25.5	9.3	10.1	14.6	0.0	0.0	11.8
18	17.4	19.0	16.7	20.5	18.1	0.0	0.0	11.2
19	15.3	18.7	18.4	18.9	31.5	0.0	0.0	10.5
20	15.2	17.5	22.9	0.0	18.7	23.3	0.0	8.7
21	16.1	20.4	26.9	0.0	10.7	18.7	0.0	9.9
22	15.7	23.0	14.1	12.1	9.6	25.3	0.0	12.4
23	19.0	22.0	11.8	14.3	12.4	29.3	0.0	15.5
24	14.0	20.2	11.4	8.8	10.1	42.6	0.0	12.0
25	14.0	20.9	13.6	21.9	9.2	40.3	0.0	11.3
26	15.9	19.9	17.0	13.1	8.3	45.0	0.0	13.6
27	18.0	20.3	15.4	9.1	10.3	31.2	0.0	13.6
28	18.3	24.4	21.5	9.2	5.9	0.0	0.0	13.1
29	21.3	15.1	17.7	10.7	5.7	21.1	0.0	x
30	20.7	14.0	19.8	9.9	8.0	21.1	0.0	x
31	20	12	x	11	x	21	0.0	x



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Date published	08/04/19	08/05/19	08/06/19	08/07/19	08/08/19	08/09/19	08/10/19	08/11/19
Date	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19
1	17.9	7.5	12.9	0.0	46.8	20.3	17.7	17.2
2	14.3	8.8	12.3	0.0	31.4	18.9	15.1	22.3
3	11.5	17.3	12.5	0.0	24.9	21.2	13.2	14.8
4	10.9	13.6	14.0	0.0	44.3	21.1	23.2	14.1
5	0.0	10.7	14.5	0.0	49.1	22.7	18.9	13.7
6	11.8	13.4	12.5	0.0	44.4	20.0	19.4	11.5
7	10.1	14.8	16.2	13.2	42.9	15.4	27.8	20.1
8	14.3	17.5	18.8	0.0	0.0	21.0	15.2	17.1
9	12.3	17.4	18.8	0.0	0.0	22.9	12.0	12.8
10	18.1	11.9	18.8	16.4	0.0	23.6	7.4	10.2
11	16.0	13.8	18.8	28.4	0.0	23.5	0.0	13.4
12	13.8	14.3	0.0	16.9	0.0	22.1	3.2	14.9
13	16.8	16.2	9.2	19.2	0.2	21.1	29.3	16.4
14	13.6	15.3	22.5	13.1	20.7	21.0	19.4	17.6
15	12.1	16.6	22.0	10.9	32.3	22.3	26.9	22.1
16	15.0	14.4	43.3	17.8	28.3	23.0	38.8	18.9
17	22.0	12.8	39.7	19.4	1.5	21.3	26.6	16.4
18	19.8	12.4	32.7	19.2	0.0	20.0	12.8	14.3
19	16.9	14.6	39.3	10.5	0.0	18.1	14.7	16.9
20	23.9	20.7	37.9	6.9	0.0	7.5	15.7	15.0
21	20.2	0.0	15.8	12.3	0.0	17.4	15.3	13.7
22	29.1	15.7	13.1	12.9	0.0	17.9	17.8	18.3
23	0.0	14.9	9.7	9.6	16.4	16.6	0.0	23.9
24	37.6	13.1	13.6	11.3	26.0	13.2	0.0	29.7
25	41.4	12.8	14.1	20.3	27.6	8.4	0.0	23.5
26	17.6	13.6	14.1	14.5	19.5	7.3	0.0	24.8
27	0.0	12.7	14.1	22.3	15.2	7.4	0.0	21.1
28	0.0	11.8	14.1	21.7	20.8	14.3	20.3	17.7
29	10.5	13.2	0.0	25.1	18.6	14.7	19.5	15.6
30	9.1	15.3	0.0	27.6	19.9	16.9	16.0	14.7
31	8.8	x	0.0	x	19	18	17.7	16.1



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Date published	08/12/19	08/01/20	08/02/20	08/03/20	08/04/20	08/05/20	08/06/20	08/07/20
Date	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	June-20
1	14.5	21.2	5.9	37.1	18.4	15.3	13.4	15.2
2	13.3	33.2	5.4	0.0	18.4	22.2	15.2	0.0
3	15.2	36.6	0.0	0.0	43.4	27.2	14.6	0.0
4	17.4	46.8	0.0	14.0	27.8	21.3	20.1	0.0
5	18.8	39.0	0.0	21.0	48.1	20.5	17.1	0.0
6	17.4	24.9	0.0	0.0	33.6	20.1	17.2	0.0
7	15.2	26.4	0.0	0.0	23.5	20.9	17.9	0.0
8	20.6	29.3	0.0	0.0	20.5	22.2	19.7	0.0
9	21.3	47.4	0.0	0.0	22.4	26.6	18.6	0.0
10	16.9	46.6	0.0	16.0	16.2	24.4	17.6	0.0
11	24.5	17.0	0.0	19.5	10.8	30.4	13.6	0.0
12	22.7	19.3	0.0	16.1	10.8	27.2	15.7	0.0
13	22.7	21.9	0.0	11.0	30.6	22.5	16.6	0.0
14	31.4	15.9	0.0	13.8	32.3	20.9	17.3	0.0
15	30.0	15.7	0.0	16.8	22.3	21.8	18.8	0.0
16	22.6	15.0	0.0	23.7	17.5	17.5	15.2	0.0
17	22.6	17.0	0.0	33.4	16.5	14.6	13.4	0.0
18	19.5	36.4	0.0	15.4	23.5	17.1	15.7	0.0
19	21.5	21.4	0.0	17.8	28.9	28.2	21.6	17.7
20	18.2	19.3	0.0	21.4	19.6	28.1	18.3	24.2
21	22.4	32.7	0.0	16.2	15.7	31.8	17.2	18.5
22	25.6	21.6	0.0	15.0	13.5	25.3	13.4	22.2
23	35.9	24.9	0.0	15.3	13.6	17.8	19.2	22.6
24	17.5	26.9	0.0	18.9	15.6	15.7	21.4	22.8
25	25.4	0.0	0.0	22.7	18.4	18.5	17.8	20.1
26	26.6	32.6	0.0	18.2	13.6	21.8	18.4	21.2
27	22.2	33.4	0.0	18.4	19.7	39.7	17.3	21.8
28	33.4	28.5	0.0	18.4	19.8	27.3	23.3	15.0
29	27.1	36.6	0.0	18.4	18.4	23.5	17.6	18.4
30	21.0	40.1	0.0	x	17.9	28.0	15.7	20.9
31	x	49	0	x	20		14.8	



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Date published	08/08/20	08/09/20	08/10/20	08/11/20	08/12/20	08/01/21	08/02/21	08/03/21
Date	July-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21
1	23.8	17.0	20.5	15.7	15.1	0.0	22.4	24.9
2	25.2	27.7	30.5	12.6	16.8	0.0	37.7	24.7
3	26.2	23.3	33.9	10.7	17.5	17.2	37.9	23.9
4	26.9	26.0	44.7	21.4	17.5	31.2	30.1	33.3
5	27.6	24.8	35.5	14.7	20.5	22.2	20.8	43.3
6	38.0	23.5	17.7	11.5	16.3	20.4	19.9	35.3
7	26.5	33.5	0.0	11.4	17.8	17.6	22.0	29.3
8	33.8	37.6	0.0	10.8	36.7	16.0	26.7	24.7
9	41.2	39.0	0.0	15.4	31.4	17.2	28.5	25.9
10	30.8	41.1	0.0	15.1	15.1	17.9	19.1	33.4
11	21.0	41.5	0.0	12.8	20.3	19.9	0.0	46.0
12	18.5	8.6	0.0	12.4	27.2	24.1	0.0	41.0
13	15.4	30.3	0.0	11.0	18.8	18.0	0.0	43.4
14	17.7	24.8	12.1	11.8	17.5	26.2	0.0	32.0
15	18.7	18.9	18.5	11.6	14.3	27.7	9.3	29.7
16	17.4	17.6	31.4	10.6	19.1	20.9	0.0	31.0
17	14.4	16.9	15.4	9.9	15.1	0.0	15.0	29.0
18	17.8	15.4	14.6	10.1	13.2	18.0	11.2	0.0
19	18.2	17.8	16.8	12.1	15.0	16.3	27.3	0.0
20	20.1	24.4	15.1	10.8	20.8	19.7	33.9	0.0
21	21.3	24.4	19.1	10.7	21.0	21.0	31.5	0.0
22	21.7	19.0	18.0	9.3	21.4	19.1	29.1	0.0
23	22.3	18.3	12.2	12.9	21.1	17.2	25.1	16.3
24	21.3	18.4	12.0	10.9	19.9	18.6	23.6	20.1
25	17.0	19.6	13.9	9.9	21.4	16.6	21.2	19.3
26	18.3	14.1	12.7	14.0	20.3	14.8	29.3	14.9
27	15.9	15.8	14.8	12.5	23.5	18.4	32.6	13.1
28	21.9	18.7	13.3	12.6	24.1	20.4	27.4	14.3
29	18.4	22.4	12.9	14.2	18.8	22.9	30.7	x
30	16.6	23.1	13.9	15.2	0.0	20.9	38.8	x
31	16.7	20.1	x	14.9	x	18	22.2	x



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Date published	08/04/21	08/05/21	08/06/21	08/07/21	08/08/21	08/09/21	08/10/21	08/11/21
Date	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21
1	14.2	26.6	28.9	35.6	24.9	14.0	19.7	13.4
2	14.9	27.2	26.2	28.3	26.5	12.7	11.7	12.1
3	14.6	27.4	22.0	30.5	29.3	16.0	18.1	13.0
4	15.9	23.4	28.5	0.0	28.1	21.5	13.9	13.0
5	22.3	25.4	25.9	0.0	27.6	8.5	12.5	16.9
6	19.8	43.3	43.3	0.0	27.0	9.2	0.0	12.3
7	19.9	24.3	23.5	0.0	18.6	8.9	0.0	11.1
8	24.7	22.9	20.9	0.0	24.8	10.5	0.0	10.7
9	27.6	27.2	26.3	0.0	27.4	10.8	0.0	11.5
10	24.4	21.4	26.0	0.0	29.5	11.1	8.8	11.9
11	11.6	22.0	30.7	0.0	24.8	14.6	13.6	11.6
12	0.0	23.3	48.9	19.2	21.0	0.0	17.9	16.4
13	0.0	19.1	22.1	16.2	28.0	11.4	0.0	18.7
14	0.0	21.8	22.4	17.1	27.6	12.4	0.0	31.3
15	0.0	25.2	19.3	17.4	29.8	14.9	12.7	37.6
16	0.0	23.3	20.1	16.2	26.4	10.6	17.3	29.8
17	0.0	22.9	24.6	0.0	33.0	12.3	16.8	14.0
18	0.0	0.0	27.4	9.7	27.4	11.9	25.7	11.0
19	0.0	22.7	32.2	0.0	25.7	11.3	27.9	13.3
20	0.0	24.7	26.6	14.5	20.7	12.8	38.6	12.5
21	0.0	34.3	36.6	13.3	28.8	14.5	36.9	11.1
22	0.0	18.5	38.5	16.4	32.3	13.4	20.3	9.9
23	0.0	24.6	44.9	12.8	25.7	15.8	13.8	7.7
24	0.0	17.4	31.8	0.0	25.9	16.9	11.5	6.3
25	0.0	18.0	35.3	15.1	27.6	11.3	11.3	0.0
26	0.0	25.7	35.9	17.2	31.6	16.0	12.4	7.8
27	0.0	28.0	29.2	18.5	28.6	0.0	11.5	6.1
28	0.0	29.5	28.4	16.6	31.6	0.0	7.2	5.9
29	21.2	31.2	34.7	19.2	24.5	0.0	10.8	9.2
30	19.3	30.3	34.3	22.2	11.3	17.5	12.7	0.0
31	25	x	28.3	x	12.9	19	x	8



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Date published	08/12/21	08/01/22	08/02/22	08/03/22	08/04/22	08/05/22	08/06/22	08/07/22
Date	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22
1	10.0	10.2	11.1	0.0	0.0	14.5	42.2	40.7
2	7.3	10.3	12.8	12.4	0.0	19.9	31.5	32.7
3	7.6	13.7	13.8	0.0	0.0	24.9	30.1	42.8
4	8.0	0.0	14.8	0.0	21.1	21.6	31.4	45.6
5	9.7	7.0	15.4	0.0	0.0	24.4	0.0	43.9
6	7.2	18.7	16.2	0.0	0.0	25.8	0.0	39.7
7	7.3	13.0	14.7	0.0	35.4	33.1	0.0	20.6
8	8.4	0.0	15.4	0.0	22.9	36.6	8.3	25.6
9	8.5	13.8	15.0	0.0	20.1	34.9	14.6	42.3
10	6.7	13.4	16.0	0.0	23.3	28.4	18.4	34.7
11	7.1	11.5	14.1	0.0	30.0	28.8	19.1	25.9
12	6.9	12.2	9.3	0.0	26.8	32.5	24.2	23.3
13	7.2	16.2	12.5	0.0	44.9	34.5	24.7	33.3
14	6.5	19.2	17.6	0.0	30.0	22.7	20.9	32.1
15	5.9	23.8	10.4	0.0	30.1	22.6	27.0	29.5
16	5.9	28.7	12.1	0.0	29.6	22.8	42.7	31.5
17	7.5	41.1	11.1	0.0	29.6	27.1	48.2	17.0
18	11.3	43.3	14.5	0.0	16.7	36.0	37.5	19.8
19	9.4	46.1	13.1	0.0	17.7	43.9	36.4	20.4
20	10.2	36.8	13.5	0.0	20.9	15.6	34.6	24.9
21	9.9	11.1	11.8	0.0	0.0	20.0	35.5	26.8
22	7.3	11.8	11.2	0.0	19.8	23.1	32.5	31.2
23	9.9	10.6	10.9	0.0	20.1	30.5	39.1	28.0
24	16.8	10.0	14.7	0.0	21.5	29.6	45.0	27.3
25	20.7	8.8	16.4	0.0	15.2	42.7	47.3	25.5
26	9.7	9.0	14.5	0.0	15.2	46.6	43.8	41.7
27	9.3	8.6	13.4	0.0	14.5	0.0	33.5	40.6
28	8.9	10.5	14.7	0.0	15.6	42.8	33.6	30.6
29	10.2	10.4	0.0	x	0.0	39.3	40.1	28.8
30	9.9	8.5	0.0	x	0.0	48.1	36.5	20.3
31	x	10	0	x	10	x	47	40.7

**Compliance Summary:** The cement plant is compliant with the Licence limits

**Note:** “0” emissions means that the kiln is not operating.



## 1.2 Annual Stack Monitoring

2021-22: Date of stack testing: 6-13/10/2021; Report received: 02/12/2021;  
Date published: 08/02/2022

Assessable Parameter (milligrams per cubic metre)	Licence Limit	2021-22
<b>Emission Source: Cement Mill No 6 Stack (EPA Identification No. 4)</b>		
Solid Particles 'Duct A'	100	1.6
Solid Particles 'Duct B'	100	12
<b>Emission Source: Kiln No 6 Cooler Stack (EPA Identification No. 5)</b>		
Solid Particles	100	6.1
<b>Emission Source: Cement Mill No 7 Stack (EPA Identification No. 10)</b>		
Solid Particles	20	6.3

### Emission Source: Kiln No 6 Stack (EPA Identification No.2)

Assessable Parameter (mg/m <sup>3</sup> )	Units	Licence Limit	Oct 2021	Jan 2022
Mercury	mg/m3	0.05	0.0083	0.0093
Type 1 +2 substances	mg/m3	0.5	<0.031	<0.047
Solid Particles	mg/m3	50	20	18
Nitrogen Oxides	mg/m3	1250	730	1100
Cadmium + Thallium	mg/m3	0.05	0.0009	<0.00057
Chlorine	mg/m3	50	<0.009	<0.01
Dioxins and furans (I-TEQ middle bound)	ng/m3	0.1	0.0029	0.00072
Hydrogen chloride	mg/m3	10	0.17	0.42
Hydrogen Fluoride	mg/m3	1	<0.02	0.063
Sulphur dioxide	mg/m3	50	<0.021	<0.02
Sulfuric acid mist and sulphur trioxide (as SO <sub>3</sub> )	mg/m3	50	0.5	1.9
Volatile Organic Compounds	mg/m3	40	2.3	1.2

**Compliance summary:** The cement plant is compliant with the Licence limits.





## 2. Ambient air/dust monitoring

### 2.1 Dust Deposition Gauges: Total Insoluble Matter (grams per square metre per month)

This test measures the levels of the coarse dust (generated mostly from unsealed roads, raw material handling, open stockpiles, etc.). It is a measure of dust *nuisance* (dust on cars, washing, window panes) in the immediate vicinity of the source, as the heavy dust settles quickly and doesn't travel far. It is not an indication of potential health problems as it doesn't penetrate into the respiratory system due to a large size of dust particles.

**Licence limit:** Not specified.

The NSW State guideline of 4 g/m<sup>2</sup>/month (presented as 12-month rolling average) was adopted.

**Note:** Dust Gauges 4 and 6 were removed, and Dust Gauges 5 and 7 relocated closer to the boundary in December 2012.

	Dust Deposition Gauges (grams per square metre per month as 12-month rolling average)						
	1	2	3	5	7	8	9
<b>April 2018</b> Report received: 18/04/18 Date published: 08/05/18	0.7	0.7	2.4	1.2	0.5	1.7	1.4
<b>May 2018</b> Report received: 15/05/18 Date published: 08/06/18	0.7	0.8	2.5	1.2	0.5	1.7	1.5
<b>June 2018</b> Report received: 15/06/18 Date published: 08/07/18	0.7	0.7	2.4	1.4	0.4	1.3	1.5
<b>July 2018</b> Report received: 17/07/18 Date published: 08/08/18	0.7	0.6	2.5	1.4	0.4	1.3	1.5
<b>August 2018</b> Report received: 20/08/18 Date published: 08/09/18	0.7	0.6	2.8	1.3	0.4	1.3	1.5
<b>September 2018</b> Report received: 10/09/18 Date published: 08/10/18	0.7	0.6	3.2	1.5	0.4	1.3	1.6
<b>October 2018</b> Report received: 23/10/18 Date published: 08/11/18	0.7	0.7	3.1	1.6	0.6	1.3	1.7
<b>November 2018</b> Report received: 21/11/18 Date published: 08/12/18	0.7	0.6	3.2	1.5	0.4	0.8	1.6
<b>December 2018</b> Report received: 20/12/18 Date published: 08/01/19	0.8	0.6	3.3	1.6	0.4	0.8	1.7
<b>January 2019</b> Report received: 20/01/19 Date published: 08/02/19	0.9	0.9	3.8	1.7	0.6	0.7	1.9



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	<b>Dust Deposition Gauges</b> (grams per square metre per month as 12-month rolling average)						
	<b>1</b>	<b>2</b>	<b>3</b>	<b>5</b>	<b>7</b>	<b>8</b>	<b>9</b>
<b>February 2019</b> Report received: 19/02/19 Date published: 08/03/19	1.0	0.9	3.9	1.6	0.7	0.7	1.9
<b>March 2019</b> Report received: 29/3/19 Date published: 08/04/19	1.0	1.0	3.7	1.6	0.7	0.8	1.9
<b>April 2019</b> Report received: 29/4/19 Date published: 08/05/19	1.1	1.0	3.8	1.9	0.8	0.9	2.1
<b>May 2019</b> Report received: 16/5/19 Date published: 08/06/19	1.0	1.0	3.9	1.9	0.8	0.9	2.1
<b>June 2019</b> Report received: 20/6/19 Date published: 08/07/19	1.0	1.0	3.9	1.9	0.8	0.9	2.1
<b>July 2019</b> Report received: 19/7/19 Date published: 08/08/19	1.1	1.0	4.0	2.1	0.8	1.1	2.2
<b>Aug 2019</b> Report received: 19/8/19 Date published: 08/09/19	1.1	1.0	3.6	2.1	0.8	1.1	2.1
<b>Sep 2019</b> Report received: 17/9/19 Date published: 08/10/19	1.1	1.0	3.3	2.1	0.8	1.2	2.2
<b>Oct 2019</b> Report received: 21/10/19 Date published: 08/11/19	1.2	1.1	3.7	2.2	0.8	1.2	2.2
<b>Nov 2019</b> Report received: 21/11/19 Date published: 08/12/19	1.2	1.1	3.4	2.1	0.8	1.2	2.0
<b>Dec 2019</b> Report received: 18/12/19 Date published: 08/01/20	1.2	1.0	3.2	1.9	0.7	1.2	2.0
<b>Jan 2020</b> Report received: 18/12/19 Date published: 08/01/20	1.0	1.3	2.8	1.7	0.7	1.3	2.2
<b>Feb 2020</b> Report received: 14/02/20 Date published: 08/03/20	1.2	1.7	2.6	1.9	0.8	1.6	2.6
<b>March 2020</b> Report received: 13/03/20 Date published: 08/04/20	1.3	1.7	2.9	2.1	0.9	1.7	2.7
<b>April 2020</b> Report received: 17/04/20 Date published: 08/05/20	1.2	1.7	2.9	2.0	0.8	1.6	2.5
<b>May 2020</b> Report received: 17/05/20 Date published: 08/06/20	1.2	1.7	2.9	2.0	0.9	1.7	2.5
<b>June 2020</b> Report received: 16/06/20	1.2	1.6	3.1	1.9	0.8	1.7	2.5



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	<b>Dust Deposition Gauges</b> (grams per square metre per month as 12-month rolling average)						
	<b>1</b>	<b>2</b>	<b>3</b>	<b>5</b>	<b>7</b>	<b>8</b>	<b>9</b>
Date published: 08/07/20							
<b>July 2020</b> Report received: 16/06/20 Date published: 08/08/20	1.2	1.6	2.9	1.7	0.8	1.6	2.4
<b>August 2020</b> Report received: 16/06/20 Date published: 08/09/20	1.2	1.7	3.5	1.9	0.9	1.7	2.5
<b>September 2020</b> Report received: 18/09/20 Date published: 08/10/20	1.2	1.6	3.3	1.9	0.9	1.6	2.4
<b>October 2020</b> Report received: 13/10/20 Date published: 08/11/20	1.1	1.6	2.9	1.7	0.9	1.5	2.2
<b>November 2020</b> Report received: 13/11/20 Date published: 08/12/20	1.1	1.5	3.1	1.8	1.0	1.6	2.2
<b>November 2020</b> Report received: 16/12/20 Date published: 08/01/21	1.0	1.5	3.3	1.9	1.0	1.6	2.1
<b>December 2020</b> Report received: 16/01/21 Date published: 08/02/21	1.0	1.1	3.3	1.8	0.9	1.5	1.7
<b>January 2021</b> Report received: 16/02/21 Date published: 08/03/21	0.8	0.7	3.1	1.8	0.8	1.2	1.2
<b>February 2021</b> Report received: 12/03/21 Date published: 08/04/21	0.6	0.6	3.1	1.8	0.8	1.0	1.2
<b>March 2021</b> Report received: 16/04/21 Date published: 08/05/21	0.6	0.6	3.0	1.6	0.9	1.0	1.1
<b>April 2021</b> Report received: 12/05/21 Date published: 08/06/21	0.6	0.6	3.0	1.6	0.8	1.0	1.1
<b>May 2021</b> Report received: 16/06/21 Date published: 08/07/21	0.6	0.6	2.8	1.7	0.9	0.9	1.1
<b>June 2021</b> Report received: 14/07/21 Date published: 08/08/21	0.6	0.6	2.8	1.9	0.9	0.9	1.1
<b>July 2021</b> Report received: 17/08/21 Date published: 08/09/21	0.5	0.6	2.3	1.7	0.8	0.8	1.0
<b>August 2021</b> Report received: 13/09/21 Date published: 08/10/21	0.5	0.6	2.6	1.8	0.8	0.8	1.1
<b>September 2021</b> Report received: 16/10/21 Date published: 08/11/21	0.5	0.6	2.6	1.9	0.8	0.8	1.1



	Dust Deposition Gauges (grams per square metre per month as 12-month rolling average)						
	1	2	3	5	7	8	9
<b>October 2021</b> Report received: 18/11/21 Date published: 08/12/21	0.5	0.6	2.5	1.8	0.8	0.7	1.1
<b>November 2021</b> Report received: 23/12/21 Date published: 08/01/22	0.5	0.5	2.8	1.8	0.8	0.7	1.2
<b>December 2021</b> Report received: 21/01/22 Date published: 08/02/22	0.5	0.6	2.8	2.4	0.8	0.8	1.2
<b>January 2022</b> Report received: 21/02/22 Date published: 08/03/22	0.5	0.5	2.8	2.3	0.8	0.7	1.1
<b>February 2022</b> Report received: 05/04/22 Date published: 08/04/22	0.5	0.6	2.6	2.1	0.6	0.7	0.9
<b>March 2022</b> Report received: 21/04/22 Date published: 08/05/22	0.5	0.6	2.5	2.1	0.5	0.7	1.1
<b>April 2022</b> Report received: 19/05/22 Date published: 08/06/22	0.5	0.6	2.5	2.1	0.5	0.6	1.1
<b>May 2022</b> Report received: 29/06/22 Date published: 08/07/22	0.5	0.7	2.5	1.9	0.5	0.7	1.1

**Compliance Summary:** The cement plant is compliant with the adopted State guideline value.

## 2.2 High Volume Air Sampling: Total Suspended Particulates (TSP) and PM<sub>10</sub>

This test measures the levels of the fine dust suspended in the air (generated mostly from stack emissions). It is a measure of potential *health effects* (irritation of the respiratory track) as the small particles can penetrate into the airways and the lungs. Fine dust can persist in the atmosphere for days or even months before it settles and can travel some distance.

**Licence limits:** Not specified. Samples are collected every 6 days. Occasionally equipment failure or weather can impact sampling. Where reasonably practicable additional samples are collected to make up any missed samples are per the sites Air Quality Management Plan.

The following guideline values were adopted:

- TSP: 90 micrograms per cubic metre (annual rolling average) - NSW State guideline
- PM<sub>10</sub>: 50 micrograms per cubic metre (daily average)

Sampling Date	Report received	Date published	Parameter (micrograms per cubic metre)	
			TSP (annual rolling average)	PM <sub>10</sub> (24-hr average)
20/03/18	10/05/18	08/06/17	62.9	18.8
26/03/18			63.4	14.1
01/04/18			64.4	29.8
07/04/18			65.1	23.3



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Sampling Date	Report received	Date published	Parameter (micrograms per cubic metre)	
			TSP (annual rolling average)	PM <sub>10</sub> (24-hr average)
13/04/18			68.0	62.4
19/04/18			68.5	24.6
25/04/18			69.1	31.4
01/05/18	15/06/18	08/07/18	69.0	6.6
07/05/18			70.0	20.4
13/05/18			70.4	4.2
19/05/18			70.2	5.5
25/05/18			70.2	7.3
31/05/18			68.9	16.4
18/06/18	24/07/18	08/08/18	67.6	3.2
24/06/18			67.2	8.4
30/06/18			67.3	4.0
06/07/18	13/08/18	08/09/18	68.9	40.8
12/07/18			69.2	8.1
18/07/18			69.7	34.7
24/07/18			68.6	34.6
30/07/18			67.9	7.3
05/08/18	13/09/18	08/10/18	68.0	8
11/08/18			66.9	45.8
17/08/18			66.8	7.9
23/08/18			65.2	15.3
29/08/18			64.0	7.5
04/10/18	24/10/18	08/11/18	60.9	2.2
10/10/18			60.3	6.4
16/10/18			60.4	7.4
22/10/18			60.0	17.2
28/10/18			60.5	40.6
4/10/18	15/11/18	08/12/18	56.6	3.7
10/10/18			55.8	5.0
22/10/18			54.9	11.8
28/10/18			53.7	9.2
3/11/18	20/12/18	08/01/19	53.5	30.1
9/11/18			53.4	11.5
15/11/18			53.4	7.2
27/11/18			53.5	13.6
03/12/18	21/01/19	08/02/19	54.1	26.5
09/12/18			55.0	31.8
15/12/18			56.3	57.3
21/12/18			56.5	7.4
27/12/18			57.7	42.8
02/01/19	13/02/19	08/03/19	57.3	18.9
08/01/19			56.6	9.8
14/01/19			55.0	15.2
20/01/19			52.1	7.4
26/01/19			52.9	32.6
01/02/19	14/03/19	08/04/19	52.5	0.6
07/02/19			50.5	0.1
13/02/19			50.8	14.1
19/02/19			47.1	18.5
25/02/19			46.6	10.7
3/03/19	15/04/19	08/05/19	46.6	6.9



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Sampling Date	Report received	Date published	Parameter (micrograms per cubic metre)	
			TSP (annual rolling average)	PM <sub>10</sub> (24-hr average)
9/03/19			47.7	21
15/03/19			47.5	8.4
21/03/19			47.3	6.6
27/03/19			47.4	8.8
02/04/19			47.4	3.8
08/04/19			49.0	45.7
14/04/19	13/05/19	08/06/19	48.4	14.2
20/04/19			48.1	19.3
26/04/19			49.5	8.9
02/05/19			49.5	36.7
08/05/19			47.2	23.3
14/05/19	13/06/19	08/07/19	47.1	14.6
20/05/19			47.0	26.9
26/05/19			47.3	12.4
1/06/2019			46.9	8.8
7/06/2019	5/08/2019	08/08/19	46.9	13.3
13/06/2019			46.8	8.6
20/06/2019			47.3	3.6
26/06/2019			47.9	3
1/07/2019			48.5	11.9
7/07/2019			49.0	3.3
13/07/2019	13/08/2019	08/09/19	49.1	4.2
19/07/2019			47.4	2.6
25/07/2019			47.9	10.2
31/07/2019			47.0	
6/8/19			46.1	
12/8/19	16/09/19	08/10/19	46	0.1
18/8/19			46.1	10.4
24/8/19			45.4	25.8
30/8/19			44.6	0.9
11/9/19			44.6	9.7
17/9/19	15/10/19	08/11/19	44.4	1
23/9/19			44.6	7.3
29/9/19			44.5	9
2/10/19			44.3	19.1
5/10/19			43.9	1.7
8/10/19	12/11/19	08/12/19	42.3	11.6
11/10/19			42.3	1.3
17/10/19			43.0	17
23/10/19			43.3	17.6
29/10/19			43.6	23.2
4/11/19			42.4	6.9
10/11/19	16/12/19	08/01/20	42.6	3.5
16/11/19			42.9	13.3
22/11/19			44.5	59.1
28/11/19			45.1	36.9
04/12/19			45.1	25.8
10/12/19	16/01/20	08/02/20	45.6	69.7
16/12/19			47.1	62.6
22/12/19			47.7	68.6
28/12/19			54.0	240



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Sampling Date	Report received	Date published	Parameter (micrograms per cubic metre)	
			TSP (annual rolling average)	PM <sub>10</sub> (24-hr average)
03/01/20	11/02/20	08/03/20	56.4	23.1
09/01/20			56.5	29.3
15/01/20			59.2	52
21/01/20			59.8	28.6
27/01/20			60.9	36.6
02/02/20	12/03/20	08/04/20	64.6	0
08/02/20			62.5	3.8
14/02/20			61.9	8.4
20/02/20			61.3	7.9
26/02/20			63.0	44.7
03/03/20	17/04/20	08/05/20	61.8	6.5
09/03/20			61.6	6
15/03/20			61.5	5.5
21/03/20			61.6	12.3
27/03/20			61.5	0.0
02/04/20	12/05/20	08/06/20	59.4	7.7
8/04/20			59.1	4.2
14/04/20			59.2	7.8
20/04/20			56.8	14.8
26/04/20			57.2	35.7
02/05/20	16/05/20	08/07/20	56.2	2.7
8/05/20			56.8	25.1
14/05/20			55.9	6.5
20/05/20			55.6	12.2
26/05/20			54.6	0.3
01/06/20	13/07/20	08/08/20	54.1	10.6
07/06/20			54.1	0
13/06/20			53.3	0
19/06/20			52.5	0.1
25/06/20			51.6	0.5
01/07/20	17/08/20	08/09/20	51.6	18.3
07/07/20			51.7	6.2
13/07/20			51.7	5.5
19/07/20			51.2	7.3
25/07/20			51.1	3.5
31/07/20	17/09/20	08/10/20	50.7	8.3
06/08/20			50.6	13.3
12/08/20			50.1	4.2
18/08/20			48.8	6.5
24/08/20			49.2	22.3
30/08/20	16/10/20	08/11/20	49.1	13.1
5/09/20			49.3	5.2
11/09/20			49.2	4.6
17/09/20			49.9	20.4
23/09/20			50.3	12.4
29/09/20	16/11/20	08/12/20	49.8	8.9
5/10/20			49.9	24.7
11/10/20			50.4	5.7
17/10/20			50.2	13.4
23/10/20			49.9	11.8
29/10/20			49.5	3.2



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Sampling Date	Report received	Date published	Parameter (micrograms per cubic metre)	
			TSP (annual rolling average)	PM <sub>10</sub> (24-hr average)
04/11/20	19/01/21	08/02/21	49.7	14.4
10/11/20			49.6	7.7
16/11/20			50.4	31.6
22/11/20			49.4	24.2
28/11/20			50.0	50.5
04/12/20	15/01/21	08/02/21	50.0	20
10/12/20			48.7	15.5
16/12/20			47.3	3.6
22/12/20			45.7	9.2
28/12/20			40.5	11.8
3/01/21	12/02/21	08/03/21	38.2	4.5
9/01/21			37.8	4.8
15/01/21			36.5	33.9
21/01/21			35.3	12.6
27/01/21			34.5	4.9
02/02/21	19/03/21	08/04/21	31.4	6.7
08/02/21			31.5	6.3
14/02/21			31.5	6
20/02/21			31.4	8.1
27/02/21			30.0	11.4
04/03/21	21/04/21	08/05/21	30.4	17.1
10/03/21			30.6	9.5
16/03/21			30.5	1
22/03/21			30.0	2.9
28/03/21			29.9	2.6
03/04/21	13/05/21	08/06/21	30.0	5.4
09/04/21			30.8	14.8
15/04/21			31.2	21.4
21/04/21			30.9	6.6
27/04/21			30.5	36.4
03/05/21	17/06/21	08/07/21	31.1	26.8
09/05/21			30.4	6
15/05/21			30.4	2.3
21/05/21			30.3	4.5
27/05/21			30.5	3.3
02/06/21	13/07/21	08/08/21	30.4	8.9
08/06/21			30.5	10.3
14/06/21			30.5	0
20/06/21			30.4	1
26/06/21			30.7	3.5
02/07/21	09/08/21	08/09/21	30.3	5.8
08/07/21			30.1	7.8
14/07/21			31.5	37.9
20/07/21			31.3	0.1
26/07/21			31.3	0.1
01/08/21	17/09/21	08/10/21	31.3	2.8
07/08/21			31.3	0.1
13/08/21			31.5	5.2
19/08/21			31.6	7.8
25/08/21			31.3	0.1
31/08/21			31.1	3.4





Sampling Date	Report received	Date published	Parameter (micrograms per cubic metre)	
			TSP (annual rolling average)	PM <sub>10</sub> (24-hr average)
06/09/21	15/10/21	08/11/21	30.9	1.1
12/09/21			30.8	17.6
18/09/21			31.2	18
24/09/21			31.8	19
30/09/21			31.0	4
6/10/2021	23/11/21	08/12/21	30.9	10.5
12/10/2021			30.8	2
18/10/2021			30.2	4
24/10/2021			29.9	3.8
30/10/2021			29.8	5.3
5/11/2021	13/12/21	08/01/22	29.5	2.8
11/11/2021			29.5	4.5
17/11/2021			29.3	6.5
23/11/2021			29.2	4.3
29/11/2021			28.5	10.8
5/12/2021	21/01/22	08/02/22	27.9	5
11/12/2021			25.9	2.8
17/12/2021			25.4	8.6
23/12/2021			24.9	2.8
29/12/2021			24.9	0.1
04/01/2022	21/02/22	08/03/22	24.6	1.4
10/01/2022			24.2	3.5
16/01/2022			24.3	9.3
22/01/2022			24.3	1.4
28/01/2022			23.2	4.7
03/03/2022	14/03/22	08/04/22	23.0	1.4
09/03/2022			23.0	4.9
11/03/2022	29/04/22	08/05/22	23.2	1.4
17/03/2022			22.8	4.4
20/03/2022			22.8	4.2
23/03/2022			23.0	10.4
24/03/2022			23.0	0.8
29/03/2022	18/05/22	08/06/22	23.3	0.1
04/04/2022			23.6	4.7
10/04/2022			23.6	4.8
12/04/2022			23.6	1.9
16/04/2022			23.4	1.3
22/04/2022	22.7	1.6		
28/04/2022	15/06/22	08/07/22	22.0	3.9
04/05/2022			22.4	9.3
10/05/2022			21.6	1.3
16/05/2022			21.0	3.5
22/05/2022			20.7	3.8
28/05/2022			20.7	1.5

**Compliance Summary:** The plant is compliant with the adopted guideline values.

HVAS was relocated on 18<sup>th</sup> February 2018.

High values for PM<sub>10</sub> recorded during the month of December 2019 due to bush fires.

PM<sub>10</sub> monitoring restricted during February 2022 due to wet weather preventing access.



### 3. Water monitoring

Runoff water from the cement works and surrounding agricultural land is captured in various storage dams on site and used as process water. In heavy rain, excess stormwater from the dam called “Lake Quality” is allowed to overflow into the Wingecarribee River. The quality of that water is required by the licence to be monitored once per overflow event. The licence specifies the parameters to be monitored, but does not specify any limits for these parameters.

**Licence limits:** Not specified.

The NSW State guidelines: Typical discharge limits are as follows:

Biological Oxygen Demand: 20 milligrams per litre

pH: 6.5-8.5

Oil and Grease: 10 milligrams per litre

Total Suspended Solids: 30-50 milligrams per litre

Sampling Date	Report received	Date published	Biological Oxygen Demand (milligrams per litre)	pH	Oil and Grease (milligrams per litre)	Total Suspended Solids (milligrams per litre)
27/02/18	06/03/18	08/03/18	<2	8.6	<5	26
15/12/18	31/12/18	08/01/19	<2	8.8	<5	24
19/03/19	27/03/19	08/04/19	<2	7.4	<5	30
10/02/20	18/02/20	08/03/20	<2	9.0	<5	26
14/02/20	26/02/20	08/03/20	2	8.9	<5	21
27/07/20	04/08/20	08/09/20	2	9.3	<5	72
11/08/20	18/08/20	08/09/20	2	8.0	<5	19
02/11/20	09/11/20	08/12/20	3	8.4	<5	13
23/03/21	30/03/21	08/04/21	2	8.1	<5	10
06/04/21	13/04/21	08/05/21	3	8.5	<5	8
05/05/21	12/05/21	08/06/21	<2	8.4	<5	15
26/08/21	03/09/21	08/09/21	<2	8.7	<5	44
14/10/21	22/10/21	08/11/21	3	8.1	<5	6
12/11/21	19/11/21	08/12/21	<2	8.5	<5	32
22/11/21	29/11/21	08/12/21	2	8.2	<5	13
10/12/21	17/12/21	08/01/22	4	8.3	<5	23
23/02/22	04/03/22	08/03/22	<2	7.9	<5	11
08/03/22	15/03/22	08/03/22	4	7.9	<5	18

**Compliance summary:** Lake Quality’s overflow generally meets the typical NSW discharge criteria. Occasionally, an exceedance of pH may occur in the overflow due to alkaline nature of raw materials and products handled on site.



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#### ***4. Noise monitoring***

The Annual Noise Monitoring Reports by Hatch Consultants are being uploaded to the Berrima webpage in their entirety. In the Summary and Conclusions of each Annual Report, Hatch confirms that Berrima Cement Works “is in compliance with its licence conditions for noise”.

**REPORT ENDS**