



## Boral Marulan Works POELA Act 2011 Monitoring Data September 2021 Report

### Boral Cement Marulan, NSW

#### Environmental Protection Licence No. 944

Explanation of units of measure:

mg/m<sup>3</sup> = milligrams per cubic metre

g/m<sup>2</sup>/month = grams per square metre per month

µg/m<sup>3</sup> = micrograms per cubic metre

mg/L = milligrams per litre

*Marulan South Lime Plant and Limestone Mine's webpage became live in July 2015. The monitoring data has been uploaded to the internet for public use first time in July 2015. Data is updated monthly.*

Record updated on 23/09/2021

**Compliance Summary:** The site is currently compliant with the Licence limits.

### 1. Annual Stack Monitoring

Test date 19<sup>th</sup> October 2020 for EPA 11- Kiln Stack and 14<sup>th</sup> of October 2020 for EPA 12 – Lime Hydration Scrubber Stack.

Assessable Parameter (mg/m <sup>3</sup> )	Licence Limit	2015-16	2016 -17	2017-18
<b>Emission Source: Kiln Stack (EPA identification Number: 11)</b>				
Solid Particulates	<b>100</b>	45	17	30
Nitrogen Oxides	<b>2,000</b>	270	250	330
<b>Emission Source: Hydrator Stack (EPA identification Number: 12)</b>				
Solid Particles Particulates	<b>100</b>	7.4	2.8	3.5

Assessable Parameter (mg/m <sup>3</sup> )	Licence Limit	2018-19	2019-20	2020-21
<b>Emission Source: Kiln Stack (EPA identification Number: 11)</b>				
Solid Particulates	<b>100</b>	50	86	39
Nitrogen Oxides	<b>2,000</b>	260	470	240
<b>Emission Source: Hydrator Stack (EPA identification Number: 12)</b>				
Solid Particles Particulates	<b>100</b>	<2.00	9.7	<2.00

**Compliance summary:** Marulan plant is compliant with the Licence stack emission limits. The latest testing was done during Annual Stack Monitoring in October 2020

## 2. Ambient air monitoring

### 2.1 Dust Deposition Gauges: Total Insoluble Matter (g/m<sup>2</sup>-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 as an internal indicator of site performance.

Date published: N/A

Report received on	Month	Report Published	Dust Deposition Gauges (g/m <sup>2</sup> /month 12-month rolling average)	
			EPA ID No. 1 (Nearest Residence)	EPA ID No. 16 (Stores Paddock Hill)
N/A	Jan 2015	N/A	1.72	3.72
N/A	Feb 2015	N/A	1.61	3.38
N/A	Mar 2015	N/A	1.81	3.33
N/A	Apr 2015	N/A	1.83	3.40
N/A	May 2015	N/A	1.96	3.44
17/07/15	Jun 2015	10/08/15	2.16	3.59
21/08/15	Jul 2015	07/09/15	2.20	3.56
22/09/15	Aug 2015	06/10/15	2.15	3.34
23/10/15	Sep 2015	09/11/15	2.11	3.32
20/11/15	Oct 2015	10/12/15	2.30	3.33
21/12/15	Nov 2015	11/01/16	2.15	3.38
21/01/16	Dec 2015	08/02/16	2.53	3.95
19/02/16	Jan 2016	02/03/16	2.53	3.7
18/03/16	Feb 2016	29/03/16	2.50	2.88
22/04/16	Mar 2016	22/04/16	2.51	3.82
20/05/16	Apr 2016	20/05/16	2.43	3.7
24/06/16	May 2016	24/06/16	2.25	3.9
27/07/16	Jun 2016	27/07/16	2.07	3.8
23/08/16	Jul 2016	23/08/16	2.12	3.8
02/09/16	Aug 2016	02/09/16	2.23	4.14
28/10/16	Sep 2016	28/10/16	2.33	4.3
23/11/16	Oct 2016	23/11/16	2.21	4.2
21/12/16	Nov 2016	21/12/16	2.4	4.5
25/01/17	Dec 2016	25/01/17	2.5	7.50
21/02/17	Jan 2017	21/02/17	2.77	7.52



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Report received on	Month	Report Published	Dust Deposition Gauges (g/m <sup>2</sup> /month 12-month rolling average)	
			EPA ID No. 1 (Nearest Residence)	EPA ID No. 16 (Stores Paddock Hill)
24/03/17	Feb 2017	24/03/17	2.88	7.70
20/04/17	Mar 2017	20/04/17	2.86	7.64
17/05/17	Apr 2017	17/05/17	2.94	7.85
20/06/17	May 2017	20/06/17	3.10	7.63
19/07/17	Jun 2017	19/07/17	3.26	8.15
22/08/17	Jul 2017	22/08/17	3.24	8.68
20/09/17	Aug 2017	19/09/17	3.21	8.64
20/10/17	Sep 2017	20/10/17	3.24	8.63
20/11/17	Oct 2017	20/11/17	3.42	8.63
21/12/17	Nov 2017	21/12/17	3.32	8.29
16/01/18	Dec 2017	16/01/18	3.12	5.50
22/02/18	Jan 2018	06/03/18	3.05	5.36
22/03/18	Feb 2018	06/04/18	3.69	6.97
19/04/18	Mar 2018	23/04/18	3.27	7.08
16/04/18	Apr 2018	02/05/18	3.39	7.07
25/06/18	May 2018	22/06/18	3.40	7.22
23/07/18	Jun 2018	17/08/18	3.33	6.84
22/08/18	Jul 2018		5.13	6.86
25/09/18	Aug 2018		5.24	7.22
23/10/18	Sep 2018		5.23	9.88
13/11/18	Oct 2018		5.23	9.72
16/12/18	Nov 2018		5.51	12.26
25/01/19	Dec 2018		5.15	13.20
20/02/19	Jan 2019		5.45	13.81
18/03/19	Feb 2019		5.16	12.86
02/05/19	Mar 2019		4.94	13.37
29/05/19	Apr 2019		4.41	13.43
29/06/19	May 2019		4.38	14.40
26/7/19	Jun 2019		4.52	14.71
	July 2019		4.57	14.49
20/9/19	Aug 2019	27/09/19	4.61	14.56
24/10/19	Sep 2019	29/09/19	5.07	12.15
28/11/19	Oct 2019	28/11/19	4.83	13.02
23/12/19	Nov 2019	20/12/19	4.38	11.59
29/1/20	Dec 2019	5/2/20	4.61	11.66
28/2/20	Jan 2020	4/3/20	4.27	13.25
31/3/20	Feb 2020	31/3/20	5.85	13.29



Report received on	Month	Report Published	Dust Deposition Gauges (g/m <sup>2</sup> /month 12-month rolling average)	
			EPA ID No. 1 (Nearest Residence)	EPA ID No. 16 (Stores Paddock Hill)
29/4/20	Mar2020	29/4/20	5.67	12.75
27/5/20	Apr 2020	27/5/20	5.87	12.78
26/6/20	May 2020	26/6/20	6.23	11.94
26/6/20	Jun 2020	5/8/20	7.23	11.56
27/8/20	Jul 2020	27/8/20	6.85	11.31
27/9/20	Aug 2020	27/9/20	6.55	10.93
27/10/20	Sep 2020	27/10/20	7.22	10.73
30/11/20	Oct 2020	30/11/20	7.56	9.53
27/1/21	Nov 2020	20/1/21	7.76	11.07
10/2/21	Dec 2020	10/2/21	7.32	10.34
17/3/21	Jan 2021	17/3/21	6.87	8.33
21/4/21	Feb 2021	21/4/21	6.54	7.47
28/4/21	March 2021	28/4/21	6.57	7.34
21/6/21	April 2021	21/6/21	6.56	7.28
30/6/21	May 2021	30/6/21	6.43	6.91
11/8/21	June 2021	10/8/21	5.71	6.94
07/9/21	July 2021	02/9/21	5.59	6.88
22/9/21	Aug 21	23/9/21	5.53	6.88

**Compliance Summary:** The site does not have a compliance limit for dust deposition. Elevated results at the two licenced points is generally reflective of their proximity to operations or activities in the surrounding paddocks. The nearest residence monitoring point is now company owned.

The stores paddock hill gauge is located on the limestone premises and is used as an indicator to manage dust from operations. Further analysis of the dust has revealed that the majority of material was organic and likely to have been from windblown paddock grasses and bird depositions.

Nearest Residence monitoring station damaged in extreme weather on the 15/2/2020. No sample was taken for that month. Reading given in any month is an average of the prior 12 months where data available.

## 2.2 High Volume Air Sampling: PM<sub>10</sub> dust fraction



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 tract) 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.

In absence of licence limits, the following guideline value was adopted:

- 24hr mean for PM<sub>10</sub> of 50 µg/m<sup>3</sup>, as per *National Environment Protection (Air Quality) Measure 2003*.

Date published: Not applicable

Sampling date	3/01/15	9/01/15	15/01/15	21/01/15	27/01/15	2/02/15	08/02/15	14/02/15
PM10 (µg/m3)	Motherboard failure	Motherboard failure	Motherboard failure	Motherboard failure	10.62	27.6	6.92	5.88

Sampling date	20/02/15	26/02/15	04/03/15	10/03/15	16/03/15	22/03/15	28/03/15	03/04/15
PM10 (µg/m3)	29.64	16.44	31.49	33.22	32.41	20.06	22.57	8.94

Sampling date	09/04/15	15/04/15	21/04/15	27/04/15	03/05/15	09/05/15	15/05/15	21/05/15
PM10 (µg/m3)	12.84	17.38	2.34	3.18	2.54	4.5	10.05	2.7

Sampling date	27/05/15	02/06/15
PM10 (µg/m3)	11.42	4.38

Data received from July 2015:

Sampling date	8/6/15	14/6/15	20/6/15	26/6/15	2/7/15	8/7/15	14/7/15	20/7/15
Report date	10/7/15	10/7/15	10/7/15	10/7/15	10/7/15	11/8/15	11/8/15	11/8/15
Upload date	10/8/15	10/8/15	10/8/15	10/8/15	10/8/15	07/09/15	07/09/15	07/09/15
PM10 (µg/m3)	4.51	19.19	2.35	4.98	3.02	152.41	42.03	4.40

Sampling date	26/7/15	1/8/15	7/8/15	13/8/15	19/8/15	25/8/15	31/8/15	6/9/15
Report date	11/8/15	11/8/15	11/9/15	11/9/15	11/9/15	11/9/15	11/9/15	20/10/15
Upload date	07/09/15	07/09/15	06/10/15	06/10/15	06/10/15	06/10/15	06/10/15	07/09/15
PM10 (µg/m3)	2.4	1.38	6.84	3.02	20.65	1.37	6.39	4.76

Sampling date	12/9/15	18/9/15	24/9/15	30/9/15	6/10/15	12/10/15	18/10/15	24/10/15
Report date	20/10/15	20/10/15	20/10/15	20/10/15	20/10/15	20/10/15	9/11/15	9/11/15
Upload date	07/09/15	09/11/15	09/11/15	09/11/15	09/11/15	09/11/15	10/12/15	10/12/15
PM10 (µg/m3)	10.08	8.89	10.68	20.47	22.53	8.98	21.32	23.79

Sampling date	30/10/15	5/11/15	11/11/15	17/11/15	23/11/15	29/11/15	5/12/15	11/12/15
Report date	9/11/15	21/12/15	21/12/15	21/12/15	21/12/15	21/12/15	21/12/15	15/01/16
Upload date	10/12/15	11/01/16	11/01/16	11/01/16	11/01/16	11/01/16	11/01/16	08/02/16
PM10 (µg/m3)	49.62	12.33	35.78	20.00	101.65	20.35	158.27	76.01

Sampling date	17/12/15	23/12/15	29/12/15	4/1/16	10/1/16	16/1/16	22/1/16	28/1/16
Report date	15/01/16	15/01/16	15/01/16	15/01/16	9/2/16	9/2/16	9/2/16	9/2/16
Upload date	08/02/16	08/02/16	08/02/16	08/02/16	10/3/16	10/3/16	10/3/16	10/3/16
PM10 (µg/m3)	63.88	44.76	44.31	33.85	36.94	6.13	19.44	19.94





Sampling date	3/2/16	9/2/16	15/2/16	21/2/16	27/2/16	4/3/16	10/3/16	16/3/16
Report date	9/2/16	14/3/16	14/3/16	14/3/16	14/3/16	19/4/16	19/4/16	19/4/16
Upload date	10/4/16	10/4/16	10/4/16	10/4/16	10/4/16	10/5/16	10/5/16	10/5/16
PM10 (µg/m3)	25.18	34.7	38.28	16.97	9.83	34.41	49.13	10.48

Sampling date	22/3/16	28/3/16	3/4/16	9/4/16	15/4/16	21/4/16	29/4/16	3/5/16
Report date	19/4/16	19/4/16	19/4/16	19/4/16	13/5/16	13/5/16	13/5/16	13/5/16
Upload date	10/5/16	10/5/16	10/5/16	10/5/16	10/6/16	10/6/16	10/6/16	10/6/16
PM10 (µg/m3)	3.92	16.95	21.54	29.43	28.66	16.16	23.33	6.69

Sampling date	9/5/16	15/5/16	21/5/16	27/5/16	2/6/16	8/6/16	14/6/16	20/6/16
Report date	22/6/16	22/6/16	22/6/16	22/6/16	22/6/16	22/6/16	19/7/16	19/7/16
Upload date	13/7/16	13/7/16	13/7/16	13/7/16	13/7/16	13/7/16	10/8/16	10/8/16
PM10 (µg/m3)	2.96	9.68	58.18	2.28	5.66	1.01	15.04	1.86

Sampling date	26/6/16	2/7/16	8/7/16	14/7/16	20/7/16	26/7/16	1/8/16	7/8/16
Report date	19/7/16	19/7/16	19/7/16	12/8/16	12/8/16	12/8/16	12/8/16	13/9/16
Upload date	10/8/16	10/8/16	10/8/16	10/9/16	10/9/16	10/9/16	10/9/16	10/10/16
PM10 (µg/m3)	10.05	4.61	10.50	3.41	1.75	2.78	1.83	15.59

Sampling date	13/8/16	19/8/16	25/8/16	31/8/16	6/9/16	12/9/16	18/9/16	24/9/16
Report date	13/9/16	13/9/16	13/9/16	13/9/16	13/9/16	28/10/16	28/10/16	28/10/16
Upload date	10/10/16	10/10/16	10/10/16	10/10/16	10/10/16	10/11/16	10/11/16	10/11/16
PM10 (µg/m3)	7.38	25.42	4.46	9.10	22.52	15.06	12.76	6.93

Sampling date	30/9/16	6/10/16	12/10/16	18/10/16	24/10/16	30/10/16	5/11/16	11/11/16
Report date	28/10/16	28/10/16	28/10/16	28/10/16	18/11/16	18/11/16	18/11/16	18/12/16
Upload date	10/11/16	10/11/16	10/11/16	10/11/16	20/12/16	20/12/16	20/12/16	20/12/16
PM10 (µg/m3)	3.34	7.61	2.23	3.96	9.09	15.24	16.36	23.98

Sampling date	17/11/16	23/11/16	29/11/16	5/12/16	11/12/16	17/12/16	23/12/16	29/12/16
Report date	18/12/16	18/12/16	18/12/16	18/12/16	20/1/17	20/1/17	20/1/17	20/1/17
Upload date	20/12/16	20/12/16	20/12/16	20/12/16	10/2/17	10/2/17	10/2/17	10/2/17
PM10 (µg/m3)	23.3	18.51	24.14	50.68	27.27	13.18	34.22	17.81

Sampling date	4/1/17	10/1/17	16/1/17	22/1/17	28/1/17	3/2/17	9/2/17	15/2/17
Report date	20/1/17	20/1/17	20/1/17	13/2/17	13/2/17	13/2/17	21/3/17	21/3/17
Upload date	10/2/17	10/2/17	10/2/17	10/3/17	10/3/17	10/3/17	10/4/17	10/4/17
PM10 (µg/m3)	12.44	20.87	51.24	27.25	32.54	33.17	43.81	64.66

Sampling date	21/2/17	27/2/17	5/3/17	11/3/17	17/3/17	23/3/17	29/3/17	4/4/17
Report date	21/3/17	21/3/17	21/3/17	21/3/17	11/4/17	11/4/17	11/4/17	11/4/17
Upload date	10/4/17	10/4/17	10/4/17	10/4/17	10/5/17	10/5/17	10/5/17	10/5/17
PM10 (µg/m3)	52.19	38.37	26.36	61.15	2.74	5.44	18.92	2.02

Sampling date	10/4/17	16/4/17	22/4/17	28/4/17	4/5/17	10/5/17	16/5/17	22/5/17
Report date	16/5/17	16/5/17	16/5/17	16/5/17	16/5/17	13/6/17	13/6/17	13/6/17
Upload date	10/7/17	10/7/17	10/7/17	10/7/17	10/7/17	10/7/17	10/7/17	10/7/17
PM10 (µg/m3)	4.77	12.83	20.70	5.22	20.45	47.86	8.90	7.26



Sampling date	28/5/17	3/6/17	9/6/17	15/6/17	21/6/17	27/6/17	3/7/17	9/7/17
Report date	13/6/17	13/6/17	12/7/17	12/7/17	12/7/17	12/7/17	12/7/17	14/8/17
Upload date	10/7/17	10/7/17	10/8/17	10/8/17	10/8/17	10/8/17	10/8/17	10/9/17
PM10 (µg/m3)	5.69	17.58	3.53	14.01	6.5	27.67	17.7	3.15

Sampling date	15/7/17	21/7/17	27/7/17	2/8/17	8/8/17	14/8/17	20/8/17	26/8/17
Report date	14/8/17	14/8/17	14/8/17	14/8/17	14/8/17	note *1	note *1	note *1
Upload date	10/9/17	10/9/17	10/9/17	10/9/17	10/9/17			
PM10 (µg/m3)	6.73	15.97	26.88	8.04	3.87			

Sampling date	1/9/2017	6/9/2017 *2	14/9/17 *1	19/9/17	22/9/17 *1	25/9/17	3/10/17	7/10/17
Report date	12/9/17	12/9/17	11/10/17	11/10/17	11/10/17	11/10/17	11/10/17	11/10/17
Upload date	10/10/17	10/10/17	10/11/17	10/11/17	10/11/17	10/11/17	10/11/17	10/11/17
PM10 (µg/m3)	8.66	1.67	5.83	8.92	44.27	6.12	13.15	11.18

Sampling date	13/10/17	16/10/17 (replace ment run for the 13/10)	19/10/17	25/10/17	26/10/17 replace ment run for 25/10)	31/10/17	3/11/17 (replace ment run for 31/10)	6/11/17
Report date	failure *3	13/11/17	13/11/17	failure *3	13/11/17	failure*3	13/11/17	failure*3
Upload date		10/1/18	10/1/18		10/1/18		10/1/18	
PM10 (µg/m3)		25.40	17.20		5.48		7.12	

Sampling date	7/11/17	12/11/17	18/11/17	24/11/17	30/11/17	6/12/17	7/12/17	12/12/17
Report date	14/12/17	14/12/17	failure *3	failure*3	failure*3	14/12/17	14/12/17	
Upload date	10/1/18	10/1/18				10/1/18	10/1/18	
PM10 (µg/m3)	10.62	17.47				5.60	6.27	73.51

Sampling date	18/12/17	24/12/17	30/12/17	5/01/18	11/01/18	17/01/18	23/01/18	29/01/18
Report date								
Upload date	6/03/18	6/03/18	6/03/18	6/03/18	6/03/18	6/03/18	6/03/18	6/03/18
PM10 (µg/m3)	70.11	33.99	37.34	61.79	38.41	51.02	114.45	43.09

Sampling date	4/02/18	10/02/18	19/02/18	22/02/18	28/02/18	6/03/18	12/03/18	21/03/18 <sup>4</sup>
Report date		15/03/18	15/03/18	15/03/18	15/03/18	15/03/18	12/04/18	12/04/18
Upload date	6/04/18	6/04/18	6/04/18	6/04/18	6/04/18	6/04/18		
PM10 (µg/m3)	24.79	40.06	16.64	37.31	12.18	24.61	112.18	11.68

Sampling date	24/03/18	30/03/18	5/04/18	11/04/18	17/04/18	23/04/18	30/04/18	5/05/18
Report date	12/04/18	12/04/18	11/05/18	11/05/18	11/05/18	11/05/18	11/05/18	11/05/18
Upload date	28/05/18	28/05/18	28/05/18	28/05/18	28/05/18	28/05/18	28/05/18	28/05/18
PM10 (µg/m3)	61.09	50.30	126.5	79.1	144.84	121.08	24.89	5.22

Sampling date	11/05/18	17/05/18	22/05/18	23/05/18	29/05/18	04/06/18	10/06/18	04/06/18
Report date	13/06/18		13/06/18	13/06/18	13/06/18	13/06/18	13/06/18	13/06/18
Upload date	02/07/18	02/07/18	02/07/18	02/07/18	02/07/18	02/07/18		02/07/18
PM10 (µg/m3)	1.53		17.18	19.87	49.09	11.70	1.58	11.70



Sampling date	10/06/18	16/06/18	22/06/18	28/06/18	04/07/18	10/07/18	16/07/18	22/07/18
Report date	13/06/18	11/07/18	11/07/18	11/07/18	11/07/18	08/08/18	08/08/18	08/08/18
Upload date	02/07/18	17/08/18	17/08/18	17/08/18	17/08/18			
PM10 (µg/m3)	1.58	0.13	6.90	10.81	13.79	7.09	4.77	

Sampling date	25/07/18	28/07/18	3/08/18	09/08/18	15/08/18	21/08/18	27/08/18	04/09/18
Report date	08/08/18	08/08/18	08/08/18	19/09/18	19/09/18	19/09/18	19/09/18	19/09/18
PM10 (µg/m3)	3.36	13.38	38.99	14.93	3.25	1.99	23.14	32.76

Sampling date	08/09/18	15/09/18	20/09/18	26/09/18	02/10/18	08/10/18	14/10/18	20/10/18
Report date	19/09/18	17/10/18	17/10/18	17/10/18	17/10/18	17/10/18	9/11/18	9/11/18
PM10 (µg/m3)	7.00	18.30	27.02	9.35	50.98	13.00	5.39	17.74

Sampling date	26/10/18	1/11/18	7/11/18	13/11/18	19/11/18	25/11/18	1/12/18	7/12/18
Report date	9/11/18	9/11/18	14/12/18	14/12/18	14/12/18	14/12/18	14/12/18	14/12/18
PM10 (µg/m3)	19.43	35.33	38.23	86.01	35.31	10.23	14.75	37.08

Sampling date	13/12/18	19/12/18	25/12/18	31/12/18	12/01/19	15/01/19	30/01/19	5/02/19
Report date	14/01/18	14/01/18	14/01/18	14/01/18	12/02/19	12/02/19	12/02/19	12/02/19
PM10 (µg/m3)	15.32	22.41	19.62	46.78	18.21	40.30	39.31	27.77

Sampling date	11/02/19	13/02/19	17/02/19	23/02/19	1/03/19	7/03/19	13/03/19	19/03/19
Report date	11/03/19	11/03/19	11/03/19	11/03/19	11/03/19	30/04/19	30/04/19	30/04/19
PM10 (µg/m3)	9.60	20.23	32.06	76.20	18.30	56.73	53.22	6.86

Sampling date	25/03/19	31/03/19	06/04/19	12/04/19	18/04/19	24/04/19	30/04/19	06/05/19
Report date	30/04/19	30/04/19	30/04/19	20/05/19	20/05/19	20/05/19	20/05/19	20/05/19
PM10 (µg/m3)	4.58	0.34	12.81	33.58	21.05	24.74	49.05	6.74

Sampling date	12/04/19	18/04/19	24/04/19	30/04/19	05/06/19	11/06/19	17/06/19	23/06/19
Report date	19/06/19	19/06/19	19/06/19	19/06/19	19/06/19	19/06/19	19/07/19	19/07/19
PM10 (µg/m3)	1.18	19.92	11.27	1.42	3.36	16.75	70.1	8.87

Sampling date	29/06/19	05/07/19	11/07/19	17/07/19	23/07/19	29/07/19	04/08/19	10/08/19
Report date	19/07/19	19/07/19	29/09/19	29/09/19	29/09/19	29/09/19	29/09/19	29/09/19
PM10 (µg/m3)	14.68	10.20	21.49	21.42	21.45	21.26	20.69	20.50

Sampling date	16/08/19	22/08/19	28/08/19	03/09/19	09/09/19	15/09/19	21/09/19	27/09/19
Report date	29/09/19	30/10/19	30/10/19	30/10/19	30/10/19	30/10/19	30/10/19	30/10/19
PM10 (µg/m3)	22.03	22.04	21.72	21.51	21.43	21.36	21.80	21.84

Sampling date	03/10/19	09/10/19	15/10/19	21/10/19	27/10/19	2/11/19	8/11/19	14/11/19
Report date	30/10/19	30/10/19	14/1/20	14/1/20	14/1/20	14/1/20	14/1/20	14/1/20
PM10 (µg/m3)	21.52	21.35	21.93	21.85	21.81	21.39	20.94	19.69

Sampling date	20/11/19	26/11/19	02/12/19	08/12/19	14/12/19	20/12/19	26/12/19	1/1/20
Report date	14/1/20	14/1/20	14/1/20	14/1/20	14/1/20	14/1/20	14/1/20	14/1/20
PM10 (µg/m3)	19.61	20.80	20.75	20.56	21.35	23.04	24.64	29.38

Sampling date	7/1/20	13/1/20	19/1/20	25/1/20	31/1/20	6/2/20	12/2/20	18/2/20
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Report date	12/2/20	12/2/20	12/2/20	12/2/20	12/2/20	24/3/20	24/3/20	24/3/20
PM10 (µg/m3)	31.22	32.53	32.42	32.39	32.46	38.18	19.41	52.58

Sampling date	24/2/20	1/3/20	7/3/20	13/3/20	19/3/20	24/3/20	31/3/20	6/4/20
Report date	24/3/20	24/3/20	24/3/20	24/3/20	30/4/20	30/4/20	30/4/20	30/4/20
PM10 (µg/m3)	47.42	54.44	48.15	104.76	15.18	34.91	8.22	7.86

Sampling date	12/4/20	18/4/20	24/4/20	27/4/20	30/4/20	1/5/20	4/5/20	6/5/20
Report date	30/4/20	30/4/20	25/5/20	25/5/20	25/5/20	25/5/20	25/5/20	22/6/20
PM10 (µg/m3)	17.61	16.81	12.30	102.64	1.81	1.07	1.64	9.00

Sampling date	12/5/20	18/5/20	24/5/20	30/5/20	5/6/20	11/6/20	17/6/20	23/6/20
Report date	22/6/20	22/6/20	22/6/20	22/6/20	22/6/20	22/6/20	16/7/20	16/7/20
PM10 (µg/m3)	13.33	15.51	0.13	3.45	4.68	3.72	8.11	0.50

Sampling date	29/6/20	5/7/20	11/7/20	20/7/20	21/7/20	23/7/20	29/7/20	4/8/20
Report date	16/7/20	16/7/20	3/9/20	3/9/20	3/9/20	3/9/20	3/9/20	3/9/20
PM10 (µg/m3)	6.51	1.12	31.05	10.14	26.53	8.32	1.88	9.21

Sampling date	5/8/20	10/8/20	16/8/20	22/8/20	28/8/20	3/9/20	9/9/20	15/9/20
Report date	3/9/20	17/9/20	17/9/20	17/9/20	17/9/20	17/9/20	21/10/20	21/10/20
PM10 (µg/m3)	2.56	4.31	2.50	2.20	7.19	22.77	9.64	10.82

Sampling date	12/9/20	27/9/20	3/10/20	7/10/20	9/10/20	15/10/20	21/10/20	27/10/20
Report date	21/10/20	21/10/20	21/10/20	21/10/20	27/11/20	27/11/20	27/11/20	27/11/20
PM10 (µg/m3)	13.71	4.22	11.59	4.25	1.88	32.18	39.59	3.92

Sampling date	2/11/20	8/11/20	14/11/20	20/11/20	26/11/20	2/12/20	4/12/20	8/12/20
Report date	27/11/20	27/11/20	27/11/20	27/11/20	23/12/20	23/12/20	23/12/20	23/12/20
PM10 (µg/m3)	8.22	7.18	8.97	15.71	26.56	20.13	5.79	3.69

Sampling date	14/12/20	20/12/20	22/12/20	26/12/20	1/01/21	5/01/21	7/01/21	13/01/21
Report date	23/12/20	7/1/21	7/1/21	7/1/21	7/1/21	7/1/21	4/3/21	4/3/21
PM10 (µg/m3)	4.13	9.46	7.08	9.96	6.33	8.65	5.23	15.66

Sampling date	19/01/21	25/01/21 to 19/04/21 Results missing due to PM10 unit mechanical failure*.						
Report date	4/3/21							
PM10 (µg/m3)	47.14							

Sampling date	25/04/21	1/05/21	7/05/21	13/05/21	19/05/21	25/05/21	31/05/21	6/6/21
Report date	21/05/21	21/05/21	21/05/21	23/06/21	23/06/21	23/06/21	23/06/21	23/06/21
PM10 (µg/m3)	11.54	27.07	3.86	4.89	13.65	14.99	Failed*	4.78

Sampling date	12/06/21	18/06/21	24/06/21	30/06/21	2/07/21	6/07/21	12/07/21	18/07/21
Report date	3/08/21	3/08/21	3/08/21	3/08/21	3/08/21	3/08/21	3/08/21	17/08/21
PM10 (µg/m3)	1.32	2.26	3.33	7.46	2.14	1.19	4.72	1.48



Sampling date	24/07/21	30/07/21	5/08/21	11/08/21	17/08/21	23/08/21	29/08/21	4/09/21
Report date	17/08/21	17/08/21	17/08/21	21/09/21	21/09/21	21/09/21	21/09/21	21/09/21
PM10 (µg/m3)	2.78	3.54	1.28	0.34	1.73	0.76	4.33	2.12

Sampling date								
Report date								
PM10 (µg/m3)								

Sampling date								
Report date								
PM10 (µg/m3)								

Sampling date								
Report date								
PM10 (µg/m3)								

**Compliance Summary:** The plant does not have a Licence limit for air-suspended particulate. Sampling is programmed to run every six days, however on occasion the sampler can fail to run which is beyond the control of the site. Where reasonably practicable additional sample runs are undertaken to make up any missed samples. Elevated levels against guidelines are typically the result of adverse events such as dust storms and bushfires.

Note \*1 PM10 High Volume sampler failed to run on the 14, 20 and 26<sup>th</sup> August 2017. Technical assistance was sought and the mother board on the sampler changed. Additional samples have been taken during September.

Note \*2 sampling should have been conducted on the 7<sup>th</sup> September 2017; however an area wide power outage was planned. Monitoring was therefore undertaken on the 6<sup>th</sup> September 2017.

Note \*3 problems have continued with the running of the High Volume sampler. The battery pack has been replaced to determine whether this is the cause. Replacement samples have been undertaken where possible.

Note \*4. Replaces sample from 18.03.18 as no sample collected due to power outage and bushfire.

**April 2018 elevated results are in caused by fire reduction exercises at Wingello and Tarago.**

**May 2018 Comments as in the Clients COC: Field Sample No 2- HVAS failed to run on the 17/05/18.**

**Make up run on the 22/05/18**

**June / July Field sample No 3: Machine didn't run correctly on the due date (22/07/2018) full re-run on the 25/07/2018.**

**October & November 2018 site has experienced high winds/ & dryer conditions.**

**February 17/02/19 till 23/02/19 a large dust storm coming from a south westerly direction during the sampling period.**

**March 2019 first half of the month was affected by dust storms and drier conditions.**

**January 2021 Breakdown of Hi Volume PM10 monitoring station. First sample with new unit 21/5/2021.**

**Samples for PM2.5 and TSP taken during this period.**



31/5/21 Machine failed to operate. Frequency to be increased to make up average samples to in every 6 days.

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### 3. **Water monitoring:** North Pit Bore

Current Licence requirements cover quarterly monitoring of groundwater quality in the North Pit Bore until March 2020 and Then WM05 Bore, (both bores were/are now EPA Identification No. 13).

**Licence limits:** Not specified.

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

Oil and Grease: 10 milligrams per litre

Total Suspended Solids: 30-50 milligrams per litre.

Sampling date	Report received on	Report published on	Oil and Grease (mg/L)	Total Suspended Solids (mg/L)
24/03/15	01/04/15	N/A	6	42
23/06/15	08/07/15	08/07/15	<5	<5
02/09/15	28/09/15	06/10/15	<5	<5
01/12/15	22/12/15	11/01/16	<5	14
31/03/16	14/04/16	10/05/16	<5	<5
30/06/16	12/07/16	10/08/16	<5	<5
09/09/16	28/09/16	28/09/16	<5	<5
13/12/16	16/01/17	10/02/17	<5	15
31/03/17	21/04/17	10/05/17	<1	156
26/06/17	13/07/17	10/08/17	<1	99
25/07/17	18/10/17	20/11/17	<1	17
15/01/18	05/02/18	06/03/18	<5	30
20/03/18	11/04/18	11/04/18	<5	22
05/06/18	26/06/18		<1	30
05/09/18	18/09/18		<1	9
03/12/18	17/12/18		<1	5
12/03/19	29/03/19		<1	4
26/06/19	04/09/19	04/09/19	<5	21
23/10/19	12/11/19	04/11/19	<5	54



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17/12/19	7/2/20	14/1/20	<5	28
24/3/20	7/4/20	7/4/20	<5	5
Note: North Pit Bore is no longer operational as of the 24/3/2020. Replaced in EPL by Ground Water Monitoring Point labelled "WM05" on map "EPL 944 Ground Water Monitoring Point Location Change – December 2020" (DOC20/1014984)				
29/9/20	8/10/20	8/10/20	<5	<5
9/12/20	18/12/20	18/12/20	<5	11
31/3/21	22/6/21	9/04/21	<5	<5
15/6/21	5/7/21	5/7/21	<5	14

**Compliance Summary:** The plant does not have Licence limits for water parameters. It is however compliant with the adopted NSW guideline values.

**REPORT ENDS**