



# EPL Monitoring

Licence Holder: Metal Manufactures Limited

Gloucester Boulevard, Port Kembla NSW 2505

EPL Number: 6158

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## Stormwater Monitoring Results

Sample Date	Results Obtained	Published	pH					Total Suspended Solids (mg/L)					Oil and Grease (mg/L)					
			1A	1B	2	3	4	1A	1B	2	3	4	1A	1B	2	3	4	
17/04/2012	30/04/2012	27/06/2012	7.3	7.5	7.6	8.3	7.8	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
16/05/2012	28/05/2012	27/06/2012	7.1	7.3	7.8	7.6	8.3	<5	<5	<5	<5	6	<5	<5	<5	<5	<5	<5
30/05/2012	7/06/2012	27/06/2012	7.4	7.7	7.7	7.7	8.3	<5	5	10	<5	9	<5	<5	<5	<5	<5	<5
13/06/2012	22/06/2012	27/06/2012	7.1	7.4	7.6	7.4	7.8	<5	<5	<5	7	<5	<5	<5	<5	<5	<5	<5
28/06/2012	10/07/2012	10/07/2012	7.1	7.1	7.4	7.5	8.2	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
6/07/2012	16/07/2012	1/08/2012	7.4	7.6	7.7	7.7	7.8	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
27/07/2012	8/08/2012	10/08/2012	7.4	7.6	7.6	7.8	8.5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
15/08/2012	27/08/2012	29/08/2012	7.6	7.3	8	8.1	8.5	<5	13	<5	<5	<5	<5	<5	<5	<5	<5	<5
29/08/2012	7/09/2012	18/09/2012	7.4	7.3	7.5	7.6	7	14	9	7	6	79	<5	<5	<5	<5	<5	24
14/09/2012	28/09/2012	16/10/2012	7.1	7.1	7.3	7.6	8.3	11	12	<5	<5	<5	<5	<5	<5	<5	<5	<5
9/10/2012	29/10/2012	13/11/2012	7.2	7	7.4	7.2	7.8	<5	15	10	<5	<5	<5	<5	<5	<5	<5	<5
23/10/2012	2/11/2012	15/11/2012	6.8	6.8	7.1	7.3	7.2	<5	<5	<5	5	9	<5	<5	<5	<5	<5	<5
20/11/2012	30/11/2012	3/12/2013	7.1	7.2	7.2	7.3	7.8	<5	7	<5	5	<5	<5	<5	<5	<5	<5	12
25/01/2013	4/02/2013	18/02/2013	7.2	7.5	7.6	7.8	7.2	7	5	9	8	13	<5	<5	<5	5	<5	<5
12/02/2013	20/02/2013	21/02/2013	7.6	7.7	8.1	8.1	8	6	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
26/02/2013	8/03/2013	11/03/2013	7.7	7.9	8.3	8.2	8.4	6	6	<5	54	28	<5	<5	<5	<5	<5	<5
20/03/2013	27/03/2013	8/01/2013	7.3	7.7	8.1	7.9	8.3	<5	<5	5	<5	<5	<5	<5	<5	<5	<5	<5
19/04/2013	26/04/2013	30/04/2013	6.7	7.5	7.8	7.7	8.3	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5

### Notes: Stormwater Monitoring

Samples are taken from gate valves. Locations are specified overleaf.

The frequency of testing is "twice each calendar month (at intervals of no less than 5 days) during day shift hours within two hours of the commencement of any discharge.

Day Shift Hours are 7:30am to 4:30pm on weekdays only (excluding Public Holidays)."

Milligrams per litre is abbreviated as mg/L

All samples are tested by a NATA accredited laboratory

The Practical Quantitation Limit for Total Suspended Solids is 5 mg/L. The Practical Quantitation Limit for Oil and Grease is 5 mg/L.



**Stormwater Monitoring Results - Continued**

Sample Date	Results	Published	pH					Total Suspended Solids (mg/L)					Oil and Grease (mg/L)				
			1A	1B	2	3	4	1A	1B	2	3	4	1A	1B	2	3	4
24/05/2013	5/06/2013	14/06/2013	7.9	8.0	8.1	7.9	8.2	<5	6	14	15	54	<5	<5	<5	<5	<5
13/06/2013	25/06/2013	28/06/2013	7.5	7.4	7.9	8.0	8.3	<5	<5	<5	33	6	<5	<4	<5	<5	<5
27/06/2013	8/07/2013	8/07/2012	7.4	7.2	7.6	7.5	7.5	15	<10	<5	5	9	<5	<5	<5	<5	<5
17/07/2013	27/07/2013	1/08/2013	6.8	7.5	7.9	8.1	8.3	<5	<5	<5	<5	11	<5	<5	<5	<5	<5
31/07/2013	9/08/2013	15/08/2013	7.4	7.3	7.7	7.7	7.9	<5	<5	18	6	41	<5	<5	<5	<5	<5
9/08/2013	20/08/2013	23/08/2013	7.2	7.5	7.7	7.9	7.7	<5	<5	5	<5	10	<5	<5	<5	<5	<5
16/09/2013	24/09/2013	27/08/2013	6.9	7.1	7.9	7.7	8.1	6	9	<5	<5	6	<5	<5	<5	<5	<5
30/09/2013	11/10/2013	17/10/2013	7.7	7.6	7.8	8.0	8.1	5	12	<5	<5	6	<5	<5	<5	<5	<5
10/10/2013	18/10/2013	24/10/2013	7.2	8.1	7.9	8.0	7.3	5	<5	<5	<5	<5	<5	<5	<5	<5	<5
12/11/2013	21/11/2013	22/11/2013	7.9	8.1	8.2	7.9	8.0	<5	9	6	16	18	<5	<5	<5	<5	6
26/11/2013	5/12/2013	9/12/2013	7.6	7.9	8.1	8.1	8.4	5	<5	<5	<5	5	<5	<5	<5	<5	<5
17/12/2013	9/01/2014	10/01/2013	7.1	7.2	7.6	8.1	8.4	<5	6	<5	<5	<5	<5	<5	<5	<5	<5
7/01/2014	17/01/2014	20/01/2013	7.1	7.3	7.8	7.8	7.8	18	<5	<5	<5	12	<5	<5	5	5	<5
22/01/2014	3/02/2014	17/02/2014	7.1	7.3	4.6 <sup>1</sup>	8.9	8.2	<5	<5	<5	<5	<5	7	7	7	8	8
20/02/2014	27/02/2014	3/03/2014	7.4	7.4	8	8.0	7.7	<5	<5	<5	<5	29	<5	<5	<5	8	16
28/02/2014	10/03/2013	13/03/2014	7.4	7.4	7.9	7.5	7.7	7	<5	<5	22	<5	<5	<5	<5	<5	<5
21/03/2014	31/03/2014	4/04/2014	6.7	6.9	7	7.0	7.7	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
28/03/2014	8/04/2014	17/04/2014	7.5	7.9	8.2	8.0	8.3	<5	<5	<5	12	5	<5	<5	<5	<5	<5
15/04/2014	28/04/2014	5/05/2014	7.1	7.3	7.5	7.9	8.3	<5	8	<5	<5	<5	<5	<5	<5	<5	<5
30/04/2014	9/05/2014	12/05/2014	7.0	7.5	7.5	7.7	8.4	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
21/05/2014	30/05/2014	2/06/2014	7.1	7.6	7.5	8.0	8.3	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
28/05/2014	6/06/2014	16/06/2014	7.1	7.5	7.5	7.7	8.2	<5	<5	<5	<5	32	<5	<5	<5	<5	<5
11/06/2014	20/06/2014	27/06/2014	7.7	7.8	8.3	8.1	8.1	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5

<sup>1</sup> Result is not believed to be representative of water condition at time of testing. In house and up-stream testing indicate pH in the range of 8.2 - 8.4 . It is believed that the sample bottle was contaminated, resulting the low pH reading. Sampling procedure has been modified to prevent recurrence.



Stormwater Monitoring Results - Continued

Sample Date	Results Obtained	Published	pH					Total Suspended Solids (mg/L)					Oil and Grease (mg/L)				
			1A	1B	2	3	4	1A	1B	2	3	4	1A	1B	2	3	4
25/06/2014	7/07/2014	10/07/2014	7.4	7.5	7.9	8.4	8.1	<5	<5	<5	<5	8	<5	<5	<5	<5	6
18/07/2014	24/07/2014	28/07/2014	7.3	7.1	7.6	8.0	8.2	22	7	19	<5	5	<5	<5	<5	<5	<5
30/07/2014	8/08/2014	21/08/2014	7.2	7.3	7.4	8.3	8.4	<5	<5	19	<5	10	<5	<5	<5	<5	<5
13/08/2014	22/08/2014	22/08/2014	7.5	7.7	7.9	7.8	8.5	<5	8	<5	<5	<5	<5	<5	<5	<5	<5
20/08/2014	29/08/2014	1/09/2014	7.8	7.9	8.0	8.0	8.3	<5	<5	<5	7	21	<5	<5	<5	<5	<5
10/09/2014	19/09/2014	25/09/2014	7.5	7.7	7.7	7.9	8.3	<5	<5	<5	<5	8	<5	<5	<5	<5	<5
26/09/2014	7/10/2014	10/10/2014	7.3	7.6	7.9	8.0	8.4	<5	<5	8	<5	<5	<5	<5	<5	<5	<5
16/10/2014	23/10/2014	24/10/2014	7.3	7.6	7.9	7.9	8.1	<5	<5	6	9	21	<5	<5	<5	<5	<5
24/11/2014	3/12/2014	5/12/2014	7.6	8.0	8.0	8.2	8.4	19	10	5	20	14	<5	<5	<5	<5	<5
2/12/2014	11/12/2014	11/12/2014	7.3	7.3	7.7	7.9	8.2	<10	<10	<10	<10	19	<5	<5	<5	<5	<5
12/12/2014	22/12/2014	5/01/2015	7.1	7.5	7.7	7.9	8.3	<5	<5	<5	<5	15	<5	<5	<5	<5	<5
15/01/2015	21/01/2015	22/01/2015	7.2	7.7	7.8	8.2	8.1	<5	<5	<5	8	19	<5	<5	<5	<5	<5
29/01/2015	3/02/2015	5/02/2015	7.4	7.9	8.1	8.2	8.2	<5	<5	<5	<5	6	<5	5	5	6	6
11/02/2015	18/02/2015	20/02/2015	7.4	7.8	8.1	7.6	8.3	12	12	10	<10	10	<5	<5	<5	<5	<5
26/02/2015	4/03/2015	6/03/2015	7.2	7.8	8.0	8.1	8.2	31	<10	<10	<10	<10	<5	<5	<5	<5	<5
20/03/2015	25/03/2015	2/04/2015	7.3	7.9	8.2	8.2	8.4	<10	<10	<10	<10	<10	<5	<5	<5	<5	<5
1/04/2015	9/04/2015	10/04/2015	7.6	7.9	8.0	8.1	8.4	15	<10	<10	<10	<10	<5	<5	<5	<5	<5
23/04/2015	30/04/2015	4/05/2015	7.5	7.9	7.9	7.8	7.9	<10	<10	<10	<10	11	<5	<5	<5	<5	<5
13/05/2015	20/05/2015	20/05/2015	7.5	7.9	8.0	8.2	8.3	<10	<10	7	9	8	<5	9	<5	<5	<5
27/05/2015	4/06/2015	4/06/2015	7.8	8.1	8.2	8.2	8.4	11	11	<10	<10	<10	<5	<5	<5	<5	<5
18/06/2015 <sup>2</sup>	23/06/2015	3/07/2015	7.2	7.2	7.1	7.0	7.1	43	67	24	14	17	<5	<5	<5	<5	<5
30/06/2015	8/07/2015	10/07/2015	7.6	8.1	8.1	8.2	8.4	<10	<10	<10	<10	<10	<5	<5	<5	<5	<5
22/07/2015	29/07/2015	31/07/2015	7.8	8.0	8.0	8.3	8.4	<10	<10	<10	<10	<10	<5	<5	<5	<5	<5
30/07/2015	6/08/2015	7/08/2015	7.8	8.1	8.2	8.4	8.4	<10	<10	<10	<10	<10	<5	<5	<5	<5	<5
13/08/2015	20/08/2015	21/08/2015	7.7	7.9	8.1	8.3	8.3	<10	<10	<10	<10	<10	<5	<5	<5	<5	<5

<sup>2</sup> High TSS Levels suspected to have resulted from entrained dust/dirt as a result of heavy rainfall and turbulent flow within the drains.



Stormwater Monitoring Results - Continued

Sample Date	Results Obtained	Published	pH					Total Suspended Solids (mg/L)					Oil and Grease (mg/L)				
			1A	1B	2	3	4	1A	1B	2	3	4	1A	1B	2	3	4
27/08/2015	3/09/2015	4/09/2015	7.7	7.9	8.2	8.1	8.3	8	7	<5	10	15	<5	<5	<5	<5	<5
18/09/2015	25/09/2015	28/09/2015	7.4	7.9	7.9	8.2	8.3	<10	9	<10	<10	<10	<5	<5	<5	8	<5
30/09/2015	7/10/2015	12/10/2015	7.4	8.0	8.1	8.2	8.3	<10	<10	<10	<10	<10	<5	<5	<5	<5	<5
15/10/2015	21/10/2015	23/10/2015	7.2	7.9	7.8	8.2	8.1	<10	<10	<10	<10	<10	<5	<5	<5	5	8
27/10/2015	3/11/2015	5/11/2015	7.2	7.7	8.0	7.7	8.4	<20	<10	<10	<10	<10	<5	<5	<5	<5	<5
12/11/2015	18/11/2015	19/11/2015	6.9	7.3	8.0	7.8	8.3	<10	<10	<10	<10	<10	<5	5	6	5	<5
26/11/2015	2/12/2015	4/12/2015	7.1	7.4	8.1	8.3	8.4	<10	<10	<10	<10	10.0	<5	<5	<5	13.0	12.0
8/12/2015	16/12/2015	17/12/2015	7.3	7.6	8.1	8.2	8.4	19.0	<10	<10	<10	<10	<5	<5	7.0	<5	15.0
16/12/2015	9/01/2016	18/01/2016	7.5	7.3	7.0	7.1	7.6	63.0	<10	15.0	13.0	<10	7.0	<5	<5	<5	<5
20/01/2016	28/01/2016	28/01/2016	7.1	7.8	8.1	8.2	8.2	<5	<5	<5	<5	6.0	<5	<5	<5	<5	<5
28/01/2016	5/02/2016	5/02/2016	7.5	7.9	8.1	8.0	8.4	<10	<10	<10	<10	<10	<5	<5	<5	<5	<5
10/02/2016	17/02/2016	18/02/2016	7.8	8.1	8.4	8.3	7.9	<10	10.0	6.0	<10	12.0	<5	<5	<5	<5	<5
29/02/2016	7/03/2016	8/03/2016	7.8	8.2	8.1	8.3	8.2	<10	<10	<10	<10	<10	<5	<5	<5	<5	6.0
8/03/2016	16/03/2016	17/03/2016	7.8	8.1	8.0	8.3	7.9	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
31/03/2016	8/04/2016	8/04/2016	7.7	7.9	8.3	8.2	8.3	<10	<10	<10	<10	<10	<5	<5	<5	<5	<5
18/04/2016	26/04/2016	26/04/2016	6.9	7.1	7.1	6.9	7.0	<10	<10	<10	<10	<10	<5	<5	<5	<5	<5
28/04/2016	6/05/2016	6/05/2016	8.0	8.2	8.3	8.4	8.5	<10	<10	5.0	<5	12.0	5.0	7.0	6.0	7.0	<5
18/05/2016	26/05/2016	27/05/2016	7.7	8.2	8.2	8.4	8.3	<10	<10	<10	<10	<10	<5	<5	<5	<5	<5
31/05/2016	10/06/2016	10/06/2016	7.4	7.4	7.5	7.2	7.4	45.0	34.0	50.0	28.0	24.0	<5	<5	<5	<5	<5
20/06/2016	29/06/2016	29/06/2016	7.3	7.8	8.1	8.0	8.2	<10	<10	<10	<10	<10	<5	<5	<5	<5	<5
30/06/2016	11/07/2016	11/07/2016	7.4	8.1	8.1	8.2	8.4	<10	<10	<10	<10	<10	<5	<5	<5	<5	<5
20/07/2016	25/07/2016	1/08/2016	7.1	7.9	8.0	8.1	8.3	<10	<10	<10	<10	<10	<5	<5	<5	<5	<5
27/07/2016	1/08/2016	2/08/2016	7.2	7.9	8.0	8.2	8.3	<10	<10	<10	<10	<10	<5	<5	<5	<5	<5
10/08/2016	19/08/2016	23/08/2016	8.2*	7.6*	7.9	8.2	8.4	<10*	<10*	<10	20.0	<10	<5	<5	<5	<5	<5
29/08/2016	7/09/2016	9/09/2016	7.5	8.0	8.0	8.1	8.3	<10	<10	<10	<10	<10	<5	<5	<5	<5	<5
21/09/2016	30/09/2016	4/10/2016	7.6	8.1	8.1	8.3	8.4	<10	<10	<10	<10	<10	<5	<5	<5	<5	7.0



**Stormwater Monitoring Results - Continued**

Sample Date	Results Obtained	Published	pH					Total Suspended Solids (mg/L)					Oil and Grease (mg/L)				
			1A	1B	2	3	4	1A	1B	2	3	4	1A	1B	2	3	4
28/09/2016	7/10/2016	11/10/2016	7.8	8.1	8.2	8.3	8.4	14.0	<10	<10	<10	<10	<5	5.0	<5	<5	<5
20/10/2016	27/10/2016	31/10/2016	7.9	8.3	8.3	8.5	8.6	11.0	<5	<5	<5	<5	<5	<5	<5	<5	<5
26/10/2016	3/11/2016	10/11/2016	7.6	8.1	8.1	8.3	8.2	<10	<10	<10	<10	<10	<5	<5	<5	<5	<5
9/11/2016	15/11/2016	21/11/2016	7.4	7.6	7.7	7.5	8.3	<10	<10	<10	<10	250 <sup>3</sup>	<5	<5	<5	<5	<5
23/11/2016	1/12/2016	1/12/2016	7.6	8.1	8.3	8.3	8.4	<10	<10	<10	<10	<10	<5	<5	<5	<5	<5
5/12/2016	9/12/2016	9/12/2016	7.3	7.8	7.5	7.5	8.4	<10	<10	<10	<10	<10	<5	<5	<5	<5	<5
14/12/2016	22/12/2016	5/01/2017	7.7	8.1	8.2	8.0	8.4	<10	<10	<10	160.0	<10	<5	<5	<5	<5	<5
18/01/2017	21/01/2016	30/01/2017	7.7	8.0	8.1	8.1	8.3	<10	<10	<10	<10	<10	<5	<5	<5	<5	<5
24/01/2017	1/02/2017	3/02/2017	7.9	8.3	8.3	8.4	8.5	<10	<10	<10	<10	<10	<5	<5	<5	<5	<5
8/02/2017	16/02/2017	17/02/2017	7.6	7.7	8.1	7.8	8.1	<10	<10	<10	<10	<10	<5	<5	<5	<5	<5
27/02/2017	3/03/2017	3/03/2017	8.0	7.8	8.3	8.1	8.4	<10	<10	<10	<10	<10	<5	<5	<5	<5	<5
13/03/2017	23/03/2017	23/03/2017	7.8	6.7	8.2	7.9	8.4	<10	<10	<10	<10	<10	<5	<5	<5	<5	<5
27/03/2017	4/04/2017	10/04/2017	7.4	7.9	8.2	8.2	8.3	<5	<5	<5	6.0	<5	<5	<5	<5	<5	<5
12/04/2017	24/04/2017	24/04/2017	7.2	7.9	8.0	8.3	8.3	<10	<10	<10	19.0	<10	<5	<5	<5	<5	<5
27/04/2017	5/05/2017	8/05/2017	7.4	8.1	8.1	8.3	8.4	<10	<10	<10	52.0	22.0	<5	<5	<5	<5	<5
9/05/2017	18/05/2017	19/05/2017	7.8	8.1	8.0	8.3	8.4	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
24/05/2017	1/06/2017	13/06/2017	6.8	7.2	7.3	7.2	8.2	<5	<5	<5	30.0	5.0	30.0	23.0	140.0	19.0	25.0
14/06/2017	20/06/2017	22/06/2017	6.8	7.5	7.9	8.2	8.3	<5	<5	<5	29.0	<5	6.0	6.0	6.0	<5	<5
27/06/2017	4/07/2017	6/07/2017	7.3	7.4	8.0	8.2	8.4	<5	<5	<5	5.0	7.0	<5	<5	<5	<5	<5
19/07/2017	25/07/2017	27/07/2017	7.0	7.9	7.8	7.7	8.4	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
31/07/2017	8/08/2017	11/08/2017	8.0	8.7	8.5	8.3	8.6	<5	<5	<5	6.0	6.0	<5	<5	<5	<5	<5
10/08/2017	18/08/2017	18/08/2017	8.0	8.2	8.1	7.9	8.4	<5	<5	<5	8.0	<5	<5	<5	<5	8.0	<5
28/08/2017	5/09/2017	8/09/2017	7.5	7.9	7.9	7.7	8.5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
14/09/2017	21/09/2017	22/09/2017	6.6	7.0	7.1	7.7	8.3	<10	<10	<10	<10	<10	<5	<5	<5	7.0	<5

<sup>3</sup> High TSS Levels suspected to have resulted from sediment caught in sampler from the base of the pit, and not representative of actual discharge to stormwater

<sup>4</sup> Elevated oil and grease levels in all drains are suspected to be from a missample of one drain, and contamination of further samples



**Stormwater Monitoring Results - Continued**

Sample Date	Results Obtained	Published	pH					Total Suspended Solids (mg/L)					Oil and Grease (mg/L)				
			1A	1B	2	3	4	1A	1B	2	3	4	1A	1B	2	3	4
26/09/2017	3/10/2017	5/10/2017	7.2	7.8	7.9	8.1	8.4	<10	<10	<10	<10	<10	<5	<5	<5	<5	<5
10/10/2017	17/10/2017	19/10/2017	7.6	8.0	7.8	7.8	8.5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
26/10/2017	1/11/2017	6/11/2017	7.9	7.9	8.1	7.6	8.5	<10	<10	<10	11.0	<5	<5	<5	<5	<5	<5
13/11/2017	20/11/2017	28/11/2017	7.2	7.5	7.9	8.0	8.2	<5	<5	<5	<5	11.0	<5	<5	<5	<5	<5
29/11/2017	7/12/2017	8/12/2017	7.7	7.9	7.9	7.9	8.4	8.0	<5	<5	6.0	14.0	<5	<5	<5	<5	<5
12/12/2017	18/12/2017	22/12/2017	7.5	7.8	7.9	8.0	8.2	<5	<5	<5	8.0	7.0	<5	<5	<5	7.0	<5
21/12/2017	4/01/2017	8/01/2017	7.7	8.1	8.1	8.3	8.5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
23/01/2018	1/02/2018	15/02/2018	7.3	7.9	7.9	7.8	8.1	<5	<5	<5	7.0	<5	<5	<5	<5	<5	<5
14/02/2018	22/02/2018	27/02/2018	7.3	8.1	8.1	8.2	8.5	<5	<5	<5	22.0	8.0	<5	<5	<5	<5	<5
2/03/2018	9/03/2018	23/03/2018	8.0	8.7	8.4	8.3	8.5	<5	<5	<5	9.0	6.0	<5	<5	<5	<5	<5
4/04/2018	12/04/2018	18/04/2018	7.8	8.2	8.3	8.2	8.5	7.0	<5	<5	<5	5.0	<5	<5	<5	<5	<5
16/04/2018	20/04/2018	3/05/2018	7.7	8.3	7.7	8.2	8.5	<5	<5	<5	30.0	48.0	<5	<5	<5	5.0	<5
9/05/2018	17/05/2018	18/05/2018	7.8	8.3	8.5	8.5	8.5	<5	<5	<5	<5	9.0	<5	<5	<5	<5	<5
28/05/2018	4/06/2018	5/06/2018	7.6	8.1	8.2	8.3	8.5	<5	<5	<5	26.0	45.0	<5	<5	<5	<5	<5
29/06/2018	26/06/2018	29/06/2018	7.6	7.5	7.7	7.5	7.3	9.0	14.0	<5	95.0	56.0	<5	<5	<5	6.0	<5
25/06/2018	3/07/2018	5/07/2018	7.4	7.7	7.8	7.7	8.2	8.0	<5	<5	54.0	150.0	<5	<5	<5	<5	<5
12/07/2018	19/07/2018	2/08/2018	7.5	8.1	8.0	8.2	8.4	<5	<5	<5	<5	80.0	<5	<5	<5	<5	<5
26/07/2018	31/07/2018	2/08/2018	7.5	8.1	8.1	8.3	8.4	6.0	<5	8.0	12.0	37.0	<5	<5	<5	<5	<5
9/08/2018	16/08/2018	17/08/2018	7.5	8.0	7.8	8.0	8.4	8.0	<5	8.0	19.0	72.0	<5	<5	<5	<5	<5
30/08/2018	6/09/2018	7/09/2018	8.0	8.2	8.3	8.4	8.6	<5	<5	<5	34.0	66.0	<5	<5	<5	<5	<5
11/09/2018	19/09/2018	28/09/2018	7.5	7.8	8.1	8.0	8.4	<5	<5	<5	8.0	86.0	<5	<5	<5	<5	<5
27/09/2018	8/10/2018	12/10/2018	7.7	7.4	8.0	7.6	8.3	<5	<5	<5	38.0	290.0	<5	<5	<5	6.0	<5
11/10/2018	19/10/2018	25/10/2018	7.2	7.7	7.6	7.7	8.2	16.0	6.0	6.0	67.0	7.0	<5	<5	<5	<5	<5
31/10/2018	8/11/2018	16/11/2018	7.0		8.2	8.1	8.4	10.0		<5	<5	28.0	<5		<5	<5	<5
15/11/2018	22/11/2018	17/11/2018	7.0	7.6	8.1	8.0	8.3	<5	<5	<5	10.0	100.0	<5	<5	<5	<5	20.0
27/11/2018	5/12/2018	14/12/2018	7.4	8.0	8.1	8.3	8.0	15.0	<5	<5	<5	16.0	<5	<5	<5	<5	6.0

Drain 1B was not sampled on 31/10/18 as it was not discharging to stormwater at the time of sampling.

**Correction Log :** Transcription errors indicated a figure of <1 for Total Suspended Solids and Oil and Grease for May 28 2018. These were corrected to <5 on November 27 2018



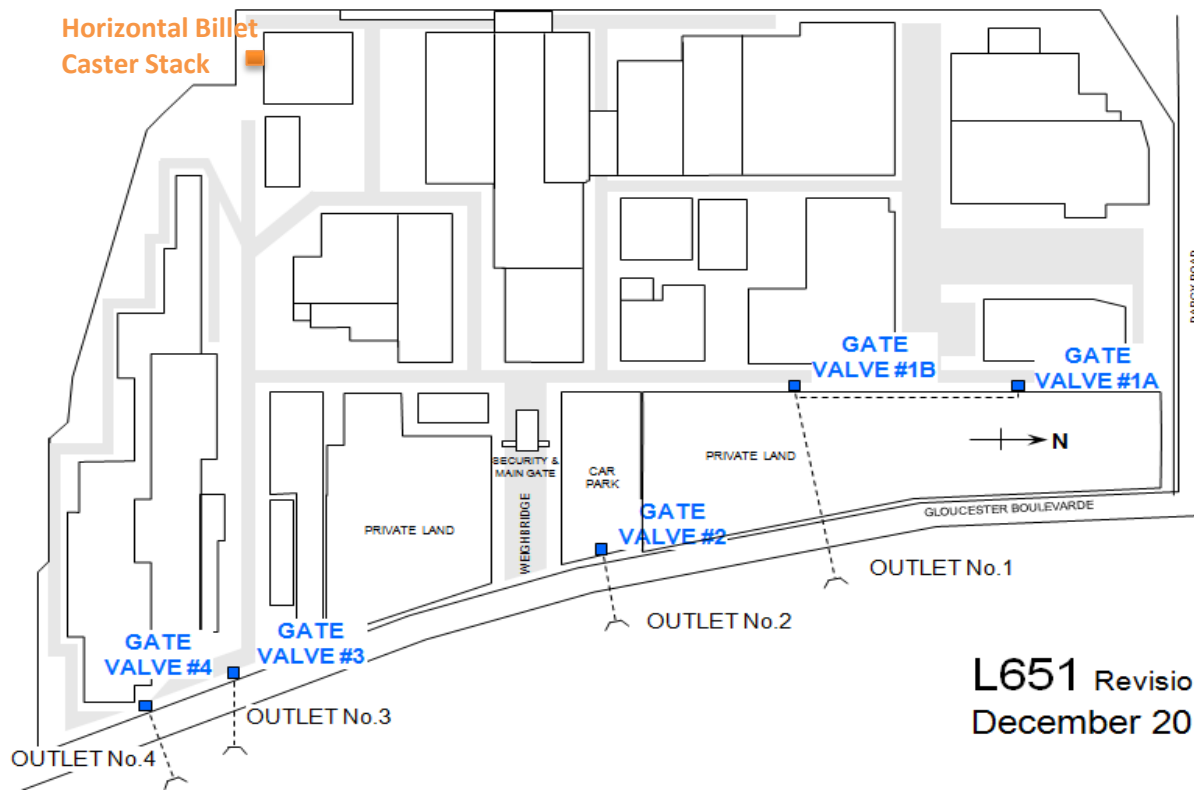
**Stormwater Monitoring Results - Continued**

Sample Date	Results Obtained	Published	pH					Total Suspended Solids (mg/L)					Oil and Grease (mg/L)				
			1A	1B	2	3	4	1A	1B	2	3	4	1A	1B	2	3	4
11/12/2018	18/12/2018	21/12/2018	7.3	8.0	8.3	8.1	8.1	<5	<5	6.0	5.0	22.0	<5	<5	<5	<5	<5
18/12/2018	3/01/2018	7/01/2019	7.2	7.8	8.2	8.1	8.2	<5	<5	<5	15.0	170.0	<5	<5	<5	<5	<5
31/01/2019	8/02/2019	18/02/2019	8.0	8.4	8.4	8.4	8.5	<5	<5	<5	<5	38.0	<5	<5	<5	<5	<5
13/02/2019	14/02/2019	25/02/2019	7.6	8.2	8.5	8.5	8.5	<5	<5	<5	5.0	8.0	<5	<5	<5	<5	7.0
27/02/2019	7/03/2019	11/03/2019	7.6	8.1	8.3	8.1	8.4	<5	<5	<5	5.0	32.0	<5	<5	<5	<5	<5
18/03/2019	26/03/2019	8/04/2019	7.6	7.6	8.1	7.9	8.1	<5	<5	<5	15.0	28.0	<5	<5	<5	<5	<5
25/03/2019	2/04/2019	8/04/2019	7.4	7.9	8.2	8.1	8.4	<5	<5	<5	6.0	6.0	<5	<5	<5	<5	<5
9/04/2019	16/04/2019	18/04/2019	7.6	8.1	8.4	8.3	8.5	<5	<5	<5	8.0	<5	<5	<5	<5	<5	9.0

## Locality map



## Location of sampling points



L651 Revision 0  
December 2010



**Air Emission Monitoring: Horizontal Billet Caster Stack**

Pollutant	100 percentile concentration limit	Units of Measure	Testing Frequency	Sample Date 20 <sup>th</sup> November 2012 <sup>1</sup>	Sample Date 11 <sup>th</sup> February 2013 <sup>2</sup>	Sample Date 9 <sup>th</sup> April 2013 <sup>3</sup>	Sample Date 10 <sup>th</sup> April 2013 <sup>3</sup>
Stack Temperature	-	°C	Special Frequency 3	51	46	82	83
Stack Velocity	-	m/s	-	6.5	5.8	9.5	10
Stack Volumetric Flow	-	m <sup>3</sup> /s	Special Frequency 3	1.7	1.5	2.5	2.6
Moisture	-	%	Special Frequency 3	1.2	0.63	0.74	0.67
Oxygen	-	%	Special Frequency 3	20.7	-	20.6	-
Dioxins & Furans (TEQ)	0.1	ng/m <sup>3</sup>	Special Frequency 2	-	0.41	Particulate 14 Gaseous 3.2	Particulate 11 Gaseous 1.9
Cadmium	0.2	mg/m <sup>3</sup>	Yearly	0.0021	-	0.0079	-
Mercury	0.2	mg/m <sup>3</sup>	Yearly	0.0062	-	0.0028	-
Type 1 Substances	-	mg/m <sup>3</sup>	-	0.0089	-	0.023	-
Total Type 1 + 2 Substances	1	mg/m <sup>3</sup>	Yearly	0.0099	-	0.027	-
Nitrogen Oxides	350	mg/m <sup>3</sup>	Yearly	21	-	18	-
Total Solid Particles	50	mg/m <sup>3</sup>	Special Frequency 2	8.5	-	12	-
VOCs as n-propane	40	mg/m <sup>3</sup>	Yearly	0.26	-	0.17	-
Results Obtained (date)	-	-	-	-	27 <sup>th</sup> March 2013	29 <sup>th</sup> April 2013	29 <sup>th</sup> April 2013
Results Published (date)	-	-	-	-	9 <sup>th</sup> April 2013	30 <sup>th</sup> April 2013	30 <sup>th</sup> April 2013

**Notes: Air Emission**

*Until August 29 2014 Special Frequency 2 means "a single stack test during the months of November 2013, March 2014 and July 2014 when the plant is under design load and normal operations". Special Frequency 3 means "during each stack emission test"*

*Milligrams per cubic metre is abbreviated as mg/m<sup>3</sup>. Nanograms per cubic metre is abbreviated as ng/m<sup>3</sup>.*

*Metres per second is abbreviated as m/s. Cubic metres per second is abbreviated as m<sup>3</sup>/s.*

<sup>1</sup> *Some necessary tests not conducted. Resampled February 2013.*

<sup>2</sup> *Exceedance noted with confirmation tests to be conducted by 11<sup>th</sup> April 2013*

<sup>3</sup> *Test were conducted with agreement from the EPA to verify previous results. During the tests, significant equipment issues were observed and are currently under investigation. The plant is shut until rectification work is completed.*

For further information regarding the exceedance: <http://www.kembla.com.au/environmental>

**Air Emission Monitoring: Horizontal Billet Caster Stack**

Pollutant	100 percentile concentration limit	Units of Measure	Testing Frequency	Sample Date 28 <sup>th</sup> May 2013	Sample Date 30 <sup>th</sup> May 2013	Sample Date 25 <sup>th</sup> June 2013	Sample Date 27 <sup>th</sup> June 2013
Stack Temperature	-	°C	Special Frequency 3	49	46	38	38
Stack Velocity	-	m/s	-	16	14	12	12
Stack Volumetric Flow	-	m <sup>3</sup> /s	Special Frequency 3	5.3	4.7	3.9	3.9
Moisture	-	%	Special Frequency 3	0.59	0.54	2.6	2.5
Oxygen	-	%	Special Frequency 3	20.8	20.9	20.8	20.9
Dioxins & Furans (TEQ)	0.1	ng/m <sup>3</sup>	Special Frequency 2	0.015	0.0076	0.013	0.0071
Cadmium	0.2	mg/m <sup>3</sup>	Yearly	0.000027	0.00043	0.000029	0.000029
Mercury	0.2	mg/m <sup>3</sup>	Yearly	0.0000048	0.00099	0.000076	0.000076
Type 1 Substances	-	mg/m <sup>3</sup>	-	0.0012	0.00022	0.0009	0.002
Total Type 1 + 2 Substances	1	mg/m <sup>3</sup>	Yearly	0.0097	0.0012	0.012	0.012
Nitrogen Oxides	350	mg/m <sup>3</sup>	Yearly	<0.01	<0.037	4.1	4.1
Total Solid Particles	50	mg/m <sup>3</sup>	Special Frequency 2	<0.047	<0.49	6.4	3.6
VOCs as n-propane	40	mg/m <sup>3</sup>	Yearly	0.021	<0.033	0.0002	0.088
Results Obtained (date)	-	-	-	7th June 2013	12th June 2013	8th July 2013	8th July 2013
Results Published (date)	-	-	-	17th June 2013	17th June 2013	8th July 2013	8th July 2013

**Notes: Air Emission**

*Until 29 August 2015 Special Frequency 2 means "a single stack test during the months of November 2013, March 2014 and July 2014 when the plant is under design load and normal operations"*

*Special Frequency 3 means "during each stack emission test"*

*Milligrams per cubic metre is abbreviated as mg/m<sup>3</sup>. Nanograms per cubic metre is abbreviated as ng/m<sup>3</sup>.*

*Metres per second is abbreviated as m/s. Cubic metres per second is abbreviated as m<sup>3</sup>/s.*

**Air Emission Monitoring: Horizontal Billet Caster Stack**

Pollutant	100 percentile concentration limit	Units of Measure	Testing Frequency	Sample Date 29th October 2013	Sample Date 25th February	Sample Date 24th June 2014	Sample Date 5th February 2015
Stack Temperature	-	°C	Special Frequency 3	58	60	51	53
Stack Velocity	-	m/s	-	12	10	10	11
Stack Volumetric Flow	-	m <sup>3</sup> /s	Special Frequency 3	3.9	3.2	3.4	3.6
Moisture	-	%	Special Frequency 3	0.91	0.67	0.57	0.7
Oxygen	-	%	Special Frequency 3	20.8	20.8	20.8	20.9
Dioxins & Furans (TEQ)	0.1	ng/m <sup>3</sup>	Special Frequency 2	0.014	0.015	0.033	0.019
Cadmium	0.2	mg/m <sup>3</sup>	Yearly	-	-	0.00005	0.000016
Mercury	0.2	mg/m <sup>3</sup>	Yearly	-	-	0.012	0.0076
Type 1 Substances	-	mg/m <sup>3</sup>	-	-	-	0.013	0.008
Total Type 1 + 2 Substances	1	mg/m <sup>3</sup>	Yearly	-	-	0.014	0.0085
Nitrogen Oxides	350	mg/m <sup>3</sup>	Yearly	-	-	10	14
Total Solid Particles	50	mg/m <sup>3</sup>	Special Frequency 2	< 0.14	< 0.18	0.59	< 0.24
VOCs as n-propane	40	mg/m <sup>3</sup>	Yearly	-	-	0.036	0.043
Results Obtained (date)	-	-	-	11-Nov-13	18-Mar-13	9-Jul-14	19-Feb-15
Results Published (date)	-	-	-	11-Nov-13	24-Mar-14	10-Jul-14	20-Feb-15

**Notes: Air Emission**

*As of 29 August 2014 Special Frequency 2 means "a single stack test once every six months until July 2015 when the plant is under design load and normal operations"  
Special Frequency 3 means "during each stack emission test"*

*Milligrams per cubic metre is abbreviated as mg/m<sup>3</sup>. Nanograms per cubic metre is abbreviated as ng/m<sup>3</sup>.*

*Metres per second is abbreviated as m/s. Cubic metres per second is abbreviated as m<sup>3</sup>/s.*

**Correction Log** : Total Solid Particles measured on 24th June 2014 were incorrectly reported as 0.059 mg/m<sup>3</sup>. Corrected on July 18 2014.

**Air Emission Monitoring: Horizontal Billet Caster Stack**

Pollutant	100 percentile concentration limit	Units of Measure	Testing Frequency	Sample Date 13th August 2015	Sample Date 6th April 2016	Sample Date 29th March 2017	Sample Date 8th March 2018
Stack Temperature	-	°C	Yearly	40	63	54	59
Stack Velocity	-	m/s	-	10	11	11	11
Stack Volumetric Flow	-	m <sup>3</sup> /s	Yearly	3.4	3.6	3.8	3.7
Moisture	-	%	Yearly	0.8	1.2	0.89	0.63
Oxygen	-	%	Yearly	20.7	20.9	20.8	20.9
Dioxins & Furans (TEQ)	0.1	ng/m <sup>3</sup>	Yearly	0.003	0.024	0.018	0.067
Cadmium	0.2	mg/m <sup>3</sup>	Yearly	0.000017	<0.0001	<0.0001	<0.0002
Mercury	0.2	mg/m <sup>3</sup>	Yearly	0.015	0.024	0.0014	0.004
Type 1 Substances	-	mg/m <sup>3</sup>	-	0.015	≤ 0.027	≤0.0034	≤0.006
Total Type 1 + 2 Substances	1	mg/m <sup>3</sup>	Yearly	0.015	≤ 0.031	≤0.0066	≤0.01
Nitrogen Oxides	350	mg/m <sup>3</sup>	Yearly	8.2	8.2	27	3.9
Total Solid Particles	50	mg/m <sup>3</sup>	Yearly	<0.25	2.3	1.1	1.2
VOCs as n-propane	40	mg/m <sup>3</sup>	Yearly	0.28	0.37	0.12	0.06
Results Obtained (date)	-	-	-	4-Sep-15	29-Apr-16	8-May-17	11-Apr-18
Results Published (date)	-	-	-	14-Sep-15	2-May-16	8-May-17	11-Apr-18

**Notes: Air Emission**

*Special Frequency 3 means "during each stack emission test"*

*Milligrams per cubic metre is abbreviated as mg/m<sup>3</sup>. Nanograms per cubic metre is abbreviated as ng/m<sup>3</sup>.*

*Metres per second is abbreviated as m/s. Cubic metres per second is abbreviated as m<sup>3</sup>/s.*