



Wye Roof Tiles

Environmental Monitoring

Date Published: October 2021



Wye Roof Tiles Environmental Monitoring Report

This monitoring report is to satisfy the requirements of Section 66 (6) of the Protection of the Environment and Operations Act 1997, to make available, within 14 days of request, any monitoring data that relates to pollution under an Environment Protection Licence.

The monitoring of pollutants provided in this report is undertaken as per the requirements of Environment Protection Licence 2702 (EPL 2702 – Boral Wye Roof Tiles).

This report provides environmental monitoring data for Wye Roof Tiles from the period of November 2014 to present day. This report is reviewed monthly during the reporting period and updated if required.

Wye Roof Tiles Information	
Premise Details	Boral – Wye Roof Tiles
Address	288 Tooheys Road East, Bushells Road, Wye NSW, 2259
Licensee	Boral Montoro Pty Ltd
EPL N°	2702
EPL Location	http://www.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=109773&SYSUID=1&LICID=2702

Monitoring data in this report relates to the monitoring undertaken during the annual reporting period for the following environmental pollutants:

- Water Quality
- Water Volume
- Air Quality

EPL 2702 Monitoring Locations

Air

EPA identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
4	Discharge to air Discharge quality monitoring	Discharge to air Discharge quality monitoring	Kiln scrubber stack as identified as LP4 in the document titled "Air Survey Nov 2013" (EPA reference DOC16/495332)
6		Discharge to air	Drier stacks as identified as LP6 in the document titled "Air Survey Nov 2013" (EPA reference DOC16/495332)

Water and land

EPA Identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
1		Discharge to land	Land utilisation area as identified as LP1 in the document titled "Air Survey Nov 2013" (EPA reference DOC16/495332)
2	Effluent quality monitoring		Effluent pond (envirocycle dam) as identified as LP2 in the document titled "Air Survey Nov 2013" (EPA reference DOC16/495332)
3	Effluent volume monitoring		Outlet from effluent pond (envirocycle dam) as identified as LP3 in the document titled "Air Survey Nov 2013" (EPA reference DOC16/495332)
7	Discharge to waters Discharge quality monitoring	Discharge to waters Discharge quality monitoring	Quarry release discharge point (old quarry dam) as identified as LP7 in the document titled "Air Survey Nov 2013" (EPA reference DOC16/495332)

- 1) Water Quality Monitoring is conducted as per condition M2.3 of EPL 2702. The water quality results for the reporting period are tabled below.

POINT 2

Pollutant	Units of measure	Frequency	Sampling Method
BOD	milligrams per litre	Quarterly	Grab sample
pH	pH	Quarterly	Grab sample
Total suspended solids	milligrams per litre	Quarterly	Grab sample

POINT 7

Pollutant	Units of measure	Frequency	Sampling Method
Oil and Grease	milligrams per litre	Daily during any discharge	Grab sample
pH	pH	Daily during any discharge	Grab sample
Total suspended solids	milligrams per litre	Daily during any discharge	Grab sample

Point 2 sampling results

Location	Sample date	Date results received	BOD (mg/L)	pH	TSS (mg/L)	Comments
Envirocycle dam	05/07/2021		2	6.71	66	
Envirocycle dam	01/04/2021		<2	6.95	42	
Envirocycle dam	07/01/2021		10	7.29	93	
Envirocycle dam	06/10/2020		5	7.61	88	
Envirocycle dam	01/07/2020		10	7.75	134	
Envirocycle dam	01/04/2020		45	6.61	32	
Envirocycle dam	06/01/2020		<2	7.29	70	
Envirocycle dam	01/10/2019		<2	8.1	12	
Envirocycle dam	04/07/2019		<2	7.67	18	
Envirocycle dam	02/04/2019		13	6.34	140	
Envirocycle dam	07/01/2019		52	7.1	104	
Envirocycle dam	5/10/2018		41	6.46	202	
Envirocycle dam	3/7/2018		<2	7.45	<5	
Envirocycle dam	4/4/2018		28	6.90	240	
Envirocycle dam	15/1/2018		22	7.33	32	
Envirocycle dam	12/10/2017		<2	6.34	6	
Envirocycle dam	17/07/2017		2	6.56	<5	
Envirocycle dam	18/04/2017		5	6.84	<5	
Envirocycle dam	24/01/2017		11	6.93	6	
Envirocycle dam	20/10/2016		17	6.77	17	
Envirocycle dam	29/07/2016		<2	6	<5	
Envirocycle dam	27/04/2016		<2	6.97	<5	

Wyee Roof Tiles Environmental Monitoring Report

Envirocycle dam	2/02/2016		<2	7.35	13	
Envirocycle dam	15/10/2015		2	6.89	5	
Envirocycle dam	16/07/2015		2	6.98	5	
Envirocycle dam	17/04/2015		2	7.39	5	
Envirocycle dam	22/01/2015		2	7.36	7	

Point 7*

POINT 7

Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile concentration limit
Oil and Grease	milligrams per litre				5
pH	pH				6.0-8.0
Total suspended solids	milligrams per litre				50

Sampling Results

Location	Sampling Date	Results Received	pH (limit 6-8)	TSS (mg/L) Limit 50	Oil & Grease (mg/L) Limit 5	Comments (exceedance only)
Old Quarry Dam (Point 7)	01/09/2021	06/10/2021	6.6	12	<5	
Old Quarry Dam (Point 7)	03/08/2021	09/08/2021	6.6	<5	<5	
Old Quarry Dam (Point 7)	14/07/2021	16/07/2021	6.5	11	<5	
Old Quarry Dam (Point 7)	06/07/21	12/07/21	6.6	7	<5	
Old Quarry Dam (Point 7)	22/06/2021	22/06/2021	6.4	7.9	<5	
Old Quarry Dam (Point 7)	15/06/2021	15/06/2021	6.6	5.6	<5	
Old Quarry Dam (Point 7)	6/07/2021	6/07/2021	6.6	6.3	<5	
Old Quarry Dam (Point 7)	1/06/2021	1/06/2021	6.4	8.7	<5	
Old Quarry Dam (Point 7)	25/05/2021	25/05/2021	6.4	9.3	<5	
Old Quarry Dam (Point 7)	18/05/2021	18/05/2021	6.4	10	<5	
Old Quarry Dam (Point 7)	12/05/2021	12/05/2021	6.2	10	<5	
Old Quarry Dam (Point 7)	30/04/2021	30/04/2021	6.3	8.9	<5	
Old Quarry Dam (Point 7)	26/04/2021	26/04/2021	6.3	2.3	<5	
Old Quarry Dam (Point 7)	15/04/2021	15/04/2021	6.4	5.2	<5	
Old Quarry Dam (Point 7)	5/04/2021	7/04/2021	6.2	9.8	<5	
Old Quarry Dam (Point 7)	28/03/2021	30/03/2021	6.2	12	<5	
Old Quarry Dam (Point 7)	14/03/2021	16/03/2021	6.8	22	<5	
Old Quarry Dam (Point 7)	08/03/2021	10/03/2021	6.8	17	<5	
Old Quarry Dam (Point 7)	22/02/2021	24/02/2021	6.7	33	<5	

Wyee Roof Tiles Environmental Monitoring Report

Old Quarry Dam (Point 7)	14/02/2021	16/02/2021	6.9	45	<5	
Old Quarry Dam (Point 7)	31/01/2021	1/02/2021	6.7	7.1	<5	
Old Quarry Dam (Point 7)	17/01/2021	19/01/2021	6.7	7.7	<5	
Old Quarry Dam (Point 7)	10/01/2021	12/01/2021	6.5	11	<5	
Old Quarry Dam (Point 7)	2/01/2021	4/01/2021	6.9	11	<5	
Old Quarry Dam (Point 7)	12/12/2020	14/12/2020	6.8	12	<5	
Old Quarry Dam (Point 7)	6/12/2020	8/12/2020	6.6	7.4	<5	
Old Quarry Dam (Point 7)	24/11/2020	26/11/2020	7	12	<5	
Old Quarry Dam (Point 7)	17/11/2020	19/11/2020	6.8	17	<5	
Old Quarry Dam (Point 7)	14/11/2020	16/11/2020	6.6	9.4	<5	
Old Quarry Dam (Point 7)	7/11/2020	9/11/2020	6.7	14	<5	
Old Quarry Dam (Point 7)	1/11/2020	2/11/2020	6.6	24	<5	
Old Quarry Dam (Point 7)	26/10/2020	27/10/2020	6.9	12	<5	
Old Quarry Dam (Point 7)	19/10/2020	21/10/2020	7.1	11	<5	
Old Quarry Dam (Point 7)	12/10/2020	14/10/2020	6.6	8	<5	
Old Quarry Dam (Point 7)	29/9/2020	29/9/2020	6.5	16	<5	
Old Quarry Dam (Point 7)	15/9/2020	15/9/2020	6.5	10	<5	
Old Quarry Dam (Point 7)	3/9/2020	3/9/2020	6.7	8	<5	
Old Quarry Dam (Point 7)	1/9/2020	1/9/2020	6.6	5	<5	
Old Quarry Dam (Point 7)	27/8/2020	27/8/2020	6.7	10	<5	
Old Quarry Dam (Point 7)	25/8/2020	25/8/2020	6.7	9	<5	
Old Quarry Dam (Point 7)	30/7/2020	30/7/2020	6.8	6	<5	
Old Quarry Dam (Point 7)	29/7/2020	29/7/2020	6.7	5	<5	

Wyee Roof Tiles Environmental Monitoring Report

Old Quarry Dam (Point 7)	27/7/2020	27/7/2020	6.6	9	<5	
Old Quarry Dam (Point 7)	9/6/2020	9/6/2020	7.2	14	<5	
Old Quarry Dam (Point 7)	18/1/2020	18/1/2020	6.3	37	<5	
Old Quarry Dam (Point 7)	2/10/2019	2/10/2019	6.4	14	<5	
Old Quarry Dam (Point 7)	1/10/2019	1/10/2019	6.4	25	<5	
Old Quarry Dam (Point 7)	27/9/2019	27/9/2019	6.3	5	<5	
Old Quarry Dam (Point 7)	26/9/2019	26/9/2019	6.5	2	<5	
Old Quarry Dam (Point 7)	25/9/2019	25/9/2019	6.4	6	<5	
Old Quarry Dam (Point 7)	24/9/2019	24/9/2019	6.4	6	<5	
Old Quarry Dam (Point 7)	20/9/2019	20/9/2019	6.2	3	<5	
Old Quarry Dam (Point 7)	19/9/2019	19/9/2019	6.3	<2	<5	
Old Quarry Dam (Point 7)	18/9/2019	18/9/2019	6.4	4	<5	
Old Quarry Dam (Point 7)	17/9/2019	17/9/2019	6.4	2	<5	
Old Quarry Dam (Point 7)	16/9/2019	16/9/2019	6.4	<2	<5	
Old Quarry Dam (Point 7)	15/9/2019	15/9/2019	6.3	2	<5	
Old Quarry Dam (Point 7)	14/9/2019	14/9/2019	6.4	2	<5	
Old Quarry Dam (Point 7)	13/9/2019	13/9/2019	6.4	<2	<5	
Old Quarry Dam (Point 7)	12/9/2019	12/9/2019	6.4	2	<5	
Old Quarry Dam (Point 7)	11/9/2019	11/9/2019	6.5	5	<5	
Old Quarry Dam (Point 7)	10/9/2019	10/9/2019	6.4	6	<5	
Old Quarry Dam (Point 7)	6/9/2019	6/9/2019	6.4	5	<5	
Old Quarry Dam (Point 7)	5/9/2019	5/9/2019	6.6	6	<5	
Old Quarry Dam (Point 7)	4/9/2019	4/9/2019	6.5	8	<5	
Old Quarry Dam (Point 7)	3/9/2019	3/9/2019	6.4	11	<5	

Wyee Roof Tiles Environmental Monitoring Report

Old Quarry Dam (Point 7)	2/9/2019	2/9/2019	6.6	7	<5	
Old Quarry Dam (Point 7)	30/8/2019	30/8/2019	6.7	<2	<5	
Old Quarry Dam (Point 7)	30/7/2019	30/7/2019	6.5	<2	<5	
Old Quarry Dam (Point 7)	26/7/2019	26/7/2019	6.6	3	<5	
Old Quarry Dam (Point 7)	25/7/2019	25/7/2019	6.5	<2	<5	
Old Quarry Dam (Point 7)	24/7/2019	24/7/2019	6.66	<2	<5	
Old Quarry Dam (Point 7)	23/7/2019	23/7/2019	6.6	<2	<5	
Old Quarry Dam (Point 7)	21/7/2019	21/7/2019	6.6	<2	<5	
Old Quarry Dam (Point 7)	20/7/2019	20/7/2019	6.6	<2	<5	
Old Quarry Dam (Point 7)	19/7/2019	19/7/2019	6.7	<2	<5	
Old Quarry Dam (Point 7)	17/7/2019	17/7/2019	6.7	<2	<5	
Old Quarry Dam (Point 7)	16/7/2019	16/7/2019	6.7	3	<5	
Old Quarry Dam (Point 7)	15/7/2019	15/7/2019	6.8	3	<5	
Old Quarry Dam (Point 7)	12/7/2019	12/7/2019	6.7	2	<5	
Old Quarry Dam (Point 7)	26/6/2019	26/6/2019	6.66	6	<5	
Old Quarry Dam (Point 7)	23/5/2019	31/5/2019	6.7	<2	<5	
Old Quarry Dam (Point 7)	22/5/2019	31/5/2019	6.7	<2	<5	
Old Quarry Dam (Point 7)	21/5/2019	31/5/2019	6.7	<2	<5	
Old Quarry Dam (Point 7)	20/5/2019	31/5/2019	6.6	<2	<5	
Old Quarry Dam (Point 7)	19/5/2019	31/5/2019	6.4	<2	<5	
Old Quarry Dam (Point 7)	18/5/2019	31/5/2019	6.5	3	<5	
Old Quarry Dam (Point 7)	17/5/2019	31/5/2019	6.7	<2	<5	
Old Quarry Dam (Point 7)	16/5/2019	31/5/2019	6.7	2	<5	
Old Quarry Dam (Point 7)	15/5/2019	31/5/2019	6.8	<2	<5	

Wyee Roof Tiles Environmental Monitoring Report

Old Quarry Dam (Point 7)	14/5/2019	31/5/2019	7.1	<2	<5	
Old Quarry Dam (Point 7)	10/5/2019	31/5/2019	6.8	<2	<5	
Old Quarry Dam (Point 7)	9/5/2019	31/5/2019	6.7	<2	<5	
Old Quarry Dam (Point 7)	8/5/2019	31/5/2019	6.6	<2	<5	
Old Quarry Dam (Point 7)	7/5/2019	31/5/2019	6.5	<2	<5	
Old Quarry Dam (Point 7)	6/5/2019	31/5/2019	6.6	<2	<5	
Old Quarry Dam (Point 7)	5/5/2019	31/5/2019	6.6	<2	<5	
Old Quarry Dam (Point 7)	4/5/2019	31/5/2019	6.4	<2	<5	
Old Quarry Dam (Point 7)	3/5/2019	31/5/2019	6.4	3	<5	
Old Quarry Dam (Point 7)	2/5/2019	31/5/2019	6.4	4	<5	
Old Quarry Dam (Point 7)	1/5/2019	31/5/2019	6.5	<2	<5	
Old Quarry Dam (Point 7)	30/4/2019	31/5/2019	6.5	<2	<5	
Old Quarry Dam (Point 7)	23/4/2019	2/5/2019	6.7	4	<5	
Old Quarry Dam (Point 7)	22/4/2019	2/5/2019	6.5	<2	<5	
Old Quarry Dam (Point 7)	21/4/2019	2/5/2019	6.4	<2	<5	
Old Quarry Dam (Point 7)	20/4/2019	2/5/2019	6.5	<2	<5	
Old Quarry Dam (Point 7)	19/4/2019	2/5/2019	6.4	<2	<5	
Old Quarry Dam (Point 7)	18/4/2019	30/4/2019	6.4	<2	<5	
Old Quarry Dam (Point 7)	17/4/2019	30/4/2019	6.3	<2	<5	
Old Quarry Dam (Point 7)	16/4/2019	30/4/2019	6.5	<2	<5	
Old Quarry Dam (Point 7)	15/4/2019	30/4/2019	6.4	<2	<5	
Old Quarry Dam (Point 7)	13/4/2019	30/4/2019	6.4	<2	<5	
Old Quarry Dam (Point 7)	12/4/2019	29/4/2019	6.4	<2	<5	
Old Quarry Dam (Point 7)	11/4/2019	23/4/2019	6.5	2	<5	

Wyee Roof Tiles Environmental Monitoring Report

Old Quarry Dam (Point 7)	10/4/2019	23/4/2019	6.6	2	<5	
Old Quarry Dam (Point 7)	8/4/2019	15/4/2019	6.5	<2	<5	
Old Quarry Dam (Point 7)	5/4/2019	15/4/2019	6.4	<2	<5	
Old Quarry Dam (Point 7)	4/4/2019	12/4/2019	6.4	<2	<5	
Old Quarry Dam (Point 7)	3/4/2019	11/4/2019	6.5	<2	<5	
Old Quarry Dam (Point 7)	2/4/2019	11/4/2019	6.4	<2	<5	
Old Quarry Dam (Point 7)	1/4/2019	11/4/2019	6.5	<2	<5	
Old Quarry Dam (Point 7)	28/3/2019	10/4/2019	6.5	<2	<5	
Old Quarry Dam (Point 7)	27/3/2019	10/4/2019	6.6	2	5	
Old Quarry Dam (Point 7)	26/3/2019	5/4/2019	6.6	2	<5	
Old Quarry Dam (Point 7)	25/3/2019	4/4/2019	6.3	3	<5	
Old Quarry Dam (Point 7)	22/3/2019	3/4/2019	6.8	3	<5	
Old Quarry Dam (Point 7)	21/3/2019	29/3/2019	6.8	<2	<5	
Old Quarry Dam (Point 7)	19/3/2019	28/3/2019	6.7	5	<5	
Old Quarry Dam (Point 7)	14/3/2019	28/3/2019	6.5	2	<5	
Old Quarry Dam (Point 7)	13/3/2019	19/3/2019	6.8	3	<5	
Old Quarry Dam (Point 7)	12/3/2019	19/3/2019	6.9	4	<5	
Old Quarry Dam (Point 7)	11/3/2019	19/3/2019	7.0	7	<5	
Old Quarry Dam (Point 7)	8/3/2019	20/3/2019	6.8	6	<5	
Old Quarry Dam (Point 7)	6/3/2019	8/3/2019	7.0	7	<5	
Old Quarry Dam (Point 7)	7/1/2019	7/1/2019	6.8	13	<5	
Old Quarry Dam (Point 7)	29/6/2018	29/6/2018	6.7	3	<5	
Old Quarry Dam (Point 7)	9/5/2018	9/5/2018	6.6	4	<5	
Old Quarry Dam (Point 7)	3/08/2017	10/08/2017	6.6	2	<5	

Wyee Roof Tiles Environmental Monitoring Report

Old Quarry Dam (Point 7)	17/07/2017	24/07/2017	6.7	18	<5	
Old Quarry Dam (Point 7)	20/06/2017	22/06/2017	6.9	13	<5	
Old Quarry Dam (Point 7)	18/05/2017	30/05/2017	7.1	16	<5	

*Point 7 monitoring location was moved to the Old Quarry Dam on 29 March 2017 as part of s. 58 licence variation. Special Frequency 1 means grab sample prior to discharge.

L4.1 For each discharge point or utilisation area specified below (by a point number), the volume/mass of:
a) liquids discharged to water; or;
b) solids or liquids applied to the area;
must not exceed the volume/mass limit specified for that discharge point or area.

Point	Unit of Measure	Volume/Mass Limit
1	litres per day	7500

This point relates to the irrigation (discharge to land) of envirocycle water within the approved area which currently is logged daily. The current capacity of the irrigation pumps cannot exceed the daily volume with the typical maximum when irrigating 4000L per day. Should day by day volumes are require please contact the site directly on (02) 4399 8668.

Air Quality

- 1) Air Quality Monitoring is conducted as per condition M2.2 of EPL 2702. The air quality results for the reporting period are tabled below.

POINT 4

Pollutant	Units of measure	Frequency	Sampling Method
Fluoride	milligrams per cubic metre	Yearly	TM-9
Nitrogen Oxides	grams per cubic metre	Yearly	TM-11
Sulphur dioxide	milligrams per cubic metre	Yearly	TM-4
Sulphur trioxide	milligrams per cubic metre	Yearly	TM-3
Total Solid Particles	milligrams per cubic metre	Yearly	TM-15

Air Quality Data 2021

Table 4.2: Results for Kiln Scrubber Stack

Parameter	Unit	Result Run 1	Result Run 2	Result Run 3
Date	-	16/09/2021	16/09/2021	16/09/2021
Time	-	9:18 – 10:18	10:55 – 11:55	12:20 – 13:20
Temperature	°C	140	140	140
Carbon dioxide	%	2.6	2.6	2.6
Oxygen	%	16.35	16.35	16.35
Moisture content	%	0.2	0.8	0.29
Molecular weight dry	g/g mole	28.95	28.95	28.89
Velocity at sampling plane	m/s	9.01	9.03	8.76
Volumetric flow rate (wet, actual)	m ³ /min	399.45	400.2	388.19
Volumetric flow rate (dry, STP)	m ³ /min	258.06	256.6	254.9
Analytes tested	-	F	SO ₂ & SO ₃	HCL & TPM

Table 4.3 shows the isokinetic results of testing.

Table 4.3: Results for Kiln Scrubber Stack

Pollutant	Run	Isokinetic rate (%)	Concentration mg/m ³	Emission rate g/s	Limit	Compliant with Limit
Total particulate matter	3	107.4	5	0.021	50 mg/m ³	✓
Hydrogen Chloride (HCl)			11.3	0.048	N/A	N/A
Sulphur Dioxide (SO ₂)	2	98.8	<14	<0.06	50 mg/m ³	✓
Sulphur Trioxide (SO ₃)			<3	<0.01	50 mg/m ³	✓
Total Fluoride (F)	1	105	1.81	0.008	50 mg/m ³	✓
Nitrogen Oxide (NO _x)			39.5	0.17	500 mg/m ³	✓
Carbon Monoxide (CO)			81.8	0.35	N/A	N/A

Table 4.2 shows the volumetric and continuous gaseous parameters measured during testing.

Table 4.2: Results for Kiln Scrubber Stack

Parameter	Unit	Result Run 1	Result Run 2	Result Run 3	Result Run 4
Date	-	22/09/2020	22/09/2020	22/09/2020	13/10/2020
Time	-	10:06-11:06	12:25-13:25	14:00-15:00	10:00-11:00
Temperature	°C	155	154.74	163	137.9
Carbon dioxide	%	0.98	0.98	0.69	0.69
Oxygen	%	19.73	19.73	19.52	19.52
Moisture content	%	0.1	1.8	3.4	0.81
Molecular weight dry	g/g mole	28.95	28.95	28.89	28.89
Velocity at sampling plane	m/s	9.65	9.47	9.5	9.61
Volumetric flow rate (wet, actual)	m ³ /min	427	419.69	421	426
Volumetric flow rate (dry, STP)	m ³ /min	252	257.8	255	280
Analytes tested	-	F	SO ₂	HCL & TPM	SO ₃

Table 4.3 shows the isokinetic results of testing.

Table 4.3: Results for Kiln Scrubber Stack

Pollutant	Run	Isokinetic rate (%)	Concentration mg/m ³	Emission rate g/s	Limit	Compliant with Limit
Total particulate matter	3	100.3	5	0.021	50 mg/m ³	✓
Hydrogen Chloride (HCl)			19	0.079	N/A	N/A
Sulphur Dioxide (SO ₂)	2	101.7	12.97	0.006	50 mg/m ³	✓
Sulphur Trioxide (SO ₃)	4	94.6	2.6	0.011	50 mg/m ³	✓
Total Fluoride (F)	1	104	0.76	0.0034	50 mg/m ³	✓
Nitrogen Oxide (NO _x)			35.4	0.15	500 mg/m ³	✓
Carbon Monoxide (CO)			7.5	0.033	N/A	N/A

Table 4.2 shows the volumetric and continuous gaseous parameters measured during testing.

Table 4.2: Results for Kiln Scrubber Stack

Parameter	Unit	Result Run 1	Result Run 2	Result Run 3	Result Run 4
Date	-	05/11/2019	05/11/2019	06/11/2019	06/11/2019
Time	-	10:06-11:06	11:56-13:12	08:42-09:42	10:53-11:53
Temperature	°C	146	148	146	150
Carbon dioxide	%	0.69	0.69	0.69	0.69
Oxygen	%	19.5	19.5	19.5	19.5
Moisture content	%	1.7	3.6	3.5	3.6
Molecular weight dry	g/g mole	29	29	29	29
Velocity at sampling plane	m/s	9.0	8.9	8.8	11
Volumetric flow rate (wet, actual)	m ³ /min	400	390	390	490
Volumetric flow rate (dry, STP)	m ³ /min	250	250	250	300
Analytes tested	-	F	PM10	HCL & TPM	SO ₂

Table 4.3 shows the isokinetic results of testing.

Table 4.3: Results for Kiln Scrubber Stack

Pollutant	Run	Isokinetic rate (%)	Concentration mg/m ³	Emission rate g/s	Limit	Compliant with Limit
Total particulate matter	1	94	9.1	0.037	50 mg/m ³	✓
Hydrogen Chloride (HCl)			21	0.085	N/A	N/A
PM10	2	106	1.6	0.0065	N/A	N/A
Sulphur Dioxide (SO ₂)	3	103	21	0.10	50 mg/m ³	✓
Sulphur Trioxide (SO ₃)			8.4	0.042	50 mg/m ³	✓
Total Fluoride (F)	4	107	0.16	0.00065	50 mg/m ³	✓
Nitrogen Oxide (NO _x)			37	0.17	500 mg/m ³	✓
Carbon Monoxide (CO)			18	0.08	N/A	N/A

Air Quality Data 2018

Assured Monitoring Group (AMG) conducted source emissions monitoring at the Boral Roofing facility located at Wyee, NSW on the 21st & 22nd March 2018.

A summary of results is presented below, for further details please refer to the body of this report. **No licence limit exceedances were recorded.**

Table 3: Summary of results – Kiln stack (EPA Point 4)

Release Point Parameter	Unit of Measure	Kiln Stack - EPA Point 4	Licence Limit
Date of testing	dd-mm-yy	21/03/2018	-
Average exhaust Velocity	m/sec	15.8	-
Average stack temperature	°C	143	-
Moisture	%	8.53	-
Dry standard stack flow rate	Nm ³ /sec	7.12	-
Total solid particulates	mg/Nm ³	3.03	50
emission rate	g/sec	0.021	-
PM ₁₀	mg/Nm ³	2.27	-
emission rate	g/sec	0.016	-
Sulphur dioxide	mg/Nm ³	48.6	50
emission rate	g/sec	0.342	-
Sulphur trioxide (as H ₂ SO ₄)	mg/Nm ³	15.2	50
emission rate	g/sec	0.107	-
Carbon monoxide	mg/Nm ³	80.1	-
emission rate	g/sec	0.563	-
Oxides of nitrogen (NO ₂)	mg/Nm ³	74.5	500
emission rate	g/sec	0.524	-
Total Fluorides	mg/Nm ³	14.2	50
emission rate	g/sec	0.103	-
Hydrogen Chloride (HCl)	mg/Nm ³	22.3	-
HCl emission rate	g/sec	0.156	-

Air Quality Data 2017

Assured Monitoring Group (AMG) conducted source emissions monitoring at the Boral Roofing facility located at Wyee, NSW on the 18th & 19th July 2017.

A summary of results is presented below, for further details please refer to the body of this report.
No licence limit breaches were recorded.

Table 3: Summary of results – Kiln stack (EPA Point 4)

Release Point Parameter	Unit of Measure	Kiln Stack - EPA Point 4	Licence Limit
Date of testing	dd-mm-yy	18/07/2017	-
Average exhaust Velocity	m/sec	14.4	-
Average stack temperature	°C	150	-
Moisture	%	5.89	-
Dry standard stack flow rate	Nm ³ /sec	6.50	-
Total solid particulates	mg/Nm ³	39.76	50
emission rate	g/sec	0.256	-
PM ₁₀	mg/Nm ³	30.6	-
emission rate	g/sec	0.197	-
Sulphur dioxide	mg/Nm ³	8.31	50
emission rate	g/sec	0.0536	-
Sulphur trioxide (as H ₂ SO ₄)	mg/Nm ³	19.34	20
emission rate	g/sec	0.125	-
Carbon monoxide	mg/Nm ³	25.2	-
emission rate	g/sec	0.162	-
Oxides of nitrogen (NO ₂)	mg/Nm ³	43.96	500
emission rate	g/sec	0.283	-
Total Fluorides	mg/Nm ³	2.59	50
emission rate	g/sec	0.0170	-

Assured Monitoring Group (AMG) conducted source emissions monitoring at the Boral Roofing facility located at Wyee, NSW on the 19th & 20th July 2016.

A summary of results is presented below, for further details please refer to the body of this report. **No licence limit breaches were recorded.**

Table 3: Summary of results – Kiln stack (EPA Point 4)

Release Point Parameter	Unit of Measure	Kiln stack - EPA Point 4	Licence Limit
Date of testing	dd-mm-yy	19/07/2016	-
Average exhaust Velocity	m/sec	17	-
Average stack temperature	°C	151	-
Moisture	%	5.2	-
Dry standard stack flow rate	Nm ³ /sec	7.8	-
Total solid particulates	mg/Nm ³	24	250
emission rate	g/sec	0.19	-
PM ₁₀	mg/Nm ³	6.8	-
emission rate	g/sec	0.053	-
Sulphur dioxide	mg/Nm ³	29	-
emission rate	g/sec	0.23	-
Sulphur trioxide (as H ₂ SO ₄)	mg/Nm ³	6.7	-
emission rate	g/sec	0.053	-
Carbon monoxide	mg/Nm ³	33	-
emission rate	g/sec	0.25	-
Oxides of nitrogen (NO ₂)	g/Nm ³	0.055	2.5
emission rate	g/sec	0.43	-
Total Fluorides	mg/Nm ³	10	50
emission rate	g/sec	0.079	-