



Wednesday, 30 March 2022

Sally Munk

Principal Planning Officer - Industry Assessments

Planning Services Division - NSW Department of Planning and Environment

(By email to Sally.Munk@planning.nsw.gov.au)

Boral Cement Limited

ABN 62 008 528 523

Level 18, 15 Blue Street
North Sydney, NSW 2060

PO Box 1228

North Sydney, NSW 2059

T: +61 (02) 9220 6300

F: +61 (02) 9233 6605

boral.com.au

Dear Sally

Boral Berrima Cement (DA 401-11-2002-i) – Request to increase Feed Rate of SWDF – Request for Additional Information

I refer to your letter dated 22 September 2021 and a request from the EPA for Boral to undertake further Proof of Performance testing when using SWDF between 40 and 50% along with a request to provide a report into the performance of the electrostatic precipitator (ESP).

High Rate 40 – 50% SWDF PoPT

In their recommendation, the EPA requested the following additional PoP Trials be undertaken.

SWDF Type	% of total SWDF by mass	Number of stack testing events
WW (high feed rate)	40 – 50%	1
RDF (high feed rate)	40 – 50%	3
Combined WW and RDF (high feed rate)	40 – 50%	1

Boral has completed three additional high rate RDF trials with associated PoPT reports attached. A summary of the stack emission results is outlined below in Table 1. There were no exceedances reported during the trials.

Table 1: High Rate RDF PoPT Stack Test Results

Date tested			6-9/10/21 11/10/21 13/10/21	6-9/10/21 11/10/21 13/10/21	2-4/11/21
Parameter	Unit	Limits	Trial 1	Trial 2	Trial 3
Mercury	mg/m3	0.05	0.0083	0.0083	0.0085
Type 1 and type 2 substances	mg/m3	0.5	≤0.031	≤0.031	≤0.023
Solid particles	mg/m3	50	20	20	12
Nitrogen oxides	mg/m3	1250	730	730	890
Cadmium and Thallium	mg/m3	0.05	<0.0009	<0.0011	≤0.00078
Chlorine	mg/m3	50	<0.009	<0.009	<0.008
Dioxind and Furans (I-TEQ middle bound)	ng/m3	0.1	0.0029	0.0029	0.00036
Hydrogen chloride	mg/m3	10	0.17	0.17	0.14
Hydrogen fluoride	mg/m3	1	<0.02	<0.02	<0.02
Sulfur dioxide	mg/m3	50	≤0.021	≤0.021	≤0.021
Sulfuric acid mist and sulfur trioxide	mg/m3	50	0.5	0.5	3.1
Volatiles organic compounds	mg/m3	40	2.3	2.3	3.1

Boral sees little value in undertaking high rate WW and combined WW and RDF trials as the RDF is the fuel which has potential to impact emissions (high metals). Note each stack emission test is circa \$20,000.

Table 2 below is a summary of the chemical analysis of the wood waste compared to the RDF received in October and November 2021. RDF is typically 90% biomass i.e. wood waste. Table 3 is our current SWDF fuel specification for metals.

Table 2: RDF and WW Fuel Chemical Analysis October 2021 and November 2021

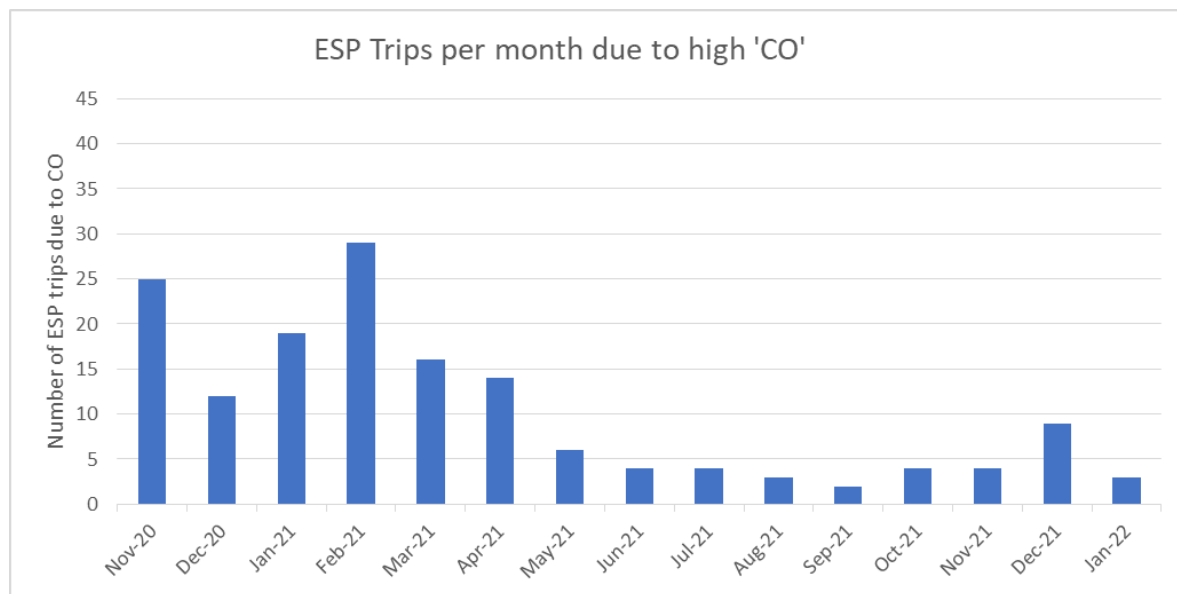
Metals	Trace Metals mg/kg			
	RDF		WW	
	Oct-2021	Nov-2021	Oct-2021	Nov-2021
As	35	53	31	34
Be	<1	<1	<1	<1
Cd	1	<1	<1	<1
Cr	58	82	50	49
Co	2	2	1	1
Cu	40	62	26	40
Hg	0.06	0.06	<0.05	<0.05
Mn	51	55	50	76
Ni	3	2	2	2
Pb	28	139	36	3
Sb	4	3	<1	22
Se	<1	<1	<1	<1
Sn	3	3	2	2
Tl	<1	1	<1	1
V	2	2	3	3

Table 3: SWDF Fuel Specification for metals

Mercury (Hg) (mg/kg)	≤1.2
Cadmium (Cd) (mg/kg)	≤20
Thallium (Tl) (mg/kg)	≤20
Total Group II metals (mg/kg)	≤30
Cadmium (Cd) + Thallium (Tl)	
Copper (mg/kg)	≤1000
Lead (mg/kg)	≤1000
Total Group III metals (mg/kg)	≤3000
Antimony (Sb) + Arsenic (As) + Cobalt (Co) + Copper (Cu) + Chromium (Cr) + Lead (Pb) + Manganese (Mn) + Nickel (Ni) + Vanadium (V)	

ESP Performance

Prior to receiving the request for details on the performance of the ESP, Boral had already been investigating and making improvements to processes and procedures to reduce trips. A report of this work and findings is attached. Since May 2021 ESP trips have reduced significantly and in the majority of instances are now occurring during the unstable conditions during kiln start up or shut down when SWDF is not in use.



If you or the EPA require any further information or clarification, we are willing to meet to discuss. I can be contacted on 0401 893 420 or by email greg.johnson@boral.com.au.

Regards

Greg Johnson



Environmental Sustainability Manager – Boral Cement