



Our reference: EF13/2676:DOC15/286517-21:MF  
Contact: Matt Fuller (02) 4224 4100

Department of Planning and Environment  
(Attention: Sally Munk)  
GPO Box 39  
SYDNEY NSW 2001

Dear Ms Munk

**DA 401-11-2002 MOD 9 – ENVIRONMENTAL ASSESSMENT - AIR QUALITY IMPACT ASSESSMENT  
BORAL CEMENT – BERRIMA – USE OF WASTE DERIVED FUELS**

I am writing in response to your letter to the Environment Protection Authority (EPA) dated 30 July 2015 seeking comments on the above application to modify an existing development consent at Boral Cement's Berrima plant. This application included an Environmental Assessment (EA) and various supporting reports.

During the exhibition period additional documents were also prepared in discussion with the Department of Planning and Environment (DPE), EPA and the proponent. These related to a Technology/Engineering Assessment (TEA) and a Human Health Risk Assessment (HHRA). The TEA and HHRA are currently the subject of a review by independent experts engaged by DPE and EPA. Given this situation, the EPA is providing its response to DPE, in a staged manner, to assist the Department in its determination of this proposal. On 17 September 2015, the EPA provided DPE with comments on the proposal relating to Waste and compliance with the *NSW Energy from Waste Policy Statement*.

Following further assessment of the EA, the EPA provides comments on the Air Quality Impact Assessment in **Attachment A** to this letter. The EPA may have additional comments on these matters upon receipt and review of further information. The EPA may also provide an additional response to DPE upon completion of the independent reviews of the HHRA and TEA.

As discussed with DPE on 25 September 2015, the EPA is available to meet with Boral and DPE at a mutually convenient time, to discuss our responses on this development modification.

If you have questions regarding the above please phone the contact, Matt Fuller on (02) 4224 4100.

Yours sincerely

A handwritten signature in black ink, appearing to read 'PB', written over the typed name Peter Bloem.

20/10/15

**PETER BLOEM**  
**Manager Illawarra**  
**Environment Protection Authority**

Att

## ATTACHMENT A

### EPA comments on the EA in relation to the Air Quality Impact Assessment

#### **1. Insufficient demonstration Kiln 6 will achieve emission limits under Modification 9**

The Air Quality Impact Assessment (Air Quality Professionals (AQP) 2015) focuses on demonstrating the acceptable air quality impact of the plant operating at the proposed emission limits. There is, however, limited discussion regarding the ability of Kiln 6 to achieve the emission limits when operating under Modification 9. Emissions data from comparable plant burning comparable fuels should be presented to demonstrate the ability of Kiln 6 to achieve the emission limits.

***The EPA recommends the proponent be requested to demonstrate Kiln 6 will achieve the emission limits under Modification 9, including presenting emissions data from a comparable plant burning comparable fuels.***

#### **2. Insufficient demonstration VOC's are associated with the blue shale raw material**

Boral are proposing to increase the volatile organic compounds (VOC) emission limit from 20ppm to 40ppm as non-methane volatile organic compounds. The supporting documentation (SLR 2015) states that the VOC emissions from Kiln 6 are not associated with the combustion of fuels but rather are associated with the natural composition of onsite blue shale used as a raw material in Kiln 6.

To support this position SLR (2015) presents VOC monitoring results during the production of off-white clinker (with non-blue shale) and also during the substitution of some blue shale with Granulated Blast Furnace Slag (GBFS). The VOC levels were reduced or eliminated during the GBFS trial. One trial, however, is not sufficient to demonstrate the kiln continually achieves a sustained reduction or elimination in VOC levels during the use of GBFS.

***The EPA agrees with Boral's position that non-methane VOC's as propane is the appropriate VOC to measure compliance as this is consistent with the Clean Air Regulation definition, clause 31.***

***The EPA considers further information needs to be presented to support the position that VOC emissions from Kiln 6 are associated with the natural composition of onsite blue shale used as a raw material. It needs to be demonstrated that Kiln 6 continually achieves a sustained reduction in VOC levels when blue shale is substituted with other raw materials.***

#### **3. Insufficient justification for a 24 hour averaging period for NO<sub>x</sub>**

Boral are seeking a 24 hour instead of a 1 hour averaging period for NO<sub>x</sub> emissions from Kiln 6. The AQP (2015) has adequately demonstrated that there is a minimal risk the EPA's 1 hour average NO<sub>2</sub> impact assessment criteria will be exceeded at any time where emissions are at or below the levels modelled. Boral state there are significant hourly variations in NO<sub>x</sub> which are not reflective of the environmental impact of the kiln emissions. Boral considers there should be consistency of averaging periods across monitoring of all pollutants and therefore requests a 24 hour NO<sub>x</sub> averaging period be used.

The EPA does not consider that 'Consistency' is a sufficient justification to change the averaging period for Kiln 6 NO<sub>x</sub> emissions. Averaging periods should be reflective of the time scale of potential health impacts. As the NSW EPA has a 1 hour average NO<sub>2</sub> impact assessment criteria, then a 1 hour average NO<sub>x</sub> emission limit is appropriate. Likewise, as there is a 24 hour average PM<sub>10</sub> impact assessment criteria, a 24 hour averaging period for solid particle emissions is appropriate.

The EPA considers it is appropriate for the consent and Environment Protection Licence (EPL) to retain a 1 hour averaging period for the Kiln 6 NO<sub>x</sub> emission limit. Where necessary, the NO<sub>x</sub> emission limit could be increased and the hourly averaging period retained (subject to appropriate assessment of any increase) instead of retaining the existing limit and increasing the averaging period to 24 hours. With a 24 hour

averaging period uncertainty remains regarding the protection of human health impacts on the smaller time scales.

***The EPA recommends the proponent is advised that it is considered appropriate that a 1 hour average NO<sub>x</sub> limit for Kiln 6 is retained in the consent and EPL. Consideration could be given to an appropriately assessed and justified increase in the NO<sub>x</sub> emission limit.***

#### **4. No evidence NO<sub>x</sub> emissions have been minimised as far as practicable**

Kiln 6 NO<sub>x</sub> emissions of approximately 1000mg/Nm<sup>3</sup> are not comparable to Best Available Techniques (BAT) which according to the EU Industrial Emissions Directive<sup>1</sup> is 500 mg/Nm<sup>3</sup>. Achieving a NO<sub>x</sub> emission limit of 500mg/Nm<sup>3</sup> would require post combustion control technology. Boral have not presented detailed information regarding the feasibility of NO<sub>x</sub> post combustion control technology on Kiln 6. Additionally, it is unclear if NO<sub>x</sub> emissions have been minimised as far as practicable through the implementation of relevant primary control techniques.

***The proponent should be requested to present a feasibility assessment of NO<sub>x</sub> post combustion control technology for Kiln 6 and demonstrate that Kiln 6 NO<sub>x</sub> emissions have been minimised as far as practicable through the implementation of all available primary NO<sub>x</sub> control techniques.***

#### **5. Solid particle emissions unlikely to comply with a 24 hour average limit of 50 mg/Nm<sup>3</sup>**

Boral are seeking a 24 hour average solid particles emission limit of 50mg/Nm<sup>3</sup> for the No 6 Kiln. The 2012 and 2013 continuous monitoring data (Table 25 in AQP, 2015) shows the No 6 kiln does not comply with a 24 hour average solid particles limit of 50mg/Nm<sup>3</sup>. Table 11 shows elevated solid particle emissions were recorded during the 2013 annual sampling and analysis compared to other years. No information is provided regarding the operational activities during 2013 that may have influenced the solid particle emissions from the No 6 Kiln.

***The EPA considers further information is required to demonstrate that No 6 Kiln can comply with the proposed limit. The proponent must provide further information regarding the variation in solid particle emissions from the No 6 Kiln (2011 to 2014); the cause of any increases in emissions; and an analysis demonstrating Modification 9 can achieve the proposed 24 hour average solid particles emission limit of 50 mg/Nm<sup>3</sup>. If appropriate, the proponent must identify any modifications to operational procedures to prevent periods of elevated emissions and ensure plant and equipment are operated in a proper and efficient manner at all times.***

#### **6. NSW Legislation does not provide for upset conditions**

AQP (2015) states Boral intends to propose wording similar to the wording in Article 46(6) of the EU Industrial Emissions Directive regarding allowable duration of emissions exceeding limit values. The proponent must note that there is no reference to allowable number of hours the emission limits can be exceeded during upset conditions or the maximum number of hours per year. The emission limits in the Clean Air Regulation and Environment Protection Licence are 100<sup>th</sup> percentile and must be complied with at all times.

***The EPA recommends the proponent is advised of the requirements to comply with the Clean Air Regulation and EPL limits at all times and that there are no allowances in NSW legislation or policy documentation regarding an allowable number of hours emission limits can be exceeded.***

---

<sup>1</sup> DIRECTIVE 2010/75/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 November 2010 on industrial emissions (integrated pollution prevention and control)

