



Date: 29.09.2017

**Subject: Hope works Environment permit - EPR/BP3731VJ - Progress report for permit improvement condition IP 16**

Dear Leonie

I am writing to provide the requested progress report on improvement condition IP 16. In relation to our current performance against the current BAT-AEL, our cement kiln SO<sub>2</sub> daily averages are as follows:

<b>SO<sub>2</sub> daily average Emissions 2017</b>			
<b>Kiln One</b>	<b>% &lt;1760 mg/m<sup>3</sup></b>	<b>% &lt;850 mg/m<sup>3</sup></b>	<b>% &lt;400 mg/m<sup>3</sup></b>
<b>January</b>	100	100	44
<b>February</b>	100	100	60
<b>March</b>	100	100	0
<b>April</b>	100	100	30
<b>May</b>	100	93	0
<b>June</b>	100	100	53
<b>July</b>	100	100	35
<b>August</b>	100	100	48
<b>September MTD</b>	100	100	30

<b>SO<sub>2</sub> daily average Emissions 2017</b>			
<b>Kiln Two</b>	<b>% &lt;1760 mg/m<sup>3</sup></b>	<b>% &lt;850 mg/m<sup>3</sup></b>	<b>% &lt;400 mg/m<sup>3</sup></b>
<b>January</b>	Shutdown	Shutdown	Shutdown
<b>February</b>	100	100	44
<b>March</b>	100	100	3
<b>April</b>	100	100	40
<b>May</b>	100	100	10
<b>June</b>	100	100	50
<b>July</b>	100	100	52
<b>August</b>	100	100	70
<b>September MTD</b>	100	100	72

**Note:** The Kiln One SO<sub>2</sub> daily average exceeded the daily ELV on one day in May. The 93% value stems from the fact the kiln only ran for 14 valid days in the month.



In terms of our progress towards achieving planning permission and installing the necessary infrastructure for increasing shale substitution. We are continuing to assess multiple technologies in parallel. Our parallel assessment of these technologies continues with good reason, and we are refining our evaluation of the potential of each option.

Since the last update in April 2017, we have commissioned a more in-depth study by an external consultant, regarding the logistics and use of a wider spectrum of incoming raw materials by rail. Once the assessment is complete, we can evaluate all options in parallel, which will determine whether or not planning permission will be required at Hope and if so to what extent. This will enable a more accurate estimate of the timescales for the project. At that point, we will know if we need to adjust any of the timescales previously agreed.

<b>% PFA Addition to raw mix 2017 - Target 8%</b>	
<b>Month</b>	<b>%</b>
<b>January</b>	<b>8.7</b>
<b>February</b>	<b>5.3</b>
<b>March</b>	<b>0.4</b>
<b>April</b>	<b>2.8</b>
<b>May</b>	<b>3.3</b>
<b>June</b>	<b>3.9</b>
<b>July</b>	<b>5.7</b>
<b>August</b>	<b>4.8</b>

The level of substitution of PFA in our raw mix YTD is currently 4%, which is half of that planned. This substitution level continues to be driven by limited availability due to rapidly changing electricity generation fuel mix in the UK.

Further to our previous update, we have been using other materials to increase the level of shale substitution. These materials also have issues in terms of availability and logistics. Without these additional materials, the level of substitution of PFA in our raw mix would only be 2.6% YTD.

Yours sincerely

**James Breen**  
EHS Manager – Breedon Cement LTD