

Our reference: DOC16/206758  
Contact: Alexander Spaller

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Dear Kerry

### **SSD 6820 Light Weight Aggregate Facility – RTS – Additional Air Quality Information**

The Environment Protection Authority (EPA) has reviewed the Proponent's additional information submitted as an addendum to the original Response to Submissions (RTS), in conjunction with the revised Air Quality Impact Assessment (AQIA) prepared by Airlabs Environmental Pty Ltd dated 31 March 2016.

The EPA notes that where no comment has been made on certain aspects of the RTS, the EPA considers that the Proponent has adequately addressed the EPA's concerns.

#### **Emission control measures – Scrubber for Existing Operations**

The EPA recommended that the Proponent commit to installing the proposed wet scrubber prior to undertaking construction and operation of Stage 1 of the proposed Light Weight Aggregate (LWA) Facility, largely on the basis that the proponent identified this measure as reasonable and feasible for implementation.

The EPA notes that Brickworks has agreed to install a Cascade Scrubber system for Plant 2 to reduce Hydrogen Fluoride (HF) emissions, which would be installed on the existing Plant 2 operations prior to undertaking construction and operation works for the Stage 1 LWA Project.

The EPA advises that the AQIA has only considered emissions from the proposal and the existing Plant 2 operations. The EPA understands that HF emissions from other existing plants on the existing environment protection licence (EPL#546), have reported exceedances for HF in the 2015-2016 annual return. The EPA intends to address this issue further with the licensee, separate to this planning matter.

#### **Emission control measures – Scrubber for Proposed LWA Plants**

The RTS provides additional information on the expected emission performance of the scrubber system for Stage 1 and Stage 2 of the LWA proposal. Based on the EPA's interpretation of this information, the expected discharge concentration of pollutants that would be treated by the scrubber system differs to the estimated discharge concentration assessed with the AQIA. The table below provides comparison of the discharge concentrations.

| Pollutant                          | Discharge Concentration Estimate from Response to submissions <sup>1</sup> | AQIA Assessed Discharge Concentration <sup>2</sup> |
|------------------------------------|----------------------------------------------------------------------------|----------------------------------------------------|
| Sulphur Dioxide (SO <sub>2</sub> ) | 130 mg/Nm <sup>3</sup>                                                     | 65 mg/Nm <sup>3</sup>                              |
| Hydrogen Fluoride (HF)             | 35 mg/Nm <sup>3</sup>                                                      | 8 mg/Nm <sup>3</sup>                               |
| Hydrogen Chloride (HCl)            | 96 mg/Nm <sup>3</sup>                                                      | 2 mg/Nm <sup>3</sup>                               |

<sup>1</sup> Based on the EPA's understanding of the information contained in Figure 3 of the RTS

<sup>2</sup> Table 16 of AQIA (dated 31<sup>st</sup> March 2016)

*Based on the new information, the EPA advises that the AQIA may have potentially under predicted the emission performance of the scrubber system. The EPA recommends that the Proponent commits to achieving the discharge*

concentrations as assessed within the AQIA. Where commitment to these discharge concentrations cannot be made, the EPA recommends that a revised AQIA is conducted that is based on emission performance that is achievable.

**Emission performance of regenerative thermal oxidiser**

The EPA requested further information to:

- Clarify the Selective Non-Catalytic Reduction (SNCR) component of the proposed emission controls;
- Outline any control efficiencies and emissions associated with the SNCR component of the regenerative thermal oxidiser (RTO), specifically for NO<sub>x</sub> and ammonia;
- Include an assessment of ammonia discharges from the process;
- Clarify that the assessment has adequately considered emissions from fuel used for all operations (including the RTO); and
- Revise the AQIA where required, to address the comments above.

The RTS advises that:

- Brickworks are proposing to install a RTO incorporating a SNCR component to reduce NO<sub>x</sub> emissions;
- A destruction efficiency of up to 97% of organics is anticipated with the proposed RTO system as per supplier specifications; and
- Typical NO<sub>x</sub> reduction efficiencies of approximately 50% have been demonstrated commercially by the injection of NH<sub>4</sub>OH into the RTO (i.e. the SNCR).

The additional information also includes an assessment of Ammonia based on nominated maximum NH<sub>3</sub> slip of 20 mg/Nm<sup>3</sup>, and no impacts above the impact assessment criteria are predicted.

The EPA advises that:

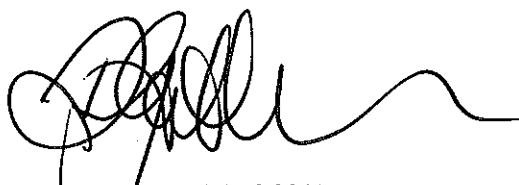
- The US EPA Air Pollution Control Technology Fact Sheet for SNCR states that:
  - For SNCR applied in conjunction with combustion controls, such as low NO<sub>x</sub> burners, reductions of 65% to 75% can be achieved.
  - In the US, permitted ammonia slip levels are typically 2 to 10 ppm.
- Ammonia may contribute to secondary aerosol formation and must be minimised to the maximum extent practical.

*The EPA recommends that the proponent be requested to provide additional information to demonstrate that the proposal can achieve emission performances for NO<sub>x</sub> and ammonia that are associated with proper and efficient operation and good environmental performance of the emission controls proposed.*

The EPA considers that this planning matter should not be progressed until the issues raised in this letter are adequately addressed.

If you have any questions or queries in regards the content of this correspondence, please contact Operations Officer, Alexander Spaller on (02) 9995 5894.

Yours sincerely



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Director – Sydney Industry  
Environment Protection Authority

24 January 2017