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RE: STATE SIGNIFICANT DEVELOPMENT APPLICATION (SSD 10422) FOR PROPOSED BRICKWORKS PLANT

PROPERTY AT: 416 & 524 BERRIMA ROAD, MOSS VALE (LOT 1 DP 785111 & LOT 1 DP 414246)

Dear Shaun,

Reference is made in relation to the subject State Significant Development (SSD) Application – **SSD 10422** – that was exhibited by the NSW Department of Planning, Industry & Environment (DPIE) on 31 July 2020 to 28 August 2020 for the proposed Brickworks Plant at the identified Subject Site – 416 and 524 Berrima Road, Moss Vale (Lot 1 DP 785111 & Lot 1 DP 414246).

Following a review of the NSW DPIE's request for the Response to Submissions (RTS), dated 12 November 2020, the matters raised have been taken into consideration and are accurately addressed in the response matrix that is attached to this letter. It is considered, that this information now provides the NSW DPIE with all the necessary facts and relevant particulars related to the Proposed Development subject to this SSD Application; thereby, enabling the assessment to be finalised and the Proposal determined.

We look forward to the NSW DPIE's feedback on the information provided and look forward to progressing with the assessment of this SSD Application.

Should you wish to discuss further, please contact the undersigned.

Yours Faithfully,

Andrew Cowan
Director
Willowtree Planning Pty Ltd
ACN 146 035 707

Enclosed:

- **Appendix 1 – Biodiversity Development Assessment Report**
- **Appendix 2 – Air Quality Impact Assessment – Response to NSW EPA**

Table 1: Response Matrix	
Relevant Entities Response to Submissions	**Formalised Response**
NSW Department of Planning, Industry and Environment (Chris Ritchie – Director – Industry Assessments)	
1. *The Response to Submissions (RtS) identifies that solar panels are proposed to be installed on the roof of the development. The Department requests clarity on if the electricity generated from the solar panels will be utilised for site operations such as lighting or if it is proposed to offset the development's energy consumption.*	The solar panel solution has currently been sized to provide sufficient power for site operations such as lighting and office usage. The current restrictions on the generation of power from solar, to during the day only, do not match with the operations of the factory, which are continuous (kiln always operating including pushing system for kiln cars). If technology improves in the coming years, then the solar system could be expanded to further offset the development energy consumption. Brickworks can design the roof structure to accommodate a future expansion of the solar system.
2. *Although the RtS provides a scope of different brick products to be produced at the facility, the RtS does not provide information on production volumes for each brick type. The Department requests clarification on anticipated volumes for each brick type or if volume is dependent on market demand.*	Production volumes for each brick type is market dependent. The information provided in the EIS provides the technical details on what products can be made at the proposed Brick Manufacturing Facility and the total brick production capacity. The actual bricks produced will be determined by a monthly manufacturing schedule.
3. *Further to the above, the RtS does not clarify if any production processes separate to those identified in the EIS and Appendix 2 of the RtS are required to be undertaken for each brick type. The Department requests the Applicant confirm there are no additional processes required for the identified brick types.*	The EIS and the Air Quality Report included as part of the SSD Application package, confirm the Proposal will include reduction firing, which is a process undertaken on the "Bowral Blue" brick products. The expected maximum pollutant discharge concentration, included in the Air Quality Report, allows for reduction burning on all products, whilst this currently only applies to select brick types. This allows future flexibility and changes in production volumes of each brick. There are no additional processes required to manufacture the identified brick types.
4. *The revised AQIA in Appendix 1 of the RtS identifies that the Applicant has applied for Climate Active certification to produce carbon neutral bricks. The Department requests further information on the production of carbon neutral bricks and if this is proposed to be incorporated into the development.*	Brickworks and its subsidiary Austral Bricks is proud of its innovative product accomplishments. It was the first company in Australia to provide Climate Active Certified Carbon Neutral Bricks to national and international markets. These Carbon Neutral Bricks have held Climate Active (formally known as NCOS) certification since 2013/14. By 2025, Brickworks target is to double the volume of products sold in Australia that hold leading sustainable qualities, compared with a baseline of FY19. During FY21, Brickworks has a focus on providing an expanded range of carbon

<table>
<tr><td></td><td>neutral, locally-made products to projects which demonstrate sustainability attributes. Brickworks confirm that a focus will be to work on project-specific requirements with selected architects and commercial builders, to deliver low carbon buildings. Brickworks confirms that the bricks produced at the proposed New Berrima Brickworks will be included in the expanded Climate Active certified carbon neutral offering.

The expanded Carbon Neutral licence application is currently being assessed by Climate Active and it includes Life-Cycle Assessment (LCA) for all operational factories in Australia. Accordingly, Brickworks will work with Energetics to update the LCA to include New Berrima (once built), to ensure that its range will be included in Brickworks offering. The boundary of the LCA is 'cradle to grave', meaning all scope 1, 2 and 3 emissions associated with mining, manufacturing, delivery and end of life will be offset by carbon credits. Brickworks' strategy is to procure Australian generated carbon credits, with a focus on supporting Indigenous land management.</td></tr>
<tr><td>5. The AQIA notes the Applicant's 'Alternative Fuels Program' has allowed the Applicant to achieve 14% consumption of biofuels during the 2019-2020 financial year across all Australian facilities, with the use of landfill gas and sawdust. The Department requests insight into what biofuel options are presently available or under consideration for the development.</td><td>The Proposed Development will make use of sawdust; however, is unable to use landfill gas, since this source is unavailable in the New Berrima area.

Brickworks is currently working with its consultants – Energetics and 100% Renewables to undertake a scenario analysis under the Task Force on Climate-Related Financial Disclosures (TCFD) framework. Brickworks' aim is to report on the outcomes of the scenario analysis by 2022. As part of the report, Brickworks will be investigating a range of low-carbon opportunities including but not limited to hydrogen and renewable fuels derived from anaerobic digestion.</td></tr>
<tr><td>6. The Department requests information on the approximate timing and staging of construction works for the development including the predicted timeframes for each stage of construction.</td><td>The approximate timing and staging for construction works in relation to the Proposed Development are outlined as follows:

<table>
<tr><th>Stage</th><th>Activity</th><th>Duration</th></tr>
<tr><td>Civil Works</td><td>Stormwater basins, cut and fill and creation of development pad. Services and road upgrade.</td><td>2 -3 months</td></tr>
<tr><td>Building Construction</td><td>Building Construction including drive over bins.</td><td>4 months
(plus overlap with fit out)</td></tr>
<tr><td>Kiln Construction and fit out</td><td>Construction of kiln (12 months) and installation of all equipment.</td><td>12 months</td></tr>
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			Hardstand and roads completed.	

Table 2: Response Matrix	
Relevant Entities Response to Submissions	**Formalised Response**
NSW Department of Planning, Industry and Environment – Environment, Energy and Science Group (EES) (Chris Page – Senior Team Leader Planning (Illawarra – Biodiversity & Conservation Division)	
Following email correspondence with the applicant dated 29/9/20 and submission of the subsequent flood assessment (SMEC, 13/10/20), flooding issues have been addressed and no further comment on this matter is provided.	Noted and agreed.
The proposal has assessed biodiversity impacts by way of a Biodiversity Development Assessment Report (BDAR), in accordance with the Biodiversity Assessment Method (BAM). The proponent must also submit the BAM-Calculator case for EES to review prior to approval. Plot data must be submitted to EES for review. The original datasheets are preferred. Credit reports should also be generated within 14 days of the BDAR submission date, and this will need to be updated.	Cumberland Ecology note, that the case was finalised in the BAM Calculator and submitted to the consent authority when the BDAR was submitted, and scans of their data sheets are attached to the case in the BAM-C. The case number is 00019529.
Figures 3 and 8 of the BDAR indicate that "complete clearing" will occur in the Vegetation Management Plan (VMP) area. It is noted that this area is to be wholly revegetated with Southern Highlands Shale Woodland threatened ecological community. We therefore suggest retaining the existing paddock trees in the VMP area where possible, particularly as many of these existing trees are outside the proposed asset protection zone.	Cumberland Ecology note, that trees are already to be retained in the VMP Area where possible. The reason there are areas of Complete Clearing in the VMP Area is because these areas are to be excavated for the drainage channel works and as such trees cannot be retained. These trees to be removed have been accounted for in the BDAR. Further consideration is not considered to be required in this respect.
The proposal will require changes to the site's hydrology, and this is assessed in Section 8.2.1 of the BDAR as a prescribed impact. Drainage features to be impacted flow into Stony Creek offsite where intact native vegetation occurs. The BDAR should further address potential indirect impacts on biodiversity values which may occur on Stony Creek and other downstream areas.	Cumberland Ecology have revised Section 8.1.3.1 of the *Biodiversity Development Assessment Report* (refer to **Appendix 1**), which notes the construction activities for the project will occur upstream of Stony Creek, which is located within the Study Area; and outside of Study Area, it eventually drains into the Wingecarribee River. It is noted, that within the Study Area, the northern extent of Stony Creek before it exits the Site is vegetated by PCT 944 and is dominated by *Eucalyptus macarthurii.* Downstream areas of Stony Creek are also vegetated with native vegetation, as are areas along the Wingecarribee Creek. Potential indirect impacts to the identified vegetation by upstream construction works

	and long-term use of the site as a Brickworks Plant may include: ▪ Sedimentation – Increased sediment entering the waterway due to exposed soil surfaces during construction and operation of the plant. This may accumulate in pools, resulting in reduced water available for plants and the around the base of plants, which may impact on the ability of plant roots to function and in turn limit nutrient uptake incurred by identified species. ▪ Nutrient Enrichment – Excess nutrients entering waterway due to runoff from the proposed Brickworks Plant. Accordingly, nutrient enrichment is known to promote weed growth, while negatively effecting native plant growth in some species. ▪ Increased Water Flow – Hard stand surfaces associated with the proposed Brickworks Plant are likely to decrease the amount of water absorbed in surface soils and subsequently increase the amount and speed of water entering waterways, which could lead to downstream erosion and reduced root stability of riparian trees and other plants. ▪ Weed Transport – Removal of vegetation during construction works may result in weed propagules entering waterways and increased weed loads in downstream areas of native vegetation. Furthermore, Cumberland Ecology note, that the majority of the risk of impacts described above is temporary and associated with construction. Accordingly, the abovementioned indirect impacts are likely to be minimal in the long-term if enacted at all due to the following reasons: ▪ Works are to be undertaken to improve capacity of tributaries of Stony Creek in the Subject Site to both carry water and slow down the movement of water within the Site; and drainage design for the Proposal, which will prevent sediment from entering the waterways. ▪ Areas currently dominated by exotic species are to be removed reducing capacity of the land to produce weed propagules, which will enter the waterways in the long-term. ▪ All proposed landscaping will utilise native plants, which have no requirement for fertilisers, likely reducing nutrient levels entering waterways compared to current conditions where the land is used for agriculture. Aquatic native plants

	are also to be planted in riparian areas within the Subject Site, which will absorb excess nutrients.

Table 3: Response Matrix	
Relevant Entities Response to Submissions	**Formalised Response**
WaterNSW (Clay Preshaw – Manager Catchment Protection)	
WaterNSW appreciates the opportunity to respond to the Response to Submissions (RtS) for the proposed New Berrima Brickworks Facility (SSD 10422). WaterNSW has reviewed and considered the RtS prepared by Willow Tree Planning (dated 30 October 2020), including the appendices. *WaterNSW notes that the applicant has accepted and will implement all of WaterNSW's recommendations in relation to the project, including consultation with WaterNSW on the construction phase Soil and Water Management Plan and the operational phase Operational Environmental Management Plan for the proposed stormwater treatment measures.*	Noted and agreed.
WaterNSW notes there is a community desire to revegetate the riparian zone along the Wingecarribee River on land (not the subject land) under the stewardship of the applicant's parent company. WaterNSW would support riparian revegetation of the Wingecarribee River should the Department decide to include such a condition.	Revegetation on the Site will be in accordance with the Landscape Plans and Vegetation Management Plan issued as part of this Proposal.

Table 4: Response Matrix	
Relevant Entities Response to Submissions	**Formalised Response**
NSW Environment Protection Authority (Charles Hajek – Manager Regulatory Operations – Regional South)	
Air Quality Impact Assessment	
The EPA does not consider the revised Air Quality Impact Assessment (AQIA V2) has addressed the issues identified in our previous submission. The EPA recommends the proponent be requested to revise the AQIA report to address the issues discussed below and in Attachment A. Options to further reduce emissions should be robustly evaluated and benchmarked against international best practice in the revised assessment. *The revised modelling predicts compliance with the EPA's ground level impact assessment criterion, as specified in the Approved Methods for the Modelling and Assessment of Air Pollutants, for all assessed pollutants. However, emissions have been modelled at, or near the standards of concentrations prescribed in the Protection of the Environment Operations (Clean Air) Regulation, for most pollutants.* *The revised modelling results have been used to justify no further consideration of additional emission controls. The 'pollute up to goal' approach used in the assessment is contrary to the approach promoted by the EPA whereby all reasonable and feasible emission controls must be considered to reduce emissions as far as practicable. Additionally, under Section 45 of the Protection of the Environment Operations Act (1997), the EPA must consider, among other matters, the practical measures that could be taken to prevent, control, abate or mitigate pollution.* *It is the EPA's expectation that newly designed and constructed plant should be capable of achieving an emission performance well below the standards prescribed in the Clean Air Regulation using best practice and technology for the control and mitigation of emissions. This expectation was clearly stated in the EPA's environmental assessment requirements provided for the proposed development in January 2020. The adopted levels of controls proposed are considered inconsistent with best practice available technologies.*	Austral Bricks and Airlabs have considered the NSW EPA's concerns and comments, which have been comprehensively addressed in the responses provided in relation to the NSW EPA Advice within the Submissions Report prepared by Airlabs (refer to **Appendix 2**). The NSW EPA comments focussed on include the following: ▪ *Fluoride impacts on sensitive land:* The assessment shows that the 24-hour average fluoride concentration exceeds the sensitive land use assessment criteria on two land parcels classified E3. One of the land parcels is the Austral Bricks Quarry site and therefore can be excluded as a sensitive land-use. The other land parcel has two land-use categories E3 and IN1. IN1 component is not applicable for assessment of fluoride impacts when using the sensitive land use assessment criteria. Across the E3 zoned component of the impacted area, concentrations exceeding the sensitive land use assessment criteria are limited to a max. area of apprx. 10ha. Across the remaining E3 zone of that impacted lot, the levels are below the assessment criteria. As-such, based on the above, it is observed that low-level fluoride impacts are expected from the project. ▪ *Assessment of HCl impacts*: Austral Bricks have lowered their discharge concentration from 100 mg/m3 to 80 mg/m3 – providing a 20% reduction in the discharge concentration. This reduction is in-line with EPAs expectations for newly designed and constructed plants that should be capable of achieving an emission performance well below the emission limits. ▪ *Issue of significant incremental impacts*: Revised discharge concentrations proposed by Austral Bricks are considerably lower than

If required and to assist the proponent to adequately address EPA's comments in relation to the AQIA, a meeting between the EPA, the proponent, and their consultant could be organised to discuss the comments in more detail.	what was proposed earlier. This reduction in the discharge concentration has a direct consequence on the incremental impacts, which will reduce accordingly. Therefore, by lowering the discharge concentrations, Austral Bricks have addressed the issue associated with significant incremental impacts. ▪ *Assessment of Nitrogen Dioxide Impacts*: A revised NO2 assessment has been conducted by Airlabs which takes into account the comments issued by the EPA. Modelling shows that the 1-hour average cumulative NO_2 concentrations exceed the impact assessment criteria at 3 sensitive receptors. At 2 of the 3 receptors, the cumulative 1-hour average concentration exceeds the impact assessment criteria only by 1 mg/m3. No exceedances of the cumulative 1-hour average NO2 concentrations were reported in the previous assessment and it is worth noting that the maximum discharge concentration of NOx emissions from the proposed facility reduced from the previously modelled 450 mg/m^3 to 250 mg/m^3. As-such, the exceedance is attributed to the background environment, which includes contribution from Boral Cement Plant, the Austral Masonry Plant and ambient levels. Modelling shows that no additional exceedances of the NO_2 concentrations are expected due to the project, and as per the Approved Methods for Modelling, in scenarios where there are elevated background concentrations, the facility should not contribute to additional exceedances. Additional details are presented in the Airlabs report. ▪ *Emissions during reduction conditions*: To address any potential variance in discharge concentrations during oxidation and reduction conditions, reference was drawn to historical emissions monitoring data measured across Austral Bricks' manufacturing plants. Analysis of the historical data shows that there is no wide variation in the discharge concentration when the kiln is operating under oxidation / reduction conditions. Moreover, the revised discharge concentrations takes into account the expected variations occurring a result of oxidation, reduction and oxidation-reduction mix conditions. ▪ *Solid particles emission control performance*: The revised discharge concentration proposed by Austral Bricks demonstrates a reduction in the concentration of total particles. As-such, this reduction

	demonstrates an improved performance. ▪ *Fugitive dust emissions from operational activities*: Airlabs have considered EPA's comments and a revised assessment of fugitive dust emissions has been conducted. Peak daily throughputs have been estimated for the assessment of short-term (i.e. 24-hour) averaging pollutants and the annual average throughputs have been used for estimating annual averaging pollutants.
Noise Impact Assessment	
Some of the matters raised by the EPA in our submission dated 21 August 2020 in relation to the Noise Impact Assessment (NIA) have not been adequately addressed. The EPA requires that further information is provided to address these matters prior to the determination of the project. This may include providing a revised NIA. This information will assist the EPA in determining appropriate conditions of approval for the proposed development. *Our previous comments on the NIA noted that the impact of the cicadas in the vicinity of the noise loggers was not adequately accounted for. The information provided in the Submissions Report refers to that the development is controlled by the amenity criteria of the Noise Policy for Industry (NPfI) and that correcting for cicada noise is "unlikely" to lower the noise criteria. An additional statement regarding the duration of cicada activity throughout the year is also provided. This information does provide sufficient justification that cicada noise has not affected the Rating Background Level (RBL) as there is no numerical analysis to quantify the claims.* *Most modern noise loggers are capable of outputting data that allows the removal of highly tonal cicada noise from the results. If the noise logging was undertaken by a noise logger that does not allow for cicada noise to be adequately excluded from the results, the EPA suggests that utilising the minimum noise levels contained within the NPfI may provide an appropriate compromise. The noise levels within the licence would then be LAeq 40 dB for the Day period and LAeq 35 dB for the evening and night period. Should these noise levels be applied for the licencing of the development, several receivers are currently predicted to have noise levels from the development that are above these minimum noise levels. The maximum exceedance would be 3 dB at R4 during the evening and night time, with several other receivers having a 2 dB exceedance. The EPA is unable to provide recommended conditions that will*	Benbow Environmental note, that the loggers utilised in the Noise Impact Assessment did not record 1/3 octave bands. However, by utilising the attended measurement 1/3 octave at Locations 'C' daytime (location with the lowest night RBL), a simplified calculation provided, shows that removing the 4-5 kHz frequencies and 4-10kHz showing only a 1.1 dB(A) reduction. This would not alter the criteria, which is limited by the project amenity noise level. Reference should be made to the calculations provided in the Table following **Table 6** below. Should the calculations not be deemed acceptable, than a formal meeting is requested with the NSW EPA to discuss the item further and ameliorate any further concerns.

results in immediate non-compliance. *Section 6 of the NIA contains additional proactive recommended mitigation measures. It is not clear as to whether these measures have been considered within the modelling and the level of noise reduction likely to be achieved. Quantifying these recommended mitigation measures may afford the 3 dB reduction required for compliance with the minimum noise level approach. If it does not, then additional mitigation measures would be required at the development to ensure compliance with the licence conditions. Further information on any additional mitigation measures (including estimated noise levels reductions) that are proposed to be implemented should be provided.*	
Noise Management	
The EPA recommends that conditions be included setting the noise limits deemed achievable in the NIA as part of the EIS. The information requested above will need to be reviewed and assessed prior to setting appropriate limits. *It is also recommended that attended noise monitoring be required to assess compliance with the noise limits once the facility is operational. This could include a noise verification monitoring campaign to verify that the activity complies with the noise limits set out in the Project Approval.* *It is also recommended that the proponent documents all proposed noise mitigation strategies prior to construction including measures to ensure compliance with the noise limits. It is recommended that this requirement be conditioned in any approved consent.* *The EPA can provide specific recommended noise conditions if required once the additional information specified in 1(a) above has been provided.*	Noted and agreed. Reference should be made to the abovementioned Submission item from Benbow Environmental.
Remediation of Asbestos Impacted Soils	
The EPA recommends that conditions be included for the preparation and implementation of a Remedial Action Plan (RAP) for the proposed remediation of the asbestos contaminated materials (ACM) identified onsite. *The EPA recommends that the proponent be required to engage a suitably qualified independent occupational hygienist to review the proposed remediation strategies and supervise the remediation activities for the site. The objective of the remediation activities should be to eliminate any potential risks to human health and/or the environment for both current and proposed future users of the*	Noted and agreed.

site. The objective of the remediation activities for the asbestos contaminated soil must be to eliminate any potential risks to human health and/or the environment for both current and proposed future users of the site. *The EPA recommends that the proponent be required to complete the proposed remediation activities prior to the construction of the proposed facility.*	
Soil and Water Management Plan	
The EPA recommends that conditions be included for the preparation and implementation of a comprehensive and staged Soil and Water Management Plan by a suitably qualified environmental consultant prior to construction of the proposed facility. Given that the site is located within the Sydney Water Drinking Catchment (Section 6.9.8), enhanced stormwater controls should be designed and implemented to be consistent with the practices and principles of the Managing Urban Stormwater: Soils and Construction Volumes 1 and 2. *As advised in our previous submission, the EPA may have further comments and/or requirements upon submission of further details for the detailed design stage.*	Noted and agreed.
Review of Revised Air Quality Impact Assessment prepared by Airlabs Environmental (AQIA V2)	
▪ *Hydrogen Fluoride (HF) Impacts on Sensitive Land* *The EPA previously requested the proponent provide a detailed land use and vegetation assessment to evaluate current and potential future land uses and vegetation that may be sensitive to fluoride.* *Airlabs did an aerial survey to identify any wineries or fluoride sensitive vegetation in close proximity to the proposed site. Airlabs also considered information provided to them by Austral Bricks and reviewed information available on the public domain. The information provided by Austral Bricks or supporting documentation has not been included in the revised AQIA V2.* *Airlabs did not identify any existing wineries or sensitive vegetation near the proposed facility or within the expected zone of impact. Airlabs have therefore applied the general HF assessment criteria (2.9 µg/m^3).* *Dispersion modelling has been undertaken, at a maximum HF emission concentration of 20 mg/m^3. This is consistent with the expected emission performance of the Austral Bricks, Horsley Park Plants 2 and 3.*	The *Response to EPA Advice on Submissions Report* prepared by Airlabs, confirms that the previous iteration of the Air Quality Impact Assessment (AQIA) provided, outlines that there are no existing wineries and sensitive vegetation within the identified modelling domain and therefore application of the general land use assessment criteria was considered appropriate for the assessment of HF impacts. Airlabs note, that incremental and cumulative HF concentration isopleths for the various time averaging periods (i.e. 24 hours, 7-days, 30-days and 90-days) were presented and assessed against the general land use assessment criteria, as well as the sensitive land use assessment criteria in the AQIA previously submitted to the NSW DPIE. Accordingly, the isopleths were overlaid on the WLEP2010 Zoning Map to assess potential HF impacts on the existing land uses outside the Site boundary pertaining to the Proposed Development. The NSW EPA reviewed the incremental and cumulative HF concentration isopleths and noted that the worst potential impacts are predicted for the 24-hour averaging periods. It is noted, that the NSW EPA mention that when the sensitive land use assessment criteria (1.5 µg/m^3) is applied for the

Incremental and cumulative HF ground level concentration isopleths have been overlaid on the Wingecarribee Local Environmental Plan 2010 to determine the extent of the predicted HF impacts. When the sensitive land use assessment criterion of 1.5 µg/m^3 (24-hour) is applied, the results of the dispersion modelling show predicted impacts above the EPA's impact assessment criteria in the land zoned E3 to the North West of the proposed facility. As such, there is potential that future specialised land use potential in this area may be affected, including vegetation sensitive to fluoride, such as grape vines and stone fruits. *The EPA recommends the proponent be required to provide supporting evidence of the information considered in Airlabs survey of the potential for sensitive lands surrounding the proposed project site.*	interpretation of the 24-hour averaging period concentrations, results of the dispersion modelling show predicted concentrations above the impact assessment criteria in the land zoned E3 Environmental Management towards the northwest of the Site, for which they note there is potential, that future specialised land uses in this area may be affected including vegetation sensitive to fluoride – such as grape vines and stone fruits. Airlabs have taken the NSW EPA's concerns into consideration with regard to potential impacts on sensitive vegetation; however, they note, that by applying the sensitive land use assessment criteria to land use that is in close proximity to existing heavy industrial sites (which include the proposed facility) is a highly conservation approach, as it is unlikely that there would be sensitive vegetation areas at a distance of about 1 km from the eastern boundary of the Proposed Development, where the predicted concentrations have exceeded the sensitive land use assessment criteria. Upon closer examination of the 24-hour average incremental isopleth, Airlabs note that concentrations exceeding the sensitive land use assessment criteria to the west, south and southwest are predicted on IN1 General Industrial and IN3 Heavy Industrial zoned land. Airlabs considered it highly unlikely that there would be sensitive vegetation land parcels in these zones; therefore, the application of general land use assessment criteria is more appropriate for the concentrations predicted to the west and southwest of the Proposal. With respect to the concentrations predicted to the east, Airlabs acknowledge that levels exceed the sensitive land use impact assessment criteria on specific land parcels that are categorised as E3 Environmental Management zoned land. 24-hour average concentrations exceed the sensitive land use assessment criteria at the following locations: ▪ Lot 1 DP 414246 (hereafter described as 'Impact Area 1'); and ▪ Lot 1 DP 623038 (hereafter described as 'Impact Area 2'). It is noted that Impact Area 1 is owned by Austral Bricks – which is the Site for the Austral Bricks Quarry. Therefore, Airlabs have excluded this site for any sensitive vegetation due to the past approval's pertaining to the Site. Accordingly, Impact Area 2 has a combination of two (2) land use categories,

	comprising IN1 General Industrial and E3 Environmental Management. Across the E3 Environmental Management zoned, the predicted 24-hour concentrations (refer to Figure 1 within **Appendix 2**) exceed the sensitive land use assessment criteria for an area which is limited to a maximum area of approximately 10 hectares (ha) in size. Across the remaining area of the E3 Environmental Management zone, the predicted concentrations comply with the sensitive land use assessment criteria. Based on the above observations, the 24-hour average fluoride ground level concentrations exceed the sensitive land use assessment criteria only on two (2) allotments across land that is categorised as E3 Environmental Management under the WLEP2010, of which one is owned by Austral Bricks. Furthermore, taking into consideration the location of the lot where the elevated concentrations are predicted, and its vicinity to existing and proposed heavy industries, which include the proposed Brickworks Plant, it is very considered unlikely that it would be a considerable potential site for developing vegetation sensitive to fluoride impacts and therefore, the application of the sensitive land use assessment criteria to that particular allotment may not be appropriate. Outside these two (2) allotments, predicted fluoride concentrations are not expected to have any considerable impacts on the remaining areas identified in the modelling domain. Additionally, Airlabs note, that the modelling results are based on a maximum discharge concentration of 20 µg/m^3, which is being achieved through end-of-pipe mitigation measures which including the commissioning of a fluorine cascade scrubber. This proposed discharge concentration of approximately 20 µg/m^3, is in line with most of Austral Bricks' other plants in South Australia and Western Australia that have an end-of-pipe HF abatement technologies. This demonstrates that the proposed discharge concentrations are considered to be in line with the best practice measures implemented by Austral Bricks. Finally, from a cumulative view, the risk of adverse impacts is considered to be low given that there are no other sources of fluoride emissions within the identified modelling domain. Therefore, based on the abovementioned rationale, a detailed vegetation characterisation of the impacts areas may not be considered necessary.
▪ *Assessment of Hydrogen Chloride*	Airlabs note, that Austral Bricks are proposing to install a cascade scrubber to

The EPA previously requested that the AQIA be revised to include an assessment of hydrogen chloride (HCl). HCl must be assessed at and beyond the boundary of the facility and consider cumulative sources including the Boral Berrima Cement Works. *A cumulative and incremental assessment of HCl emissions has been conducted which is presented in the revised AQIA V2. Modelling of the HCl emissions is based on a maximum discharge concentration of 100 mg/m^3, which is at the Group 6 concentration standard prescribed in the Clean Air Regulation.* *The maximum (reported as 99.9th percentile) 1-hour average incremental HCl concentration predicted at or beyond the facility boundary is 30.4 µg/m^3 (22% of the impact assessment criteria). Airlabs have not proposed any additional options to further reduce HCl emissions based on the results of the modelling.* *Austral Bricks proposes to install a fluorine cascade scrubber to control emissions of acid gases, including HCL. The effectiveness of this pollution control option is dependent on the adsorbing material used. For example, unmodified calcium carbonate granules are effective at removing HF and SO3, whilst only partially effective (50% control) for HCl and largely ineffective (20% control) for SO2 (CER, 2016)[1]. Improved HCl removal performance can be achieved with the use of modified adsorption materials or through additional controls.* *Airlabs have assumed a HCl discharge concentration of 100 mg/m^3, consistent with the maximum allowable standard prescribed in the Clean Air Regulation. This is inconsistent with best practice and the EPA's expected emission performance, for a newly designed plant. Emission performance well below the POEO Clean Air Regulation should be practicably achievable. Additionally, under Section 45 the Protection of the Environment Operations Act (1997), the EPA must consider, among other matters, the practical measures that could be taken to prevent, control, abate or mitigate pollution.* *The EPA requests that further evaluation of emission controls is undertaken. Also see Point 3 below.*	reduce the discharge concentration of acidic pollutants mainly HF along HCI and Sox. It is noted, that the maximum discharge concentrations for these pollutants as mentioned in the AQIA are noted as follows: ▪ HF: 20 mg/m^3 ▪ HCI: 100 mg/m^3 ▪ SO_2: 400 mg/m^3 Austral Bricks have shared their concerns with Airlabs that no weightage is being given to the dispersion modelling results. Modelling demonstrates adequate compliance with the HCI impact assessment criteria where-by the model predictions are substantively lower – less than 25% of the HCI impact assessment criteria; however, the NSW EPA deem that the proposed discharge concentration of 100 mg/m^3, which in in line with the maximum allowable standard does not reflect best practice measures and is inconsistent with the NSW EPA's expected emission performance for a newly designed plant. Accordingly, the NSW EPA in their Submission comments, note that modifying the absorption media will result in improved / lower HCI concentrations. To address the NSW EPA's concerns, Austral Bricks have consulted with the kiln manufacturer to further reduced the HCI discharge concentration, even though modelling at 100 mg/m^3 demonstrates adequate compliance. Based on advice from the kiln manufacturer, the revised HCI discharge concentration from the kiln exhaust stack will not exceed 80 mg/m^3. The provides a 20% reduction in the HCI discharge concentration and addresses the NSW EPA's concerns in relation to discharge concentrations being in line with the maximum allowable standard prescribed in the Clean Air Regulation. Airlabs note, that with the revised discharge concentration 80 mg/m^3, the ground level concentrations will be further lower than what was predicted for a discharge concentration of 100 mg/m^3. Modelling at 100 mg/m^3 showed that the maximum ground level concentration (reported as the 99.9th percentile, 1-hour average incremental) predicted outside the facility site boundary was less than 25% of the impact assessment criteria. As such, Airlabs confirm that revised dispersion modelling at 80 mg/m^3 is not warranted. Therefore, Airlabs confirm that the NSW EPA's concerns with respect to HCI emissions are addressed by lowering the kiln exhaust stack maximum discharge

	concentrations from 100 mg/m^3 to 80 mg/m^3.
▪ *Significant Incremental Impacts are Predicted* *The EPA previously requested that the proponent identify and evaluate further mitigation measures to minimise emissions of pollutants including sulfur trioxide, nitrogen oxides and sulfur dioxide in a revised AQIA. Additionally, options to improve dispersion, such as increasing the stack height, should also be considered.* *The revised AQIA V2 includes additional discussion regarding the expected emission performance of the proposed plant. Airlabs have used the results of the dispersion modelling and the predicted levels of compliance with the EPA's assessment criterion, to determine that further consideration of additional controls was not warranted.* *As identified in Point 2 above, the proposed cascade scrubber is not effective at controlling some pollutants associated with the brick manufacturing including NOx. Emission reduction options, such as low NOx burners or catalytic reduction have not been discussed which indicates that no mitigation measures have been proposed for preventing or minimising NOx emissions. This is inconsistent with best practice and the EPA's expected emission performance for a newly designed plant. Emission performance well below the POEO Clean Air Regulation should be practicably achievable.* *The cascade scrubber also has limited effectiveness at controlling SO2, depending on the absorbing material used. However, options for minimising emissions of SO2, such as the use of appropriate absorbing material, have not been discussed in detail and no emission performance guarantees or engineering specifications have been provided.* *The proposed facility will be the dominant source of SO2 emissions in the local area, with predicted incremental impacts (10 minute, 100% ile) of up to 131 µg/m^3 (18% of the EPA's assessment criterion). All reasonable and feasible options to further reduce SO2 emissions should be evaluated in a revised assessment.* *The EPA requests that the AQIA V2 be revised to include a detailed feasibility assessment of engineering options and control measures to minimise emissions*	Austral Bricks have taken the NSW EPA's comments into consideration and have investigated the options for further reducing the discharge concentrations from the kiln stack. Based on further consultation undertaken with the kiln manufacturer and a further detailed review of historical pollutant concentrations measured across other Austral Bricks' manufacturing facilities, a revised discharge concentration estimate has been provided to Airlabs, which is outlined within Table 1 of **Appendix 2**. The revised discharge concentrations articulated in Table 1 are considerably lower than the maximum allowable standard, which demonstrates Austral Bricks' commitment towards a sustainable mode of operation with respect to air quality. Airlabs confirm that no further modelling is warranted as the predicted ground level concentrations corresponding to the revised discharge concentrations, which will be considerably lower than what was predicted within the AQIA.

of pollutants including, but not limited to, particles, hydrogen chloride, nitrogen oxides and sulfur dioxide as far as practicably achievable. The results of dispersion modelling must not be used as the sole basis for not proposing emission controls. Where controls are proposed, the estimated level of emission performance must be supported using engineering specifications or performance guarantees.	
▪ *<u>Assessment of Nitrogen Dioxide Impacts</u>* *The EPA previously requested that the AQIA be revised to include a refined assessment of nitrogen dioxide, accounting for all nearby emission sources.* *The EPA's previous advice dated 21 August 2020 (DOC20/604489-13) identified that NOx emissions from the Boral Cement Plant adopted in the original assessment were considerably lower for the 2017/18 reporting period (2,300 tonnes) when compared to the emissions from the higher for the 2018/19 reporting period (4,000 tonnes).* *To address this concern, Airlabs undertook a review of the NOx emissions released from the Boral Cement Plant as reported to the NPI over a 10 year period from 2009 to 2019. Airlabs observed that NOx emissions from the Boral Cement Plant were approximately 1.7 times higher in 2018/19 than the average emissions measured over the 9 preceding years. As-such, the average of the last five years (including the emissions reported for the 2018/19 period), was determined to be 2,880 tonnes and used in the cumulative assessment. Airlabs are unaware of any reason for the increase in NOx emissions at the Boral cement plant.* *Given the limited data-set publicly available regarding the NOx emissions, and the unfamiliarity with the change in operating conditions at Boral Cement, the EPA considers that a more conservative approach could have been applied. The EPA considers that there is still potential that cumulative NOx impacts have been slightly underpredicted, further supporting the EPA's request in Point 3 above that additional NOx controls must be considered in the final design stages of the project.*	For determination of cumulative NO_2 ground level concentrations, the following sources have been included in the cumulative assessment: ▪ Incremental (project only) impacts as a result of NO_x emissions discharged from the kiln exhaust stack (refer to Table 1 of **Appendix 2** of this Submission). ▪ Emissions released from the Austral Masonry Plant (refer to Table 8 of AQIA). ▪ Emissions from the Boral Cement Plan for the 2018-19 reporting period, as requested by the NSW EPA. Total NO_x emissions from the Boral Cement Plant (point + fugitive) for the 2018-19 reporting period have been estimated to be 4,000,000 kgs. ▪ 1-hour and annual average ambient NO_2 concentrations recorded at the Bargo air monitoring station for the 2017 calendar year (refer to Table 6 of the AQIA). Revised assessment of NO_2 impacts demonstrate that the maximum incremental (Project only) 1-hour average concentration (refer to Table 2 of **Appendix 2**) across all of the sensitive receptors is 50.9 µg/m^3, which is approximately 21% of the impact assessment criteria. Maximum annual average concentration is 1.4 µg/m^3, which is approximately 2.2% of the impact assessment criteria. These incremental concentrations have been based on a revised maximum discharge concentration of 250 mg/m^3. Cumulative concentrations are presented in Table 3 of **Appendix 2**. These concentrations are a consequence of the incremental impacts along with contributions from Boral Cement Plant, the Austral Masonry Plant and the ambient concentrations recorded from the Bargo monitoring station. Results presented in Table 3 of **Appendix 2**, demonstrate that the 1-hour average cumulative NO2 concentrations exceed the impact assessment criteria of 246 µg/m^3 at three (3) of the sensitive receptors. At two (2) out of these

	three (3) receptors (Receptor I.D. 76 and 77), the cumulative 1-hour average concentration exceeds the impact assessment criteria only by 1 µg/m^3. Airlabs note, that no exceedances of the cumulative 1-hour average NO^2 concentrations were reported in the previous assessment within the AQIA undertaken and previously issued. The main changes constituting the revised assessment of NO_2 impacts is the increase in Boral Cement Plant NO_x emissions from 2,880 tonnes to 4,000 tonnes and reducing the maximum discharge concentration of NOx emissions from the proposed facility from 450 mg/m^3 to 250 mg/m^3. As-such, it is evident that these marginal exceedances of the impact assessment criteria are attributed to emissions from the Boral Cement Plant. Accordingly, Section 5.1.3 of the Approved Methods provides guidance on scenarios where there are elevated background concentrations. The Approved Methods states that no additional exceedances of the impact assessment criteria are to occur as a result of emissions from the proposed facility. Findings of the additional exceedance investigation are presented in Table 4 of **Appendix 2**. It is evident from Table 4 that no additional exceedances of the 1-hour average NO_2 ground level concentrations are predicted at any of the worst impacted receptors due to the proposed facility's operations. As such, it can be summarised from the revised NO_2 assessment that the proposed facility is not expected to significantly contribute to the overall background concentrations. Airlabs also note, that Austral Bricks are implementing all reasonable and feasible measures to reduce NOx emissions from the proposed facility and this is evident by their commitment to reduce the maximum discharge concentration from the originally proposed 450 mg/m^3 to 250 mg/m^3. No exceedances of the annual average cumulative concentrations have been predicted from the revised assessment and therefore do not warrant a detailed discussion.
▪ *Kiln Emissions During Reducing Conditions* *The EPA previously requested that the AQIA be revised to include a discussion on the expected emissions profiles from the kiln stack under oxidised and reduced conditions. All pollutant emissions associated with the proposed two firing*	In order to address the NSW EPA's comments with respect to variance in discharge concentrations during oxidation and reduction conditions, reference was drawn to historical emissions monitoring data measured across Austral Bricks' manufacturing plants as there is no available information from the proposed facility with regards to variations in discharge concentrations occurring

techniques, including carbon monoxide, volatile organic compounds and particles must be adequately evaluated and assessed. Justification for all adopted emission rates should be appropriately supported. *The response provided by Airlabs in the revised AQIA V2 is limited to the following 'Modelling of the kiln emissions have been based on a maximum discharge concentration, considering every kiln condition. Therefore, irrespective of whether the kiln is operating in an oxidation or reduction mode, emissions from either condition would never exceed the modelled emission rates'.* *There is no further discussion regarding the emissions profile from the kiln when fired under the various conditions. Evidence, such as emissions profiling data, has not been provided by Airlabs to support their response.* *The EPA requests that the AQIA V2 be revised to include supporting evidence of emissions profiles under both oxidising and reducing conditions to support the emissions inventory adopted in the assessment.*	due to oxidation and reduction conditions. Table 5 of **Appendix 2** summarises pollutant discharge concentrations for specific products manufactured under these conditions – i.e. oxidation and reduction. Due to commercial-in-confidence, reasons, details of the specific products or the manufacturing site(s) where these concentrations have been measured cannot be presented in this RtS; however, Table 5 provides sufficient information to compare average discharge concentrations measured over a period of time when the kiln was operating in oxidation and / or reduction conditions. From the information presented in Table 5 of **Appendix 2**, it is noted that there is not a wide variation in the measured pollutant concentrations across oxidation and reduction conditions – especially for key pollutants such as HF and NOx. Moreover, the discharge concentrations proposed by the kiln manufacturer (refer to Table 1 of **Appendix 2**) has taken into account the expected variations occurring as a result of the oxidation, reduction and oxidation-reduction mix conditions and that the maximum discharge concentrations proposed in Table 1 will not be exceeded irrespective of the conditions under which the kiln would operate.
▪ *Solid Particles Emissions Control Performance* *The EPA previously requested that additional information is provided to demonstrate that all reasonable and feasible control measures have been considered and evaluated in the AQIA to achieve an emission performance of particles, which is reflective of best practice controls and benchmarked against comparable emission performance standards for newly installed pollution control systems.* *The revised AQIA V2 does not consider any additional emission controls to further reduce particle emissions. Airlabs did not consider additional controls because the modelling results suggest that particulate emissions from the facility (both point and fugitive) are not a major concern as the predicted incremental impacts for all the size fractions is less than 7% of the assessment criteria at the worst impacted receptor. This 'pollute up to goal' approach is not supported by the EPA.* *As previously advised, the EPA expect that newly designed plant and equipment*	As seen from Table 1 of **Appendix 2**, Austral Bricks have agreed to lower the maximum discharge concentrations of total particles from 45 mg/m^3 to 33 mg/m^3, which corresponds to a 27% reduction. This revised discharge concentration of 33 mg/m^3 represents a 34% reduction when compared to the maximum allowable standard prescribed in the Clean Air Regulation. Therefore, based on the above response, it can be demonstrated that Austral Bricks are undertaking necessary measures to limit / reduce the pollutant discharge concentrations from the proposed kiln stack and therefore adhere to EPA's expectations for newly designed plants. This observation is not only just limited to particle emissions only, but also to all other pollutants released from the kiln exhaust stack. The proposed discharge concentration limits of majority of pollutants have been revised (refer to Table 1 of **Appendix 2**) such that they are considerably lower than what was presented in the AQIA previously provided.

can achieve an emission performance well below the standards prescribed in the POEO Clean Air Regulation. Dispersion modelling results should not be used as sole justification for not adopting reasonable and feasible emission controls. Additionally, under Section 45 of the Protection of the Environment Operations Act (1997), the EPA must consider, among other matters, the practical measures that could be taken to prevent, control, abate or mitigate pollution. All practicably achievable options to further reduce point source emissions of particulates form the kiln should be evaluated in a revised assessment. *The EPA requests that the AQIA V2 be revised to include the information request in Point 3 above.*	
▪ *<u>Fugitive Dust Emissions from the Operational Activities</u>* *The EPA previously requested that the AQIA be revised to model emissions of fugitive dust from operational activities over a 24-hour period, unless adequate justification can be provided for adopting a 12-hour period.* *Airlabs has revised the assessment to model emissions of fugitive dust from operational activities over a 24-hour period. However, there is no change in predicted emissions from the original assessment. For example, annual Fugitive TSP Emission Estimates have remained at 820kg/year.* *In the original AQIA (AQIA V1), fugitive emissions were modelled over a 12-hour period. Under this scenario, the emission rates are effectively half the 24-hour modelled scenario. For example, estimated annual TSP emission rate from crusher operations in AQIA V1 was 114 kg/yr or 7.2 mg/s. In the revised assessment (AQIA V2), the emission rate has halved to 3.6 mg/s. This reduction in emission rates has not been discussed.* *It appears that the emission rates calculated in the revised AQIA V2 are based on the average daily throughput, rather than the peak daily maximum throughput. As such, the modelling scenario does not reflect a worst case.* *To reflect a worst-case scenario, for a 24-hour period, the peak maximum daily emission rates should be calculated based on the maximum achievable production rates, rather than the average rate.* *The EPA requests that the AQIA V2 be revised to include further assessment of*	Airlabs acknowledge that particulate matter emission rates estimated for the proposed facility's operations have been based on the average daily throughput for both – the short-term (24-hour) and the long-term (annual) averaging period. The rationale for selecting this approach is that there are limited sources of fugitive dust emissions from the operations as the proposed facility would not have any unsealed haulage surfaces and all the raw materials would be unloaded and handled inside the material storage building. Enclosure of the raw material stockpiles considerably diminishes the potential for fugitive dust emissions. Airlabs have considered the NSW EPA's concerns – especially with regards to predicting the 24-hour average PM10 and PM2.5 concentrations, and therefore, a revised assessment of particulate impacts has been conducted, which is presented in Table 6 of **Appendix 2**. At the time of preparing this RtS, there is no information available regarding peak daily throughputs, which would be used to estimate dust emission rates for the 24-hour averaging period pollutants. As-such, for the assessment of 24-hour average PM10 and PM2.5 impacts, it has been assumed that the peak daily throughput would be approximately 1.5 times the average daily throughput. This assumption is consistent with other air quality assessments conducted by Airlabs for extractive operations and material handling facilities and is reasonable, especially considering the limited sources of fugitive dust emissions from the operations at the proposed facility. For the annual averaging pollutants – i.e., annual average TSP, PM10, PM2.5 concentrations and deposited dust levels, no scaling has been applied and

worst case fugitive emissions of particles.	therefore, the emission rates are unchanged. Particulate emission rates specific to the 24-hour averaging period pollutants are presented in Table 6 of **Appendix 2** and emission rates for predicting the annual averaging pollutants as reproduced from the AQIA are shown in Table 7 of **Appendix 2**. Incremental and cumulative particulate concentrations are presented in Table 8 and Table 9 of **Appendix 2** respectively. Cumulative impacts presented in Table 9 are a result of the combined contribution of emissions from the proposed facility, the Boral Cement, the Austral Masonry Plant, the Austral Bricks Quarry and ambient concentrations recorded from the Bargo air monitoring station. From the incremental and cumulative particulate concentrations presented in Table 8 and Table 9 of **Appendix 2**, it is observed that the incremental particulate concentrations for both the 24-hour averaging period and the annual averaging period are well below the respective impact assessment criteria. With regards to cumulative concentrations, with the exception of the 24-hour average PM10 impacts, remaining pollutants are below their respective impact assessment criteria. The 24-hour average PM10 impacts – which reflect peak daily throughputs as requested by the NSW EPA, at the worst impacted receptor (Receptor No. 80) is approximately 118% of the impact assessment criteria. Correspondingly, the 24-hour average incremental PM10 concentration at the worst impacted receptor, which also is No. 80 is 2.3 $\mu g/m^3$, which is approximately 4.6% of the assessment criteria. Additionally, Airlabs note, that the ambient 24-hour average PM10 concentration measured at the Bargo NEPM monitoring station exceeded the assessment criteria of 50 $\mu g/m^3$ on one (1) occasion – 24 September 2017 (refer Table 4 of the AQIA, page 33 of 114). As this exceedance in the background concentration was included in the cumulative assessment, the maximum 24-hour average cumulative PM10 concentrations at each sensitive receptor would all have at least one (1) exceedance of the assessment criteria of 50 $\mu g/m^3$. To further understand the impacts from the proposed facility, possibility of additional exceedances resulting from the proposed facility's operations were investigated and the findings are presented in Table 10 of **Appendix 2**.

	An investigation has been undertaken by Airlabs at all of the identified sensitive receptors to check for any additional exceedance due to the proposed facility's operations. As seen from Table 10, there are two (2) key columns, labelled A and B. Column A in Table 10 presents the number of exceedances of the 24-hour average PM10 concentrations at the identified sensitive receptors as a consequence of the existing environment only – i.e. impacts from Austral Bricks Quarry, Austral Masonry Plant, Boral Cement Plant and the ambient concentrations from the Bargo monitoring station. Column B in Table 10 presents the number of exceedances of the 24-hour average PM10 concentrations at each of the identified sensitive receptors arising due to the contributions from the proposed facility in addition to the existing environment. If there is no increase in the number of exceedances reported in column B (i.e. additional exceedances), it means that no additional exceedances are reported due to the proposed facility's operations. As seen from Table 10, no additional exceedances (Column B – Column A) are reported at any of the identified discrete sensitive receptors, therefore indicating that the proposed facility's operations are not expected to have an adverse impact on the overall 24-hour average PM10 concentrations. Therefore, based on the above discussion, Airlabs note that it is evident that the proposed facility's operations are not expected to have an adverse impact on the overall particulate concentrations in the surrounding environment.

Table 5: Response Matrix	
Relevant Entities Response to Submissions	**Formalised Response**
TfNSW (Emma-Rose Cooper – Development Assessment Officer)	
TfNSW note the following: ▪ *For this development, the key state road is the Hume Highway and in particular the connecting on and off ramps at Medway Road and Mereworth Road.* ▪ *The Department of Planning, Industry and Environment is seeking advice from TfNSW to assist in its assessment under Clause 101 of State Environmental Planning Policy (Infrastructure) 2007.* *Having regard for the above, TfNSW does not believe the development will have a significant impact on the state road network, and on this basis, does not object to the subject development.*	Noted and agreed.

Table 6: Response Matrix	
Relevant Entities Response to Submissions	**Formalised Response**
NSW Rural Fire Service (RFS) (Nika Fomin – Manager Planning & Environment Services)	
The NSW Rural Fire Service acknowledges the response to submissions provided for the proposed development. No further requirements are provided, subject to the correspondence initially provided dated 11 August 2020.	Noted and agreed.

Attended measurement 1/3 octave at location C																														
	Sum	25Hz	31Hz	40Hz	50Hz	63Hz	80Hz	100Hz	125Hz	160Hz	200Hz	250Hz	315Hz	400Hz	500Hz	630Hz	800Hz	1kHz	1.25kHz	1.6kHz	2kHz	2.5kHz	3.15kHz	4kHz	5kHz	6.3kHz	8kHz	10kHz	12.5kHz	16kHz	20kHz
dB	39.9	10.4	13.5	14.6	17.1	18.8	22.3	23.0	23.2	28.5	24.5	21.0	23.7	24.9	27.4	27.3	27.5	27.7	32.3	25.6	25.7	27.8	27.0	25.2	21.8	20.4	28.7	19.8	13.9	9.7	9.9
dB(A)	38.8	-34.4	-26.4	-19.9	-13.2	-7.4	-0.1	3.9	7.0	15.3	13.7	12.3	17.1	20.1	24.2	25.4	26.7	27.7	32.9	26.6	26.9	29.1	28.2	26.2	22.4	20.3	27.6	17.3	9.6	3.0	0.6
Measurment scaled down to 36 dB(A) - Night RBL at location C																														
	Sum	25Hz	31Hz	40Hz	50Hz	63Hz	80Hz	100Hz	125Hz	160Hz	200Hz	250Hz	315Hz	400Hz	500Hz	630Hz	800Hz	1kHz	1.25kHz	1.6kHz	2kHz	2.5kHz	3.15kHz	4kHz	5kHz	6.3kHz	8kHz	10kHz	12.5kHz	16kHz	20kHz
dB	37.1	7.6	10.7	11.8	14.3	16.0	19.5	20.2	20.4	25.7	21.7	18.2	20.9	22.1	24.6	24.5	24.7	24.9	29.5	22.8	22.9	25.0	24.2	22.4	19.0	17.6	25.9	17.0	11.1	6.9	7.1
dB(A)	36.0	-37.2	-29.2	-22.7	-16.0	-10.2	-2.9	1.1	4.2	12.5	10.9	9.5	14.3	17.3	21.4	22.6	23.9	24.9	30.1	23.8	24.1	26.3	25.4	23.4	19.6	17.5	24.8	14.5	6.9	0.2	-2.2
Raw measurement for 4kHz and 5kHz included																														
	Sum	25Hz	31Hz	40Hz	50Hz	63Hz	80Hz	100Hz	125Hz	160Hz	200Hz	250Hz	315Hz	400Hz	500Hz	630Hz	800Hz	1kHz	1.25kHz	1.6kHz	2kHz	2.5kHz	3.15kHz	4kHz	5kHz	6.3kHz	8kHz	10kHz	12.5kHz	16kHz	20kHz
dB	37.2	7.6	10.7	11.8	14.3	16.0	19.5	20.2	20.4	25.7	21.7	18.2	20.9	22.1	24.6	24.5	24.7	24.9	29.5	22.8	22.9	25.0	24.2	25.2	21.8	17.6	25.9	17.0	11.1	6.9	7.1
dB(A)	36.3	-37.2	-29.2	-22.7	-16.0	-10.2	-2.9	1.1	4.2	12.5	10.9	9.5	14.3	17.3	21.4	22.6	23.9	24.9	30.1	23.8	24.1	26.3	25.4	26.2	22.4	17.5	24.8	14.5	6.9	0.2	-2.2
4 - 5KHz=0																														
	Sum	25Hz	31Hz	40Hz	50Hz	63Hz	80Hz	100Hz	125Hz	160Hz	200Hz	250Hz	315Hz	400Hz	500Hz	630Hz	800Hz	1kHz	1.25kHz	1.6kHz	2kHz	2.5kHz	3.15kHz	4kHz	5kHz	6.3kHz	8kHz	10kHz	12.5kHz	16kHz	20kHz
dB	36.8	7.6	10.7	11.8	14.3	16.0	19.5	20.2	20.4	25.7	21.7	18.2	20.9	22.1	24.6	24.5	24.7	24.9	29.5	22.8	22.9	25.0	24.2	-1.0	-0.6	17.6	25.9	17.0	11.1	6.9	7.1
dB(A)	35.7	-37.2	-29.2	-22.7	-16.0	-10.2	-2.9	1.1	4.2	12.5	10.9	9.5	14.3	17.3	21.4	22.6	23.9	24.9	30.1	23.8	24.1	26.3	25.4	0.0	0.0	17.5	24.8	14.5	6.9	0.2	-2.2
Reduction	0.6	dB(A)																												
4-10kHz=0																														
	Sum	25Hz	31Hz	40Hz	50Hz	63Hz	80Hz	100Hz	125Hz	160Hz	200Hz	250Hz	315Hz	400Hz	500Hz	630Hz	800Hz	1kHz	1.25kHz	1.6kHz	2kHz	2.5kHz	3.15kHz	4kHz	5kHz	6.3kHz	8kHz	10kHz	12.5kHz	16kHz	20kHz
dB	36.4	7.6	10.7	11.8	14.3	16.0	19.5	20.2	20.4	25.7	21.7	18.2	20.9	22.1	24.6	24.5	24.7	24.9	29.5	22.8	22.9	25.0	24.2	-1.0	-0.6	0.1	1.1	2.5	11.1	6.9	7.1
dB(A)	35.2	-37.2	-29.2	-22.7	-16.0	-10.2	-2.9	1.1	4.2	12.5	10.9	9.5	14.3	17.3	21.4	22.6	23.9	24.9	30.1	23.8	24.1	26.3	25.4	0.0	0.0	0.0	0.0	0.0	6.9	0.2	-2.2
Reduction	1.1	dB(A)																												

Appendix 1
Biodiversity Development Assessment Report

Appendix 2
Air Quality Impact Assessment – Response to NSW EPA