4 February 2020
Ref: 19/2019

The General Manger
Ballina Shire Council
PO Box 450
BALLINA NSW 2478

Attention: Lucy Bennett

Dear Lucy

RE: Response to Submissions Land Use Conflict Risk Assessment Extractive Industry (Quarry), Asphalt/Bitupave and Ron Southon Depot & Proposed Residential Subdivision Lot 4 DP879770, No 81 Teven Road, Alstonville

1. Introduction

This letter is submitted as a response to submissions with respect to a *Land Use Conflict Risk Assessment (LUCRA) Extractive Industry (Quarry), Asphalt/Bitupave and Ron Southon Depot & Proposed Residential Subdivision Lot 4 DP879770, No 81 Teven Road, Alstonville* (Tim Fitzroy & Associates (TFA) 24 October 2019). This correspondence has been prepared in response to submissions from the NSW Environment Protection Authority (EPA) and the Boral Property Group.

Both submissions reaffirm that the proposed residential development is within Council's *Buffer to Extractive Industries and to Hot mix asphalt / bitument batch plant.* Principal concerns relate to potential land use conflicts as a result of approved activities at Tuckombil Quarry and Alstonville Asphalt Plant. The key concerns relate to noise, blasting and air quality. Reference is made to complaints regarding the operation of the Asphalt Plant. In addition, there are concerns from Boral with regard to any restrictions on the current and future use of the Tuckombil Quarry resource under clause 13 of State Environmental Planning Policy (SEPP) (Mining, Petroleum Production and Extractive Industries (2007). It is noted that this matter has not been raised by Ballina Shire Council, the owner of the quarry, as TFA understand that the quarry has not been operational since 2016 and that BSC is considering the future of the quarry.

The LUCRA (TFA, 24 October 2019) has been triggered by the proposed location of the residential subdivision approximately:

- 425m from the Tuckombil quarry; and
- 350m from Boral Asphalt plant operations.

The LUCRA acknowledges the potential land use conflicts between the existing Asphalt plant and quarry to future residents of No 81 Teven Road Alstonville. Clearly noise and air quality are the pre-eminent issues at play.

2. Noise Impacts

The LUCRA has conducted a comprehensive review of Noise Impact Reports undertaken of the Boral Asphalt Plant including Muller Acoustic Consulting Pty Ltd (MAC) August 2017, amongst others, and by Ambiance Audio (2014) for an adjoining residential development in Greenie Street Alstonville.

2.1 Noise Impact Assessment (MAC August 2017)

In August 2017 Muller Acoustic Consulting Pty Ltd (MAC) were commissioned by Boral (NSW) Pty Limited to complete a Noise Monitoring Assessment (NMA) for the Alstonville Asphalt Plant. The NMA was completed to quantify operational noise emissions of the plant within the surrounding community to ascertain compliance with relevant noise criteria.

The assessment was conducted in accordance with the following documents:

- NSW Environment Protection Authority (EPA) 2000, Industrial Noise Policy (INP);
- Standards Australia AS 1055.1:1997 - Acoustics - Description and measurement of environmental noise - General Procedures; and
- 160816 Alstonville Asphalt MOD3 Conditions (August 2016).

Four representative residential catchment areas were selected for this assessment and are summarized below:

- Location R1 is situated at Calypso Court, Alstonville, NSW, approximately 500m south-east of the plant. R1 is representative of residents on Calypso Court and the greater Granada Parade catchment area.

- Location R2 is situated on Greenie Drive, Alstonville, NSW, approximately 450m west of the plant and is representative of the Greenie Drive and Tanamera Drive catchment area.

- Location R3 is situated at the boundary of 1353 Teven Road, Alstonville, NSW. This location is approximately 430m north-west of the site and representative of all receivers to the north of the plant along Teven Road.

- Location R4 is situated in the car park of the Alstonville Hockey Club, which is situated 450m to the east of the plant. This location is representative of the receiver catchment to the east of the plant.

Noise Monitoring Locations (Muller Acoustic Consulting Pty Ltd 2017)

Table 13 presents the measured Boral contribution to the ambient environment at each monitoring location assessed against the day, evening and night PSNL derived from the INP assessment methodology.

Table 13 Industrial Noise Policy Compliance Assessment

Receiver	Operational Noise Level Contribution LAeq(15min) dBA		PSNL LAeq(15min) dBA			Compliant		
	Day	Evening/Night[2]	Day	Evening	Night	Day	Evening	Night
R1 (Calypso Court)[1]	31	41	38	35	35	✓	X	X
R2 (Greenie Drive)	<30	34	38	35	35	✓	✓	✓
R3 (Teven Road)	Nil	<30	38	35	35	✓	✓	✓
R4 (Hockey Club)	<30	<30	38	35	35	✓	✓	✓

Note 1: Includes 5dB modifying factor for low frequency as per the INP.

Note 2: Evening and night assessed against same criteria.

Noise from the project was above the relevant PSNL by 1dBA at R1. Taking into account the modification factors as per Section 4 of the INP, this equates to a 6dB contribution above the evening/night PSNL. Remaining measurements demonstrated compliance with relevant PSNLs for all assessed locations during day, evening/night periods.

It is noted that the noise contribution at R1 was obtained during the presence of a north- east wind and should be considered a worst case scenario.

2.2 Noise Impact Assessment (Ambiance Audio)

TFA has conducted a review of the *Noise Impact Assessment Operations of Boral Asphalt and Tuckombil Quarry at 486 Gap Road Alstonville on Proposed Residence at Lot 2 DP 800081 Greenie Drive Alstonville* (Ambiance Audio, 16 July 2014). The proposed residence was to be located in the south west portion of Lot 2 DP 800081 Greenie Drive and approximately 125m north west of the closest point of the subject lot (81 Teven Road, Alstonville).

According to Ambiance Audio (2014) the distance from the closest façade (north east) to the quarry related activities is as follows:

Distance from the closest façade (north east) of Proposed Dwelling at Lot 2 DP 800081 Greenie Drive Alstonville to the quarry related activities

Asphalt Stockpiles	450m
Asphalt Plant	470m
Current Quarry Operations	600+m
Quarry Stockpiles	275m
Quarry Boundary	210m

Based on the proposed residential subdivision plan for 81 Teven Road, the closest points to the quarry of proposed lots 1 to 3 (actual dwelling locations are as yet unknown) are described in the **Table below.**

Distance from the closest façade (north east) of closest Dwelling in proposed residential subdivision plan at 81 Teven Road to the quarry related activities

Activity	Lot 1	Lot 2	Lot 3	Lot 4
Asphalt Stockpiles	300m	280m	310m	Existing NA
Asphalt Plant	360m	360m	395m	Existing NA
Current Quarry Operations	600 +m	600 +m	600 +m	Existing NA
Quarry Stockpiles	480m	465m	535m	Existing NA
Quarry Boundary	230m	225m	300m	Existing NA

EPA Licence Noise Criteria

The Tuckombil Quarry **whilst not currently operating (postponed in 2016)** still retains an Environmental Protection Licence (EPL) issued by the NSW Environment Protection Authority (EPA). EPL: 3856 for Tuckombil Quarry states that:

L4 Noise limits

L4.1 Noise from the licensed premise must not exceed an LAeq (15 minute) noise emission criterion of 38, except as expressly provided by this licence.

L4.2 Noise from the premises is to be measured at the most affected residential receiver to determine compliance with this condition.

The Boral Asphalt Plant was previously licenced with the NSW EPA for Bitumen pre-mix or hot-mix production. On 28 April 2000 the NSW EPA removed the requirement for the Asphalt Plant to be licenced under the POEO Act. The Environment Protection Authority (EPA) is still the Appropriate Regulatory Authority (ARA) however the premises are no longer required to be licensed under the Protection of the Environment Operations Act 1997 (POEO Act). The pre-existing noise limits are provided below:

L6.1 Noise from the premises must not exceed the limits as set out in Table 1.

Table 1.

Location	Evening $LA_{eq(15min)}$	Night $LA_{eq(15min)}$
214 Teven Road*	N/A negotiated agreement in place	
29 Granada Parade	38 dB(A)	35 dB(A)
81 Teven Road	38 dB(A)	35 dB(A)

* Note: Negotiated agreement in place between the owner and occupier of 214 Teven Road and the licensee.

Note the evening limit of 38 Laeq (15min) and the night time limit of 35 Laeq (15min) currently apply to the existing residence at the subject site (81 Teven Road) and would apply to residential dwellings in the proposed subdivision.

The closest point of 81 Teven Road is located:

- 125m south east of the proposed dwelling site on Lot 2 DP 800081;
- 360m south west of the asphalt plant; and
- Greater than 600m from the current extent of quarrying operations

Noise Monitoring

Ambiance Audio (2014) concluded as follows:

Results of noise monitoring of the asphalt plant and quarry at the proposed building site indicate a level of 35 dBA $L_{Aeq,15min}$ for each of the asphalt plant and quarry operations under load conditions for the day time period. It is predicted the combined day time noise level is 38 dBA $L_{Aeq,15min}$ which complies with the PSNG. The noise level of the asphalt plant at the proposed building site is 35 dBA $L_{Aeq,15min}$ which complies with the evening and day time PSNG.

Noise levels from the asphalt plant and quarry may increase at the proposed building site due to changes of operations at the asphalt plant and quarry. These increases will also equally affect the existing residential dwellings 25 – 30 metres to the west of the proposed building site. Similarly, any increase in noise levels at the proposed building site due to meteorological conditions will also have an equal increase at the nearby existing residential dwellings.

Additional quarry related traffic on Teven Road is not considered to have any significant noise impact on the proposed residential dwelling.

Blast over-pressure and ground vibration levels are predicted to be below the allowed limits at the proposed residential dwelling.

Noise levels from the nearby Tuckombil quarry and asphalt operations at the proposed residential dwelling will comply the NSW Industrial Policy.

TFA Comment

Based on the proposed subdivision plan (Ardill Payne & Partners, Job No 8964 Drawing SK1, Issue A, 11 June 2019) the closest lot will be approximately 125m south east of the dwelling at Lot 2 DP 800081.

The Ambiance Audio report is based on noise assessment undertaken at the site of the proposed dwelling not at the source of the asphalt plant nor the quarry. Ambiance Audio (2014) includes measurements of both Asphalt plant and Quarrying operations at the proposed dwelling site that were co-ordinated with the asphalt plant and quarry operators and Garry Hall (acoustic engineer) to identify noise sources at the receptor (see extract below)

> The 2250 SLM was mounted on a 1.4m high tripod and a Bruel and Kjær outdoor microphone kit fitted to the microphone. The SLM was located at the proposed SW corner building site on the lot to record asphalt plant operations while operating under load conditions. The asphalt plant would not allow a sound level meter to be located on site to record reference noise levels while the plant was under operating conditions. Phone calls were used to coordinate between the plant supervisor to inform of the operating conditions at the asphalt plant.
>
> The measurements were recorded over 15 minute periods with 1 second logging. Markers and sound recordings were used during the noise monitoring to identify the noise level and duration of acoustic events for later analysis.

Given that measurements were not taken at the noise source it is not possible to directly predict the impacts at the proposed subdivision from Ambiance Audio (2014). It is important to note that Ambiance Audio (2014) includes noise impacts from both asphalt and quarrying activities.

Ambiance Audio (2014) does however provide contextual data on noise impacts from asphalt and quarrying activities and coupled with the Compliance Noise Monitoring ((Hyder Consulting Australia (October 2004), Heggies Australia 25 October 2005 and NMA Muller Acoustic Consulting Pty Ltd (MAC) September 2017)) for Alstonville Asphalt Plant, that enables some inferences to be made as to the noise impacts from asphalt and quarrying activities on the proposed subdivision. In addition, Muller (2017) suggests the asphalt plant contributes up to 6dB above the Project Specific Noise Level (PSNL) for R1 during the evening and night period due to tonal effects. R2 appears to be the closest receptor to the proposed subdivision and it is predicted to be within the PSNL. R1 is predicted to exceed the PSNL by 6dBA (including tonality penalty) but it is located to the south, therefore it is assumed that the southern direction from the Asphalt plant is the worst affected.

Ambiance Audio (2014) established:

> The internal noise levels from the asphalt plant during the evening and night time periods will meet the requirements of AS/NZS 2107:2000 - Sleeping Areas - Satisfactory 30dB (A), Maximum 35 dB(A) and Living Areas – Satisfactory 30 dB(A), Maximum 40 dB(A) for houses and apartments near minor roads. All values L_{Aeq}. Windows tend to be kept closed during winter months which will reduce internal noise further.

1. Predicted Leq 15min noise levels identified activities such as trucks manoeuvring / passbys and reversing as exceeding the background level in the Day, Evening and Night time periods.
2. The potential noise impacts from vehicle air brakes arriving and leaving the site have not been considered for the morning, evening and night periods.
3. Any activities that have the potential to cause sleep disturbance have not been assessed.
4. The noise mitigation measures outlined in section 5 of the report are considered inadequate to effectively control and manage noise emissions to an acceptable level.

TFA Comment

Based on the data at hand it appears that the land use conflict risk with respect to noise generating activities between the existing asphalt plant and quarrying operations (should they recommence in the future) and future dwellings in the proposed subdivision to be low.

Nevertheless, adopting the *precautionary principle,* it is recommended that future dwellings in Lots 1 to 3 (inclusive) be constructed of standard construction with acoustic seals to windows facing the quarry/asphalt plant and the provision of air conditioning in habitable rooms to allow residents with the opportunity to be closed windows to maintain internal acoustic amenity when required.

TFA offer the following condition to be applied to the development prior to the issue of subdivision certificate:

A Restriction As-To-User in accordance with Section 88b of the Conveyancing Act 1919, is to be placed on the title of Lots 1 to 3 inclusive stating that any proposed dwelling located on Lots 1 to 3 inclusive must be constructed so as to achieve the internal noise levels for bedrooms (LAeq) of 35 dBA during night periods (10pm to 7am) and 40dBA for other habitable rooms as specified in *AS/NZ 2107:2000 Acoustics – Recommended design sound levels and reverberation times for building interiors.*

Reference is made to the Land Use Conflict Risk Assessment submitted by Tim Fitzroy & Associates 27 October 2019 which identifies Lots 1 to 3 as potentially noise affected.

Acoustic certification from a suitably qualified and experienced person is to be provided to the Principal Certifying Authority prior to the release of the Construction Certificate or Complying Development Certificate for any dwelling house on those lots to certify that the dwelling construction plans and specifications will achieve the internal noise levels for bedrooms (LAeq) of 35 dBA during night periods (10pm to 7am) and 40dBA for other habitable rooms as specified in AS/NZ 2107:2000 Acoustics – Recommended design sound levels and reverberation times for building interiors.

A copy of the section 88b instrument shall be provided to and approved by Council prior to the issue of the subdivision certificate.

2.3 Noise Complaints

The LUCRA included a review of complaints provided by Council and correspondence from the EPA. On 1 September 2017 the EPA responded to a request from Ballina Shire Council seeking further details on complaints to the EPA's *Environment Line* with respect to the operation of the Boral Asphalt Plant, 540 Gap Road, Alstonville. The EPA provided a Table (see extract below) with a list of complaints received from January to June 2017. The complaints numbered 7 in total and related to 4 events (3 in May and 1 in January). The complaints related to odour and noise. The location of the receivers is unknown. There is no evidence that the complaints have been independently verified.

Boral's (2019) submission refers to a 2019 Alstonville Asphalt Plant Complaints Register which was provided to Council's Environmental Health team on 25 November 2019 *of which there were 26 claims which demonstrate actual conflict*. Boral advised that in every case the wind direction was from the north, north nor east or north east in the direction of 81 Teven Road.

Boral (2019) do not describe the nature of the complaints, the duration over which the complaints occurred, whether the incidents were isolated, the actual number of complaints, nor the location of the complaints. There is no evidence that the complaints have been independently verified and substantiated.

In order to assess the substance of the complaints, the aforementioned interrogation would be required. Nonetheless and in spite of these claims TFA have recommended that future dwelling in Lots 1 to 3 be suitably acoustically treated and where necessary fitted with air conditioning to mitigate any noise or air impacts from the asphalt plant and quarry.

2.4 Prevailing Weather

As discussed in the LUCRA the annual wind rose (Figure 8-2) indicates that the modelled winds tend to be well distributed throughout the sectors with the prevailing winds blowing from the south-southeast to southeast sector and therefore away from the proposed development site (81 Teven Road).

Winds also frequently arrive from the south-west and north to north-north-east sectors but rarely flow from the north-west to west-north-west sectors. Calm conditions, where the wind speed is lower than 0.5 m/s, are rare occurring on only 0.4 % of occasions, with the annual mean wind speed being 3.2 m/s.

The lightest winds tend to arrive from the south-east quadrant. The diurnal wind distribution is presented in Figure 8-3 and shows that stronger winds are more common during the day, with more instances of south-south-easterly and south-easterly winds during the afternoon. At night winds most frequently arrive from the south-west quadrant. Figure 8-4 shows that during summer and autumn winds are more likely to originate from the south-south-east and south-east, with south-westerly and northerly winds prevailing during winter and spring respectively.

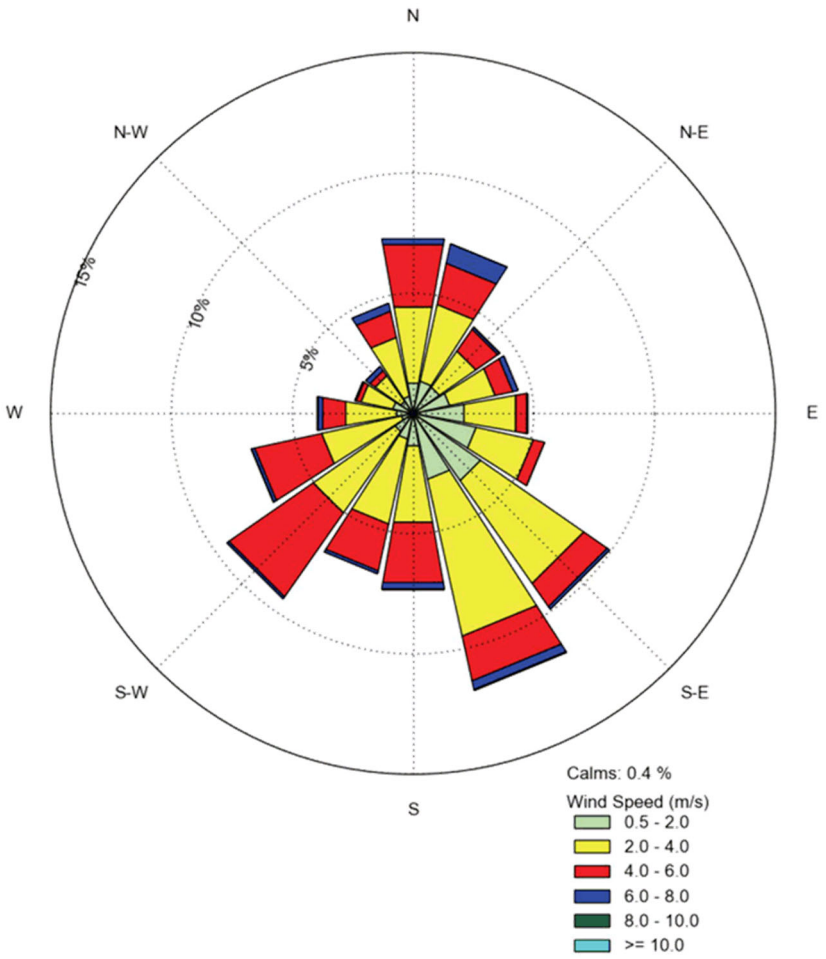

Figure 8-2 Annual distribution of winds at the site

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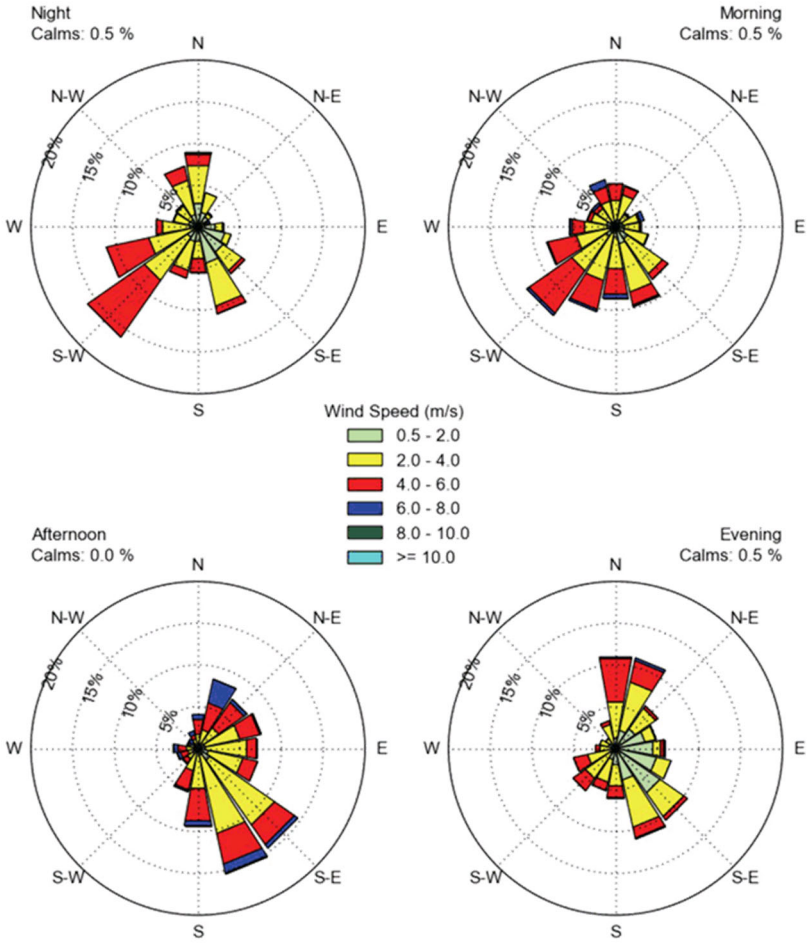

Figure 8-3 **Diurnal distribution of winds at the site**

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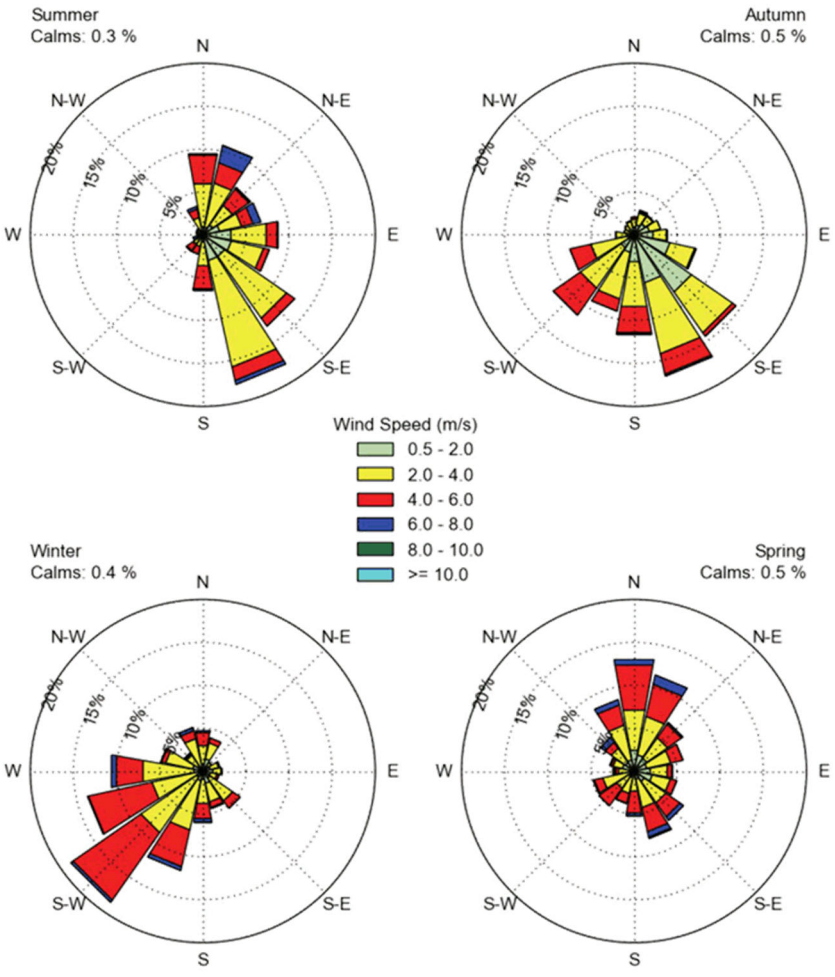

Figure 8-4 Seasonal distribution of winds at the site

The mean annual, seasonal and diurnal wind speeds and proportion of calms are presented in Table **8-1**

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Table 8-1 Annual, seasonal and diurnal mean wind speeds

Period	Mean Wind Speed (m/s)	Calms (%)
Annual	3.2	0.4
Summer	3.2	0.3
Autumn	2.6	0.5
Winter	3.4	0.4
Spring	3.4	0.5
Night: Midnight to 6am	2.8	0.6
Morning: 6am to Midday	3.3	0.6
Afternoon: Midday to 6pm	3.8	0.1
Evening: 6pm to midnight	2.7	0.6

3 Air Quality

3.1 Alstonville Asphalt Plant

As discussed in the LUCRA the Alstonville asphalt plant is designed to operate as a batching-type asphalt plant. This means that during a typical production run, asphalt is produced in approximately three tonne batches.

Consequently, not all plant processes operate or emit odour emissions on a continuous basis and at a constant rate. The plant operates in response to the demand for its product. Road construction and maintenance is conducted by a range of customers at varying times, including varying hours of the day and on different days of the year, including weekends. Consequently, the plant needs to maintain operating flexibility in order to meet the requirements of its customers.

Asphalt is produced for road construction on a 'just in time' manufacturing basis. The asphalt is required to remain above a set temperature threshold that is specific to the product being produced and the distance it has to travel to the customer, in order for it to maintain the required properties for production, transit to site and application by the end user. Consequently, production rate and temperature are important considerations in the production process and the odour impact assessment.
Air Environment Consulting was commissioned by Boral National (Boral) in June 2017 to undertake an odour impact assessment of the Alstonville asphalt plant during normal production. The asphalt plant has intermittently received complaints from the local community about odour emission releases over many years. In response to these complaints, Boral implemented an Air Quality Management Plan (AQMP) in 2014 that included the installation of an activated carbon filtration system to treat odour emissions released from the Bitumen Kettles / Holding Tanks during tanker loading.

According to Air Environment Consulting (2017) this odour control system has been highly effective at reducing emissions from this source. Notwithstanding this, the NSW Environmental Protection Authority (EPA) has noted that there have been verified odour complaints associated with asphalt production and handling under certain conditions since the implementation of the Bitumen Holding Tank odour control units.

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To investigate the odour issue, an odour impact assessment comprising source odour sampling and laboratory olfactometry analysis was conducted in accordance with the relevant Australian standards (including AS4323.3 [2001] and AS4323.4 [2009]) and NSW Approved Methods techniques. An odour emissions inventory was then developed for use in a CALPUFF odour dispersion modeling assessment, conducted in accordance with the NSW Approved Methods and CALPUFF modelling guidance.

The odour impact assessment determined that ground-level odour concentrations associated with air emissions from all stack and fugitive sources combined were predicted to comply with the EPA odour impact assessment criterion at all sensitive receiver locations. This assessment was conducted on the basis of the plant's license conditions that allow for its operation during every hour of the year.

In reality, the potential for the facility to cause odour impact was expected to be significantly lower than that assessed, as the plant only operated for 2.77% of the recent 2016-17 financial year. The assessment also determined that emissions associated with the Dryer Kiln stack were the largest contributor to ground-level odour concentrations in sensitive residential areas adjacent to the plant.

The second most important odour emission source was determined to be the truck load out facility for asphalt product. This conclusion was primarily due to the large difference in odour emissions between the two source types, where emissions from the stack were determined to be 20,444 OU/s compared to approximately 75 OU/s from all asphalt production sources combined. Also important to this finding was the configuration of the stack that was determined to be affected by turbulence generated by the flow of wind around the nearby plant buildings and structures that were of similar height to the top of the stack.

Notwithstanding the plant's compliance with the odour impact assessment criterion, in acknowledgement of the odour complaints from the community, Air Environment Consulting recommended that further investigations are conducted into their cause. These investigations would include:

- A series of ambient odour assessment surveys to be conducted around the plant and in the local community during production periods to track the odour plume and record its intensity,
- The keeping of an odour complaint log to assist in odour investigations including the establishment of a direct phone line that the community can use to register odour complaints,
- Liaison with the local community by Boral Alstonville operators to investigate the odour impact immediately upon the receipt of a complaint, and
- The analysis of wind and production conditions at the time of complaints based on data recorded at the on-site AWS.

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3.2 Tuckombil Quarry

It is important to note that the Tuckombil Quarry has not been in operation since 2016. The future of the Tuckombil Quarry is being currently considered by Council.

The Environmental Management Plan for the Tuckombil Quarry states that dust monitoring will be conducted on a three monthly basis. Discussions with the previous owner of Australian Soil and Concrete Testing (ASCT) Mr Brian Dick has confirmed that ASCT were engaged by Lismore City Council to undertake dust monitoring at Tuckombil Quarry. An Environmental Audit of the Tuckombil Quarry was conducted by Newton Denny Chappelle (2007-2013). The author of the Environmental Audit Karina Vikstrom (pers. com 24 January 2018) confirmed that she viewed certain records online via the Council trim service.

Despite inquiries by the applicant to Ballina Shire Council copies of the dust monitoring results have not been recovered. The audit states that between 2007 – 2013 there were two dust complaints in 2010. In response, increased water cart usage was undertaken and no further complaints were received. It is noted the EPL 3856 for the Tuckombil Quarry does not require dust or air monitoring.

TFA Comment
As discussed in the LUCRA it is our view that the risk from air quality impacts from the Alstonville Asphalt Plant (principally odour) and Tuckombil Quarry (particulate matter, when operating) at the proposed residential subdivision are acceptable due to a combination of:

- Distance attenuation;
- Topographical shielding;
- The implementation of Air Quality Management Plan (AQMP) by Boral
- The implementation of the Tuckombil Quarry Environmental Management Plan

4 Blasting (Tuckombil Quarry)

In 2013 Lismore City Council engaged Orica Quarry Services to conduct a seismic assessment for the Tuckombil Quarry. The seismic assessment involved firing a series of small explosive charges along the edge of the proposed extraction limit and monitoring the resultant vibration at the nearest sensitive receiver.

The nearest sensitive receiver is a residential development bordering the site, and monitoring the vibration at strategic locations in the vicinity of this development can determine site vibration transmission characteristics and ultimately, maximum charge weights to allow the development of a Site Law.
The seismic assessment determined that blasting in close proximity to the nearest sensitive receiver known as Monitor #1 is achievable. However, a number of recommendations have been given in order to ensure that this can occur.

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- Future blast monitoring data is gathered and added to this seismic assessment to further refine the site law.
- Limit blast charging to 2 decks in any one hole. This may involve limiting bench heights in some areas.
- Implementation of the Unitronic Electronic Blasting System to enable single hole/single deck firing critical to meeting vibration limits.
- Ensure all this information is used in conjunction with other influences on the blasting event such as boretrak results, survey information, and weather events.

For each blast event on site, blast monitors should be placed at 4 sites surrounding the quarry to capture vibration and overpressure data. The nearest sensitive receiver is the residence on Teven Road. The monitor located at this property is known as Monitor #01. Monitor #02 is located at the rear boundary of residences on Tanamera Drive. Similarly, Monitor #03 is located at the rear boundary of residences on Granada Parade and Monitor #04 is located at the nearest residence to the east of the quarry on Gap Road (see Illustration 2.5 Blast Monitoring Locations).

The residence at Monitor #01 is in particularly close proximity to the quarry and historically has had higher environmental readings as a result of blasting events. Therefore, the main focus of the seismic assessment is to determine appropriate methods for the control of blast induced ground vibrations at this location.
In previous reports on blasting at Tuckombil Quarry, the residence at Monitor #01 may have been referred to as the “Schmidt Residence”.

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Overview of Tuckombil Quarry and locality with Blast Monitoring Locations (Source Orica Quarry Services 2013)

TFA Comment

Clearly, if Tuckombil Quarry reopens, blasting activities will continue to focus on compliance at the nearest affected residence namely, *Monitor No 1*, on Teven Road providing comfort to residences locating further away including at 81 Teven Road that blasting impacts will be in compliance with relevant health and building structure guidelines

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5 Clause 13 State Environmental Planning Policy (SEPP) (Mining, Petroleum and Extractive Industries) 2007

The following is an assessment under the provisions of Clause 13 of SEPP (Mining, Petroleum and Extractive Industries) 2007:

(1)(a) There is a distance of approximately 190m between the boundary of the subject land and the closest lot boundary of the quarry.

(1)(b) The "Tuckombil Quarry" is identified in the Far North Coast Regional Strategy 2006-31 as being a "regionally significant extractive resource".

(1)(c) The "Tuckombil Quarry" is not identified by any known environmental planning instrument as being the location of significant resources of minerals, petroleum or extractive materials.

(2)(a)(i) The quarry is located in an area that is predominantly rural in nature, being surrounded by rural and rural residential uses, agricultural pursuits and playing fields (Council owned). Urban residential development exists approximately 300m to the south of Gap Road and approximately 200m to the west of Teven Road.

All residences within the locale are in excess of 500m from the workable area of the quarry and are shielded/buffered by an effective visual and noise buffer, which has been created by vegetated perimeter mounds that have been constructed around the bulk of the current working area of the site. A southern and western bund wall exist to Gap Road and Teven Road respectively.

The subject and adjoining land is zoned R2 – Low Density Residential and has a mapped 600m2 minimum lot size/subdivision standard under the BLEP 2012. The subject and adjoining land is mapped in the Alstonville Planning and Environmental Study 2017 (Diagram 32 – see below) as "containing large lots with subdivision potential".

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Diagram 32:
R2 zoned land containing large lots with subdivision potential

(2)(a)(ii) There are a number of dwellings that are situated on land/lots that will be closer to any of the dwellings that will be situated on the proposed lots, including a dwelling house that was recently approved on Lot 2 DP 800081 under the terms and conditions of DA 2014/383.

As shown on the attached BLEP 2012 zoning map, there is a substantial number of residential lots and dwellings that are situated within 500m of the quarry lot boundary with more than half of the urban area of the village of Alstonville being situated with 1km of the quarry lot boundary.

Based on the above, the proposed creation of 3 new lots/future houses is not considered to be such that will have a significant effect on the current or future extraction/recovery of extractive materials and will not limit access to or impede assessment of those resources. This statement is supported by a Land Use Conflict Risk Assessment (Tim Fitzroy & Assoc, dated 24th October 2019) that was provided at Appendix G to the DA/SEE and which concluded that:

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This Land Use Conflict Risk Assessment is based on:

- a thorough review of the site history of the Tuckombil quarry and adjoining Alstonville Asphalt Plant, including previous development applications and environmental assessments, and comments by council officers and state government agencies;
- an assessment of the existing Ron Southon Blasting Contractor and Depot
- site inspection; and
- discussions with the current owner of the subject site.

This LUCRA has concluded that the proposed site is suitable for a proposed residential subdivision as described in the Site Plan subject to the following recommendations:

- Noise Mitigation
    - As a precautionary measures given the tonal impacts of asphalt plant operation resulting in a 6dB exceedance in the evening and night periods at noise monitoring location R1 on the northern perimeter of the Panorama Estate consideration should be given to the provision of acoustic treatment of windows and the provision of air conditioning in habitable rooms to allow windows to be closed in the night and evening for dwellings in the proposed subdivision.

A number of factors have led to this conclusion including:

- distance attenuation of some 425 metres from the limit of quarry excavation to the proposed residential subdivision;
- distance attenuation of some 350 metres from the closest point of the Alstonville Asphalt Plant to the proposed residential subdivision;
- no direct line of sight between the quarry and asphalt plant and the proposed development;
- the ongoing implementation of the Environmental Management Plan for the Tuckombil Quarry,
- Boral's commitment to implement the recommendations of the Odour Impact Assessment of the Alstonville Asphalt Plant (Air Environment 2017)
- the evidence of air quality, noise and vibration monitoring, and
- the results of modelling on the effects of the asphalt plant on air quality.

The findings and recommendation of this LUCRA have been supported by further detailed investigations undertaken by Tim Fitzroy & Assoc in respect to noise impact and air quality assessment (refer below).

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(2)(a)(iii) The proposed residential subdivision is compatible with and permitted under the existing statutory and strategic planning provisions applying to the subject and adjoining land and is not considered to be such that is incompatible with the existing and continued operation of the quarry. The subject land is NOT part of the "urban buffer" around the Village of Alstonville and is physically and spatially separated from such buffer by Teven Road.

2(b) As stated above, the proposed residential subdivision is compatible with and permitted under the statutory and strategic planning provisions applying to the subject and adjoining land and is not considered to be contrary or injurious to the public interest. The extractive industry is required to operate strictly in accordance with the controls and conditions of the development consent and the EPA licence, which have been imposed to control operations and minimise impacts on the natural and man-made environment.

2(c) As detailed in the LUCRA and the addendum, as a precautionary measure in respect of the tonal impacts of the asphalt plant operation (not the extractive operation), consideration should be given to the provision of acoustic treated windows and air conditioning in habitable rooms to allow windows to be closed in the night and evening for future dwellings on certain lots in the proposed subdivision.

6 Conclusion

This correspondence has been prepared in response to submissions from the NSW Environment Protection Authority (EPA) and the Boral Property Group.

Both submissions reaffirm that the proposed residential development is within Council's *Buffer to Extractive Industries and to Hot mix asphalt / bitument batch plant.* Principal concerns relate to potential land use conflicts as a result of approved activties at Tuckombil Quarry and Alstonville Asphalt Plant. The key concerns relate to noise, blasting and air quality. Reference is made to complaints regarding the operation of the Asphalt Plant. In addition, there are concerns from Boral with regard to any restricions on the current and future use of the Tuckombil Quarry resource under clause 13 of State Environmental Planning Policy (SEPP) (Mining, Petroleum Production and Extractive Industries (2007). It is noted that this matter has not been rasied by Ballina Shire Council, the owner of the quarry, as TFA undersatnd that the quarry has not been operational since 2016 and that BSC is considering the future of the quarry.

The LUCRA acknowledges the potential land use conflicts between the existing Asphalt plant and quarry to future residents of No 81 Teven Road Alstonville. Clearly noise and air quality are the pre-eminent issues at play.

Based on the data at hand it appears that the land use conflict risk with respect to noise generating activities between the existing asphalt plant and quarrying operations (should they recommence in the future) and future dwellings in the proposed subdivision to be low.

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Nevertheless, adopting the *precautionary principle*, it is recommended that future dwellings in Lots 1 to 3 (inclusive) be constructed of standard construction with acoustic seals to windows facing the quarry/asphalt plant and the provision of air conditioning in habitable rooms to allow residents with the opportunity to be closed windows to maintain internal acoustic amenity when required.

TFA offer the following condition to be applied to the development prior to the issue of subdivision certificate:

A Restriction As-To-User in accordance with Section 88b of the Conveyancing Act 1919, is to be placed on the title of Lots 1 to 3 inclusive stating that any proposed dwelling located on Lots 1 to 3 inclusive must be constructed so as to achieve the internal noise levels for bedrooms (LAeq) of 35 dBA during night periods (10pm to 7am) and 40dBA for other habitable rooms as specified in AS/NZ 2107:2000 Acoustics – Recommended design sound levels and reverberation times for building interiors.

Reference is made to the Land Use Conflict Risk Assessment submitted by Tim Fitzroy & Associates 27 October 2019 which identifies Lots 1 to 3 as potentially noise affected.

Acoustic certification from a suitably qualified and experienced person is to be provided to the Principal Certifying Authority prior to the release of the Construction Certificate or Complying Development Certificate for any dwelling house on those lots to certify that the dwelling construction plans and specifications will achieve the internal noise levels for bedrooms (LAeq) of 35 dBA during night periods (10pm to 7am) and 40dBA for other habitable rooms as specified in AS/NZ 2107:2000 Acoustics – Recommended design sound levels and reverberation times for building interiors.

A copy of the section 88b instrument shall be provided to and approved by Council prior to the issue of the subdivision certificate

As discussed in the LUCRA it is our view that the risk from air quality impacts from the Alstonville Asphalt Plant (principally odour) and Tuckombil Quarry (particulate matter, when operating) at the proposed residential subdivision are acceptable due to a combination of:

- Distance attenuation;
- Topographical shielding;
- The implementation of Air Quality Management Plan (AQMP) by Boral
- The implementation of the Tuckombil Quarry Environmental Management Plan

Clearly, if Tuckombil Quarry reopens, blasting activities will continue to focus on compliance at the nearest affected residence namely, *Monitor No 1*, on Teven Road providing comfort to residences locating further away including at 81 Teven Road that blasting impacts will be in compliance with relevant health and building structure guidelines.

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As discussed in the LUCRA the annual wind rose indicates that the modelled winds tend to be well distributed throughout the sectors with the prevailing winds blowing from the south-southeast to southeast sector and therefore away from the proposed development site (81 Teven Road).

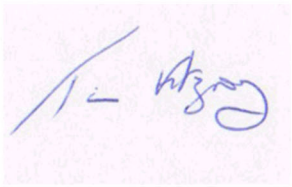
Boral's (2019) submission refers to a 2019 Alstonville Asphalt Plant Complaints Register which was provided to Council's Environmental Health team on 25 November 2019 *of which there were 26 claims which demonstrate actual conflict*. Boral advised that in every case the wind direction was from the north, north nor east or north east in the direction of 81 Teven Road.

Boral (2019) do not describe the nature of the complaints, the duration over which the complaints occurred, whether the incidents were isolated, the actual number of complaints, nor the location of the complaints. There is no evidence that the complaints have been independently verified and substantiated.

In order to assess the substance of the complaints, the aforementioned interrogation would be required. Nonetheless and in spite of these claims TFA have recommended that future dwelling in Lots 1 to 3 be suitably acoustically treated and where necessary fitted with air conditioning to mitigate any noise or air impacts from the asphalt plant and quarry.

If you have any enquiries with regard to the content of this correspondence do not hesitate to contact me on ph 044 848 3837 or email tim@timfitzroy.com.au.

Kind regards,



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