



BEFORE THE TASMAN DISTRICT COUNCIL

IN THE MATTER of the Resource Management Act 1991  
AND.

IN THE MATTER of applications under section 88 of the  
Act to the Tasman District Council by  
Tasman Bay Asphalt Limited for  
resource consents for an  
Asphalt Plant (RM201000, RM201002,  
RM201018)

BETWEEN Tasman Bay Asphalt Limited  
Applicant

AND MG Group Holdings Ltd., Edens Road  
Fruit Ltd., JS Ewers Ltd, Blackbyre  
Horticulture Ltd. and Boysenberries  
New Zealand Ltd.  
Submitters

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STATEMENT OF EVIDENCE OF REWA JANE SATORY (NOISE)

ON BEHALF OF EDEN ROAD FRUIT AND JS EWERS

DATED 17 DECEMBER 2021

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### Qualifications and experience

1. My name is Rewa Satory. I am an Acoustic Engineer with Acoustic Engineering Services Limited, an acoustic engineering consultancy with head office based in Christchurch. I hold a Bachelor of Engineering from the University of Canterbury. I am a Member of the Acoustical Society of New Zealand.
2. I have over six years' experience in the field of acoustic engineering consultancy and have been involved with a large number of environmental noise assessment projects throughout New Zealand on behalf of applicants, submitters and as a peer reviewer for Councils.
3. My experience includes assessing noise levels from many activities including quarrying and industrial activities, heavy vehicles on sites and on public roads in Christchurch, Selwyn, Southland and Central Otago Districts.
4. While this matter is not before the Environment Court, I have read the Code of Conduct for Expert Witnesses (Part 7 of the Environment Court Code of Practice), and I agree to comply with it. I confirm this evidence is within my area of expertise, except where I state I am relying on facts or information provided by another person. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

### Background

5. In July 2021, AES was engaged by the 'Submitters' to undertake a review of the methodology and findings of the report titled *272 Bartlett Road, Acoustic Assessment - Resource Consent* prepared by Bladon Bronka Acoustics and dated the 22<sup>nd</sup> of September 2020 (the Acoustic Assessment), along with the application documents, including the traffic assessment.
6. I have since reviewed the s42A report prepared by Mr Doole and Mr

Pigott and the summaries of submissions and applicant evidence.

7. The description of the activity has been presented elsewhere and I have not repeated it; however, in summary:
  - a. A Carbon T-box asphalt plant is to operate for a maximum of 10 hours per day to produce asphalt using aggregate from the existing gravel extraction and processing plant operated by Downers that is located adjacent to the proposed location of the asphalt plant.
  - b. A six day working weeks is proposed (Monday - Saturday) with the plant able to operate between 10 hours each day between 7 am and 6:30 Monday - Friday and between 7 am and 6 pm on Saturday
  - c. On 30 occasions per year Monday - Saturday the plant may operate up until 9 pm and truck movements will occur until 10 pm.
  - d. There will be 80 truck movements per day (i.e. 40 return trips) once averaged. Peak heavy vehicle movements will be 4 trucks per hour (8 movements)
8. In my evidence, I consider the assessment criteria, the noise generating aspects of the asphalt plant and noise from heavy vehicles on local road and discuss whether noise effects on nearby residences will be appropriate.

#### Assessment criteria

9. Mr Bronka's assessment focuses on Section 16 of the Resource Management Act 1991 (RMA) which states that there is a duty to avoid unreasonable noise such that every occupier of land *shall adopt the best practicable option to ensure that the emission of noise from that land or water does not exceed a reasonable level.*

10. Mr Bronka does not include any reference to Section 104a of the RMA (under which this Application is made) which requires the actual and potential effects of the activity on the environment to be considered, with an upper threshold of 'minor effects'.
11. In order to determine the expected level of noise effect, I consider the limits set out in the Tasman Resource Management Plan (TRMP) for permitted activities are the most relevant point of reference. Those limits are:

Daytime (7 am - 9 pm Monday - Friday, 7 am - 6 pm Saturday)

55 dB  $L_{Aeq}$

Night time

40 dB  $L_{Aeq}$  70 dB  $L_{AFmax}$

These limits apply at the notional boundary of dwellings. The nearest dwelling at 202 Edens Road is located some 600 metres from the applicant site.

12. The TRMP does not provide noise limits for noise from vehicles on public roads; however, noise from these vehicles may have an effect and should be considered as part of the assessment.

#### Plant noise levels

13. I have undertaken indicative calculations of noise from the plant, heavy vehicles and loaders based on the information provided in Mr Bronka's initial assessment assuming the following sound powers:

112 dB  $L_{WA}$  for the asphalt plant

108 dB  $L_{WA}$  for a 10 T front end loader

108 dB  $L_{WA}$  for trucks travelling at 10 km/h on site

14. My indicative analysis included a realistic assumption for the source

height of the Carbon T-box. Mr Bronka states that the primary noise source of the Carbon T-box will be from the burners and air-compressors at a height of 1.0 metres. The Carbon T-Box is ~6 metres high and there will likely be sound sources higher than 1.0 metres including the burner drum, conveyors and motors, and fans associated with the bag house.

15. Based on the above, my analysis suggests that Mr Bronka's assessment may have overestimated the effect of the bund/fence by 2 - 4 dB. However, the asphalt plant is still expected to comply with the TRMP daytime limit by some margin. I agree that the effect of this daytime noise will be low when received in outdoor living areas, and within dwellings.
16. On up to 30 days per year the asphalt plant may operate up until 9 pm. If this occurs on a Saturday when the TRMP night-time limit is 40 dB  $L_{Aeq}$  in the period from 6 pm to 9 pm, my analysis suggests that the TRMP limit may be exceeded by 1 - 2 dB at 202 Eden Road, and 208 Bartlett Road.
17. This noise level would be 5 - 12 dB above the existing background noise level on Saturday afternoons presented by Mr Bronka, which according to the Standard *BS 4142 2014+A1 2019* which Mr Bronka references in his evidence, would constitute something between a "low observed" and "significant observed" adverse effect. While a 'background plus' approach like this hasn't typically been used in New Zealand since the 1990's as it leads to background creep, noise at these times will be slightly above the level the District Plan envisages for permitted activities, and this effect could be avoided through limiting plant operation to 6 pm on Saturdays.
18. Submitters are also concerned about noise levels received on the river walkway. Based on the existing activity on this part of the river I expect the predicted noise levels will be acceptable as absolute noise levels are moderate and will only be elevated for a short portion of the walkway.

### Heavy vehicles noise levels on roads

19. Heavy vehicles must travel on nearby roads in order to access the site and distribute asphalt. Up to 8 heavy vehicle movements per hour are expected for the asphalt plant. As above, noise from vehicles on roads is not covered under the TRMP or for this type of situation, by any New Zealand Standard.
20. Mr Bronka presents 24-hour average traffic noise levels, which is a concept from NZ 6808:2010 *Acoustics - Road-traffic noise - New and altered roads*. However, the approach recommended in that Standard is not intended to be applied to low volume roads. The Standard does note that for roads *in isolated rural areas servicing a small number of dwellings agricultural industries, or other commercial or business activities which generate low traffic volumes, Resource Consent conditions controlling hours of operation and number of vehicles may be more appropriate*.
21. To understand the potential adverse noise effects of heavy vehicles on nearby roads associated with the asphalt plant I have considered the noise in terms of the  $L_{Aeq}(1 \text{ hr})$  and  $L_{AFmax}$  levels, and the change in noise levels due to the increased traffic. This is consistent with the approach my company has taken when assessing this type of effect in many similar situations involving heavy vehicles on public roads.
22. I have subtracted Mr Bronka's 'existing noise' in his section 5.49 from his 'cumulative noise' levels and surmised that he expects noise from 8 heavy vehicles travelling at 80 km/h on the roads to be 55 dB  $L_{Aeq}(1 \text{ hr})$  received at a dwelling 10 metres from the road. I have undertaken my own calculations and agree with this prediction.
23. I have also calculated noise levels at the façade of the two most affected dwellings on Bartlett Road from 8 heavy vehicles per hour traveling on Bartlett Road, as follows:

154 Bartlett Road      54 dB  $L_{Aeq}(1 \text{ hr})$  85 dB  $L_{AFmax}$

208 Bartlett Road      50 dB  $L_{Aeq}(1 \text{ hr})$  78 dB  $L_{AFmax}$

24. All of these 8 heavy vehicles must travel past 154 and 208 Bartlett Road, on the portion of Bartlett Road that is south of Ranzu Road. At the Bartlett Road / Ranzu Road intersection the vehicle paths diverge and heavy vehicle movements past any given dwelling may be less.
25. Based on the 'existing noise' analysis presented by Mr Bronka and my analysis above, I agree that up until 6 pm the noise effects of these heavy vehicles will be minimal, as there is likely to be only a small change in average noise levels, and the absolute noise levels are moderate.
26. However, during the evening, it appears that the existing traffic noise levels are lower. With regard to existing noise from traffic on Bartlett and Ranzu roads, Mr Fon states that on local roads the majority of truck movements occur before 5 pm, on weekdays. Mr Fon also states that on Bartlett Road and Ranzau Road heavy truck movements after 9 pm are currently "rare" and implies that there is currently less than 1 heavy vehicle per hour after 9 pm.
27. Mr Bronka has based his 'existing' road traffic noise levels on measured levels on Ranzau Road west. Mr Bronka states that the 'existing' noise level at 10 metres from Bartlett Road would therefore be 49 dB  $L_{Aeq}(1\text{ hr})$ . I have calculated that to generate this noise level, more than 100 light vehicles per hour<sup>1</sup> would be required. Mr Fon has provided vehicle numbers for Bartlett Road north of Ranzu Road which provide a 462 vehicle *per day* on a 5-day average. I therefore consider that Mr Bronka's 'existing' noise level is considerably overstated, particularly for Bartlett Road south of Ranzu Road in the evening period.
28. I have considered a more realistic 'existing' scenario where 20 light vehicles travel along a quiet rural road such as Bartlett or Ranzu Road in an hour, after 6 pm. Those vehicles would be expected to

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<sup>1</sup> Based on a light vehicle having a sound power of 90 dB  $L_{WA}$  travelling at 80 km/h

generate noise levels of 41 dB  $L_{Aeq}$  and 75 dB  $L_{AFmax}$  10 metres from the road.

29. On any day where operation of the asphalt plant leads to 8 heavy vehicles per hour in the evenings, noise levels may therefore actually increase from 41 dB  $L_{Aeq}$  to 55 dB  $L_{Aeq}$  and from 75 dB  $L_{AFmax}$  to 87 dB  $L_{AFmax}$  for receivers on Bartlett Road south of Ranzu Road. This is a 14 dB increase in noise level and will cause a noticeable reduction of amenity at these dwellings in the evening.
30. Noting that the period from 9 pm to 10 pm weekdays, and 6 pm to 10 pm Saturdays, falls into the 'night time' period in the TRMP noise rules, it is relevant that the predicted 'existing' situation noise levels comply with generic guidance as to prevention of sleep disturbance,<sup>2</sup> whereas the noise associated with the asphalt plant heavy vehicles exceed this guidance. Occupants of dwellings such as 154 and 208 Bartlett Road may therefore be required to adapt their sleeping behaviour, or dwellings, to manage this additional road noise.
31. Based on this activity occurring on a limited number of evenings I consider that this would represent a minor overall noise effect earlier in the evening. Later in the evening an appropriate response may be prohibiting heavy vehicle movements beyond the District Plan 'daytime hours' (i.e. after 9 pm weekdays, and 6 pm on a Saturday), and limiting the number of heavy vehicle movements in the evenings to 8 per hour.

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<sup>2</sup> NZS 6802:2008 *Acoustics - Environmental Noise* provides a guideline residential upper noise limit of 45 dB  $L_{Aeq}$  at night-time.



A handwritten signature in black ink, appearing to read 'R. Satory', written in a cursive style.

Rewa Jane Satory  
17 December 2021