

IN THE MATTER OF

of the Resource Management Act 1991

AND

IN THE MATTER OF

of Resource Consents and Notices of Requirement for the Central Interceptor main project works under the Auckland Council District Plan (Auckland City Isthmus and Manukau Sections), the Auckland Council Regional Plans: Air, Land and Water; Sediment Control; and Coastal, and the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health

**STATEMENT OF EVIDENCE IN REPLY OF
MATHEW JOHN COTTLE ON BEHALF OF WATERCARE SERVICES LIMITED**

NOISE

1. INTRODUCTION

Qualifications and experience

1.1 My name is Mathew John Cottle. My qualifications and experience are set out in my primary statement of evidence.

1.2 I confirm that I have reviewed, and agree to comply with, the Code of Conduct for Expert Witnesses set out in the Environment Court's Practice Note (2011).

Scope of this reply evidence

1.3 The purpose of this reply evidence is to respond to issues raised in the statements of evidence made by Mr Nevil Hegley and Mr Mark Arbuthnot for Foodstuffs Auckland Limited ("**Foodstuffs**"), and Pip, Tony, and Alexandra McAlwee (residents of 65C Asquith Avenue).

2. FOODSTUFFS

Mr Nevil Hegley

- 2.1 The evidence of Mr Hegley was primarily concerned with the potential noise effects on the occupants of 58 Roma Road from heavy vehicles using Watercare's proposed site access road adjacent to this building, when accessing the May Road construction site. I note that this building is in a business zone and is used for commercial purposes only.
- 2.2 Mr Hegley undertook an assessment of potential noise effects at 1 metre from the façade of this building based on a measurement of truck noise carried out at a 5 metre distance. He predicted noise levels in the range of 73 - 77 dB L_{Aeq} for one-way and two-way traffic based on an average of 9 truck movements per hour (or 1 truck every 7 minutes) and included trucks idling directly outside the office building (at the traffic lights proposed for two-way traffic) for an indeterminate period of time. He noted that these levels were in excess of the Construction Noise Standard NZS6803:1999 ("**Standard**").
- 2.3 I acknowledge that "receiver location 4" detailed in Table 10 of my Noise Report (also mentioned by Mr Arbuthnot) is located some distance away from the access road. This point was discussed in paragraph 8.57(b) and (c) of my primary statement of evidence in which I explain that I also carried out additional noise predictions at the façade of 58 Roma Road (incorrectly referred to as 59 Roma Road in my evidence).
- 2.4 Using source noise level data for a heavy vehicle from the Standard¹ I predicted a level of 65 dB L_{Aeq} at the façade of 58 Roma Road, which I noted in my evidence complies with the Standard.
- 2.5 It is obvious that there is a difference in the predicted noise level between myself and Mr Hegley. I consider that the significant points of difference between our assessments relate to the distance of the source to the façade of 58 Roma Road and the fact that Mr Hegley has located static trucks directly outside the façade of the building.
- 2.6 In my opinion, based on the worst case scenario of 9 trucks per hour, it is very unlikely that more than one truck would use the access road at any one time, due to the low volume of trucks and to turning circle restrictions

¹ Table C.3 Annex C NZS 6803: 1999.

within the site. Also, in respect of two-way access, where more vehicles would be using the access, this would be controlled by traffic lights. Therefore, I consider that, even if the access were used for two-way access, which is no longer proposed, trucks would travel down the centre of the access road, rather than close to the boundary, meaning that the source of noise is further away from 58 Roma Road.

- 2.7 Mr Hegley noted that, depending on tunnelling requirements, there may be a choice made to drive the tunnel boring machine ("**TBM**") from Western Springs to May Road, eliminating the need for spoil removal from the site. If this occurs then the number of trucks accessing the site would be significantly less than the estimated worst case scenario of 104 heavy trucks per day (which assumes spoil is to be removed from the site). The resulting noise level from truck movements along the access road would then be significantly below the Standard.
- 2.8 I accept that there is currently uncertainty around the number and type of trucks, and that the frequency of movements cannot be given at this stage of the Project largely because of decisions yet to be made about the direction of the TBM drive. However, Watercare has now committed to a one-way system for the May Road site, with trucks entering the site via Roma Road and exiting the site via May Road, rather than the two-way system from Roma Road originally proposed. Whatever the final number of trucks, they will be halved as compared to the worst case assessment.
- 2.9 During the detailed design phase, the number and types of trucks and the frequency of movements on the one-way system would be used to assess whether there is a requirement for noise mitigation at this site. However, on the basis of the noise level predictions I have carried out thus far, and recognising that a one-way system is now proposed by Watercare (which would reduce the number of trucks using the Roma Road access and therefore the truck noise received at 58 Roma Road), I am entirely satisfied that truck noise on the access road will readily comply with the Standard.
- 2.10 Notwithstanding this conclusion, there are contingency measures which could always be taken if it proves necessary. Practicable noise mitigation and management measures could include:

- (a) ensuring that the site access road is flat and well maintained; and
 - (b) construction of a noise barrier along with the application of an absorption layer to the façade of 44 - 52 Roma Road to control noise reflections.
- 2.11 I do not foresee that the above mitigation measures will be necessary, but I consider that they could be readily and practicably implemented should they be required.
- 2.12 Paragraph 2.11 of Mr Hegley's evidence states that "*the maximum noise from a truck passing so close to the building will exceed the 85 dBA L_{max} limit of NZS6803*".
- 2.13 I note that the limit Mr Hegley refers to is from Table 2 of the Standard and that the limits in this table apply to noise received in residential zones, not on commercially-zoned land such as 58 Roma Road. I further observe that there is no L_{max} control for receivers located in industrial or commercial areas.²
- 2.14 In paragraphs 2.14 - 2.16 of Mr Hegley's evidence he states that the limits of the Standard were not intended to apply to construction projects with a five year duration such as this. The Standard defines "long-term" construction as "*construction work at any one location with a duration exceeding 20 weeks*"³ and the Standard does not set an upper duration limit – it is open-ended. I therefore consider the long-term duration limits to be relevant and applicable to the Project.
- 2.15 It should be emphasised here that construction noise is inherently variable in nature – there will be periods of high noise generating activities and then there will be periods of relative quiet.
- 2.16 The accepted process on a large number of projects to date⁴ is to make every reasonable effort to comply with the Standard through adopting standard mitigation and management methods "at source". Where compliance is not achievable then the process set out in proposed Designation Conditions CNV4 (g) - (l) (and Consent Conditions 1.10(h) - (j)) would be implemented which outline a methodology for handling non-

² NZS 6803: 1999 *Acoustics – Construction Noise Table 3 – Recommended upper limits for construction noise received in industrial or commercial areas for all days of the year.*

³ NZS6803: 1999 7.2.1 (c).

⁴ See paragraph 4.2 below for some examples.

compliances – including drafting site or activity specific Construction Noise and Vibration Management Plans ("**CNVMP**"); consultation with affected parties; and methods for monitoring and reporting (to Council) of activities that cannot comply. If for any reason any aspect of the truck movements or any other construction activities exceed the Standard which has been incorporated into the proposed Conditions, then the methodology referred to above will be implemented.

Mr Mark Arbuthnot

- 2.17 Paragraph 37 of Mr Arbuthnot's evidence states that "*...the hearing report does not address the measures that are necessary to avoid, remedy, or mitigate the adverse effects...*". Yet, at paragraph 36, Mr Arbuthnot quotes the Council's noise expert, Mr Styles, in relation to mitigation and management measures, as saying "*[t]his would be best dealt with in the CNVMP*".
- 2.18 This issue was addressed in my primary statement of evidence in paragraphs 6.9 and 6.10 and, to summarise, I concur with Mr Styles in regard to when mitigation and management measures should be addressed.
- 2.19 At paragraph 39 of Mr Arbuthnot's evidence he states that "*[o]btaining feedback from affected stakeholders does not avoid, remedy, or mitigate the effects of the development*". In relation to Mr Arbuthnot's statement I observe that consultation with, and obtaining feedback from, affected parties can result in changes to construction methodology and periods of activity which experience has demonstrated can result in the avoidance and remedy of noise effects.
- 2.20 Paragraphs 40 – 42 of Mr Arbuthnot's evidence relate to the assessment of noise effects on 58 Roma Road. This has been addressed in paragraphs 2.4 – 2.6 of this reply evidence.
- 2.21 Paragraph 44 of Mr Arbuthnot's evidence expresses concern that, as the CNVMP is proposed to be a stand-alone document, and would not require prior Council approval, "*...it does not provide certainty that the effects of the development can be adequately managed...*". This is incorrect. The CNVMP is one of the documents required to be submitted as part of the Outline Plan of Works under the proposed Designation Conditions, and for approval under the proposed Consent Conditions. The changes to these

conditions made in the Reply Set now clearly set out that consultation is required where there is a predicted non-compliance with the Standard, and that details of the feedback received must also be submitted as part of the CNVMP. These changes provide certainty to parties such as Foodstuffs that they will be involved in the detail of the CNVMP if the Standard cannot be achieved.

- 2.22 In regard to the level of noise generated by Foodstuffs' own activities at its Roma Road site, based on an average of 180 inwards and outwards truck movements,⁵ I have predicted a level of 54 dB L_{Aeq} for the north-east façade of 58 Roma Road. This level would increase to 56 dB L_{Aeq} based on a 40% increase at peak trading times. Based on the predicted levels, I conclude that Foodstuffs' own activities would at times contribute appreciably to the existing ambient sound level during periods where heavy vehicles access the site.
- 2.23 Paragraphs 47 and 48 of Mr Arbuthnot's evidence state that heavy vehicle movements "*...would not be able to achieve compliance...*" with the Auckland Council District Plan: Isthmus Section noise rule of 60 dB L_{A10} and "*...there would need to be a substantial reduction in the volume of "heavy" vehicle movements along the Roma Road access to achieve compliance...*".
- 2.24 I note that the 60 dB L_{A10} limit is not relevant to construction noise, but to ongoing operational noise. I addressed this issue previously in paragraph 8.60 of my primary statement of evidence, which I will now re-quote:

Lastly, it is generally accepted that noise from construction projects, particularly large-scale projects such as these that take place over more than 1 year, cannot practicably be constrained within the noise limits applicable to normal activity. To do so would place overly onerous restrictions on these projects and stifle, and in some cases, prevent development. The approach taken by the Proposed Designation Conditions is that noise should be no louder than necessary and should occur within appropriate hours.

3. THE MCALWEES

- 3.1 The McAlwee's statement of evidence highlighted an apparent contradiction between the noise evidence, presented by myself, and the vibration evidence of Mr Millar, in regard to rock breaking/blasting at the Mount Albert War Memorial Reserve site. I stated that the duration of

⁵ Paragraph 12 of Ms Bull's evidence for Foodstuffs.

noise effects could be significantly reduced by using controlled blasting instead of rock breaking,⁶ whereas Mr Millar stated that due to the separation distance to the nearest receivers "[t]he effect on structures and disturbance may be possible to mitigate to less than minor effects by the primary use of rock breakers...".⁷

3.2 I consider that this is an example where consultation with, and feedback from, affected residents will enable this issue to be resolved in an acceptable manner. This is provided for in proposed Designation Conditions CNV.4(g) and (h) and Consent Conditions 1.10(h) and (i). The end result of any consultation and feedback may be that a suitable time is arranged so that blasting can be carried out in the absence of the closest residents – thereby avoiding noise effects on them. Designation Condition CNV.6 (and Consent Condition 1.10D) provides further provision for blasting to higher limits (and therefore potentially shorter duration of noise effects) where the building owner agrees. This may be an option for this site.

4. CONDITIONS

4.1 Questions have been raised during the hearing about the use of the phrase "as far as practicable" in proposed Designation Condition CNV.2 and Consent Condition 1.10.

4.2 I note that the inclusion of "as far as practicable" is commonly adopted on a large number of major infrastructure projects, including the ones listed below (most of which have been successfully completed or, in the case of Hunua 4, are currently underway):

- (a) Hunua 4 Watermain (Condition 23);
- (b) North Auckland and Northland Cable Installation (NAaN CS 1 and 2);
- (c) Pakuranga to Penrose Cable Stage 2 (Condition 7);
- (d) AMETI Phase 1 (Condition 16);
- (e) Victoria Park Tunnel (Condition 6.1);

⁶ Refer to paragraph 6.27 of my primary statement of evidence.
⁷ Evidence of Mr Millar at paragraph 11.6(m).

(f) Newmarket Viaduct (Condition 4.2); and

(g) MacKays to Peka Peka Expressway (Condition DC.31).

4.3 On this basis I consider that the inclusion of "as far as practicable" is appropriate in that it allows for some flexibility to cope with the inevitable variations in the characteristics of construction activity.

4.4 Finally, I have had the opportunity to review the Reply Set of Conditions prepared by Watercare and confirm that I agree with and support the changes now proposed.

Mathew John Cottle

13 August 2013