

Technical Specialist Memo - Hunua Quarry Expansion – 489 Hunua Road, Hunua Noise and Vibration Assessment

To: Emma Chandler – Lead Planner & Warwick Pascoe - PPL

From: Duffy Visser

Qualifications & Relevant Experience: I hold a Diploma in Public Health and have 29 years' experience in noise and vibration assessment and enforcement. I am a member of Acoustical Society of New Zealand. I have prepared expert evidence and technical assessments for resource consent applications and fast-track applications and have appeared as an expert witness before consent authorities on multiple occasions.

Preparation in Accordance with the Code of Conduct: I confirm that I have read the Environment Court Practice Note 2023 – Code of Conduct for Expert Witnesses and have complied with it in the preparation of this memorandum. I also agree to follow the Code when participating in any subsequent processes, such as expert conferencing, directed by the Panel. I confirm that the opinions I have expressed are within my area of expertise and are my own, except where I have stated that I am relying on the work or evidence of others, which I have specified.

Date: 12 May 2026

1.0 APPLICATION DESCRIPTION

Application and property details

Fast-Track project name: Hunua Quarry Expansion

Fast-Track application number: FTAA-2603-1185 (Council Reference BUN60464053)

Site address: 489 Hunua Road, Hunua

2.0 Documents Reviewed

- Assessment of Environmental Effects and Application for Resource Consent, prepared for Winstone Aggregates, dated 30 March 2026. (AEE)
- Acoustics and Vibration Assessment prepared by Styles Group, dated 23 March 2026. (the Acoustic report)
- Draft Operational Noise Management Plan, prepared by Styles Group, dated 23 March 2026. (ONMP)

3.0 Specialist Assessment

The acoustic report disregarded any noise and vibration effects on the following sites, for which written approval to the application has been provided: 369, 397, 411, 480-486, and 490 Hunua Road, 105, 106, 108, 115, 118, 119, and 195 Judge Richardson Drive, and 161, 163, 165, 167, 180, 193, and 255 Middleton Road.

I have assessed the effects of construction noise and vibration as well as the operational noise and vibration (including noise and vibration from blasting).

Operational Noise

Styles Group (SG) have undertaken a comprehensive quarry noise measurement project using the CetawareTM system. The data was used to create a computer noise model to predict the potential noise from all the operational activities.

Resource consent will be required for infringements of the following AUP standards:

- H28.6.2.1: Infringement of the Quarry effects Line (QEL) noise limits by activities in the Special Purpose Quarry Zone (SPQZ).
- H28.6.2.2: Deviation from the Auckland Unitary Plan (AUP) blasting noise and vibration standard to clarify ambiguities around monitoring and assessment and to adopt industry best practice.
- E25.6.31.(1): Infringement of the AUP blasting noise standard in the RMRZ at the boundaries of properties that are either owned by FCIL or where written approval was obtained.

The existing quarry is consented to operate on a 24-hour basis, but hours for general sales are restricted to between 6:00 am and 5:30 pm on Monday to Friday and between 6:00 am and 4:00 pm on Saturdays. The Project will generally retain these hours but will include occasional early morning activity during periods of high demand, when purchasing trucks will access the Site from 5:00 am. The noise from the purchasing trucks has been included in the operational noise assessments and calculation have shown that noise from the purchasing trucks complies with the proposed operational noise limits and will not exceed a reasonable level.

The acoustic report suggested changes to the current operational noise and vibration compliance criteria and suggested consent conditions that are more suitable to assess compliance as an alternative. I agree with the reason for the suggested changes and that the proposed consent conditions should apply to the consent.

Overall, the proposed conditions provide better controls than the operative AUP standards for all the surrounding residents in terms of potential noise and vibration effects. The proposed conditions include the requirement for an ONMP. SG have submitted a draft Operational Noise Management Plan.

I consider that subject to the inclusion of recommended conditions and adherence to the Operational Noise Management Plan (ONMP) overall operational noise and vibration effects will be unlikely to exceed a reasonable level at the neighbouring properties.

Construction noise and vibration

The activities of the project/proposal that is regarded as construction work include: vegetation clearance, haul road construction, culvert construction and stream realignment and rehabilitation work.

The acoustic report used measurement data to calculate construction noise levels at the neighbouring sites based on worst-case scenarios:

I agree with the acoustic report that, due to the substantial separation distances between the works and receivers, the predicted construction noise and vibration levels will comply with the relevant AUP limits by significant margins.

4.0 Recommendation

Should the Expert Panel choose to grant this application I support the conditions proposed in the Acoustics and Vibration Assessment, subject to the changes recommended in Section 5 below. These will provide controls for noise management that are clear, enforceable, and will

provide certainty for both the neighbouring residents and the Hunua Quarry operation. They will ensure that the noise effects associated with the construction works and operation of the quarry do not exceed a reasonable level at all relevant notional boundaries.

5.0 Proposed Conditions, comments and suggestions

Condition

38	Operational Noise Management Plan The objective of the Operational Noise Management Plan (ONMP) is to detail the measures and procedures to be implemented to minimise the operational noise and vibration effects and construction noise and vibration effects of the Project and ensure compliance with the noise and vibration limits and requirements in Conditions 78–85. 39. The ONMP must include: (a) roles and responsibilities for implementation of the ONMP; (b) a description of activities and noise sources at the Site; (c) the relevant noise and vibration limits; (d) the neighbouring receivers; (e) noise and vibration mitigation measures and operational restrictions required to ensure that the relevant noise and vibration limits are complied with; (f) procedures for undertaking noise and vibration monitoring; (g) procedures for communicating with the neighbours and managing any noise complaints; (h) corrective action measures; and (i) a process for review of the ONMP to adapt to any changes in the receiving environment or any material changes to the quarry vehicle fleet and machinery.
39	The ONMP must include: (a) roles and responsibilities for implementation of the ONMP; (b) a description of activities and noise sources at the Site; (c) the relevant noise and vibration limits; (d) the neighbouring receivers; (e) noise and vibration mitigation measures and operational restrictions required to ensure that the relevant noise and vibration limits are complied with; (f) procedures for undertaking noise and vibration monitoring; (g) procedures for communicating with the neighbours and managing any noise complaints; (h) corrective action measures; and (i) a process for review of the ONMP to adapt to any changes in the receiving environment or any material changes to the quarry vehicle fleet and machinery
Comment or suggestion	The ONMP has been provided and adequately addresses all noise and vibration management issues.
78	Construction Noise Construction works must only take place on site between the hours of 7.30am to 6:00pm, Monday to Saturday. This condition does not prevent quiet construction

	work from taking place outside standard construction hours providing the noise emissions are inaudible at the notional boundary of any occupied dwelling.																																													
Comment or suggestion	I agree with this condition Add Advice note: Construction work includes (without limitation) temporary activities associated with vegetation clearance, stream realignment, rehabilitation work, and the construction of sediment retention ponds, haul roads, drainage networks, culverts, and earth bunds.																																													
79	Noise from Construction must not exceed the following limits when measured 1m from the façade of any building that contains an activity sensitive to noise that is occupied during the works, except that: (a) the noise limits do not apply at 369, 397, 411, 480 – 486, 489, and 490 Hunua Road, 105, 106, 108, 115, 118, 119, and 195 Judge Richardson Drive, and 161, 163, 165, 167, 168, 180, 193, and 255 Middleton Road, 101 Coal Mine Road, and Section 1 Survey Office Plan 417727 and Part Allotment 79 Parish of Hunua (North Auckland) (b) for Construction works involving a total duration that is less than 15 calendar days, the noise limits must be increased by 5dB in all cases; and (c) for Construction works involving a total duration that is more than 20 weeks the noise limits must be decreased by 5dB in all cases <table><tr><th rowspan="2">Time of week</th><th rowspan="2">Time Period</th><th colspan="2">Maximum noise level (dBA)</th></tr><tr><th>L_{eq}</th><th>L_{max}</th></tr><tr><td rowspan="4">Weekdays</td><td>6:30am – 7:30am</td><td>60</td><td>75</td></tr><tr><td>7:30am – 6:00pm</td><td>75</td><td>90</td></tr><tr><td>6:00pm – 8:00pm</td><td>70</td><td>85</td></tr><tr><td>8:00pm – 6:30am</td><td>45</td><td>75</td></tr><tr><td rowspan="4">Saturdays</td><td>6:30am – 7:30am</td><td>45</td><td>75</td></tr><tr><td>7:30am – 6:00pm</td><td>75</td><td>90</td></tr><tr><td>6:00pm – 8:00pm</td><td>45</td><td>75</td></tr><tr><td>8:00pm – 6:30am</td><td>45</td><td>75</td></tr><tr><td rowspan="4">Sundays and public holidays</td><td>6:30am – 7:30am</td><td>45</td><td>75</td></tr><tr><td>7:30am – 6:00pm</td><td>55</td><td>85</td></tr><tr><td>6:00pm – 8:00pm</td><td>45</td><td>75</td></tr><tr><td>8:00pm – 6:30am</td><td>45</td><td>75</td></tr></table> <i>Advice note: Activities sensitive to noise are defined as: any dwelling, visitor accommodation, boarding house, marae, papakāinga, integrated residential development, retirement village, supported residential care, care centres, lecture theatres in tertiary education facilities, classrooms in education facilities and healthcare facilities with an overnight stay facility</i>	Time of week	Time Period	Maximum noise level (dBA)		L _{eq}	L _{max}	Weekdays	6:30am – 7:30am	60	75	7:30am – 6:00pm	75	90	6:00pm – 8:00pm	70	85	8:00pm – 6:30am	45	75	Saturdays	6:30am – 7:30am	45	75	7:30am – 6:00pm	75	90	6:00pm – 8:00pm	45	75	8:00pm – 6:30am	45	75	Sundays and public holidays	6:30am – 7:30am	45	75	7:30am – 6:00pm	55	85	6:00pm – 8:00pm	45	75	8:00pm – 6:30am	45	75
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80	Noise from Construction works must not exceed the following levels when measured 1m from the façade of any other building that is occupied during the works, except that: (a) the noise limits do not apply at 369, 397, 411, 480 – 486, 489, and 490 Hunua Road, 105, 106, 108, 115, 118, 119, and 195 Judge Richardson Drive, and 161, 163, 165, 167, 168, 180, 193, and 255 Middleton Road, 101 Coal Mine Road, and Section 1 Survey Office Plan 417727 and Part Allotment 79 Parish of Hunua (North Auckland):																																													

	(b) for Construction works involving a total duration that is less than 15 calendar days, the noise limits may be increased by 5dB in all cases; and (c) for Construction works involving a total duration that is more than 20 weeks the noise limits may be decreased by 5dB in all cases: <table><tr><th>Time Period</th><th>Maximum noise levels L_{eq} (dBA)</th></tr><tr><td>7:30am – 6:00pm</td><td>75</td></tr><tr><td>6:00pm – 7:30am</td><td>80</td></tr></table>	Time Period	Maximum noise levels L_{eq} (dBA)	7:30am – 6:00pm	75	6:00pm – 7:30am	80					
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Comment or suggestion	I agree with this condition											
81	Construction Vibration Construction works must be controlled to ensure any resulting vibration does not exceed: (a) the limits set out in DIN 4150-3: 1999 when measured in accordance with that Standard on any structure not on the same site; and (b) the following limits in buildings in any axis when measured in the corner of the floor of the storey of interest for multi-storey buildings, or within 500mm of ground level at the foundation of a single storey building <table><tr><th>Receiver</th><th>Period</th><th>Peak Particle Velocity Limit (mm/s)</th></tr><tr><td rowspan="2">Occupied activity sensitive to noise</td><td>Night time 10pm to 7am</td><td>0.3 mm/s</td></tr><tr><td>Daytime 7am to 10pm</td><td>2 mm/s</td></tr><tr><td>Other occupied buildings</td><td>At all times</td><td>2 mm/s</td></tr></table> except that the vibration limits do not apply at 369, 397, 411, 480 – 486, 489, and 490 Hunua Road, 105, 106, 108, 115, 118, 119, and 195 Judge Richardson Drive, and 161, 163, 165, 167, 168, 180, 193, and 255 Middleton Road, 101 Coal Mine Road, and Section 1 Survey Office Plan 417727 and Part Allotment 79 Parish of Hunua (North Auckland).	Receiver	Period	Peak Particle Velocity Limit (mm/s)	Occupied activity sensitive to noise	Night time 10pm to 7am	0.3 mm/s	Daytime 7am to 10pm	2 mm/s	Other occupied buildings	At all times	2 mm/s
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Comment or suggestion	I agree with this condition											
82	Construction works generating vibration for three days or less between the hours of 7.00am to 6.00pm may exceed the limits in Condition 81, but must comply with a limit of 5mm/s peak particle velocity in any axis when measured in the corner of the floor of the storey of interest for multi-storey buildings, or within 500mm of ground level at the foundation of a single storey building, where: (a) all occupied buildings within 50m of the extent of the works generating vibration are advised in writing no less than three days prior to the vibration-generating works											

	commencing; and (b) the written advice must include details of the location of the works, the duration of the works, a phone number for complaints and the name of the site manager; except that the vibration limits do not apply at 369, 397, 411, 480 – 486, 489, and 490 Hunua Road, 105, 106, 108, 115, 118, 119, and 195 Judge Richardson Drive, and 161, 163, 165, 167, 168, 180, 193, and 255 Middleton Road, 101 Coal Mine Road, and Section 1 Survey Office Plan 417727 and Part Allotment 79 Parish of Hunua (North Auckland).								
Comment or suggestion	I agree with this condition								
83	Operational Noise 83. All Mineral Extraction Activities except blasting must comply with the following limits when measured and assessed in accordance with NZS 6801:2008 and 37NZS 6802:2008. The noise limits apply at the notional boundary of any site outside the Special Purpose – Quarry Zone except at 369, 397, 411, 480 – 486, 489, and 490 Hunua Road, 105, 106, 108, 115, 118, 119, and 195 Judge Richardson Drive, and 161, 163, 165, 167, 168, 180, 193, and 255 Middleton Road, 101 Coal Mine Road, and Section 1 Survey Office Plan 417727 and Part Allotment 79 Parish of Hunua (North Auckland). <table border="1"> <thead> <tr> <th>Times</th><th>Noise levels</th></tr> </thead> <tbody> <tr> <td>7.00am – 6.00pm Monday to Friday</td><td>55dB LAeq</td></tr> <tr> <td>7.00am – 4.00pm Saturday</td><td>55dB LAeq</td></tr> <tr> <td>All other times:</td><td>45dB LAeq / 75dB LAFmax</td></tr> </tbody> </table> Advice note: The Site may operate 24 hours a day/7 day a week, subject to complying with the above noise levels.	Times	Noise levels	7.00am – 6.00pm Monday to Friday	55dB LAeq	7.00am – 4.00pm Saturday	55dB LAeq	All other times:	45dB LAeq / 75dB LAFmax
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Comment or suggestion	I agree with this condition								
84	Tonal reversing alarms (beepers) must not be used on quarry-based machinery. Alternatives without tonal characteristics such as broadband reversing alarms (squawkers) are permitted								
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85	Blasting Noise and Vibration 85. All blasting on the Site must comply with the following limits, except that overpressure limits do not apply at 369, 397, 411, 480 – 486, 489, and 490 Hunua Road, 105, 106, 108, 115, 118, 119, and 195 Judge Richardson Drive, and 161, 163, 165, 167, 168, 180, 193, and 255 Middleton Road, 101 Coal Mine Road, and Section 1 Survey Office Plan 417727 and Part Allotment 79 Parish of Hunua (North Auckland); (a) Overpressure generated by explosives must comply with a limit of 128 dB LZpeak when measured at the notional boundary of any dwelling outside the								

	Special Purpose — Quarry Zone. Overpressure must be measured in accordance with the guidance of Appendix J Ground Vibration and Airblast Overpressure of AS 2187.2:2006. (b) Vibration generated by blasting activities must comply with the limits set out in DIN 4150-3 2016 when measured and assessed in accordance with the Standard. (c) All blasting is restricted to the following except where it is necessary for safety reasons: (i) Blasting must only take place between 9:00am and 5:00pm on Monday to Saturday. (ii) The number of blasts over any calendar fortnight must not exceed an average of two per day. (d) A siren must be used prior to blasting to alert people in the vicinity.
Comment or suggestion	Replace with: All blasting on the Site must comply with the following limits, except that overpressure limits do not apply at 369, 397, 411, 480 – 486, 489, and 490 Hunua Road, 105, 106, 108, 115, 118, 119, and 195 Judge Richardson Drive, and 161, 163, 165, 167, 168, 180, 193, and 255 Middleton Road, 101 Coal Mine Road, and Section 1 Survey Office Plan 417727 and Part Allotment 79 Parish of Hunua (North Auckland); (a) Overpressure generated by using explosives within the <i>Special Purpose – Quarry Zone</i> must comply with a limit of 128 dB LZpeak when measured at the notional boundary of any dwelling outside the zone. Overpressure generated by using explosives within the <i>Rural — Mixed Rural Zone</i> must comply with a limit of 120 dB LZpeak when measured at the boundary of any other site. Overpressure must be measured in accordance with the guidance of Appendix Ground Vibration and Airblast Overpressure of AS 2187.2:2006 Explosives— Storage and use, Part 2:Use of explosives. (b) Vibration generated by blasting activities must comply with the limits set out in DIN 4150-3 2016 when measured and assessed in accordance with the Standard. (c) All blasting is restricted to the following except where it is necessary for safety reasons: (i) Blasting must only take place between 9:00am and 5:00pm on Monday to Saturday. (ii) The number of blasts over any calendar fortnight must not exceed an average of two per day. (d) A siren must be used prior to blasting to alert people in the vicinity.