

2 April 2026

Ann Rodgers
Principal Policy Planner
Central Otago District Council

P. 09 308 9015
E. info@stylesgroup.co.nz
W. www.stylesgroup.co.nz
Saatchi & Saatchi Building,
L2, 125 The Strand, Parnell
PO Box 37857, Parnell,
Auckland 1151

By email: [REDACTED]

Dear Ann,

FTAA-2507-1089 BOGP Review of noise effects

1.0 Introduction

Central Otago District Council (**CODC**) have engaged Styles Group to provide advice on noise and vibration issues arising from my review of the proposed Bendigo-Ophir Gold Project (**BGOP**).

This advice is focused on the following assessments and documents:

Original Application Documents

- 1) The relevant sections of the Assessment of Environmental Effects (the **AEE** - A.13 of the Substantive Application)
- 2) The Assessment of Noise and Vibration Effects (the **MDA Report** – B.29 of the Substantive Application)
- 3) The CODC Land Use Consents and Conditions (the **Proposed Conditions** – D.01 of the Substantive Application)
- 4) The Noise and Vibration Management Plan prepared by Matakanui Gold Limited (**MGL**) dated 27 June 2025 (the **NMP**)

All available at <https://www.fasttrack.govt.nz/projects/bendigoophir-gold-project>

Summary of Key Noise Issues

- 5) The Summary of Key Issues prepared by Styles Group and dated 24 December 2025 (the **Summary of Noise Issues**)

I cannot find this document at <https://www.fasttrack.govt.nz/projects/bendigoophir-gold-project>

I have appended the Summary of Noise Issues to this review as Appendix A.

5 February Further Information Response

- 6) The memorandum from Mitchell Daysh entitled *Further Information Response – Noise and Vibration - Bendigo-Ophir Gold Project Fast-track Application*, (the **Noise and Vibration Response**)

I cannot find this document at <https://www.fasttrack.govt.nz/projects/bendigoophir-gold-project>

I have appended the Summary of Noise Issues to this review as Appendix B.

March 10 Updates

- 7) The memorandum from Mitchell Daysh entitled *Blasting vibration – Effects on heritage structures*, (the **Blasting Memo**)
- 8) The memorandum from Marshall Day Acoustics entitled *Summary of Amendments to the Bendigo-Ophir Gold Project Fast-track Application*, (the **Summary of Amendments**)
- 9) Several of the plans and other relevant documentation.

All available at <https://www.fasttrack.govt.nz/projects/bendigoophir-gold-project>

This advice forms a review of the noise and vibration effects of the BGOP.

The review briefly records agreement with some of the important aspects of the noise and vibration assessments and conditions but focuses mainly on several matters that have not been resolved at the time of writing.

2.0 Matters agreed

There are a number of matters that are generally agreed and that I comment on only to provide additional context. These are (without limitation):

- 1) I consider that the noise modelling process has been undertaken appropriately using recognised software and following the correct prediction algorithms and procedures. The inputs to the models appear to have been robustly calculated.

Notwithstanding the above, the modelling outputs only represent 'snapshots' in time. They do not (and do not purport to) represent the noise levels that will vary considerably over time as the mine develops.

The inputs to the models have been taken from measurements and data from other sites, so there some minor uncertainty in the noise models arising from variations in the noise levels from the plant and machinery that will eventually be commissioned on the site. I expect that this uncertainty will be small and may amount to 1-4 dB of difference to the predicted noise levels depending on the location of the receiver and the stage of mine development. Such variation or uncertainty is minor.

- 2) The MDA Report accurately sets out the noise and vibration standards for permitted activities in the District Plan. The only issue is that the MDA Report does not assess the potential noise effects at dwellings that might or might be likely to be constructed on land around the BOGP between now and when rehabilitation is complete. This is dealt with in more detail below.
- 3) The MDA Report proposes the adoption of the newer L_{Aeq} noise level descriptor for the basis of the assessment and for proposed conditions. I agree that this is appropriate.

- 4) There are a range of other minor technical matters that I also agree on.

3.0 Matters resolved by further information

My Summary of Noise Issues raised several noise and vibration issues for the applicant to consider. The Noise and Vibration Response responded some of the matters raised. Several remain outstanding.

The Summary of Key Noise Issues raised the following matters that have been resolved:

- 1) The District Plan sets noise standards for permitted activities in the zone using the L_{10} descriptor. The MDA Report and the Proposed Conditions propose operational noise limits using the L_{Aeq} descriptor and at the same numerical limits as the District Plan limits. The change in descriptor would enable noise levels between approximately 1dB and 3dB higher than the noise standards for permitted activities. This is a reason for consent that the MDA Report and application had not identified.

The Noise and Vibration Response records that restricted discretionary consent is required.

- 2) Similarly, the District Plan sets construction noise standards using the L_{10} descriptor, but the MDA Report and Proposed Conditions recommend the same numerical limits but based on the L_{Aeq} descriptor. This is a reason for consent that the MDA Report and application had not identified.

The Noise and Vibration Response records that restricted discretionary consent is required.

- 3) The District Plan sets noise and vibration standards for blasting activities. The MDA Report proposed blasting noise limits that are potentially slightly higher than the permitted standards and blasting vibration limits that are approximately double that of the permitted standard.

The Noise and Vibration Response records that discretionary consent is required.

As a result, I now consider that the application (including the Noise and Vibration Response) appropriately records all District Plan rules that the BOGP will infringe.

4.0 Matters not yet resolved

My Summary of Noise Issues raised several matters that the Noise and Vibration Response did not respond to.

4.1 Noise effects over surrounding land and compliance with the noise standards for permitted activities at dwellings anticipated by the District Plan

Rule 4.7.6.E of the District Plan requires compliance with noise limits measured at the notional boundary of any dwelling, resthome or hospital. The rule does not limit compliance to physically existing receivers.

By contrast, Proposed Condition 11 sets noise limits in the receiving environment that only apply at the notional boundaries of dwellings that existed at the time that consent was granted. I describe this 'freezing' of the receiving environment as a 'date-stamp'.

The MDA Report proposes conditions of consent in its section 11. The conditions proposed in the MDA Report do not include the date-stamp qualifier.

The proposed date-stamp has the effect of exempting the activity from complying with any noise limits at dwellings provided for by the District Plan and that may be established in the future. It essentially creates a 'first in, first served' arrangement. I consider that the proposed date-stamp effectively alters the way Rule 4.7.6.E of the District Plan works by limiting it to apply only at notional boundaries that exist when consent is granted. The BOGP would not have to comply with any noise limits at the notional boundary of dwellings that might be lawfully established in the future.

Because the date-stamp works differently to the District Plan permitted standard, it would essentially authorise non-compliance with the District Plan rule. This is not recognised anywhere in the application or in the Noise and Vibration Response despite being raised as a key issue in the Summary of Noise Issues.

The date-stamp essentially seeks to authorise the use of neighbouring land as a buffer for the noise emissions of the proposal and it creates some degree of certainty for the applicant that it will not be affected by encroachment of new dwellings (closer than those that physically exist when consent is granted). That certainty may come at the expense of the neighbour's amenity and right to reasonable noise levels.

My experience is that it is most-common for decision makers to reject the date-stamp approach if an applicant has proposed it, or to not apply it at all if it hasn't been proposed¹.

I consider that it should be rejected for this proposal as well, given that:

- 1) The effect it will have over neighbours vacant land has not been quantified or assessed by the applicant; and
- 2) It has not been recognised in any of the application material or the Noise and Vibration Response as a reason for consent or for the effect it may have on neighbours.

If the date-stamp is to be retained in the conditions, I consider it critical that the effect it can have on neighbouring properties is clearly understood and determined to be reasonable or acceptable before consent is granted. This will require that applicant to produce daytime and nighttime noise level contours for the typical worst-case noise emissions in each stage of mining and

¹ Interim Decision [2023] EnvC 277- Waste Management NZ Ltd, Ruawai Solar Farm (Northpower Ltd) Kaipara District Council RM230144, [Rangiriri Solar Farm](#), [Waerenga Solar Farm](#), Decision [2025] NZEnvC 067- A and J Bartom Trust

rehabilitation, an assessment of the potential for new dwellings to be established on neighbouring land and an overall assessment of the potential effect that the date-stamp may have on neighbouring land.

4.2 Difference between operational noise level predictions and proposed operational noise limits

The MDA Report predicts that the operational noise levels will be significantly lower than the proposed noise limits and the noise standards for permitted activities in Rule 4.7.6.E of the District Plan. I agree that compliance by a significant margin is likely for the majority of time and for the majority of neighbours.

The MDA Report assesses the potential noise effects based on the results of these noise level predictions.

However, both the MDA Report and the Proposed Conditions include noise limits that are slightly higher² than the noise standards for permitted activities in Rule 4.7.6.E of the District Plan. Proposed Condition 24 includes objectives for the Operational Noise Management Plan (**ONMP**). The first objective is to ensure that noise levels comply with the proposed noise limits.

This creates a gap whereby the application, Proposed Conditions and the ONMP seek to authorise noise and manage noise levels to be no greater than the proposed noise limits, (slightly above the noise standards for permitted activities in the District Plan), whereas the MDA Report has assessed the noise effects at the predicted levels that are significantly lower. Unsurprisingly, the MDA Report concludes that the effects will be 'minimal'.

In my experience, it is more appropriate to assess the potential effects based on what the Proposed Conditions would allow for, especially if they are higher than the noise standards for permitted activities, modify the way the standards work by including the date-stamp that 'freezes' the receiving environment in time.

In my view, the operational mining noise levels that would be authorised by the Proposed Conditions would be subjectively experienced as:

- 1) During the daytime at 55dB L_{Aeq} – dominant in the noise environment and louder than most or all other sounds except for some intermittent or seasonal rural activities that might be taking place close by (e.g. tractors and sprayers or frost fans operating in the late evening or early morning). A noise level of 55dB L_{Aeq} is the upper desirable limit for rural / residential health and amenity. Based on my experience with ambient noise measurements in the area, I consider that mining noise at up to 55dB L_{Aeq} will be significantly above the ambient / background sound environment for the vast majority of receivers and for the vast majority of time.
- 2) During the nighttime at 40dB L_{Aeq} – dominant in the noise environment and louder than most or all other sounds except for some intermittent or seasonal rural activities that might be taking place close by (e.g. frost fans). A noise level of 40dB L_{Aeq} is 5dB (noticeably)

² The same numerical decibel limits as the District Plan but based on the L_{Aeq} descriptor which has the potential to allow noise levels 1-3dB higher than the noise standards for permitted activities in the District Plan.

lower than the upper desirable limit for rural / residential health and amenity. Based on my experience with ambient noise measurements in the area, I consider that mining noise at up to 40dB L_{Aeq} at night will be significantly above the ambient / background sound environment for the vast majority of receivers and for the vast majority of time.

I acknowledge that noise levels from the proposal will be unlikely to reach the limits in the Proposed Conditions often, and maybe not at all. But at the same time, I consider that it is appropriate for the Expert Panel to understand the level of effect the Proposed Conditions would authorise.

The operational noise effects could be controlled to be consistent with the assessment in the MDA Report (that noise levels will be well below the proposed noise limits with 'minimal' effects) by setting operational noise limits that are consistent with (or slightly above) the predicted noise levels. This outcome can be appropriate in some cases for a Discretionary activity. I leave this assessment to others.

Based on my experience in the area, there are a range of intermittent and seasonal rural activities that control the noise environment at times, but there are large periods of relative quiet when only natural sounds are present and at generally very low noise levels during calm meteorological conditions.

I consider that the proposal is likely to change this character by introducing a constant sound that is likely to be a feature of the sound environment for many of the receivers around the BOGP. The mining noise is likely to range from present but at a low level if the noise levels are consistent with the predictions in the MDA Report, through to dominant and louder than most other sounds if the noise levels approach or meet the proposed noise limits.

I note that the MDA Report discusses the World Health Organisation Guidelines in its section 4.2. I consider that these guidelines are inappropriately included, out of context and provide no meaningful guidance on rural amenity for a project of this nature in an environment such as this. The guidelines are designed to assist in the evaluation of effects of large populations exposed to high levels of transport noise where serious adverse health effects need to be managed. The guidelines state that "*Existing large quiet outdoor areas should be preserved and the signal-to-noise ratio kept low*". I consider that in the context of the guidelines, the land surrounding the BOGP is currently quiet, even when including the range of activities provided for in the District Plan.

4.3 Blasting over-pressure and vibration

Proposed Condition 17 seeks to authorise:

- 1) Blast over-pressure (noise) levels that approximately similar to (and potentially very slightly higher than) the standards for permitted blasting in the District Plan; and
- 2) Blast vibration –
 - a. 95% of blast events in any calendar year where vibration levels must not exceed a velocity of 5mm/s PPV; and

- b. the remaining 5% of blast events per calendar year must comply with 10 mm/s PPV.

Blasting vibration levels of 10mm/s PPV are twice the limit of 5mm/s PPV permitted by Rule 12.7.4(iv) of the District Plan.

The MDA Report describes the general blasting process and the nature of blasting events. It also acknowledges that a detailed blasting plan has not been developed yet. The MDA Report demonstrates that blasting will be a very regular feature of the BOGP, with several blasts per day across the various pits and

The MDA Report then goes on to recommend the adoption of the vibration limits from Australian Standard AS 2187.2-2006 *Explosives – Storage and Use, Part 2: Use of Explosives* (the limits set out in (2) above). This includes the vibration limit of 10 mm/s PPV for up to 5% of blasts per year.

I consider that there is an issue with the proposed vibration limits, because:

- 1) The MDA Report does not demonstrate that the higher limit of 10 mm/s PPV is even required; and
- 2) There is no meaningful assessment of the effect of the higher levels and how this might be perceived by neighbours of the BOGP.

This matter was raised in my Summary of Noise Issues but was not responded to in the Noise and Vibration Response.

I consider that these two matters need to be addressed.

4.4 Truck noise on public roads

My Summary of Noise Issues raised the issue of the effects of trucks on Ardgour Road at 213 Ardgour Road. The Noise and Vibration Response did not respond to it.

The MDA Report addresses the likely noise effects arising from the proposal on houses close to the nearby public roads. The MDA Report identifies that 213 Ardgour Road is likely to receive noise levels that are significantly higher than the existing levels and considerably higher than is generally acceptable for a typical rural / residential dwelling at approximately 60dB $L_{Aeq}(1hr)$.

I consider that the noise effects of proposal-related traffic on nearby public roads has the potential to be unreasonable and that the applicant should consider further mitigation measures to reduce the noise levels.

5.0 Summary

There are a number of matters that I agree with and consider have been carried out or addressed appropriately.

My Summary of Noise Issues raised several noise and vibration issues. The Noise and Vibration Response responds to some of those, and agreement has now been reached that the BOGP

requires consent to infringe the operational noise, construction noise and blasting vibration standards for permitted activities in the District Plan.

There are several matters that remain not agree or outstanding in terms of assessment. These are:

- 1) The inclusion of the date-stamp in Proposed Condition 11 that is different from the way the District Plan noise rules operate and has not been assessed;
- 2) The difference between the operational noise limits proposed in conditions and the assessment of noise level effects in the MDA Report;
- 3) Seeking to authorise blasting vibration at twice the limit set in the District Plan for permitted activities, with no demonstrable need for the high vibration limits and no assessment of the effects that the higher limits will allow; and
- 4) No response to recommendation to mitigate potentially unreasonable truck noise levels at 213 Ardour Road as set out in my Summary of Noise Issues.

I consider that these issues should be addressed by the applicant.

Yours sincerely,



Jon Styles, MASNZ
Director and Principal