

In the matter of

an application for approvals under the Fast Track Approvals Act 2024 for the Barrytown Minerals Project – Southern Block [FTAA-2605-1238]

By

Tāiko Critical Minerals Limited

Applicant

Statement of reply evidence in reply of Richard Montgomerie in relation to Freshwater Ecology

5 October 2026

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Introduction

- 1 My name is Richard Montgomerie.
- 2 I provided a statement of evidence dated 27 March 2026 which outlines my experience at paragraphs 2 - 4.
- 3 I confirm that I have read the Code of Conduct for expert witnesses contained in the Environment Court of New Zealand Practice Note 2023 and that I have complied with it when preparing this reply to comments.

DOC – Dr Richard Storey

- 4 In paragraph 26 of his statement, Dr Storey offers the opinion that because the fish survey undertaken by Ecological Solutions did not include sites within wetlands “*that the information regarding the freshwater fish fauna of the SB is incomplete*”. The fish survey undertaken by Ecological Solutions was comprehensive and involved sampling a wide range of sites and habitats using both electric fishing and eDNA. In my opinion the fish survey was thorough and has provided a robust assessment of the fish values within the site on which to assess the effects of the proposed mining.
- 5 In paragraph 27, Dr Storey notes that springs can support an unusual macroinvertebrate community. He goes on to state that the springs may have low ecological value. In my opinion the springs are highly modified (e.g., I'm advised the spring that feeds Wasabi Creek is the result of historic mining). My view, based on our thorough assessment of the macroinvertebrate communities in the watercourses across the site, is that the springs are highly unlikely to support unusual macroinvertebrate fauna.
- 6 Dr Storey (in paragraph 35) offers the opinion that a water level in the dredge pond below the surrounding water table could result in draw down effects on nearby creeks and that this would have an adverse effect on the ecology of the creeks and drains. Mr Jens Rekker confirms that the stream flows will not be affected by mining activities. In my opinion, based on that evidence, there is no risk of adverse effects on the ecology of the creeks and artificial drains resulting from hydrological drawdown.
- 7 I note that in paragraph 38, Dr Storey agrees with me that the aim of improving stream ecological value by providing diverse habitat and riparian planting is achievable.
- 8 In paragraph 39 of his statement, Dr Storey considers that macroinvertebrates are likely to recolonise the streams that originate within the Site (as opposed to the streams that originate in the hills upstream of

the site) slowly and take '*many years*'. I note that the length of stream channel that originates within the site is limited and as a result Dr Storey's concerns relate to a small proportion of the total stream habitat within the Site.

- 9 In my experience, monitoring macroinvertebrate communities in streams after significant disturbance events, such as large floods or stream diversion, macroinvertebrates typically begin to recolonise stream habitat almost immediately. The small extent of affected habitat, close proximity of undisturbed stream, close proximity to the sea (important for diadromous fish recruitment), combined with the staged nature of the mining and stream disturbance, will, in my opinion, ensure that there is an abundant source of macroinvertebrates and fish to recolonise diverted streams originating within the Site. I expect macroinvertebrates and fish will begin to recolonise these streams almost immediately.
- 10 In my opinion the macroinvertebrate community in streams that originate within the Site will recover within 3 – 6 months. The fish community will, in my opinion, take longer (1 – 2 years) to fully recover in the diverted streams that originate within the Site. In my opinion the avoidance of loss of stream extent coupled with the enhanced stream ecological values (habitat, macroinvertebrates and fish) has fully addressed the residual ecological effects of the proposal.
- 11 With respect to riparian planting, Dr Storey notes in paragraph 41 that riparian planting will be five metres wide (on each bank) along Granite Creek and three metres wide along all other watercourses, which he considers insufficient to provide the benefits to the stream ecosystems.
- 12 The three-metre buffer was proposed by TCM. Notwithstanding the current almost complete lack of effective riparian vegetation in my opinion a 5 m riparian buffer will be effective and contribute significantly to the overall enhancement of stream ecological health. TCM is willing to offer this and condition 28.2 has been amended.
- 13 In paragraph 52 of his statement, Dr Storey states that the NFFCRP should specify reporting of fish species and numbers caught and species and numbers of fish killed, along with three other minor additions (listed as a, b and c in paragraph 52 of his evidence). I agree with Dr Storey's recommendations and the relevant consent condition 15.2 have been amended to reflect this change. The draft NFFCRP includes this information.
- 14 In paragraph 61 of his evidence, Dr Storey recommends that Condition 24.6a specify that stream habitat monitoring be reported using the fish and

macroinvertebrate metrics in the NPS-FM National Objectives Framework (Fish IBI, MCI and ASPM) and interpreted in relation to relevant attribute bands. Dr Storey goes on to recommend that monitoring should commence with at least one year of baseline (pre-mining) data collection, and sampling sites must be located within a section of each stream that will be diverted during mining and restored after mining. I agree with Dr Storey's recommendations and consent condition 24.5 has been amended to reflect this change. Monitoring required under the conditions must be undertaken and analysed by suitably qualified personnel and the results supplied to the Consent Authority annually as part of the annual works programme (Condition 24.3).

- 15 Dr Storey recommends (in paragraphs 63-68) a condition requiring that macroinvertebrate and fish metrics should return to the same attribute band as that present prior to mining. I partially agree with Dr Storey's recommendation in relation to metrics but in my opinion returning to pre mining metrics should be a target and not a requirement due to the inherent uncertainty of ecological restoration and enhancement and factors (such as local high rainfall and flooding) that are beyond TCM control. In my opinion the goal of macroinvertebrate and fish metrics returning to the same state should be based on a five-year horizon. Consent condition 28.3 has been amended to reflect these changes.
- 16 Dr Storey also recommends a condition that the consent holder be required to demonstrate that the ecological functioning of watercourses originating within the Site post mining is at least 50% better than the ecological functioning pre-mining. The only natural watercourse that originates within the site is Northern Creek, which consists of a short length of ephemeral and intermittent habitat. I agree with Dr Storey that it is appropriate to establish an ecological stream functioning target, but I do not agree that a 50% increase in post mining ecological function is appropriate in this instance, given its context (a working dairy farm). In my opinion the best and most direct measures of ecological functioning are the macroinvertebrate and fish communities, which will be directly and closely monitored both pre- and post-mining. On that basis, I have recommended, and TCM have accepted, that SEV monitoring be added to the pre and post monitoring plan for all stream monitoring sites but that no target be set.

WCRC – Mr Jonny Horrox

- 17 I have reviewed Mr Horrox's responses to the panel dated 23 September 2026 and note that Mr Horrox is largely in agreement with my assessment of stream ecological effects and my conclusion that the post-mining

restoration of streams will result in streams which have higher ecological values than currently.

- 18 I maintain my opinion that with respect to the potential and actual effects on freshwater ecology, having taken into account the species and habitats present, the nature of the proposed activities and actions to avoid, remedy and minimise/mitigate any effects, it is my view that the effects of the proposed project on freshwater values would be negligible.
- 19 In the medium–long term, the effects of the proposed project would be positive, in that there will be no overall loss of creek extent and that stream ecological values will be enhanced by naturalising and improving the instream and riparian habitat quality of creeks.

Richard Montgomerie

5 October 2026