

BEFORE THE FAST-TRACK EXPERT PANEL

IN THE MATTER of the Fast-track Approvals Act 2024 ("FTAA")

AND

IN THE MATTER of The Central and Southern Block Mining Project
(FTAA-2512-1153)

JOINT STATEMENT OF EXPERT WITNESSES:

HYDROLOGY / HYDROGEOLOGY

18 September 2026

INTRODUCTION

1. Expert conferencing on hydrology / hydrogeology took place online via Microsoft Teams from 9.00am-5.30pm on 18 September 2026.
2. The conference was attended by the following experts:
 - (a) Jon Williamson ("JW"), Hydrologist (engaged by the Applicant);
 - (b) Josh Mawer ("JM"), Hydrologist (engaged by the Applicant);
 - (c) Jake Scherberg ("JS"), Hydrogeologist (engaged by the Applicant);
 - (d) Keren Bennett ("KB"), Freshwater Ecologist (engaged by the Applicant); KB participated in the discussion on agenda item B only;
 - (e) Grant Eccles ("GE"), Planner (engaged by the Applicant);
 - (f) Dr Sung Soo Koh ("SK"), Hydrologist (Waikato Regional Council);
 - (g) Mark Chrisp ("MC"), Planner (engaged by Waikato Regional Council);
 - (h) Nicole Calder-Steele ("NC"), Hydrogeologist (engaged by the Department of Conservation);
 - (i) James Blyth ("JB"), Hydrologist (engaged by the Department of Conservation), noting that JB did not attend from 12.30pm-2.30pm and was not present for agenda items concerning RFI 18;
 - (j) Taituwha King ("TK"), Mātauranga Māori (engaged by Te Nehenehenui);
 - (k) Cathy O'Callaghan ("CO"), Planner (engaged by Te Nehenehenui); and
 - (l) Fleur Passau ("FP"), Mātauranga Māori (engaged by Ngaati Mahuta ki te Hauaauru).
3. Steve Mutch (ChanceryGreen) acted as independent facilitator.
4. Islay Fowler (ChanceryGreen) assisted the experts to draft the Joint Witness Statement ("JWS").

CODE OF CONDUCT

5. The experts confirm that they have read the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023 and referred to in the Fast-track Approvals Act 2024: Panel Conveners' Practice and Procedure Guidance 22 July 2025, and agree to comply with it. The experts

confirm that the issues addressed in this JWS are within their area of expertise, unless stated otherwise.

SCOPE OF JWS

6. The Expert Panel directed the experts to confer and advise on questions concerning hydrology and hydrogeology. These questions are set out in Appendix A to Minute 24 of the Expert Panel (20 August 2026) as Request for Further Information (“RFI”) 1, 2, 6 and 18. These questions have formed the basis of the conferencing agenda.
7. In this JWS, we report the outcome of our discussions in relation to each item (below), including by reference to points of agreement, disagreement, and unresolved matters or uncertainties. Where we are not agreed in relation to any issue, we have set out the nature and basis of that disagreement.
8. The experts have only commented on matters in this JWS that are within their expertise.

AGENDA ITEMS

RFI 1: AUTH 14.01 (Water Permit – Divert Groundwater & Surface Water Take): Conditions 2-4 to be deleted and replaced

A. Condition to verify or revise the estimated 45L/s Mitiwai MALF and 31L/s Q5 (using an external control catchment or other equivalent method) as part of baseline monitoring.

9. All hydrogeologists and hydrologists (SK, JM, JW, JS, JB, NC) agree with the overall approach to the proposed amendments to condition 2 of AUTH142035.14.01 included in Appendix A to memorandum of counsel on behalf of the applicant providing an interim response to certain further RFIs dated 8 September 2026.
10. All hydrogeologists and hydrologists (SK, JM, JW, JS, JB, NC) consider that the relevant threshold for water loss between the upstream and downstream flow measurement points in condition 2 should be 5% of Q5 (before augmentation is implemented).
11. CO and TK are not supportive of augmentation however, they consider that any augmentation should only occur where necessary and where adverse effects on water quality, mauri and taonga species, including tuna migration are avoided.

They further consider that the timing and any transfer must consider mātauranga Māori and the maramataka Māori with mana whenua involved in assessing potential effects and determining appropriate conditions.

12. FP does not support augmentation as a preferred management response. If augmentation is undertaken, it should be limited to circumstances where it is necessary and where adverse effects on water quality, mauri, ecosystem health, and taonga species, including tuna migration, are avoided. From a mātauranga Māori perspective, any transfer of water between catchments requires careful consideration of the mauri and whakapapa of both the donor and receiving waterbodies. The timing and operation of any augmentation should be informed by mātauranga Māori and the maramataka Māori, with mana whenua involved in the assessment of effects, development of conditions, and monitoring of outcomes.
13. SK raised a question whether sourcing the augmentation water from the same catchment is acceptable to the "mixing of water" consideration. CO, FP, and TK consider the approach of sourcing water from the same catchment is preferable, dependent on the quality of the augmented water.
14. SK, TK, and FP want to ensure that monitoring practices meet an appropriate standard. Rating curves should be supported by a sufficient number of stream gauging measurements, and follow-up gauging should be undertaken regularly to verify and maintain the rating curve. This monitoring should occur routinely, rather than only in response to observed reductions in flow.
15. JB supports the statement at [14] above, and suggests adding reference to National Environmental Monitoring Standards ("NEMS") as a guiding document to help support quality data collection, acknowledging the limited applicability of NEMS to sandy coastal streams.
16. JM agrees with [15] and proposes an approach of undertaking manual flow gauging at the start of December annually, and if that diverges from the current rating curve +/- 10%, then additional rating gauging should be undertaken to update the rating curve.
17. All experts (except KB who was not present) agree that the approach recommended at [15] and [16] should be worked in to conditions to apply to AUTH142035.14.01.

18. NC supports the statement at [14] with a general comment that all groundwater and surface water monitoring should be consistent with NEMS and/or other appropriate and accepted standard.
19. With respect to [18], GE says that general reference to consistency with the NEMS (which the experts agree have applicability limitations in this environment) throughout the consent conditions raises the potential for compliance difficulties for both the consent holder and the regulator. If the regulator is dissatisfied with the quality of the data it is receiving in terms of being able to establish compliance with consent conditions, there are remedies available to it to address that matter.

B. Condition to determine the minimum environmental flow for lower Mitiwai Stream.

20. JM, GE, JW, SK, JS, and NC do not consider that developing a site specific minimum environmental flow condition is necessary or proportionate to manage the degree of effect anticipated. They instead propose to maintain the default provisions of the Waikato Regional Plan (i.e., 95% of Q5).
21. JB, JS, JM, JW, NC, KB, and SK say that to define an environmental minimum flow is a significant undertaking, and the practical approach of adopting plan limits of 95% of Q5 is appropriate in this instance.
22. CO, GE, MC, SK, FP, and TK support the inclusion of a specified timeframe for implementing the measures required by Condition 6 of AUTH 142035.14.01, preferably within the consent condition, to provide certainty and facilitate compliance monitoring.

C. Limit conditions for Central Pit management (specifically maximum groundwater drawdown limits in terms of RLm – mAMSLL for Stages 1 to 4 of Central Mine Pit).

23. All experts agree that this agenda item has been addressed through the responses under agenda item G below.

D. Conditions outlining revised stream low flow trigger level criteria and responses if Central Pit depletion effects on Mitiwai Stream greater than 10% MALF or appropriate alternative criteria (such as minimum environmental flow).

24. All experts agree that this agenda item has been addressed through the responses under agenda items A and B above.

RFI 2: AUTH 05.01 (Water Permit - Surface Water Take): Condition 7

E. Confer and advise on whether 8.53 m RL as a cease take is needed and/or an appropriate level.

25. All experts record that while the question above specifically refers to 8.53 m RL, the discussion points below consider a continuum of responses over a range of different lake levels because the management system needs to adapt to different stressors that occur at different points in the hydrological range.
26. JM and JW consider that 8.53 m RL is needed and appropriate. The reason that this minimum cease take level is required is that it ensures a continuation of flow from Lake Tahaaroa to the Wainui Stream and to the Dam. The reason they consider it an appropriate level is the range of other trigger levels that are proposed as part of the current consent conditions, being the 9.6 m RL and the 9.45 m RL as these would be encountered well before the 8.53 m RL cease take level is triggered.
27. SK agrees with [26] above. 8.53 m RL has a rare chance of actually being reached, but it marks an important environmental threshold that everybody needs to be aware of for future decision making. JW notes for context that at the transition from Lake Tahaaroa to the Wainui Stream, the historical bed level is 8.45 m RL, which is 8cm below the 8.53 m RL.
28. JB and JM clarify that the 9.6 m RL trigger level relates to lake level management and potential wetland ecology effects, while the 9.45 m RL trigger is relevant to the continuation flow in the Wainui Stream downstream of the Dam, and the 9.3 m RL trigger is for initiating pumping and augmentation into the fish pass. The 8.53 m RL trigger level is related to flow from Lake Tahaaroa into Wainui Stream.
29. JB believes that the 8.53 m RL cease take represents a historic backstop for managing minimum water levels that may no longer be appropriate. Data indicates minimum monitored lake levels have not dropped below 9.6 mRL and

that the proposed activity will increase the frequency of drawdown below 9.6mRL, to as low as 8.53 m RL, potentially for months at a time, that are likely to have an ecological effect if not managed appropriately. FP and TK agree.

30. FP, JB, SK, NC, TK, JW and CO consider the management responses at 9.6 m RL need to be more robust. The matter cannot be addressed in isolation by hydrologists, and input from ecologists is also required.
31. JW suggests the following management response at 9.6 m RL: If the lake level drops below 9.6 m RL for a continuous 30-day period, the consent holder must immediately implement the mandatory reduction measures specified in the council-approved Lake Level and Water Management Plan. The consent holder must notify the Waikato Regional Council in writing within 48 hours detailing the specific reduction measures that have been activated.
32. JB believes the consent condition wording for the trigger of 9.6 m RL as drafted (a cumulative period of 30 days over any 60 day period) provides too much uncertainty to ensure effects are minimised. This may result in management approaches that draw the lake down numerous times per year, below the lowest recorded minimum level, without any monitoring of ecological effects being triggered (which begins after 30 days). JB recommends the consideration of an annual limit on the number of days below 9.6 m RL to be advised by ecological conferencing. CO, FP, and TK agree.
33. TK considers that from a Mātauranga Māori perspective, lake level drops must be considered in relation to the interconnected hydrological and ecological health of the lake. From a Mātauranga Māori perspective, changes in water levels can affect the mauri of the wider system and place stress on its taonga species, including tuna and their habitats. Conditions must be staged and able to respond quickly to detected changes, ensuring the balance and health of the lake and its taonga species are maintained. FP and CO agree.

**RFI 6(1): AUTH 16.01 (Destroy, disturb, dewater natural inland wetlands):
Conditions 5(a) and 5A**

**F. Confer and advise on how baseline monitoring and trigger levels
would be determined for water level management for groundwater
connected wetlands for the purpose of AUTH 16.01 Condition 5(a).**

34. Subject to [35]-[37] below, JB agrees with the applicant's response to RFI 6.1, including changes to conditions, in Appendix A to the memorandum of counsel on behalf of the applicant dated 8 September 2026.
35. JB recommends further clarity is required in the updated natural inland wetland buffer plan around the frequency of monitoring of ground water indicator wells, and how triggers be managed and monitored in practice by operational staff. FP, CO and TK agree.
36. JB, JW and JS recommend modelling incorporated a 20-30 year climatic series that captures existing baseline monitoring.
37. JB, JW, NC and JS agree that trigger levels require either telemetered monitoring equipment or regular downloads of continuous monitoring data as water levels approach TL1, and that the conditions and the natural inland wetland buffer plan should be updated to reflect this.
38. JB recommends in Table 1 for TL2 that after a review is completed, within one month the outcomes of this review should be provided to WRC and if TL3 is enacted (augmentation), a hydrological ecological outcomes report should be produced and provided to WRC at the end of augmentation. MC, JS, JW and SK agree.

RFI 18: Hydrogeology: Maximum drawdown

G. Review and comment on draft condition:

The consent holder shall not drawdown groundwater within the Central and Southern Mine pits below the following levels (levels in terms of RLm Moturiki vertical datum):

A. Central Mine Pit:

- i. Pit 1 – RLm TBA***
- ii. Pit 2 – RLm TBA***
- iii. Pit 3 – RLm TBA***
- iv. Pit 4 – RLm TBA***

B. Southern Mine Pit:

- i. Pit 1 and 2 – RLm TBA***
- ii. Pit 3 – RLm TBA***
- iii. Extension 1 – RLm TBA***
- iv. Extension 2 – RLm TBA***
- v. Extension 3 – RLm TBA***

Extent of mine stages as presented on Figure 1 of WWLA Appendix N drawing dated 22 August 2025.

(RLm stage levels to be provided by TIL.)

39. JW considers that the suite of consent conditions is robust with respect to monitoring and contingencies, and focusses on the effects from groundwater dewatering (stream depletion, wetland water level depletion, saline intrusion). The effects-based premise of these consents renders the need for RL controls in the mine pit superfluous. For example, if the mine at the maximum depth that was modelled was not causing effects anywhere near the level accepted under the consent, then there should be no reason not to continue deeper. GE, SK and JS agree.
40. CO does not oppose the effects-based approach in principle provided the proposed monitoring and trigger regime is robust and enforceable enough to replace RL limits on groundwater. That is, if no envelope is applied there needs to be some form of compensatory effects management and monitoring. TK and FP agree.

41. By way of explanation for SK's agreement to [39], SK says there is augmentation plan in place. In terms of pure hydrology (depletion) considerations, he doesn't have concerns on depletion effects associated with deepening the water level in the pit. The augmentation will limit the depletion effects to streams and wetlands. SK wants to prevent any potential salinity from being released to any surface water bodies or wetland area. He considers that any water from the pit must be returned to the mine pits or the stormwater system must carry the water to the saline environment. There is already a stormwater management system that routes the potential salinity down to the CMA.
42. NC considers that there should be a clear connection between resource consent conditions and the modelled scenario. The assessment of effects is based on a model that assumed particular excavation depths. If mining exceeds this, the assessment is no longer relevant. Confirmation that the model is performing well under current conditions does not necessarily demonstrate that the model remains valid for deeper excavations. As impacts have been assessed to a maximum excavation depth, a limit tied to that depth (or the equivalent induced drawdown) is appropriate. Otherwise, there is reliance on assumptions beyond those that have been evaluated in the effects assessment. NC considers the conditions proposed by the panel are appropriate with respect to WWLA Figures A1 to A6 dated 15 July 2023.
43. In reference to [42] JW considers that connection between resource consent conditions and the modelled scenarios should relate to the magnitude of effects consented, not the model scenario or model setup per se. This approach would cover outcomes where the model is overly conservative, or non-conservative. JS agrees.
44. FP considers that the proposed conditions focus on managing predicted effects within an acceptable operational envelope. From a Mātauranga Māori perspective, the more appropriate question is whether the activity remains within the limits that the taiao can sustain while maintaining its mauri, whakapapa relationships, and ecological functioning. Trigger levels should therefore operate as limits that constrain mining activity, rather than merely signalling a requirement for additional management responses such as augmentation or mitigation. From a Mātauranga Māori perspective, the absence of measured effects at a particular excavation depth does not, in itself, justify deeper mining. Mauri, ecological integrity, and hydrological resilience may be affected cumulatively and may not be immediately apparent through conventional monitoring. FP considers that

environmental limits should reflect the natural capacity of the taiao to sustain disturbance, rather than allowing progressive expansion of mining activity until adverse effects become measurable. TK agrees.

45. In TK's view, groundwater drawdown must not be considered to have no effect simply because an immediate physical effect is not detected. From a Mātauranga Māori perspective, water is interconnected and artificially altering its natural movement can affect mauri and the wairua of the wider system. These effects are cumulative and may not become apparent for some time. TK is concerned about reliance on predictive modelling and considers any effects-based approach requires robust and precautionary conditions.

H. Review and comment on draft condition:

The consent holder shall not cause dewatering of ground outside of mine pit areas greater than the predicted groundwater levels (levels in terms of RLM Moturiki vertical datum) presented on WWLA Figures A1 to A6 dated 15 July 2023.

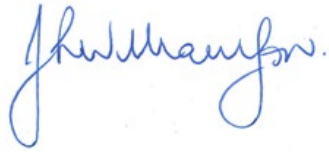
46. All experts (except KB and JB, who were not present for this part of conferencing) consider this agenda item is addressed through responses to item G above.

I. Review and comment on draft condition:

The consent holder should carry out sand mining activities which maintain Electrical Conductivity of water within all mine pits at less and equal to 1,000uS/cm to control potential saline intrusion of iron sand aquifer.

47. GE is of the view that dredge pond salinity restrictions are not required because:
- (a) the extremely minor modelled adverse effects from saline water remaining in a pond, and the fact that any saline water removed from a pond as part of dredging is diluted through recirculation in the mine water system or disposed of through tailings; and
 - (b) excess saline mine water can be discharged to the CMA i.e. a saline environment via the export pipeline.
48. SK and JW agree with GE's [47].

SIGNATURES OF EXPERTS



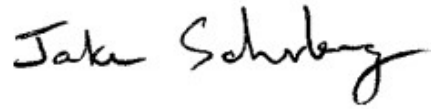
Jon Williamson



Josh Mawer



Grant Eccles



Jake Scherberg



Keren Bennett



Mark Chrisp



Dr Sung Soo Koh



James Blyth



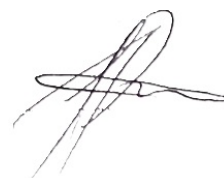
Nicole Calder-Steele



Taituwha King



Cathy O'Callaghan



Fleur Passau