

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:

**ADEQUACY OF PROPOSED EFFECTS MANAGEMENT MEASURES FOR
WETLANDS**

6 & 7 July 2026

INTRODUCTION

1. Expert conferencing on adequacy of the proposed effects management measures for wetlands took place online via Microsoft Teams from 9.00pm-2.00pm on 6 July 2026 and 9.00am-2.20pm on 7 July 2026.
2. The conference was attended by the following experts:
 - (a) Dr Hannah Mueller (“HM”) (engaged by the Applicant);
 - (b) Hamish Dean (“HD”) (engaged by the Applicant);
 - (c) Kaitlin Morrison (“KM”) (Waikato Regional Council);
 - (d) Dr Catherine Beard (“CB”) (Department of Conservation);
 - (e) Dr Fleur Maseyk (“FM”) (engaged by the Department of Conservation);
 - (f) Taituwha King (“TK”) (engaged by Te Nehenehenui); and
 - (g) Fleur Passau (“FP”) (engaged by Ngaati Mahuta ki te Hauaauru).
3. Steve Mutch (ChanceryGreen) acted as independent facilitator.
4. Caitlin Todd (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. In Expert Panel Minute 15 (10 June 2026), the Panel directed the experts to conference on the adequacy of the proposed offset measure for wetlands. This was expanded by the experts to effects management. The Panel identified four key issues to be addressed. Minute 15 has 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

Overarching comments

9. TK and FP consider that, from a mātauranga Māori perspective, restoration is a process for restoring balance, strengthening mauri, and supporting the continuation of cultural relationships for future generations. Wetlands should be understood as a living system connected through whakapapa, and within whakapapa this is not just genealogy, but a wider connection with all things (the land, taonga species, and people are interconnected).
10. All experts agree that seepage wetlands are not offsetable, and their loss will need to be considered separate to the wetland offset proposal as compensation measures. All experts agree that while seepage wetland is naturally uncommon and a threatened ecosystem type and has high ecological value, the seepage wetlands proposed to be removed here are degraded habitat and, in some cases, have modified hydrology.
11. All experts agree that the offset and compensation site must be confirmed prior to a decision and codified within consent conditions to reduce uncertainty of the offset and compensation being achieved.
12. All experts agree that ecological value of a wetland is not just based on vegetation composition but should consider functional and habitat value. TK further considers that consideration should be given to culturally significant species and resources, such as tuna (eel), inanga (white bait), and mokomoko (lizards), mahinga kai (food gathering), rongoā (medicine), raranga (craft and other traditional practices).
 - A. The suitability or otherwise of the Tonkin and Taylor Biodiversity Compensation Model and whether a different model such as the Department of Conservation's Biodiversity Offset Accounting Model (BOAM) (2026) should be applied.**
13. FM considers the BCM to be an inappropriate model for loss/gain calculations within an offset design for the reasons set out in her statement of advice before the panel. Her views on the inappropriateness of the BCM in the general sense remain unchanged.

14. In relation to use of the BCM for Tahaaroa, FM considers that the BCM is inappropriate and unhelpful for verifying the offset outcomes in the future. FM considers that aggregated condition scores are inappropriate measures for high value biodiversity and for use in offset design. This is particularly so where it is unclear as to which attributes contribute to the aggregated score. Measuring change is therefore not possible. FM is of the view that the BCM data inputs do not provide a meaningful value that translates to on-the-ground change (biodiversity gain) that can be monitored and verified and therefore an offset (of at least no net loss) confirmed, and the outputs from the BCM are meaningless in terms of evaluating ecological equivalence as required for an offset. Further, the 10% net gain claim is misleading as it relates to a change in the aggregated wetland value score (which is not a measure of biodiversity) and not to actual change on the ground.
15. FM also remains of the view it is inappropriate to aggregate biodiversity elements that are unoffsettable (in this instance, seepage wetland) within an 'overall' gain and claim a net gain offset.
16. Since the original reports were drafted, FM understands that HD has changed the principal metric for the offset from the value score used in the BCM to vegetation cover and evaluated the offset design using a BOAM. To date, FM has not had the opportunity to work through that modelling. In addition, in the course of conferencing the experts have confirmed that seepage wetlands are not part of the offset (their loss is permanent), and that vegetation cover is an appropriate attribute to describe (in a general sense) condition of wetland habitat.
17. HD would welcome working through the BOAM with FM.
18. FM considers that, in light of these developments, and provided that the BCM is set aside and not relied on to evaluate offset success, seepage wetlands are acknowledged as permanently lost, the implementation of the offset and compensation actions commences six years prior to destruction of the wetlands, the consent conditions as recommended elsewhere in the JWS are adopted, FM is more comfortable with the offset and compensation design (notwithstanding comments elsewhere in this JWS relating to uncertainty).
19. HD and FM consider that the loss of seepage wetlands need to be compensated for. This has been incorporated alongside the proposed offset actions at the same site. Therefore, the proposed "offset site" (as currently referred to) should be referred to as an "offset and compensation site". All other experts agree.

20. FP considers that the BCM is an aggregating model, effectively taking entirely distinct, living ecosystems, grouping them together and averaging their value to a single baseline score of 2.5. In our worldview, this breaks the whakapapa of the water, every wetland has its own identity, its own mauri, and its own specific duty to sustain the lake, the land, the environment, and our people. The BCM is fundamentally unsuitable for a landscape as sacred and interconnected as Tahaaroa. The BOAM is uniquely suited to this project because it directly confronts the high ecological complexity and active trauma of the landscape. Research undertaken by Tahaaroa Lakes Trust alongside ESNZ (NIWA) has identified a collapse of tuna growth by half, suffocating kaiaua (freshwater mussel), and severe bio-hazard incursions like Hornwort (*Ceratophyllum demersum*). Because the landscape is under acute trauma, applying the best-practice BOAM is preferred.
21. TK and FP consider that the loss of a natural wetland is the permanent loss of a living ancestor with its own whakapapa, mauri, and relationship to the whenua and waterways. Although a replacement wetland cannot restore what has been lost, tikanga can provide a means to respectfully acknowledge that loss while establishing the cultural identity and mauri of the new wetland. This must be led by the marae, kaumātua, and Mātauranga Māori knowledge holders within Ngaati Mahuta ki te Hauaauru hapu. This process should also include cultural ceremonies including the naming of the new wetland, recognising its place within the wider landscape and ensuring it carries its own identity and relationship with the generations who will care for it.

B. The extent and nature of the offset required for the loss of the wetlands being removed by mining activities to meet the principles outlined in the National Policy Statement on Indigenous Biodiversity 2023 (NPS-IB) and National Policy Statement for Freshwater Management 2020 (NPS-FM).

(i) Extent and nature of wetlands proposed to be removed as part of the Project

22. All experts agree that the extent and nature of the wetlands proposed to be removed are understood: 3.72ha of seepage, 0.49ha of permanent shallow water wetland, and 0.03ha of raupō (palustrine swamp) are proposed to be removed.

23. FP and TK consider that, with respect to the nature of the wetland, it concerns a living landscape bound by whakapapa, sustained by mauri, and protected through kaitiakitanga (guardianship).
24. FM, KM, FP, TK and CB consider there is uncertainty as to effectiveness and feasibility of the proposed mitigation measure (water supplementation) to address the degradation of the remaining wetlands from the proposed activity. HD and HM agree because there is a potential reliance on water supplementation. All experts note that their recommendations below regarding the consent conditions are necessary for responding to this uncertainty and providing for contingency in the event of failures.
25. FP and TK consider that because Lake Tahaaroa is the only available water source in the catchment, the uncertainty regarding the volume of water abstracted for mining operations, including for flow augmentation mitigation measures and the offset and compensation proposal, requires evaluation of potential effects on the lake and its wider catchment.

(ii) Extent and nature of offset required for the removal of those wetlands

26. All experts agree that seepage wetlands cannot be offset, therefore, their loss due to the proposed activity is permanent.
27. Notwithstanding the above, HD and HM consider that the extent and nature of the offset and compensation proposed (in the NIWBMP) will achieve a good ecological outcome, through providing additional quantity and quality of habitat.
28. FM, KM, FP, TK and CB consider there is unacceptable uncertainty (in its current formation, proposed consent conditions and lack of management plans) that the proposed offset will achieve anticipated gains. Biodiversity offsets require measurable outcomes that reasonably demonstrate at least no net loss. An unquantified “good” outcome does not meet that requirement.
29. TK and FP consider Te Mana o te Wai is the guiding principle for the management of Ngā Wai o Maniapoto. That principle requires the health and integrity of waterbodies is protected for the present and future generations. Where there is uncertainty regarding the ability of an offset proposal to maintain those values, he considers caution is appropriate.

30. FP refers to: “*E rere ana ngaa wai o ngaa roto o Tahaaroa hei oranga moo te roto, moo ngaa koiora katoa, moo te whenua, moo te tangata, aa, hei painga hoki moo ngaa uri whakaheke o Ngaati Mahuta ki te Hauaauru.*” (The waters of the Tahaaroa lakes flow to sustain the lake, the land, the environment, the people, and future generations of Ngāti Mahuta ki te Hauāuru). FP considers that while ecological values may be capable of being offset in part, from a mātauranga Māori perspective, the loss or the mauri and whakapapa relationships associated with specific wetlands cannot always be recreated or transferred elsewhere. Consequently, avoidance remains the preferred outcome wherever practicable. TK agrees with this.

C. Measures to ensure that the offset site is adequately and appropriately established, protected from mining activities, remains in perpetuity, and that potential effects from groundwater drawdown are adequately avoided.

(i) Feasibility of the offset proposal, including the ability for new seepage wetland systems to establish to offset those that would be lost if the application is approved.

31. As outlined above, all experts agree that seepage wetlands cannot be offset so the proposal needs to include additional management actions to compensate for that loss.
32. HD, HM and TK consider that Site 27 is the most suitable option onsite because it is close to the loss, has very good ecological connectivity with the Tahaaroa lakes, and is close to known habitat for threatened fauna. FM is less familiar with the site but is comfortable in the conclusions of the other experts.
33. TK considers that the proposed area should be recognised as a place with its own identity, whakapapa, and significance. Opportunities should be considered for mana whenua (wider mana whenua including the three marae and the Te Rūnanga o Ngaati Mahuta) to contribute to naming, interpretation, puuraakau (oral accounts), and cultural narratives associated with this area. TK also considers that the landscape and significant places connected to that proposed wetland, including right next door there is Te Kakara (battle ground), Kaiwaka (boundary marker), and Maukore (taonga species monitoring area), should be acknowledged. It is imperative that mana whenua have involvement with regards to the shifting of the mauri from the current wetland system over to the new proposed area.

34. FP agrees with TK above and considers that consideration of the lake systems degradation that has occurred over the last 10-15 years highlighted by significant research and monitoring undertaken by the Tahaaroa Lakes Trust in conjunction with ESNZ (NIWA), which have identified the 50% reduction of tuna growth, mass extinction events of kaiaua (freshwater mussel) due to sediment, and increased growth of invasive macrophytes, needs to be taken into account when looking at the feasibility of the site to ensure that no more decline occurs to the lake systems. FP asserts TK's comments that mana whenua must be involved in when addressing feasibility of the site and through the entire process (development and implementation).
35. FM, KM, FP, TK and CB consider feasibility of the offset and compensation proposal is predicated on stipulating in consent conditions, specifications, including time bound actions, outcome targets, performance measures, and contingency measures where monitoring indicates deviation from anticipated offset gains or unanticipated outcomes that compromise the offset requirement. They consider these specifications are missing from the current proposed conditions.
36. HD notes these specifications are in the proposed management plan. FM and FP are of the view these need to be replicated in the consent conditions and not solely relegated to management plans which can be changed post-decision. HD, HM, KM, TK and CB agree.

1. The four-zone planting model for the offset site assumed in the NIWBMP

37. HD and CB consider that a planting plan which recognises different wetland zones is a standard and accepted approach. They consider the important thing is to have the offset and compensation outcomes described within consent conditions. They consider the details of how that is achieved sits within the NIWBMP. They consider development of that plan should be done in conjunction with mana whenua.

2. Fencing and pest/weed control

38. All experts agree that livestock, nuisance animals, and pest plants that degrade the ecological condition of the site must be managed and/or controlled to ensure required offset and compensation gains are achieved and sustained (and failure to do so will undermine the offset and compensation gains). HD notes this is detailed in the NIWMP.

39. All experts agree that these matters must also be in consent conditions.

(ii) Conditions and management plan framework in relation the wetland offset site

40. All experts agree the following matters must be included in consent conditions to ensure the success of the offset and compensation:

- (a) Purpose of the condition (to generate a net gain offset of wetland vegetation cover to address the loss of wetlands and generate additional gain to compensate for permanent loss of seepage wetlands).
- (b) Commencement of implementation of the offset and compensation actions is to occur no later than six years prior to any direct loss of wetland habitat from mining activities.
- (c) Description and mapping of spatial extent of the offset and compensation site and the planted buffer (noting paragraph 33 above in relation to naming this area).

Planted buffer

- (i) HD and HM acknowledge wider buffers are always better, but they consider a 30m planted buffer is sufficient.
- (ii) CB, FM and KM consider a wider buffer would provide more hydrological protection for wetlands given the potential requirement for water augmentation as a mitigation measure. They also consider a wider buffer would provide more ecological protection.
- (iii) FP and TK consider a 100m planted buffer is appropriate. The 100 metre buffer is not presented as an absolute ecological threshold. Rather, it is a precautionary management measure that provides sufficient separation to reduce the likelihood of adverse effects on a taonga ecosystem. From a mātauranga Māori perspective, where uncertainty exists, it is more appropriate to err on the side of protecting the mauri of the wetland than relying on remediation after degradation has occurred.

Unplanted set back

- (i) While a wider planted buffer would offer better ecological protection, all experts consider that an additional unplanted set back within which

mining activities would be prohibited (in addition to a 30m planted buffer) is preferable over having a 30m planted buffer and no setback. This would offer more protection from hydrological, sediment and disturbance effects. The set back would need to be specified in conditions and be subject to the weed and pest management conditions that relate to the site.

- (ii) FM, KM and CB consider that an unplanted set back of 70m in addition to a 30m planted buffer would be appropriate.
 - (iii) As noted above, FP and TK consider a 100m planted buffer is preferred; however, a set back 70m and 30m planted buffer could be an alternative.
- (d) Measurable offset and compensation outcomes required (extent and condition).
 - (e) Timebound actions required to achieve outcomes, including planting and maintenance, pest and weed management, hydrological changes (including water management), earthworks.
 - (i) FM, KM and CB consider that a strategy for wilding pines should be included in the weed control management plan.
 - (f) Triggers and thresholds and performance measures as informed by the offset and compensation design. The specifications for end point state, triggers and performance measures as set out in the monitoring section of the NIWBMP must be incorporated into the consent conditions.
 - (g) Contingency measures including additional offset and compensation where required that respond in a timely way to monitoring (e.g. additional and replacement planting to address plant death or slower growth rates than anticipated, additional pest control, actions to address where lake levels too low for augmentation, address spread of invasive aquatic species, to address delays falling short of performance targets, or where more monitoring may be required before actions are taken).
 - (h) A legal protection mechanism in perpetuity of the wetland offset and compensation site, planted buffer, and any unplanted set back.

41. All experts consider that a suite of consent conditions covering the same matters outlined above at (a)-(h) need to apply with respect to the 30m planted buffers around remaining and created wetlands.
42. FP considers that the offset and compensation area must be co-designed with Ngaati Mahuta ki te Hauaaauru (marae-led) and that this be included as a consent condition. TK, FM, KM and CB support this.
43. All experts agree that input is required from the participants of this conferencing to inform the drafting of the final proposed consent conditions. This comment applies to all conditions referred to in this JWS.

D. Monitoring and reporting requirements to document C. above.

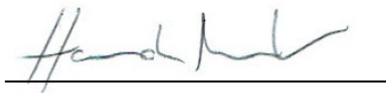
44. The identified experts consider that the following monitoring and reporting requirements should be incorporated into the proposed consent conditions:
 - (a) All experts agree that the water level triggers and contingency measures discussed below should also apply to the offset and compensation wetland (which is not currently the case in the proposed conditions).
 - (b) All experts agree that the current seasonal low trigger (outlined in proposed conditions 5 and 6 of AUTH142035.16.01) could result in stress (including cumulative stress and irreversible loss) on wetland ecosystems. A revised trigger level of mean seasonal water level would be suitable, noting that water levels should be managed to align with natural fluctuations (including rewatering levels).
 - (c) CB, FP, TK, FM and KM consider monitoring of hydrology and condition at a grouping scale might not recognise gradients in water levels and impacts within individual wetlands and might not pick up degradation. That risk would be overcome by monitoring wetlands individually.
 - (d) TK and FP consider that a Cultural Monitoring Plan be prepared in consultation with the relevant marae prior to the commencement of works. The Plan should incorporate mātauranga Māori indicators and provide for ongoing cultural monitoring, marae participation, and governance involvement throughout implementation, rehabilitation, and long-term management to recognise and respond to effects on cultural values and relationships with wetlands.

- (i) TK and FP consider that monitoring should include Mātauranga Māori alongside scientific methods to recognise the whakapapa and interconnectedness of wetlands, waterways, species, and people. Monitoring should be guided by MLC (Marae Led Committee/Rōpū) to ensure cultural values, mātauranga, and local observations are incorporated into reporting and long-term management.
- (ii) TK and FP seek specified, measurable parameters and triggers, mandatory reporting thresholds, independent auditing and monitoring determined alongside the MLC, contain clearly specified timeframes and review clauses, and not rely solely on management plans to address effects. CB, FM and KM support this.
- (iii) TK and FP consider hydrological and ecological monitoring alone cannot fully measure the health of a wetland. Cultural indicators, including observations of mauri, taonga species, and the relationships between wetlands and connected waterways, should also be monitored. MLC should co-design cultural monitoring and reporting to ensure the wetland's cultural, environmental, and intergenerational values are recognised and maintained.
- (iv) TK and FP consider that appropriate funding and resources must be provided to enable the hapū, mātauranga Māori knowledge holders, the MLC, and the Tahaaroa Lakes Trust to undertake cultural monitoring, reporting and adaptive management throughout the life of the project.
- (e) FP considers Ngāti Mahuta ki te Hauāuru should be provided reasonable access to the site to undertake cultural monitoring at agreed intervals, following significant environmental events, and upon reasonable request where concerns regarding environmental effects arise. Records of monitoring undertaken, site access, and any requests made shall be maintained and provided to Waikato Regional Council upon request. FP considers Ngaati Mahuta mātauranga has the ability to work alongside quantitative monitoring to ensure early detection of any adverse effects. TK agrees.
- (f) FP considers that the results from research undertaken by Tahaaroa Lakes Trust and Ngaati Mahuta between 2023 and 2026 be acknowledged and

addressed, including to ensure that it informs baseline monitoring of each retained wetland. TK agrees.

- (g) FP considers a suitably qualified mātauranga Māori expert, endorsed by Ngaati Mahuta ki te Hauaauru, should be involved across all aspects of the monitoring plan. FM, TK and CB support this.
 - (h) As noted earlier in this JWS, all experts agree that the specifications for end point state triggers and performance measures for the offset site and planted buffers as set out in the monitoring section of the NIWBMP must be incorporated into the consent conditions.
45. FM, KM and CB do not hold expertise in mātauranga Māori but support the statements above by FP and TK at paragraph 44(d)-(g), noting that these align with sound ecological management approaches. They support FP and TK's recommendations.

SIGNATURES OF EXPERTS



Dr Hannah Mueller



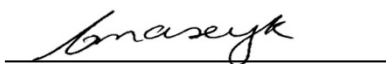
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Kaitlin Morrison



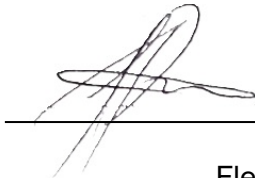
Dr Catherine Beard



Dr Fleur Maseyk



Taituwha King



Fleur Passau