

**Before the Hearing Panel appointed by Canterbury Regional
Council and Selwyn District Council**

IN THE MATTER OF The Resource Management Act 1991

AND

IN THE MATTER OF Applications CRC184166, CRC200500,
CRC201366, CRC201367, CRC201368,
CRC203016, CRC214320, CRC21421
and SDC RC185640 Bathurst Coal
Limited for a suite of resource consents
to close Canterbury Coal Mine.

Final Reply Comments

Andrew Henderson

Consultant Planner for Selwyn District Council

25 March 2022

Introduction

1. My full name is Andrew Philip Henderson.
2. I have the qualifications and experience as set out in Paragraphs 2 and 3 of the section 42A report prepared for the Bathurst Resources hearing, dated 23 September 2021.
3. Although this is not a hearing before the Environment Court, I have read and agree to comply with the Code of Conduct for Expert Witnesses in the Environment Court Practice Note 2014. This evidence is within my area of expertise, except where I state I am relying on material produced by another person. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

Section 42A report overview

4. At the adjournment of the hearing, the view I expressed to the Panel was that:
 - (a) the adverse effects arising from the removal in indigenous vegetation could not be excluded from the section 104D(1)(a) gateway test¹; and
 - (b) subject to appropriate conditions being developed that addressed ecological compensation matters, the proposal would be consistent with the Objectives and Policies of the relevant planning instruments and would satisfy the second gateway test in section 104D(10(b)).

Scope of Report

5. In this statement I briefly address the following matters that have arisen since the adjournment of the hearing and the circulation of the Applicant's final draft conditions of consent:
 - Requirement for a retrospective consent under the NES-CS;
 - Conditions relating to the requirement of a Bond; and
 - Ecological Compensation.

National Environmental Standard for Assessing and Managing Contaminants in Soil

6. In paragraph 33 of the Statement in reply, Ms Hunter notes that she now considers a consent is required under the NESCS for the retrospective works due to the physical changes that had occurred on the site, because the site had been subject to HAIL activities. I agree with Ms Hunter, and refer

¹ Supplementary s42A Report, 29 October 2021 para 30

the Panel to paragraph 7 of my section 42a Addendum report, where I recorded my agreement with that view.

Conditions Relating to the Requirement for a Bond

7. The bond conditions forming part of the Selwyn District Council conditions presented at the hearing have been amended in the Applicant's final version circulated on 28th February.
8. I sought advice from SDC's counsel in relation to the final wording of the Bond conditions to ascertain their suitability for Council. The advice I received was that changes were required for the following reasons:
 - The applicant's proposed conditions provide that the bond agreement does not need to be entered into until management plans have been approved. I understand a bond agreement can be entered into at any point, and should therefore be entered into prior to the commencement of the consent conditions.
 - SDC wishes to end up in the position whereby in the instance of a default there is a have a bond agreement in place accompanied by a bond held by a bank. When default occurs, if money is required it can be provided through the Bank, and the Council(s) can spend the money to rectify any condition breach, particularly if there is serious environmental harm and/or risk. Council also wants to be a position where it can enforce the conditions of consent.
 - Finally, while the bond conditions are presently located within the General Environment Canterbury conditions, the bond is intended to be a joint Councils' bond that is intended to be applicable to all consents, including the SDC consents. The conditions should therefore also sit in the SDC consent. For certainty, the consent numbers and the conditions within those consents that the bond covers should be specifically identified. Those determining the bond amount will need to understand clearly what consents and which conditions of those consents are being bonded.
9. I have appended the changes sought to this statement in the annotated version of the bond conditions in Appendix 3.

Ecological Compensation Conditions

10. Following the hearing's adjournment, the Applicant has given further consideration to the proposed ecological restoration conditions and has presented their latest iteration in the reply received on 28 February, along with supporting expert statements.

11. I have reviewed those conditions, and taken advice from Mr Harding, the Selwyn District Council's ecologist, and his additional memoranda (dated 7 March 2022 and 9 March 2022) are appended to this statement.
12. In summary, I note that Mr Harding remains of the view expressed in his earlier evidence that the Applicant's proposed ecological mitigation and compensation conditions are not adequate, for reasons including:
- The Applicant's compensation proposals do not adequately compensate for the unconsented loss of indigenous biodiversity at the Bathurst coal mine;
 - The proposed conditions do not recognise the attributes that contributed to the North ELF seepage wetland ecosystem in particular, and the ecological value of the seepage wetlands is downplayed;
 - The ecological benefits of the four proposed restoration sites in the Mine Operation Area are over estimated;
 - Evidence suggests that benefits for lizards and Canterbury Mudfish will be minor;
 - The sustainability of the restoration is at risk, as the restoration will not be buffered or protected from changes in the wider catchment; and
 - The proposals contain inadequate monitoring and financing provisions to secure achievement of the compensation work.
13. Mr Harding concluded that
- In summary, the supplementary evidence and consent conditions do not adequately address the issues raised in my ecological evidence for Selwyn District Council, or those raised in the ecologists' Joint Witness Statement. The wetland restoration will not adequately compensate for the unconsented loss of indigenous biodiversity at Bathurst Resources Canterbury Coal Mine.*
- The proposed wetland compensation creates no new wetlands, and will do little to improve aquatic ecology (instream habitat) of Bush Gully Stream. The wetland restoration remains at risk from activities elsewhere in the catchment and there is no certainty that the restoration will be sustainable (especially if monitoring ceases in 2026).*
14. My view at the conclusion of the hearing was that provided appropriate conditions could be agreed in relation to the ecological restoration, then the proposal would be consistent with the relevant Objectives and Policies of the relevant Planning instruments. I rely on the view of Mr Harding and agree on that basis that the proposed conditions do not provide an appropriate level

of compensation or mitigation, and that improvements to the proposed conditions are necessary to achieve an appropriate outcome.

Consideration of s104 Gateway test

15. In the section 42A report I noted that given Mr Harding's view on the inadequacy of the offered mitigation and compensation conditions, the proposal was "at least inconsistent" with relevant provisions relating to ecological matters in the Selwyn District Plan. In reviewing this, I note that the relevant test for a non-complying activity is whether a provision is 'contrary to' the provisions.
16. In reviewing the relevant provisions, I note that none of them are directive – there are no provisions that direct that ecological impacts be avoided. The provisions can therefore be considered 'in the round' and there are none that should be afforded greater weight in reaching a view. In that regard, I consider that while the proposal as it stands is inconsistent with the provisions relating to ecological matters in the SDC Plan, it is not contrary to them. In that regard, therefore, the proposal passes the second gateway test allowing a substantive assessment of the proposal under section 104.
17. In my view, there are four broad outcomes available for this application, being:
 - (i) consent is declined on the basis that the Panel determines both gateway tests are not satisfied; or
 - (ii) the proposal is considered on its merits having passed the second gateway test, but is declined on the basis that the ecological mitigation is insufficient; or
 - (ii) consent is granted subject to the conditions proposed by the Applicant; or
 - (iii) consent is granted subject to conditions that would secure a more appropriate environmental outcome in terms of the ecological compensation proposed.
18. I do not consider that a determination that the proposal fails both gateway tests would be a good planning outcome, and neither would be a decline of consent under the second option I have identified above. This history of this application is long, and much of the closure and remediation work is underway or complete. Although there have been adverse effects, many of these have now been addressed or remediated by the works to close and remediate the works thus far. A declined consent would not be an ideal outcome for either Bathurst or the Selwyn District Council, in my view. Further effort would be required in theory to prepare new consents with new mitigation proposals, or to determine conditions through a mediation process. Given that many of the adverse effects have already occurred, and that the current consents were sought to address the previously

unconsented works, declining the consents would be counter-productive. There is also no certainty that further consents would be sought by the applicant given much of the remediation work is complete, and only the ecological compensation matter requires resolution.

17. Similarly, taking guidance from Mr Harding's assessment, I do not consider that granting consent subject to the conditions proposed by the applicant to be an appropriate outcome, for the reasons given by Mr Harding that I have set out above. I do acknowledge however that this is an option open to the Panel, having determined that the proposal passes the second gateway tests.
- 19 In light of the above, it remains my view as expressed at the hearing that the proposal would be consistent with relevant provisions of the District Plan were a more appropriate mitigation and compensation proposal to be offered.
- 20 In providing his views, Mr Harding has noted that the limitations presented by the current proposal arise because the applicant has focused on providing mitigation and compensation options that are limited to land within their ownership. Some of these constraints, in my view, become less of an obstacle when a wider view is taken. There are a range of options or instruments available that could overcome this issue, including agreements for access, easements or covenants (to gain access to the main upper reach of the Bush Gully Stream as identified by Mr Harding) made with the owners of the property. To date it is unclear whether the applicant has had any discussions with the landowners about the possibility of such access or agreement, or whether it was simply discounted because they do not own the land.
- 21 In applying this view, Mr Harding and I turned our minds to what might be an appropriate mitigation package in the event that the Panel agreed that the current proposal is not appropriate. Mr Harding's Memorandum, which I have appended, sets out the components of a compensation package which, in his view, would provide more adequate and more effective compensation for the unconsented loss of indigenous biodiversity at the site.
- 22 This compensation package comprises two parts and is generally based upon the views Mr Harding expressed at the hearing. The elements revolve around protection and restoration on the Applicant's North property; and protection/restoration along the main upper reach of Bush Gully Stream which is on land not owned by the Applicant.
- 23 As I understand it, Mr Harding's proposal is based upon protecting a fully functioning part of a waterbody as a whole, as opposed to piecemeal sites. The package includes the following components:

- (i) Provision of secure legal protection in perpetuity for wetland and riparian areas at the North property, including the creation of four seepage wetlands within the Mine Operations Area. It is acknowledged that this involves some areas outside of the Applicant's ownership. As discussed above, however, there are mechanisms that exist to enable such protection to occur and could in my view be easily achieved and managed with a willing landowner. Mr Harding's view is that the protection should be at least as secure as a QEII Open Space Covenant. Mr Harding has also noted that the adjacent unformed legal road should be included in this protected area. I consider this is achievable as the road reserve traverses the existing wetland area, and is therefore unlikely to be required as road.
- (ii) Provision of secure legal protection in perpetuity for the natural floodplain of, and an additional 20m riparian buffer along, the length of Bush Gully Stream between the mine site (North ELF landform) and the North property wetland. Similar to point (i) above, this protection should be no less secure than that provided by a QEII Open Space Covenant. It is also acknowledged that this involves land outside of the Applicant's ownership. As discussed above, however, there are mechanisms that exist to enable such protection to occur and could in my view be easily achieved and managed with a willing landowner.
- (iii) Both areas identified in (i) and (ii) above should be fenced to exclude grazing animals.
- (iv) Plant and animal pests should be controlled at both areas to maintain and enhance wetland and riparian values for a period of 25 years. Mr Harding considers that appropriate funds should be set aside to achieve this management objective. I consider that this could be achieved through a bond, and through separate access agreements with the landowner. I consider if the landowner affected was aware that these restoration activities were to be funded by the applicant, then the landowner effectively need agree only to providing access and the implementation of the stream related measures, then I consider securing landowner consent would not be onerous. It is unclear if the applicant has tried to secure landowner consent.
- (v) Strategic localised planting, to facilitate natural regeneration. I consider this can be achieved even if the land is not owned by the applicant.

25. I agree with Mr Harding that the above steps are not necessarily difficult (acknowledging that some of the steps involve land not owned by the Applicant), and will provide a number of benefits that are not present in the current proposal, including:
- The above components provide more adequate compensation for the loss of the seepage wetland ecosystems at the North ELF (and the loss of other indigenous biodiversity, such as lizard habitat).
 - The package provides protection for the wetland and stream ecosystems by more effectively protecting hydrological and ecological processes.
 - The package creates, enhances and buffers wetland ecosystems in a way that is much more likely to provide sustainable long-term ecological benefits.
26. I agree with Mr Harding's view. The additional measures he proposes are not bound by the limitations of the Applicant's property boundaries and provide a more comprehensive mitigation package. There are mechanisms available to give effect to these provisions.
27. Finally, if there are no mechanisms including property owner's agreements available to secure the additional components suggested by Mr Harding, a financial contribution towards restoration at an alternative site is an option that could be employed in combination with the Applicant's current proposal.

Conclusion

27. Overall, I remain of the view that the proposal is inconsistent with the relevant objectives and policies relating to ecological matters in the Selwyn District Plan. This issue would be overcome, in my view, were the conditions proposed by Mr Harding adopted by the Applicant.

BATHURST RESOURCES LIMITED CANTERBURY COAL MINE

SELWYN DISTRICT PLAN RM185622

MEMO from Mike Harding to Andrew Henderson, March 2022.

Draft at 7 March 2022

Introduction:

This memo provides further advice to Selwyn District Council (SDC) on terrestrial ecology matters associated with Consent Application RM185622. In particular, it responds to issues raised in supplementary evidence provided for the applicant (Bathurst Coal Limited) on 25th February 2022. Statements of evidence addressed in this memo are those provided for:

- Ecology (Dr Gary Bramley)
- Aquatic Ecology (Kristy Hogsden)
- Runanga (Mahaanui Kurataiao Ltd)
- Planning (Claire Hunter)

Issues:

Key ecological issues raised in the supplementary evidence listed above are:

1. Whether the North ELF wetlands were dominated by indigenous species.
2. Ecological significance of the North ELF seepage wetlands.
3. Ecological value of the North ELF wetlands.
4. Effects of removal of North ELF wetlands.
5. Protection/restoration of Canterbury mudfish habitat.
6. Protection/restoration of lizard habitat.
7. Adequacy of wetland restoration proposals/compensation.
8. Adequacy of protection for restoration sites.

These issues are discussed below.

1. Indigenous character of the North ELF wetlands:

Claire Hunter states that the North ELF wetlands were (based on the evidence of Dr Bramley) very likely to have been dominated by exotic plant species¹. This is inconsistent with the ecological assessment undertaken in 2017 prior to disturbance of this area, which recorded the presence of areas of wiwi rushland that were dominated by an indigenous rush (wiwi/*Juncus edgariae*)². The statement is also inconsistent with terrestrial ecology evidence of Mike Harding, Philip Grove and Dr Gary Bramley.

¹ Supplementary Evidence of Claire Hunter, para 68.

² Canterbury Coal Mine. Ecological significance of Tara Stream Wetland, the North ELF and Bush Gully Stream. Boffa Miskell, 2017.

2. Ecological Significance of the North ELF wetlands:

Claire Hunter states that the North ELF wetlands did not (based on the evidence of Dr Bramley) provide significant habitat of indigenous fauna³. This is inconsistent with Dr Bramley's supplementary evidence, in which he states that "the habitats are significant"⁴. No comprehensive fauna surveys of the wetlands were undertaken prior to their destruction, so it is not possible to determine with certainty the significance (or otherwise) of the habitats.

Gary Bramley concludes that the wiwi rushland meets the Canterbury Regional Policy Statement (CRPS) criteria for significance because the "habitats are significant"⁵. This is misleading, unless he is referring to the habitats of plant species. At this site it is the ecosystem that is significant, and the rarity of the ecosystem is based on the loss of indigenous vegetation (not fauna habitats) from this type of ecosystem nationally.

Gary Bramley states, with respect to ecological significance, that vegetation within the wiwi rush wetlands was not predominantly indigenous, nor representative of the natural diversity of the ecological district⁶. This statement is misleading (if not incorrect). The wiwi rushlands were dominated by an indigenous species (*Juncus edgariae*). The CRPS ecological assessment criteria define representativeness as 'typical' or 'characteristic' of the ecological district. The wiwi rushland was both typical and representative of this wetland type in this part of the ecological district.

Gary Bramley states that seepage wetlands "covered by indigenous vegetation" are rare and endangered⁷. Seepage wetlands are listed as endangered, but do not need to be dominated (covered with) indigenous vegetation to achieve that listing. The presence of indigenous vegetation at a seepage wetland is sufficient for it to be regarded as significant under the CRPS.

3. Ecological value of the North ELF wetlands:

Gary Bramley assesses ecological value of the seepage wetlands by comparing the present-day (pre-clearance) vegetation with the 'original' vegetation that would have been present⁸. He does not define original. The usual ecological interpretation of original vegetation is that which existed prior to human settlement or at 1840 (EIANZ Guidelines). Neither of those dates have any statutory basis in assessing ecological value (or significance). Use of the 'original' benchmark inappropriately downgrades the ecological value of extant wetlands because few wetlands in Canterbury are representative of their original state.

Gary Bramley persists in using the ecological districts framework for assessing the value (and significance) of the seepage wetlands⁹. The ecological districts' framework dates from the 1980s, is a broad-scale differentiation of vegetation/landform, and does not adequately recognise ecological differences at the small scale of seepage wetlands. In effect, Gary Bramley argues that the value of a seepage wetland in an ecologically distinct part of the Whitecliffs Ecological District (Malvern Hills) where wetlands are substantially depleted, is no different from a seepage

³ Supplementary Evidence of Claire Hunter, para 68.

⁴ Supplementary Evidence of Dr Gary Bramley, para 21.

⁵ Supplementary Evidence of Dr Gary Bramley, para 21.

⁶ Supplementary Evidence of Dr Gary Bramley, para 20(a).

⁷ Supplementary Evidence of Dr Gary Bramley, para 9.

⁸ Supplementary Evidence of Dr Gary Bramley, para 14.

⁹ Supplementary Evidence of Dr Gary Bramley, paras 15-18.

wetland in the Canterbury foothills many kilometres distant where seepage wetlands are much less depleted and less modified.

Gary Bramley suggests that using the Malvern Hills as a framework for assessing the value of seepage wetlands is inappropriate because it would 'elevate' their value¹⁰. It is appropriate to elevate their value because wetlands are substantially depleted in this part of the ecological district and that depletion is relevant for the protection of indigenous biodiversity.

Gary Bramley defends his use of LCDB for considering seepage wetlands in Whitecliffs ED because it is the only nationally consistent spatial database, even though he agrees that the mapping scale of LCDB is not fine enough to identify seepage wetlands¹¹. Use of LCDB does not provide robust evidence; it is largely irrelevant for the assessment of the value (or significance) of seepage wetlands.

Gary Bramley states that the LENZ database provides "an objective measure of the extent and significance of environments"¹². LENZ provides a measure of the extent of environments (though not at the scale of seepage wetlands), but provides no measure of significance. Use of LCDB does not provide robust evidence; it is largely irrelevant for the assessment of the value (or significance) of seepage wetlands.

Gary Bramley continues to defend the use of the EIANZ Guidelines for assessing the ecological value of a site¹³. The guidelines have no statutory basis; and they are inadequate for the assessment of ecological value at the scale of seepage wetlands at this location. The important consideration is that the wetlands were part of a relatively (for Canterbury) unmodified site with intact hydrology and apparently intact ecological functioning.

4. Effects of removal of North ELF wetlands:

Claire Hunter states that the effects of wetland "disturbance" post 2012 (i.e., that for which retrospective consent is sought), are not considered to be any more than minor¹⁴. This is not supported by the ecological evidence; no ecologist (to my knowledge) has advised that the effects are no more than minor. To the contrary, all ecologists agree that the wetlands were significant. The wetlands were not just disturbed; they were removed. The effects of removal of ecologically significant wetlands are more than minor, especially in this part of the ecological district.

5. Protection/restoration of Canterbury mudfish habitat:

Gary Bramley notes that the North property restoration proposal takes into account the very high conservation value of Canterbury mudfish¹⁵. To support his evidence, he refers to the aquatic ecology supplementary evidence of Kristy Hogsden¹⁶. However, the aquatic ecology supplementary evidence states that the benefits of the North Property Enhancement Area for aquatic ecology will be limited to the c.250m reach of Bush Gully Stream at which the riparian planting will occur. It appears that the restoration proposal will provide little benefit for Canterbury mudfish.

¹⁰ Supplementary Evidence of Dr Gary Bramley, para 18.

¹¹ Supplementary Evidence of Dr Gary Bramley, para 19(a).

¹² Supplementary Evidence of Dr Gary Bramley, para 19(b).

¹³ Supplementary Evidence of Dr Gary Bramley, para 37.

¹⁴ Supplementary Evidence of Claire Hunter, paras 32 and 63.

¹⁵ Supplementary Evidence of Dr Gary Bramley, para 52.

¹⁶ Supplementary Evidence of Kristy Hogsden, paras 8 and 28.

6. Protection/restoration of lizard habitat:

Gary Bramley states that the North property restoration planting will provide habitat for lizards¹⁷. This is debatable. The habitats lost in the Mine Operating Areas (MOA) were open grassland with scattered shrubs and occasional areas of exposed rock; habitat which likely supported Canterbury grass skink. Dense plantings of shrubs and tussocks at a valley-floor riparian site are unlikely to replicate the habitat lost at the MOA.

7. Adequacy of the restoration/compensation proposal:

The compensation proposed is restoration of approximately 2.3ha at the North property¹⁸ and planting and/or fencing of four small areas (total area of c.1.09ha) within the MOA¹⁹.

The restoration areas within the MOA are small, isolated, poorly buffered and therefore unlikely to be ecologically sustainable. Furthermore, those areas will have no secure protection because Bathurst Resources does not own the land. Gary Bramley acknowledges that the potential for ecological benefits at these sites is “somewhat limited”, though expects “some ecological benefits to accrue”²⁰.

The four small restorations areas proposed within the MOA cannot be considered to provide meaningful or secure compensation. The value of those areas should not be given any weight when assessing the adequacy of the compensation package.

Gary Bramley states that the enhancement proposed at the North property wetland provides adequate compensation for the loss of the seepage wetlands (and other ecological values) because the value of that biodiversity was low²¹. I disagree. The seepage wetlands at North ELF were ecologically significant (as agreed by all three ecologists), were part of a relatively unmodified landform with apparently intact hydrology, and included areas dominated by indigenous plant species (wiwi/*Juncus edgariae*).

Gary Bramley states that the restoration work would “contribute positively to improving habitat for” Canterbury mudfish²². The aquatic ecology evidence suggests that contribution would be minor. The activities in the wider catchment, which remains unprotected, will have a much greater effect on the quality of habitat for Canterbury mudfish. Those activities will potentially negate any benefits provided by riparian planting at the North property, which comprises a tiny proportion of the catchment.

Gary Bramley states that, in determining the quantum of compensation, he has considered what is practically achievable²³. I don’t believe he has. He has limited his consideration to the one site that Bathurst Resources owns: the North property (and four unsustainable sites within the MOA). Restoration of a single site, isolated mid-reach in a much larger catchment, will not compensate for the loss of sites in an upper catchment tributary at which hydrological (and probably wider ecological) functioning appeared largely intact.

¹⁷ Supplementary Evidence of Dr Gary Bramley, para3 54-57.

¹⁸ Supplementary Evidence of Dr Gary Bramley, para 47.

¹⁹ Supplementary Evidence of Dr Gary Bramley, para 58.

²⁰ Supplementary Evidence of Dr Gary Bramley, para 65.

²¹ Supplementary Evidence of Dr Gary Bramley, para 68.

²² Supplementary Evidence of Dr Gary Bramley, para 68.

²³ Supplementary Evidence of Dr Gary Bramley, para 69.

There may be practical constraints, such as land ownership. However, it is inappropriate for an ecological assessment to be constrained. Ecologists should advise what is required to compensate for the loss of ecological values. I believe it is the task of others (planners, decision makers) to determine what is practical within planning and legal constraints.

Gary Bramley notes that the North property wetland is ecologically significant when assessed against the CRPS²⁴. If the North property wetland is already considered significant, the restoration proposal is not creating new significant wetland vegetation/habitat. Instead, it is enhancing an existing wetland. No new wetlands are being created to compensate for the loss of the North ELF wetlands.

Overall, the effect of the proposed compensation is a reduction in the extent of ecologically significant wetlands in the Bush Gully catchment. The compensation will not establish new wetlands. Nor will the wetland compensation provide any meaningful (or measurable) benefits for aquatic ecology of Bush Gully Stream. And, the sustainability of the proposed wetland enhancement is potentially threatened by activities and landuse change elsewhere in the catchment.

Compensation for the effects of the removal of seepage wetlands at the North ELF requires restoration/enhancement that will increase the extent of and provide sustainable protection for wetland ecosystems, preferably in or near Bush Gully Stream. This should include protection of the ecological and hydrological processes that maintain the ecological integrity of that wetland ecosystem. This concept is supported by the runanga who recommend that “restoration should be extended to all waterways and riparian margins”²⁵.

Consent Conditions:

The consent conditions (as appended to the planning supplementary evidence²⁶) are inadequate because the restoration sites are inadequate (as outlined above). Furthermore, there appears to be no requirement for monitoring to continue beyond 2026, and therefore no money (bond) is likely to be provided beyond that date to ensure satisfactory completion of the wetland compensation work.

Wetland enhancement work at this location is difficult. Fertile lowland sites are vulnerable to plant and animal pests. The minor catchment that sustains the North property wetland is unprotected. The major catchment of Bush Gully Stream, adjacent to which the riparian and dryland planting will occur, is unprotected. Furthermore, a substantial part of the Bush Gully Stream catchment supports exotic plantation forest, an activity which poses sedimentation, fire and wilding conifer risks.

The wetland compensation should include a requirement for active management and monitoring for a period of no less than 25 years, and the bond money should be available for the same period.

²⁴ Supplementary Evidence of Dr Gary Bramley, para 68.

²⁵ Canterbury Coal Mine Closure. Mahaanui Kurataiao Ltd, recommendation 2.

²⁶ Supplementary Evidence of Claire Hunter, appendices C and D.

Summary of Advice:

The applicant's supplementary evidence:

- Fails to adequately recognise the attributes that contributed to the ecological significance of the MOA (notably the North ELF seepage wetland ecosystems).
- Downplays the ecological value of the seepage wetlands, by using inappropriate frameworks (LCDB and LENZ), inappropriate methods (EIANZ Guidelines), and failing to recognise the extent of the loss of indigenous biodiversity in this part of the ecological district.
- Over-estimates the ecological benefits that will be provided by restoration at the four sites within the MOA and the North property wetland.
- Claims that restoration at the North property will provide benefits for lizards and Canterbury mudfish, when what little evidence there is suggests that the benefits will be minor.
- Proposes restoration that will not be buffered or protected from changes in the wider catchment, therefore risking the sustainability of that restoration.
- Proposes restoration that will not adequately protect the ecological and hydrological processes of the restoration site.
- Proposes restoration that will create no new wetlands, and provide little additional protection beyond that already provided by plan rules for an existing wetland.
- Contains inadequate monitoring and financing provisions to secure achievement of the compensation work.

In summary, the supplementary evidence and consent conditions do not adequately address the issues raised in my ecological evidence for Selwyn District Council, or those raised in the ecologists' Joint Witness Statement. The wetland restoration will not adequately compensate for the unconsented loss of indigenous biodiversity at Bathurst Resources Canterbury Coal Mine.

The proposed wetland compensation creates no new wetlands, and will do little to improve aquatic ecology (instream habitat) of Bush Gully Stream. The wetland restoration remains at risk from activities elsewhere in the catchment and there is no certainty that the restoration will be sustainable (especially if monitoring ceases in 2026).

Mike Harding
7 March 2022

**Bathurst Resources Ltd
Canterbury Coal Mine
Selwyn District RM185622**

**Ecological Compensation
Memo 2**

Attention: Andrew Henderson

As discussed at our Teams meeting today, below is a summary of a compensation package which would provide more adequate and more effective compensation for the unconsented loss of indigenous biodiversity at Bathurst's Canterbury Coal Mine. This compensation package comprises two parts: protection/restoration at Bathurst's North property; and protection/restoration along the main upper reach of Bush Gully Stream.

Compensation Package:

- Provide secure legal protection in perpetuity for wetland and riparian areas at the North property. Protection should be no less secure than that provided by a QEII Open Space Covenant. Ideally, SDC should enable the adjacent unformed legal road to be included in this protected area.
- Provide secure legal protection in perpetuity for the natural floodplain of, and an additional 20m riparian buffer along, the length of Bush Gully Stream between the mine site (North ELF landform) and the North property wetland. Protection should be no less secure than that provided by a QEII Open Space Covenant.
- Securely fence both areas to exclude grazing animals.
- Control plant and animal pests at both areas to maintain and enhance wetland and riparian values for a period of 25 years. Ensure funds are set aside to achieve this management objective.
- Strategic localised planting, to facilitate natural regeneration.

Benefits of Compensation Package:

- More adequate compensation for the loss of the seepage wetland ecosystems at North ELF (and the loss of other indigenous biodiversity, such as lizard habitat).
- Provides better protection for the wetland and stream ecosystems by more effectively protecting hydrological and ecological processes.
- Creates, enhances and buffers wetland ecosystems in a way that is much more likely to provide sustainable long-term ecological benefits.
- Provides better protection for aquatic (instream) ecological values, including habitat for Canterbury mudfish.

Mechanism to Achieve Compensation Package:

Secure legal protection of the North property wetland and riparian areas can be achieved by Bathurst Resources Ltd as the property owner. Inclusion of the unformed legal road in that protected area can presumably be enabled by SDC.

Secure legal protection of other parts of Bush Gully Stream, and fencing and management of both areas, could be achieved by provision of funds by Bathurst Resources Ltd. Those funds could be held by a publicly-accountable agency (such as SDC or Ecan) and distributed according to an agreed management plan. An independent group of persons (technical experts and representatives of the consent parties) could be appointed to oversee and audit the distribution of funds and the achievement of management goals.

Cost of Compensation Package:

It is difficult to estimate the likely cost of this compensation package. The costs of the following components would need to be calculated:

- Securing legal protection for the North property wetland and riparian areas.
- Securing legal protection for the unformed legal road adjacent to the North property (with assistance from SDC).
- Securing legal protection for the floodplain and riparian buffer along Bush Gully Stream (by negotiation with the landowners).
- Construction of stock-proof fences around the entire management area (normally calculated at a per-metre rate).
- Preparation of a management plan.
- Plant and animal pest control (annual control costs over 25 years calculated following an inventory/survey of pest infestations).
- Planting and plant care.
- Fence maintenance (an estimate of annual costs over 25 years).
- Initial establishment of a management structure (within SDC/Ecan?) and an oversight/audit group.
- Annual operating costs of the oversight/audit group (over 25 years).

Mike Harding
9 March 2022