

**IN THE MATTER OF**

The Resource Management Act 1991

**AND**

**IN THE MATTER OF**

Applications by Bathurst Coal Limited for resource consents to authorise retrospective mining activities and activities associated with the rehabilitation and closure of the Canterbury Coal Mine.

**BETWEEN**

**BATHURST COAL LIMITED**

**Applicant**

**AND**

**CANTERBURY REGIONAL COUNCIL**

**Consent Authority**

**SELWYN DISTRICT COUNCIL**

**Consent Authority**

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**JOINT REPORT AND DECISION OF HEARING COMMISSIONERS**

**Sharon McGarry and Graham Taylor**

**17 June 2022**

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Heard on 26-29 October 2021 in the Ballroom, Wigram Manor,  
14 Henry Wigram Drive, Christchurch.

**It is the decision of the Canterbury Regional Council and Selwyn District Council, pursuant to sections 104, 104D, 105 and 107, and subject to Part 2 of the Resource Management Act 1991, to REFUSE the applications by Bathurst Coal Limited for resource consents to authorise activities associated with the operation, rehabilitation and closure of the Canterbury Coal Mine.**

## REPRESENTATIONS AND APPEARANCES

### Applicant:

**Mr Joshua Leckie and Ms Katharine Hockly**, Counsel, Lane Neave  
**Mr Craig Pilcher**, General Manager of Domestic Operations, Bathurst Resources Limited  
**Mr Eden Sinclair**, Canterbury Coal Technical Service Manager, Bathurst Resources Limited  
**Dr Michael Begbie**, Principal Geotechnical Engineer, Bathurst Resources Limited  
**Dr Paul Weber**, Director and Principal Environmental Geochemist, Mine Waste Management  
**Dr James Griffiths**, Hydrologist and Group Manager, NIWA Taihoro Nukurangi  
**Dr Chris Hickey**, Scientist, RMA Science  
**Ms Sioban Hartwell**, Civil Engineer and New Zealand Market Lead Water, GHD Limited  
**Dr Kristy Hogsden**, Periphyton Ecologist and Group Manager, NIWA Taihoro Nukurangi  
**Dr Frank Boffa**, Landscape Architect  
**Dr Gary Bramley**, Ecologist and Principal, the Ecology Company Limited  
**Ms Claire Hunter**, Director, Mitchell Daysh Limited

### Submitters:

**Forest & Bird/Te Reo o Te Taiao** - Ms Nicky Snoyink, Regional Conservation Manager  
**Ms Kate Jensen**  
**Coal Action Network and Extinction Rebellion** - Ms Siana Fitzjohn  
**Malvern Hills Protection Society** - Ms Liz Weir and Ms Rosalie Snoyink  
**Ms Rosemary Penwarden**  
**Mr Ants Field** (tabled written statement)

### Section 42A Reporting Officers:

**Ms Adele Dawson**, Associate Resource Management Consultant, Incite

- **Mr Don MacFarlane**, Consultant specialist in engineering geology, AECOM New Zealand Limited (joint witness for CRC and SDC)
- **Ms Jen Dodson**, Senior Scientist - Hydrology, CRC
- **Dr Michael Massey**, Principal Science Advisor (Contaminated land and waste), CRC
- **Dr Fouad Alkhaier**, Senior Groundwater Scientist, CRC
- **Mr Myles McCauley**, Environmental Consultant, Enviser Limited
- **Mr Ian Jenkins**, Operations Director, AECOM New Zealand Limited (joint witness for CRC and SDC)
- **Dr Adrian Meredith**, Principal Scientist (Surface water quality and ecology), CRC
- **Dr Philip Grove**, Science Team Leader, CRC

**Mr Andrew Henderson**, Principal Planner, Jacobs New Zealand Limited

- **Mr Mike Harding**, Environmental Consultant

## BACKGROUND AND PROCEDURAL MATTERS

1. This is the joint report and decision of independent Hearing Commissioners Sharon McGarry (Chair) and Graham Taylor. We were delegated powers and functions<sup>1</sup> by the Canterbury Regional Council (**CRC**) and Selwyn District Council (**SDC**) to jointly hear and decide applications by Bathurst Coal Limited (**BCL** or ‘the Applicant’) pursuant to the Resource Management Act 1991 (**RMA** or ‘the Act’) for resource consents to authorise activities associated with the operation, rehabilitation and closure of the Canterbury Coal Mine (**CCM**) located in the Malvern Hills.
2. The CCM was established in approximately 2002, with the operator at that time being Canterbury Coal Limited. BCL took over the operation of CCM in 2012 and legal ownership in 2013, rapidly increasing the scale of the activity. In 2015, the SDC received complaints that the mine was exceeding the limits of the consent. Subsequent investigations by both Councils identified that mining operations were exceeding the terms and limits of the consents held for the site.
3. The background to these applications and the consent process has been long and complicated due to ongoing non-compliance with existing resource consents held and unauthorised activities. Resource consents are sought retrospectively for unconsented activities, as well as for existing and ongoing activities related to mine closure and rehabilitation. There are disagreements regarding the consented baseline, consents required, and the consents sought.
4. SDC land use application RC185018 was lodged on 16 January 2018, initially seeking consent only to authorise heavy vehicle movements associated with the mine operation. Commissioner Taylor was appointed to determine that application, including an initial notification decision. In considering the s.95 decision, Commissioner Taylor issued a minute advising that he considered that the application did not fully identify the mining activities and consents required, as the vehicle movements could not be unbundled from the overall mining activities, and the volume of mining activities exceeded consented volumes. He considered the proposal should be correctly defined as a mining activity not complying with various standards. The Applicant was invited to respond to this matter.
5. The application was replaced with new application RC185622 on 20 November 2018 which sought land use consent for retrospective and future expansion of the CCM. Commissioner Taylor determined in a decision dated 6 March 2020 that the application be publicly notified.
6. The applications to the CRC for eight resource consents were lodged in five different applications lodged since March 2018 and have been processed by the Council as one bundle of applications.
7. The SDC and CRC consents were jointly processed and publicly notified, and the present Commissioners were appointed to determine the joint applications.

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<sup>1</sup> Under section 34A of the Resource Management Act 1991

8. We issued Minute #1 on 30 November 2020 responding to two Memorandums received from the CRC and BCL seeking directions from us to determine the existing environment/consented baseline that applies to the CRC applications as a preliminary matter by way of a 'preliminary jurisdictional hearing' or by written submission from the hearing parties. In response, we advised that defining the scope and extent of existing CRC resource consents held by BCL was outside the scope of our delegated authority in hearing and determining the resource consent applications lodged; and that we considered such matters were within the CRC's general authority and powers to determine whether a resource consent is required for an activity and to interpret the scope and extent of any existing resource consents. We advised that, if BCL disagreed with the CRC's determination, it should seek appropriate recourse through declaration from the Environment Court.
9. During the processing of the applications, CRC identified that existing resource consents for discharges onto land (CRC170540) and into water (CRC170541) did not cover the full extent of the Mining Operations Area (**MOA**). To address this, in early 2021, BCL applied for two additional resource consents (CRC214320 and CRC214321), which we determined could be processed on a non-notified basis<sup>2</sup> and considered alongside the 'bundle' of notified CRC applications.
10. On 12 July 2021, we received a Joint Memorandum on behalf of BCL, the CRC and the SDC (dated 8 July 2021) updating us on the consent applications and proposing a hearing timetable. The Memorandum also advised that the Applicant had decided to close the CCM and that processing of the applications would continue with the necessary refinements for the rehabilitation and closure process. It noted that additional detail on the closure process was outlined in the Addendum Assessment of Effects (**AEE**) for Closure and Rehabilitation provided to the Councils on 6 April 2021 ('Addendum AEE'). It stated that the CRC and the SDC agreed that the changes outlined within the Addendum AEE were within scope of the applications, as notified. The amended SDC consent is now also referenced as RM185640.
11. The CRC undertook the role of the lead authority in this joint hearing process.
12. Prior to the hearing, a report (dated 26 October 2021) was produced pursuant to section 42A of the Act by the CRC's Reporting Officer, Ms Adele Dawson, an Associate Resource Management Consultant for Incite. This 'CRC s42A Report' included recommended conditions of consent (Appendix 1) and a summary of submission (Appendix 2); technical reviews of the application and written reports by Mr Don MacFarlane (Appendix 3), Ms Jen Dodson (Appendix 4), Dr Adrian Meredith (Appendix 5), Dr Fouad Alkhaier (Appendix 6), Mr Stephen Gardner (Appendix 7), Mr Ian Jenkins (Appendix 8), Dr Philip Grove (Appendix 9), and Mr Myles McCauley (Appendix 10); rule classifications (Appendix 11); a full list of resource consents associated with CCM (Appendix 12); a compliance summary (Appendix 13); and a legal opinion from Ms Lucy de Latour and Ms Kate Woods, Counsel with Wynn Williams, on section 104D (Appendix 14).
13. The CRC s42A Report provided an analysis of the matters requiring consideration and recommended the resource consents sought must be declined under section 104D of the

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<sup>2</sup> CRC Notification Decision Report (dated 5 July 2021)

RMA because the environmental effects of the activities would be more than minor (section 104D(1)(a)) and the activities would be contrary to the objectives and policies of the relevant plan (section 104D(1)(b). It concluded that the section 104D(1)(a) gateway could not be passed; and that for the consents to be granted the section 104D(1)(b) gateway must be met. It also concluded that, in its current form, section 107(1) of the RMA would also prevent the grant of any discharge permit that would be likely to give rise to significant adverse effects on aquatic life. The report set out a large number of outstanding matters and additional information required to be addressed by the Applicant to enable a full assessment of the application.

14. Prior to the hearing, a report (dated 23 September 2021) was produced pursuant to section 42A of the Act by the SDC's Reporting Officer, Mr Andrew Henderson, a Principal Planner with Jacobs New Zealand Limited. This 'SDC s42A Report' included – proposed conditions of consent (Attachment 1); Part 5.4 of the Mahaanui Iwi Management Plan (Attachment 2); a technical review of planned acid mine drainage management by Mr Simon Hay, Principal Environmental Scientist and Mr Ian Jenkins, Operation Director with AECOM (Attachment 3); a technical review of geotechnical issues by Mr Don McFarlane, Engineering Geology Consultant (Attachment 4); a technical review of heritage and cultural effects by Ms Kirsia Webb, Archaeologist; a technical review of landscape and visual effects by Mr Graham Densem, Landscape Architect (Attachment 5); a statement of evidence in relation to terrestrial ecology by Mr Mike Harding, Ecologist (Attachment 6); a technical review of transport effects by Mr Nick Fuller, Senior Transport Engineer with Novo Group Limited (Attachment 7); a technical review of noise and vibration effects by Dr Jeremy Trevathan, Principal Acoustic Engineer with Acoustic Engineering Services (Attachment 8); and a technical review of artificial lighting by Mr Andrew Read, Principal Electrical Engineer.
15. The SDC s42A Report provided an analysis of the matters requiring consideration and recommended the resource consent sought could be granted subject to conditions, provided details regarding the appropriateness of the final capping for subsequent land use were provided and additional changes to the proposed mitigation and compensation were made as recommended by the relevant experts.
16. The s42A reports, the Applicant's evidence and submitter expert evidence were pre-circulated in advance of the hearing<sup>3</sup>. This evidence was pre-read by us and taken 'as read' at the hearing.
17. We received a Memorandum from the CRC (dated 13 October 2021) informing the Panel that the CRC Reporting Officer, Ms Dawson, may be unavailable during the course of the hearing and that in such an event, Mr Rhett Klopper, Senior Consents Planner for CRC, would be available as an alternative Reporting Officer.
18. We undertook a site visit on 22 October 2021. We were driven from Malvern Hills Road to the site office by Mr Josh Sollamuthu (Administration Manager, BCL) and accompanied on the mine site by Mr Isaac Chellew (Mine Manager, BCL).

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<sup>3</sup> In accordance with section 103B of the RMA.

19. The hearing commenced on 26 October 2021 and evidence was heard over four days. The hearing was adjourned to enable the Applicant to undertake further expert conferencing and to revise the proposed conditions of consent and compensation package.
20. We issued Minute #3 on 4 November 2021, outlining post hearing steps for further staged expert conferencing and the production of annotated draft conditions reflecting any agreements reached in conferencing.
21. We issued Minute #4 on 21 December 2021, confirming receipt of the annotated set of proposed conditions and directing the circulation of those conditions and further information from the post hearing conferencing to submitters. The Minute set a timeframe for the provision of further comments from submitters by 28 January 2022 and the Applicant's written right of reply by 25 February 2022.
22. No further written comments were received from submitters.
23. We determined that a further procedural step was required, before receiving the written right of reply, to enable the Applicant to confirm the revised proposed conditions and for the Reporting Officers to provide a final recommendation. We issued Minute #5 on 18 February 2022 directing this further procedural step.
24. We received the Applicant's revised proposed conditions and reply evidence on 25 February 2022.
25. We received further comments and final recommendations from the Reporting Officers on 18 March 2022.
26. We received the Applicant's final set of proposed conditions and written right of reply on 14 April 2022.
27. We closed the hearing on 6 May 2022. We doubled the timeframe for the release of this decision under section 37A of the Act due to the length of time since the hearing and the significant amount of evidence received.

## **THE APPLICATIONS**

28. The application documentation is extremely voluminous for each application, with many of the reports relating to the initial proposal to continue mining operations. The applications, as lodged, have since been amended<sup>4</sup> (post notification) to reflect BCL's decision to close the mine. The Applicant stated it sought all necessary consents to retrospectively authorise unconsented activities which have occurred at the CCM and future activities required to close and rehabilitate the mine.

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<sup>4</sup> 'Bathurst Coal Limited Canterbury Coal Mine Addendum AEE for Closure and Rehabilitation' prepared by Mitchell Daysh dated 6 April 2021.

29. The CRC s42A Report set out the consents sought in Table 1. We have modified this table to summarise the consents sought including SDC consent, date lodged, amendments made, retrospective aspects and consent terms sought below.

<b>Adapted from Table 1: Resources consents lodged for CCM</b>				
<b>CRC Number (Date lodged)</b>	<b>RMA Section Consent Type</b>	<b>Description</b>	<b>Consent Term Sought</b>	<b>Consent Term recommended (CRC s42A Report)</b>
CRC184166 <sup>5</sup> (16 March 2018)	Section 9 Land Use	Undertake earthworks in the High Soil Erosion Risk area from 2012 and earthworks and vegetation removal in riparian margins, including removal of wetlands. Retrospective.	20 years	10 years
CRC200500 <sup>6</sup> (24 July 2019)	Section 15 Discharge	Discharge of contaminants into air (fugitive dust) from within the mine operations area.	35 years	5 years
CRC201366 (25 Sept 2019)	Section 14 Water Permit	To take and use surface water from artificial ponds, to divert surface run-off and to dam water in artificial ponds. Partially retrospective.	20 years <sup>7</sup>	Expiry of 24 January 2032 to align with current consents held.
CRC201367 (25 Sept 2019)	Section 14 Water Permit	To take and use groundwater (via drainage systems). Partially retrospective.	20 years <sup>5</sup>	Expiry of 24 January 2032 to align with current consents held.

<sup>5</sup> Amended to specify that earthworks include the removal and disturbance of seepage wetlands and then further amended to reflect the mine closure by reducing the area subject to the application.

<sup>6</sup> Replacement consent for CRC146449 currently exercised under section 124. Amended geographic area to reflect reduced MOA for mine closure.

<sup>7</sup> The Applicant amended this from 35 years.

CRC201368 <sup>8</sup> (25 Sept 2019)	Section 15 Discharge Permit	To discharge sediment and mine influenced water, drainage water and residual contaminants from the treatment of water, into water. Partially retrospective.	20 years <sup>5</sup>	Expiry of 24 January 2032 to align with CRC214321
CRC203016 (20 Dec 2019)	Section 15 Discharge Permit	To discharge coal combustion residuals, lime products and mussel shells onto land and into water. Partially retrospective.	20 years	5 years
CRC214320 <sup>9</sup> (11 May 2021)	Section 15 Discharge Permit	To discharge coal combustion residuals, lime products and mussel shells onto land and into water. Non-notified.	Expiry 24 January 2032	5 years
CRC214321 (11 May 2021)	Section 127 Change to conditions	To change conditions of CRC170541 to increase and amend the source area of the discharge into water. Non-notified.	Unchanged Expiry 24 January 2032	Unchanged Expiry 24 January 2032
RC185622 (20 November 2018)	Section 9 Land Use	To expand Canterbury Coal Mine (retrospective and future)		
RC185640 (6 April 2021) (Addendum to RC185622)	Section 9 Land Use	Short duration coal mining and closure and rehabilitation of the Canterbury Coal Mine		

30. The Applicant is seeking retrospective land use consent from the CRC for earthworks undertaken within the MOA from 2012 onwards and for earthworks associated with rehabilitation. The Applicant confirmed this applies to almost all of the MOA, with the exception of 3.8 ha which had been fully rehabilitated by 2012.
31. The Applicant seeks retrospective consent from the CRC for the removal of seepage wetlands within the MOA and has proposed a compensation package to address the

<sup>8</sup> The Applicant lodged application CRC191342 to change the conditions of CRC170541. However, the CRC deemed the application to be for a new consent (CRC201368) which would be exercised alongside of CRC170541. The Applicant confirmed it would withdraw application CRC191342 if resource consent CRC201368 is granted.

<sup>9</sup> The Applicant lodged application CRC214320 as a section 127 change to the conditions of CRC170540. However, the CRC deemed the application to be for a new consent due to the increase in the geographic area.



wetland loss. In closing, the Applicant stated the CRC consent application was for the loss of 1.17 ha of wetland from within the MOA and the uncertainty in relation to future effects on the raised spring and related seepages. It noted that there was uncertainty regarding an additional 0.25 ha which was removed prior to 2012, before BCL operated the site, and that this was not within the scope of the consents sought.

32. The Applicant is seeking retrospective consent to authorise the discharge of Coal Combustion Residuals (**CCR**), lime products (limestone chip, hydrated lime and quicklime) and mussel shells onto and into land where it may enter water and artificial drains or ponds within an area located within N01, N02, N03 and the North engineered landform (**ELF**). This activity ceased in June 2021 when coal extraction ceased.
33. The SDC s42A Report stated that land use consent was sought for all mining activities (retrospectively) within the MOA, including coal extraction, overburden removal, CCR disposal, vegetation removal, trucking movements, waste management and associated infrastructure, onsite offices, workshops and ancillary activities. It stated that the amendment to the application to reflect the mine closure had considerably narrowed the scope of the application and that most of these activities had now ceased. It noted that land use consent was required for the closure and rehabilitation of the CCM site. It also noted that no consent under the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (**NESCS**) was required based on the advice from Mr Gary Knoyle. However, in his supplementary s42A Report presented at the hearing, Mr Henderson acknowledged it would be prudent to include retrospective consent under the NESCS given mining had extended beyond the consented boundaries.

## DESCRIPTION OF THE ACTIVITIES

34. The proposed and retrospective activities are detailed in the applications and summarised in the s42A Reports and should be read in conjunction with this decision.
35. The MOA covers an area of 61.06 hectares (**ha**), with up to 57.17 ha being previously disturbed. Coal extraction ceased in June 2021. The site is currently being rehabilitated and water collection and treatment systems constructed. Rehabilitation is expected to be completed in 2022. There are a number of key management plans to guide the closure and rehabilitation activities, including a draft Mine Closure Management Plan (**MCMP**) and draft site Environmental Management Plan (**EMP**). It is anticipated that these management plans will be updated and finalised to give effect to the conditions of the consents granted through this decision.
36. It is proposed that post closure, discharges will be managed in compliance with consented water quality limits, with any potential non-compliance detected via the Trigger Action Response Plans (**TARPs**), associated performance monitoring and adaptive management responses. If any of the triggers identified in the TARPs are reached or exceeded, the conditions set out appropriate response actions and methods.

## DESCRIPTION OF THE AFFECTED ENVIRONMENT

37. A description of the existing environment was set out in the application AEE and was summarised in the s42A Reports<sup>10</sup>. These should be read in conjunction with this decision. We adopt<sup>11</sup> these summaries for the purpose of our assessment.
38. There was disagreement regarding the extent of wetland removal and the value of the wetlands removed within the MOA.

## NOTIFICATION AND SUBMISSIONS

39. The applications (excluding CRC214320 and CRC214321) were jointly publicly notified by both Councils in 'The Press' on 21 March 2020 and 'The Selwyn Times' on 25 March 2020. The CRC served notice on the SDC, the Department of Conservation (**DOC**), Te Ngāi Tūāhuriri Rūnanga, Te Taumutu Rūnanga and Te Rūnanga o Ngāi Tahu. The SDC also served notice on a number of landowners in the vicinity of the site. Due to the COVID-19 Alert Level 4 lockdown the submission period was extended from 21 April 2020 to 18 May 2020.
40. A total of 644 submissions were received; 549 submissions in opposition to the applications; 93 in support of the applications; two submissions neither in opposition nor support; with 122 submitters indicating they wished to be heard.
41. The CRC s42A Report summarised the key submission points as follows:
  - a) Hydrological impacts – concerns with the Selwyn/Te Waihora catchment being over-allocated and the proposal to abstract water.
  - b) Water quality – a significant number of submitters are concerned about the degradation of water quality from mining contaminants and discharging sediment. Many submitters highlight the importance of the area as Canterbury Mudfish habitat.
  - c) Wetlands – several submitters raise strong opposition to the removal of wetlands, seeking that no further wetlands are removed and compensation is undertaken.
  - d) Carbon emissions – A significant number of submitters oppose the use of coal and further greenhouse gas emissions and associated air quality effects.
  - e) Economic benefits – submitters in support of the proposal note the CCM provides local economic benefits, directly through employment and the use of local service providers but also supplying resources other businesses and organisations rely upon.
  - f) Compliance history – some submitters raise concerns about the Applicant's compliance history to date.

<sup>10</sup> CRC s42A Report paragraphs 212-256 and SDC s42A Report paragraphs 13-17.

<sup>11</sup> In accordance with section 113(3).

42. A full submission summary was attached to the CRC s42A Report (Appendix 2). We accept this is an accurate summary of submissions received.
43. The SDC s42A Report summarised the key submission points as follows:
  - a) Traffic effects;
  - b) Noise effects from the mine operation;
  - c) Noise and vibration effects from truck movements;
  - d) Amenity and visual effects;
  - e) Effects on indigenous biodiversity;
  - f) The management of contaminated land;
  - g) Remediation and rehabilitation of the site; and
  - h) Consent conditions and appropriate controls to manage effects.
44. Both of the s42A Reports noted that many of the issues raised in submissions were no longer relevant given the changes to the application to reflect the mine closure.
45. On 6 April 2021, following the closing of submissions, the Applicant lodged the Addendum AEE to the Councils pertaining to mine closure and rehabilitation. Both Councils agreed that the amendments were within the scope of the publicly notified applications; and that the hearing and determination of the applications could proceed with no further notification being required.

## THE HEARING

### Applicant's case

46. **Mr Joshua Leckie**, Counsel, conducted the Applicant's case assisted by Ms Katharine Hockly, presenting legal submissions and calling eleven witnesses. Mr Leckie submitted that the management of effects had been agreed by all experts, except for a small number of issues relating to future land uses, water management trigger response plans (TARPS), and wetland offsetting and compensation. He noted retrospective consent was sought for the loss of 1.17 ha of wīwī rushland and a wetland offsetting and compensation package for this habitat loss was proposed. He outlined the background to the CCM and closure, retrospective and future consents sought, the Addendum AEE, landowner obligations, procedural matters, legal principles, the permitted baseline and existing environment, the adaptive management approach, effects on the environment, matters raised in the s42A Reports, future land uses, long term water management, and wetland offsetting and compensation. He concluded BCL's evidence demonstrated that the adverse effects would be no more than minor; the proposed activities were consistent with the objectives and policies of the relevant district and regional plans; and were consistent with the higher order planning documents and Part 2 of the RMA. Mr Leckie tabled an updated draft set of proposed conditions, 'Offset and Wetland Notes' (dated 18 October 2021), 'Joint Witness Statement – Planning' (dated 21 October 2021) and a bundle of CCM plans.
47. **Mr Craig Pilcher**, General Manager of Domestic Operations for Bathurst Resources Limited, provided a written statement of evidence and a summary statement giving an overview of Bathurst Resources Limited and outlining the history and operation of the CCM. He

highlighted the improved water treatment and the obligations to landowners in designing the mine closure, rehabilitation, and offsetting and compensation plans. He estimated 6-12 months of earthworks were required to construct the final landforms and establish vegetation cover. Appended to his summary statement were letters from the two landowners (Avoca Trust and Matariki Forests Limited) supporting the closure plans.

48. Mr Pilcher provided supplementary reply evidence (dated 14 April 2022) outlining discussion with landowners about the protection (fencing and covenanting) of the main upper reach of Bush Gully Stream; and the estimated cost of the amended proposed compensation package. Appended was a letter from Mr Evan Frew, a Trustee of Avoca Trust.
49. **Mr Eden Sinclair**, Canterbury Coal Technical Service Manager for Bathurst Resources Limited provided a written statement of evidence and a summary statement outlining the operation of the CCM before closure, and the closure and rehabilitation processes. He considered the mine closure proposal and management plans provided a robust system to complete the closure without undue effects on the receiving environment. He addressed surface water management, acid and metalliferous drainage (**AMD**) and CCR management, engineered landform (**ELF**) construction, spills, the Lizard Habitat Management Plan, the Wetland Management Plan, the Site Rehabilitation Management Plan, air quality, noise and lighting, fire management, the Archaeological Management Plan, management of key environmental risks, compliance history, closure phases, closure objectives, closure progress, iwi consultation, the Mine Closure Management Plan (**MCMP**), the proposed conditions of consent, wetland rehabilitation and planting, and responses to the s42A Reports. Appended to his statement was a document titled 'Canterbury Mine SOP for MSR Sludge Removal' (Appendix 1), a plan showing land titles (Appendix 2), a plan showing the site overview (Appendix 3), a plan showing the NO<sub>2</sub> surface water system (Appendix 4) and plan showing water investigation sites (Appendix 5).
50. Mr Sinclair showed drone video at the hearing giving an overview of the site and provided commentary. His summary statement referred to a caucusing meeting on 19 October 2021 which had led to updated water quality TARPs and a performance monitoring matrix, and outlined points of agreement.
51. Mr Sinclair provided a further statement of evidence in reply (dated 25 February 2022) responding to matters raised in the hearing relating to operation of the post closure infrastructure, TARPs, and performance and compliance monitoring. He outlined areas of agreement and disagreement following further expert conferencing. He acknowledged that the proposed water take for dust suppression and irrigation was not critical to achieving the objectives of the MCMP but may cause delays and additional costs. Appended to his statement were copies of the revised TARPs (Appendix 1).
52. **Dr Michael Begbie**, Principal Geotechnical Engineer for Bathurst Resources Limited provided a written statement of evidence and a summary statement addressing geotechnical risk and slope stability, the proposed management and monitoring measures, relevant submissions and the s42A Reports. He stated that design of the final ELF would have slopes similar to the surrounding landform within similar catchments and would

provide a high level of stability over the long term for farming and forestry land uses. He concluded there was a low risk of future instability given the design geometrics and stability criteria proposed to be implemented. He considered this had been demonstrated by the success of the existing ELFs on the site. He noted that some settlement or consolidation would occur over time, with most occurring shortly after completion (within 12 months). He recommended temporary monitoring, with monthly inspections during construction and three-monthly inspections for a period of 12 months following completion.

53. **Dr Paul Weber**, Director and Principal Environmental Geochemist for Mine Waste Management, provided a written statement of evidence and a summary statement addressing geochemistry matters and AMD management. He considered the management of AMD at the site had been undertaken to a high standard utilising international industry standard best practice guidance. He stated that CCR had been placed within the ELFs and encapsulated by 10-15 m of non-acid forming (**NAF**) materials, with less than minor adverse effects on drainage from the ELFs (as shown by the water quality monitoring data). He acknowledged there remained some uncertainty in regard to the future water quality and flow rates, but that this was best managed by conservative estimates to understand and identify areas of risk; and the investigation and identification of appropriate management options. He recommended performance monitoring to confirm the management approaches developed to manage risks were appropriate, with a reduction and eventual cessation of monitoring once key closure objectives have been achieved. Appended to his statement were water quality data for the CC02 underdrain monitoring site (Appendix 1), N02 Pit Pond highwall PAF exposures (Appendix 2), modelled flow rates for Tara catchment (Appendix 3), modelled discharge contaminant concentrations (Appendix 4), modelled 90 day cumulative rainfall and daily live storage volumes – N02 Pit Pond (Appendix 5), model scenario 7 zero flow duration (Appendix 6), and graphs showing iron concentrations measured at monitoring CC02-tele (Appendix 7).
54. In his summary, Dr Weber outlined key outcomes from expert caucusing on 19 September 2021. He confirmed that BCL were committed to using potable water supply to dilute the discharge if another source of water was not available.
55. Dr Weber provided a further statement of evidence in reply (dated 25 February 2022) responding to matters raised in the hearing relating to previous studies of the AMD at CCM, compliance and performance monitoring, review requirements and TARPs. He provided further information regarding options for the Applicant to manage infrequent dry periods and recommended an empirical model was constructed to assist in determining actual low flow rates required for dilution.
56. **Dr James Griffiths**, Hydrologist and Group Manager at NIWA Taihoro Nukurangi, provided a written statement of evidence and a summary statement addressing the hydrological characteristics of the site, historic activities and impacts, hydrological implications of the final landform and proposed management measures, hydrology effects, submissions and the s42A Reports. He stated the final landform design aimed to minimise surface water flow convergence and concentration to limit the potential for soil erosion and sediment transport. He noted this was achieved by the reintroduction of topsoil and vegetation cover; and where convergence was unavoidable, directing runoff to engineered structures

including lined drainage channels, culverts and spillways. He confirmed the natural surface water catchments would be marginally different (less than 1%) after mine closure compared to pre-mining conditions, with minimal volumetric change to flow inputs to the Waianiwaniwa and Selwyn River catchments. Dr Griffiths acknowledged there was uncertainty as to the dominant process that sustained both the raised spring and seepage wetlands, but noted these had continued to exist despite a reduction in surface water catchment (due to the expansion of the MOA) suggesting flows were partly the result of hydrostatic pressure within the sub-surface strata. In response to questions, he confirmed there would be changes in the flow regime through the reduction of peak flows, but maintained that the N02 Pit Pond would maintain residual mean average low flows in Tara Gully. He concluded the conditions and monitoring proposed were sufficient to maintain minimum flow requirements post closure.

57. Mr Griffiths provided a further statement of evidence in reply (dated 25 February 2022)<sup>12</sup> responding to matters raised in the hearing relating to the raised spring and base flows to Tara Stream. He acknowledged the extent of the long-term hydrological impact on the raised spring was unknown because the extent of contribution from groundwater was uncertain. He considered it was plausible that the lack of observable impact since mining was because it was predominantly groundwater flows that contribute to the raised spring. He highlighted the period from January 2020 to April 2021 had been drier than average and that there had been no discernible reduction in moisture around the raised spring. He highlighted the baseflow to Tara Stream would be more continuous post closure given the ponds would reduce the high flows and increase low flows downstream. Appended to his statement were Figure 1 to illustrate landform contours before and after mining (Appendix 1), Figure 2 to illustrate the contributing surface water catchment to the raised spring (Appendix 2) and Figure 3 to illustrate the rainfall in the area from January 2017 to October 2021 (Appendix 3).
58. **Dr Christopher Hickey**, a Scientist with RMA Science, provided a written statement of evidence and a summary statement addressing ecotoxicology and recent water quality monitoring results. He stated that the proposed treatment and dilution would appropriately manage boron concentrations almost all of the time, except in very infrequent prolonged dry years (21 occasions over the 32-year modelled period). He considered recent monitoring suggested contaminant concentrations were stabilising and mass-loads were reducing from historic levels. He noted there was efficient treatment at high and low flows to manage iron and manganese concentrations to Tara Stream from the underdrain to comply with water quality guidelines and to prevent accumulation and regeneration of dissolved iron and manganese, which may precipitate at downstream sites. He considered the wetland downstream of the CC02-tele discharge monitoring site would provide efficient removal of boron by plant uptake, reducing exposure to downstream aquatic species. He concluded that a robust adaptive management process would be required to manage the treatment system and future discharges, including incorporating TARPS into the conditions of consent and triggers for compliance monitoring with appropriate statistical assessment procedures. In response to questions, he confirmed that

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<sup>12</sup> Refiled by BCL with Attachments included on 12 April 2022.

the availability of ‘clean water’ for the required dilution was critical to meet appropriate water quality standards in Tara Stream and to avoid adverse ecological effects.

59. Dr Hickey recommended a TARP for managing the N02 Pit Pond and assessing the level of potential stratification and deoxygenation once the reservoir was full. In response to questions, he acknowledged that N02 Pit Pond water quality posed a ‘moderate-high’ risk to effective dilution given stratification and deoxygenation could result in the production of iron. However, he stated this would not be a problem if the decant depth was not below the stratification level. He added that it is also important that the decant discharge was piped to avoid any reduction in water quality enroute and the proposed spillway modifications were completed to design levels.
60. Dr Hickey provided a further statement of evidence in reply (dated 25 February 2022) setting out areas of agreement, and his recommendations for compliance monitoring and performance monitoring. He supported the retention of the North ELF ponds (Pond 1 and Pond 2) and Tara Pond, as essential closure infrastructure. He commented on limits and monitoring of aluminium, boron and iron. He commented on parameters/contaminants for performance monitoring including hardness, dissolved organic carbon, biochemical oxygen demand (**BOD**), chemical oxygen demand (**COD**), polycyclic aromatic hydrocarbons (**PAHs**), mercury, arsenic and dissolved oxygen (**DO**). He responded to the evidence of Dr Massey and Dr Meredith and discussed the proposed revised consent conditions. Appended to his statement were the results of recent BCL water quality monitoring data for December 2021 – January 2022.
61. **Ms Siobhan Hartwell**, a Civil Engineer and New Zealand Market Lead Water with GHD Limited, provided a written statement of evidence and a summary statement addressing the final landform and surface water management during and post closure. She noted significant improvements to erosion and sediment control, including water treatment and proactive erosion prevention. She supported the landform design to minimise erosion, drainage systems to convey runoff from rainfall associated with up to 100-year return period event, and the proposal for treatment ponds/wetlands at Tara Gully and the North ELF to be retained. She considered the approach taken was a best practice approach for closure to minimise sediment release. She supported an adaptive management approach to provide flexibility to respond to issues that arise over time. She concluded BCL had minimised the potential for long term impacts on receiving water quality.
62. In response to questions, Ms Hartwell agreed that it was of critical importance that design landform and catchments were maintained through ongoing compliance with the conditions of consent in perpetuity. She said that of key concern would be large scale earthworks which changed the restored catchments. To ensure the ongoing performance of the designed surface water management system, she recommended regular biannual inspections of all permanent drains for slips and debris for the term of the consent. She considered there was no justification to remove the North ELF ponds given the landowner wanted to retain these and that the sediment accumulated beneath 1 m of water should be left undisturbed. However, she supported fencing and vegetation planting to prevent future sediment disturbance within the ponds.

63. Ms Hartwell provided a further statement of evidence in reply (dated 25 February 2022) responding to matters raised in the hearing relating to recent turbidity monitoring data, existing pond infrastructure and sediment remobilisation, and site monitoring.
64. **Dr Kristy Hogsden**, a Periphyton Ecologist and Group Manager for NIWA Taihoro Nukurangi, provided a written statement of evidence and a summary statement addressing the current state of the aquatic ecology in Bush Gully Stream and Tara Gully, an assessment of the effects of the CCM on aquatic ecology, and proposed management measures. She highlighted that surrounding historic and current land uses (mining, forestry and agriculture) have had detrimental effects on aquatic ecology through inputs of sediment and AMD over time. She noted the CCM site would be adaptively managed and monitored during closure, rehabilitation and post closure to meet water quality and contaminant compliance levels and minimise adverse effects on waterbodies and aquatic values. She noted the presence of Canterbury mudfish/kōwaro ('Threatened – Nationally critical'<sup>13</sup>), Canterbury galaxias ('At Risk – Declining') and upland bullies ('Not threatened'). She concluded that provided existing contaminant limits were achieved and maintained, and there was no large-scale disturbance to the rehabilitated land, it was likely the existing aquatic values in the receiving environment would be protected. She considered the restoration of near natural runoff pathways and the proposed continuous flow to Tara Stream wetland should increase the availability of wetted habitat. She stated wetland compensation and rehabilitation measures may improve the availability and quality of habitat for indigenous freshwater species, particularly kōwaro. In response to questions, she acknowledged that her stated 'likely positive future effects' and 'positive outcomes for the environment' would be more accurately described as 'a reduction of adverse effects'. Appended to her evidence was a plan showing water quality monitoring and aquatic ecology sampling sites (Appendix 1).
65. Dr Hogsden acknowledged there was little existing data on fish abundance and distribution in recent years, which limited the understanding and assessment of effects on these populations. She noted that the compliance limits had been established, in part, to support the protection of aquatic values. She stated the water discharging into Tara Stream would be passively treated (using the MSR) and diluted by a decanting flow from the N02 Pit Pond, closely monitored, and adaptively managed until contaminant limits can be met without treatment.
66. Dr Hogsden provided a further statement of evidence in reply (dated 25 February 2022) responding to matters raised in the hearing relating to stream health, flows in Tara Stream, the suggested creation of kōwaro nodes, riparian planting, ongoing aquatic monitoring and updated monitoring locations.
67. **Dr Frank Boffa**, a self-employed Landscape Architect, provided a written statement of evidence and a summary statement addressing the site and surrounding landscape, mine closure objectives, landscape and visual effects, submissions and the s42A Reports. He supported the mine closure plan and the nature and form of the final landform. He

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<sup>13</sup> Dunn *et al.* (2018) Conservation status of New Zealand freshwater fishes, 2017, New Zealand Threat Classification Series. Department of Conservation, Wellington.



considered the SDC's landscape expectations and requirements in terms of leaving reasonably naturalised and aesthetic landforms had been met. He concluded the landscape and visual effects would be low; and would be 'relatively insignificant' within a period of 3-5 years following rehabilitation. He confirmed 'low' equated to a less than minor effect. Appended to his statement were a number of graphic attachments.

68. **Dr Gary Bramley**, Ecologist and Principal with the Ecology Company Limited, provided a written statement of evidence and a summary statement addressing terrestrial ecological values and effects, the proposed Wetland Management Plan (**WMP**), proposed ecological restoration, and the management and monitoring of ecological restoration. He confirmed retrospective consent was sought for the loss of 1.17 ha of seepage wetland removed since 2012. He noted that the removed seepage wetlands would have likely been significant under criterion 6 of the Canterbury Regional Policy Statement (**RPS**) because they were naturally uncommon ecosystems with a conservation status of 'endangered'. He concluded the wīwī/exotic grassland vegetation communities were of 'moderate value' in terms of rarity and/or distinctiveness, but of 'low' value in terms of their ecological context. He stated that the difference between his conclusion regarding the ecological value of the seepage wetlands and that of Dr Grove related to the different context of their assessments i.e. local versus ecological district. He considered the permanent loss of 1.17 ha of seepage wetland was of 'negligible magnitude' at the scale of the Whitecliffs Ecological District (**ED**). On the basis of low ecological value and a negligible magnitude of effect, he concluded the level of effect was 'very low', which was below the threshold where the EIANZ guidelines<sup>14</sup> for ecological impact assessment recommend extensive offset or compensation actions. He noted that despite this conclusion on the scale of effects, BCL had proposed potential offset and compensation options. He outlined the principles of offsetting and the appropriateness of compensation given difficulties with delivering a sustainable 'like for like' offset. His evidence outlined the compensation proposed at the North Property Wetland and the Bush Gully Wetland to restore and improve wetland habitat. At the hearing, he advised the Applicant had amended the compensation package by removing the proposed Bush Gully Wetland area because BCL do not own the land.
69. In response to questions, Dr Bramley acknowledged that the non-compliant discharges to Tara Stream had contributed to adverse cumulative effects on ecological values and that he agreed this should be taken into account and compensated. He stated the raised spring would probably have a higher conservation status than the seepage wetlands and would benefit from protection by fencing and weed control.
70. Dr Bramley provided a further statement of evidence in reply (date 25 February 2022) responding to matters raised in the hearing and post hearing conferencing relating to wetland disturbance effects, the amended proposed compensation package, ongoing improvements for Tara Stream, revisions to the WMP and comments on consent conditions. Appended was an updated draft version of the 'Canterbury Coal Mine Wetland Management and Planting Plan, Malvern Hills, Coalgate' dated 24 February 2022.

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<sup>14</sup> Roper-Lindsay, J., Fuller S.A., Hooson, S., Sanders, M.D., Ussher, G.T. (2018) Ecological impact assessment, EIANZ guidelines for use in New Zealand: terrestrial and freshwater ecosystems. 2<sup>nd</sup> edition.

71. **Ms Claire Hunter**, a Director with Mitchell Daysh Limited, provided a written statement of evidence and a summary statement addressing the consenting history and existing environment, the closure and rehabilitation proposal, the relevant statutory framework and an evaluation, and comments on submissions, consent duration and conditions of consent. Ms Hunter prepared the 'Addendum AEE for Closure and Rehabilitation' and the proposed draft conditions. Her summary statement included replacement Figure 2 'Existing ECan environment relevant to earthwork activities pre 2012' and replacement Figure 3 'ECan existing environment relevant to the removal of wetlands (if wetlands were known to exist)'. Ms Hunter considered the adaptive management regime proposed through the TARPs was appropriate and consistent with best management practice for managing mine closure and rehabilitation activities. She noted the water quality limits were essentially 'a bottom line' and there was no uncertainty regarding the ultimate outcome of the TARP process. She considered the loss of the seepage wetlands was 'no more than minor' based on the evidence of Dr Bramley. She concluded that both section 104D(1)(a) and 104(1)(b) were met given the adverse effects would be 'less than minor'; and the proposal was not contrary to the Canterbury Land and Water Regional Plan (**LWRP**) when viewed in the round or Objective B1.2.1 of the Selwyn District Plan (**SDP**). She considered BCL were proposing a comprehensive wetland enhancement plan and other remediation measures to deliver positive ecological effects and an overall net gain in wetland values within the Whitecliffs ED. Appended to her evidence was an assessment of the relevant LWRP objectives and policies. Ms Hunter spoke to the set of updated proposed conditions of consent tabled at the hearing by Mr Leckie.
72. Ms Hunter provided a statement of evidence in reply (dated 25 February 2022) responding to key matters raised in the hearing. She highlighted the need to consider the application within the context of the existing environment and the authorised discharges to Tara Stream. She disagreed that mitigation was required to redress matters associated with the previous consent non-compliance. She stated the Panel should focus on limits to manage adverse effects on water quality and ecology. She considered it was appropriate to legally authorise retrospective activities going forward and confirmed the proposed infrastructure was within the scope of the consents sought. She confirmed the North ELF pond infrastructure was subject to a separate consent and that there was no scope to require their removal nor any environmental remediation need to do so. She concluded water quality and aquatic values in the affected area would be maintained and likely improved in time; and that the loss of wetlands was no more than minor given they did not hold significant ecological value.
73. Ms Hunter provided a supplementary statement of evidence in reply (dated 14 April 2022) relating to the final revised set of proposed consent conditions, comments on outstanding disagreements relating to conditions, and her updated planning view. She remained of the view that the loss of seepage wetlands was no more than minor. She outlined the outstanding disagreements regarding water quality monitoring and limits, compliance limits and TARPs, and the certification of management plans and TARPs. She concluded that the final proposed conditions provided for the appropriate management of the site during the closure and rehabilitation phases. Appended to her statement were tracked change versions of the proposed SDC consent conditions (Appendix A) and the proposed CRC consent conditions (Appendix B) based on the Applicant's 25 February 2022 revised

version; and compliance monitoring reports for CRC173823 and CRC170541, dated 27 May 2022 (Appendix C)

## Submitters

74. **Ms Nicky Snoyink**, Regional Conservation Manager for Forest & Bird/Te Reo o Te Taiao, spoke at the hearing in opposition to the applications. She highlighted the significant size of the unconsented expansion (an order of magnitude larger than consented) and the inadequacy of the compensation offered. She supported the conclusions of the s42A Reports and considered the compensation needed to be generous and in perpetuity given the wetland loss and the non-compliance with conditions. She noted the rehabilitation needed to be effective in extreme weather events, with clear links between conditions and management plans. She considered provision of a bond was absolutely necessary given the Applicant's compliance record and that the proposed conditions were a starting point only.
75. **Ms Kate Jensen** spoke in opposition to the applications via internet connection. She emphasised the climate emergency faced by the world and urged the Panel to make the decision through this lens.
76. **Ms Siana Fitzjohn** spoke in opposition to the applications at the hearing on behalf of herself and the Coal Action Network and Extinction Rebellion. She considered the entire mining site and the surrounding environment were 'a total mess and very, very degraded'. She didn't think the environment could be remediated, but that it should set a precedent for restoration by returning it to a better state. She highlighted the significant breaches of consent and the failure of the Councils to regulate and monitor the mining activities. She considered there had not been adequate recourse for these breaches and that the Applicant owed the public a huge debt for environmental damages. She wanted the company to take a huge financial hit and be made an example of for the environmental damage it had caused.
77. **Ms Liz Weir and Ms Rosalie Snoyink** provided a written statement and spoke in opposition to the applications on behalf of the Malvern Hills Protection Society. They expressed concerns about long-term adverse effects and the need for adequate reparation. They supported the creation of lizard habitat and pest control across the site. They highlighted the importance of the Waianiwaniwa catchment to the survival of the Canterbury mudfish/kōwaro and the need for remediation. They noted it was difficult to know what had been lost given we don't know what was there before. They wanted the Councils to do their jobs and ensure the consent conditions imposed are complied with going forward. They noted the consent process had been complicated and confusing. They highlighted the area was erosion prone and subject to high rainfall events, such as the recent storm event in May 2021 when 200-300 millimetres of rain fell over three days.
78. **Ms Rosemary Penwarden** spoke in opposition to the applications via internet connection. She highlighted the extent of the unconsented works and the resulting significant adverse effects on the environment. She considered the Applicant had demonstrated that it could not be trusted to comply with the conditions proposed and that the Councils must oversee

the remediation. She noted the discharges would need to be monitored for a long time (decades) given the disposal of CCR material and contaminants discharging.

79. **Mr Ants Field** provided a written statement and two photographs, which were tabled at the hearing. He highlighted the extent of unconsented activities and non-compliance with consent conditions. He noted BCL's claim the reason for the mines closure was the regulatory burden of meeting the RMA, despite extracting five times the amount of coal permitted, which demonstrated the company should not be trusted to rehabilitate the site. He requested the Councils be required to 'keep a close eye' to ensure the site is returned to a safe, clean, forested and pollution free state.

### Section 42A Reports

80. **Mr Don MacFarlane**, a Consultant specialist in engineering geology with AECOM New Zealand Limited (joint witness for CRC and SDC), provided a geotechnical review of the application with the CRC s42A Report and summary statement at the hearing. Overall, he was satisfied there were no major geotechnical issues and that the final landform would be stable. He made a number of recommendations for post closure monitoring inspections. On the basis of further evidence provided by the Applicant regarding the construction methods employed during construction of the ELFs, he was satisfied there was an extremely low likelihood of CCR material being exposed at the land surface due to forestry or shallow land instability.
81. **Ms Jen Dodson**, a Senior Scientist – Hydrology for CRC, provided a supplementary report with the CRC s42A Report commenting on the effects on hydrology in the affected catchments and a summary statement (dated 28 October 2021) at the hearing. Ms Dodson agreed that the permanent changes in flows to each affected catchment would be less than 1%, but noted this did not account for the impact of Tara Pond or N02 Pit Pond on Tara Stream or the removal of the north-west seepages on Bush Gully Stream. She highlighted that the Tara Pond would only discharge for 7% of the time at a rate of 70-90 L/s during high rainfall events (based on the evidence of Dr Griffiths). She noted this reduced the MALF (7d)<sup>15</sup> in Tara Stream to zero under current water management and during active closure; and that post closure effects would depend on spillway and decant thresholds. She considered the reduction of the MALF(7d) to zero was a significant adverse impact. She acknowledged that post closure there would be no impact on small freshes, as long as the Tara Pond remained full. She highlighted the critical importance of an effective spillway threshold at Tara Pond to achieve this, as well as the N02 Pit Pond decant level to provide constant 'clean water' flows. She considered the loss of the seepage wetlands would reduce the baseflow in Bush Gully Stream but that the significance of this effect was difficult to determine. She considered the removal of the seepages from the north-west slopes would reduce baseflow in Bush Gully Stream but that the significance of that effect was difficult to determine.
82. **Dr Michael Massey**, a Principal Science Advisor (Contaminated land and waste) for CRC, provided a summary statement (dated 28 October 2021) addressing the potential effects

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<sup>15</sup> Seven Day Mean Annual Low Flow

from the deposition of CCR, lime products and mussel shells to land. He noted he had advised Mr Gardner in the preparation his supplementary report appended to the CRC s42A Report and that he adopted his report. He highlighted the insufficient data available to understand the materials deposited at the site, particularly CCR, and the need for robust long-term (decades) monitoring of a wide range of contaminants similar to that required for landfills. He considered the monitoring programme should be commensurate with the scale and extent of the activities at the site, the history of contaminant discharges, the presence of existing effects, and the proximity of ecological receptors. He noted short term monitoring would not be adequate for establishing trends in treatment and at least 10-20 years would be reasonable to evaluate trends in water quality data given the scale of activity. He recommended regular, frequent long-term monitoring at all existing monitoring points as a condition of consent. He considered resampling to confirm an exceedance was not appropriate for discharges to surface water and that any exceedance should be considered an exceedance unless it was demonstrated to be caused by a technical fault such as a laboratory problem.

83. Dr Massey provided further comment (Memo dated 16 March 2022) with the CRC s42A Report Addendum (Appendix 3) on the revised CRC consent conditions. He outlined a number of recommended amendments to the conditions and concerns regarding the relationship between the TARPs and consent trigger levels. He noted the commentary proved on draft conditions as part of expert conferencing remained applicable and that further amendments to the conditions were required to address the matters raised.
84. **Dr Fouad Alkhaier**, a Senior Groundwater Scientist for CRC, provided a supplementary report with the CRC s42A Report commenting on the effects on seeps and wetlands and a summary statement (dated 27 October 2021) at the hearing. His evidence assessed the effects of the removal of the quarried ridge on the northern side of the MOA on surface water flow and sub surface water flow to the seeps and wetlands below and Bush Gully Stream. He provided several figures to show the extent of the ridgeline removed, and a cross-section showing the original landform level and closure landform level in relation to the remaining wetland level. He considered the raised spring wetland on the north-west ridge was fed by a combination of three water sources – deep confined groundwater, slow shallow subsurface water and quick surface flow from the upgradient slopes; and the seepage wetlands on the north-west ridge were fed by slow shallow subsurface water and quick surface flow from the upgradient slopes. He noted that the surface and subsurface flow from the upgradient catchment had two functions by providing slow seeps over prolonged timeframes and recharging groundwater below the wetland. He considered the length and extent of the slopes and soils upgradient contributed to the continuity and quality of the water that seeps into the downgradient raised spring and wetland. He concluded that removal of one third of the original catchment made the wetland more fragile to drought and that there was uncertainty regarding the wetland’s future survival. He had similar concerns for the remaining seepage wetlands given the upgradient catchment was half the original catchment. He concluded that the removal of a significant proportion of the upgradient catchment would reduce surface and sub-surface flows adversely affecting the raised spring and the remaining seepage wetlands. He recommended a monitoring programme for the raised spring and seepage wetlands focussed on vegetation health as the primary indicator and hydrology changes.

85. **Mr Myles McCauley**, an Environmental Consultant with Enviser Limited, provided a supplementary report with the CRC s42A Report commenting on the effects of the discharge of contaminants into air and dust effects. He concluded that the imposition of conditions relating to the closure of the mine adequately addressed dust effects. He was not concerned if there was no water available for dust suppression given the late stages of rehabilitation. He considered achieving at least an 80% vegetative cover over disturbed areas was an appropriate trigger for ceasing dust control measures.
86. **Mr Ian Jenkins**, Operations Director with AECOM New Zealand Limited (joint witness for CRC and SDC), provided a technical review of the planned acid mine drainage management in conjunction with Mr Hay. At the hearing, Mr Jenkins stated that most of the issues raised in the review had been addressed in evidence by Dr Weber. He considered more work was required on the consent conditions and TARPs to reflect the evidence presented. He noted that any increase in drainage flow would affect the ability to provide sufficient 'clean water' to dilute contaminants, but acknowledged that the data indicated the current drainage flows are less than the design flows. He noted there were other options for treatment such as irrigation back onto the ELF or absorption technologies, but that these required more active management. He highlighted the need for long-term contaminant monitoring, including boron even if a strong correlation was found between conductivity and boron concentrations.
87. **Dr Adrian Meredith**, Principal Scientist (Surface water quality and ecology) for CRC, provided a supplementary report with the CRC s42A Report commenting on the effects on surface water quality and ecology and a summary statement (dated 29 October 2021) at the hearing. He highlighted the lack of baseline ecological information in the affected catchments and the incorrect assumption by the Applicant's experts that the affected catchments are degraded hard substrate streams. He highlighted the significant ecological value of Tara Stream and Bush Gully Stream and the importance of the catchments to the Canterbury mudfish/kōwāro and threatened indigenous species. He outlined the adverse effects on Tara Stream and wetland from mining discharges prior to 2018 from sediment and contaminant discharges, particularly from monitoring sites CC02 to CC03. He highlighted that recent compliance with discharge standards had primarily been met by not discharging to Tara Stream and that these hydrological changes had resulted in significant adverse effects from reduced flows. He noted some of his concerns regarding additional monitoring sites, MSR desludging procedures, oxygen depletion, the location of the compliance point for discharge monitoring, design and management of the N02 Pit Pond, and appropriate boron limits. He concluded the proposed consent conditions and compensation required further consideration and would benefit from further expert conferencing. He outlined the significant adverse effects on Bush Gully Stream and Tara Stream wetland and the need to restore and reinstate habitat to replace the lost wetland area.
88. Dr Meredith highlighted the risks associated with retaining water storage ponds in perpetuity and the management of future releases of stored contaminated material. He noted the limitations of the MSR to reduce boron, sulphate and manganese concentrations, and the need for more detail on the operation and maintenance processes. He outlined the

risks posed relating to water quality and quantity from the N02 Pit Pond and considered the Applicant had largely ignored these. He noted that storage structures alter flow regimes and provide only low, flat lined flow to support aquatic flora and fauna. He considered an adaptive management approach based on TARPs was only appropriate if the uncertainties identified were addressed and risks of targets not being met were low. Overall, he concluded there was considerable uncertainty regarding the effectiveness of the proposed adaptive management approach and it posed a significant risk to the receiving environment.

89. Dr Meredith provided further comment (Memo dated 17 March 2022) with the CRC s42A Report Addendum (Appendix 2) on the revised CRC consent conditions. He agreed with the further comments of Dr Massey on water quality and TARP conditions. He considered it was important that the uncertainties being addressed by the TARP process were reported annually (both orange and red responses) to capture and acknowledge the degree of additional TARP activities that were required to be undertaken. He highlighted that these responses may not be inconsequential to the overall effects given the potential for the discharge of lime, acid or alkali to achieve discharge compliance. He concluded the proposed conditions and mitigations did not adequately address the risks and uncertainties.
90. **Dr Philip Grove**, Science Team Leader for CRC, provided a supplementary report with the CRC s42A Report commenting on the effects on wetlands and a summary statement (dated 28 October 2021) at the hearing. Dr Grove described Tara Stream gully below the MOA as an 'intermittent stream ecosystem' with some associated riparian vegetation, rather than just a wetland. He highlighted that the ecology of Tara Stream had not been well described by the Applicant and that Dr Bramley's assessment of the effects of boron related only to plants in general and not to the specific habitat of the stream or its components such as microbes, insects and fish. He considered that use of a wetland to uptake boron should be undertaken in a constructed wetland designed for that purpose and not in a natural waterbody as proposed. He concluded the proposed wetland compensation package was inappropriate and insufficient compensation for the direct loss of significant wetlands and the ongoing adverse effects on the remaining north-west seepage wetlands. He considered the compensation package should also include compensation for adverse effects on Tara Stream wetland, Bush Gully Stream and the remaining downstream seepage wetlands. He highlighted the uncertainty regarding ongoing adverse effects on the raised spring and the need to monitor this. He considered the wetland package should include a bond for further compensation if adverse effects on the extent or values of the raised spring wetland were detected. He highlighted the lack of baseline information on ecological values lost and adversely affected. He considered compensation options should focus on areas where wetlands have been lost and recreating these ecological habitats. He highlighted additional matters which were not recorded in the JWS, including agreement that there was very little ecological information on what had been removed from the MOA and North ELF; and that consent conditions and management plans cannot be relied on to deliver the ecological outcomes sought without future legal protection and payment of a bond to fund necessary management actions.
91. Dr Grove provided further comment (Memo dated 13 March 2022) with the CRC s42A Report Addendum (Appendix 1) on the revised compensation package. He noted the compensation package had not changed greatly from that discussed at the post hearing

ecology conferencing in November 2021. He remained of the view the compensation package was inadequate. He also provided further comment on the revised set of consent conditions (Memo dated 14 March 2022) and concluded these were inadequate.

92. **Ms Adele Dawson**, an Associate Resource Management Consultant with Incite, spoke to her CRC s42A Report and the evidence presented at the hearing. Her report concluded the effects of the loss of value and extent of wetlands, the consumptive use of water and effects on water quality and ecosystems arising from AMD discharges would be more than minor. She considered the effects on tāngata whenua values may also be more than minor. She considered the proposal was contrary to the objectives and policies of the LWRP. She concluded the application could not be granted under section 104D. In addition, she concluded the discharge permit sought could not be granted under section 107(1) due to the potential to give rise to significant adverse effects on aquatic life. She considered section 104D(1)(b) was the only possible gateway to grant consent and would require the Applicant to propose a compensation package sufficient to meet the relevant objectives and policies of the LWRP. She outlined an extensive list of outstanding matters that needed to be addressed in evidence to complete a full assessment.
93. Ms Dawson provided a summary statement (dated 29 October 2021) at the hearing outlining the areas of insufficient information to demonstrate the application could meet the section 104D(1)(b) gateway test. She commented on the matters raised in evidence relating to the existing environment, landform capping, slope stability monitoring, plantation forestry, hydrological impacts on Tara Stream, NO2 Pit Pond dilution flows, MSR maintenance, water quality monitoring of Oyster Gully and Surveyors Gully, discharge limits and monitoring, TARPs, wetlands and the raised spring, cultural effects, and relevant objectives and policies. She noted areas of agreement on consent conditions and areas of disagreement relating to sufficient compensation, discharge limits, monitoring parameters, methods and timeframes.
94. Having heard the evidence presented at the hearing, Ms Dawson remained of the view that neither section 104(1)(a) nor 104(1)(b) had been met and the consents sought must be declined. She concluded that the environmental effects of the proposal were more than minor and could not be offset or compensated under section 104D(1)(a). She acknowledged that the proposal could potentially be consistent with the relevant objectives and policies of the LWRP with additional compensation, but not on the basis of what had been proffered. She considered the proposed conditions needed additional work and would benefit from further conferencing of the expert witnesses.
95. Mr Klopper provided final reply comments in an addendum to the CRC s42A Report (in response to Minute #5) on 25 March 2022, as the alternative Reporting Officer to Ms Dawson. Mr Klopper noted Dr Grove remained of the view that the proposed compensation was inadequate to compensate for the effects of unconsented mining activities on wetland, aquatic and terrestrial ecosystems. He noted there was near agreement to the general conditions of consent between the CRC and the Applicant, except for further refinement of timeframes for certification and reporting, and the compensation proposed. He noted ongoing disagreement regarding frequency of sampling and the contaminants of concern, trigger limits, timeframes, documentation, reporting and changes to TARPs. In conclusion,



Mr Klopper remained of the view that the application must be declined under section 104D. Appended to the final reply were further written comments from Dr Grove (Appendix 1), Dr Massey (Appendix 2) and Dr Meredith (Appendix 3).

96. **Mr Mike Harding**, an independent Environmental Consultant, provided advice regarding the appropriateness of the mitigation/compensation proposed for terrestrial ecology appended to the SDC s42A Report and a summary statement at the hearing. He considered the proposed wetland enhancement/restoration would not directly compensate for the loss of the seepage wetlands removed and the resulting downstream hydrological changes; and would not restore other terrestrial biodiversity lost. He noted the newly created lizard habitat required under existing consents had failed to meet the Environmental Management Plan specifications. He considered onsite remediation of seepage wetlands and wīwī rushland could be achieved. He disagreed with Dr Bramley that the ecological value of the seepage wetlands was 'low or very low' and considered the value to be at least 'moderate'. He noted the EIANZ guidelines used were non-statutory, have important limitations for the assessment of ecological value at this scale and were not intended for assessments in relation to section 6(c) RMA matters. He recommended use of the statutory RPS and SDP criteria. He supported the creation of seepage wetlands to address the loss of indigenous vegetation and habitat, and considered this was technically feasible. He considered it was appropriate to also compensate for residual adverse effects of the loss.
97. Mr Harding provided further comment (Memo dated 7 March 2022) with the SDC s42A Report final reply comments responding to the revised compensation package. He remained concerned with Dr Bramley's use of the EIANZ guidelines and considered he had understated the value of the removed seepage wetlands. He considered the overall effect of the proposed compensation was a reduction in the extent of ecologically significant wetlands in the Bush Gully catchment because no new wetlands would be created and there would be no meaningful (measurable) benefits for aquatic ecology. He concluded the revised compensation package and conditions were inadequate to compensate for the unconsented loss of biodiversity at the CCM.
98. Mr Harding also helpfully provided a further 'Memo 2' (dated 9 March 2022) summarising the key elements of an adequate and effective compensation package.
99. **Mr Andrew Henderson**, a Principal Planner with Jacobs New Zealand Limited, spoke to his s42A Report and provided a supplementary report (dated 29 October 2021) at the hearing. Mr Henderson noted that his s42A Report had highlighted two matters which needed to be addressed by the Applicant relating to the final cover material and ecological compensation. He considered that consent for retrospective activities was required and allowed for a complete package of consents and activities to be considered and appropriate conditions imposed; for all parties to clear on obligations going forward; and for administrative efficiency for the regulatory authority. He noted an option available could be to issue one consent combining the existing consent (RC165238) and the consent sought, which would allow the removal of any redundant conditions and to avoid confusion from multiple consents. He considered recent forestry planting on the North ELF by the landowner required resource consent under the operative SDP and that he was not aware of any consent being issued. He noted that the forestry plantings would make the existing lizard

habitat that had been created within the North ELF ‘unfit for their intended purpose’ and that provision and protection of suitable lizard habitat was a requirement of existing CRC consents. He noted that issues raised in the s42A Report relating to the final landform capping had been addressed to the satisfaction of Mr MacFarlane. Mr Henderson concluded that section 104D(1)(a) was not met due to more than minor adverse effects from the removal of indigenous vegetation; and that section 104D(1)(b) could only be met if agreement could be reached on the appropriate level of compensation.

100. Mr Henderson provided final reply comments (dated 25 March 2022) in a further addendum to the SDC s42A Report in response to Minute #5. He considered that there were no directive provisions in the operative SDP that required ecological impacts be avoided and that no provisions should be afforded greater weight than others. He concluded when viewed ‘in the round’ the application was inconsistent with the provisions relating to ecological matters but was not ‘contrary’ to them, and therefore passed the second gateway test of section 104D. He outlined four broad outcomes for the application and considered a decline of the consent would not be ‘an ideal’ for the Applicant or SDC and would be ‘counter-productive’ given that many of the adverse effects had already occurred and only ecological compensation matters require resolution. However, he acknowledged that granting the consent subject to the conditions proposed by the Applicant would not be an appropriate outcome and more appropriate mitigation and compensation needed to be offered. He highlighted the alternative compensation outlined by Mr Harding and instruments for securing legal protection of significant values in perpetuity regardless of land ownership, which would overcome inconsistencies with the SDP.

#### **Applicant’s Further Evidence and Right of Reply**

101. Counsel’s ‘Memorandum regarding post hearing conferencing outcomes for BCL’ (dated 20 December 2021) provided a revised ‘conferencing version’ of the consent conditions (Appendix A), a revised draft version of the TARPs (Appendix B), and a revised version of the wetland compensation and enhancement package (Appendix C). It noted post hearing conferencing between experts had occurred in three areas – water quality, AMD management and TARPs; wetland compensation; and planning. It stated BCL had considered the comments of experts in producing the revised documents but that these were draft subject to obtaining further feedback from submitters. It emphasised the documents filed as evidence did not represent the Applicant’s final view, which would be provided by way of BCL’s reply.
102. Counsel’s Memorandum for the Applicant (dated 25 February 2022) filed reply evidence from Dr Bramley, Dr Weber, Dr Hickey, Ms Hunter, Mr Sinclair, Ms Hartwell, Dr Hogsden and Dr Griffiths; revised proposed conditions of consent; and a letter from Mahaanui Kurataio Limited (dated 22 February 2022)
103. Counsel’s Memorandum for the Applicant (dated 14 April 2022) filed supplementary reply evidence from Mr Pilcher and Ms Hunter, closing legal submissions, and a ‘clean’ word version of the final proposed consent conditions.

104. The Applicant's closing legal submissions (dated 14 April 2022) focused on BCL's overall position and the key issues raised. It noted that the mine would enter the active closure phase in June or July 2022. It stated that retrospective consents were required to authorise the activities to avoid '*...administrative difficulties in terms of future consenting (if required) as well as possible issues with respect to the consented baseline and management of effects moving forward*' (para 17, pg. 6). It noted the retrospective consent applications must stand or fall on their merits assessed against the relevant statutory planning provisions and that in this case many of the activities were already completed and the effects known. It submitted that when the consented environment and the proposed conditions were properly accounted for, the effects for which consents were sought were less than minor; and there was no basis to require additional compensation as part of the current consenting process with respect to aquatic ecology. The submissions concluded that with the further refinements to wetland compensation package and consent conditions the applications met both gateway test of section 104D; would result in significant positive environmental outcomes; and were consistent with the relevant objective and policies and Part 2 of the Act. Appended to the closing submissions were site rehabilitation photos from March 2022 (Appendix A), existing environment plans (Appendix B), and CRC190172 compliance monitoring report 16-09-2020 (Appendix C).

## **ASSESSMENT**

105. In assessing the application, we have considered the application documentation and Addendum AEE, the submissions, the s42A Reports and technical reviews, the evidence presented at the hearing and the extensive volume of evidence submitted since the adjournment.

### **Status of the Application**

106. The starting point for our assessment of the applications is to determine the status of the activities under the relevant planning provisions.
107. There was agreement that the proposed closure and rehabilitation activities identified in the April 2021 AEE Addendum are within the scope of the applications, as notified.
108. There was disagreement regarding the water take sought for dust suppression and potential irrigation supply during rehabilitation. Mr Leckie and Ms Hunter considered the take and use of water for irrigation and dust suppression was a permitted activity in accordance with Rule 5.121 of the LWRP and was therefore part of the permitted baseline. Ms Dawson disagreed and considered the activities required discretionary activity consent in accordance with the catch all rule that captures innominate activities (LWRP Rule 5.6). Ms Dawson highlighted the take and use was a consumptive activity within an overallocated catchment.
109. We accept Ms Dawson's view that consent to take and use water for dust suppression and irrigation is required in conjunction with the diversion of water into the N02 Pit Pond. We consider Rule 5.121 applies to water use from water storage ponds for which a take and divert consent is held and the environmental effects of the use of the water has been

assessed. In this situation, the diversion of water into onsite ponds is for water treatment and management purposes. We agree that the effects of a consumptive take from the water treatment ponds have not been assessed as part of a consent to take and divert surface water for water management purposes.

110. There was agreement that the CRC applications should be bundled and considered holistically as a non-complying activity; and that the SDC application should be considered as a non-complying activity. Mr Leckie submitted the district and regional consents should not be bundled and that separate decisions are required. We agree and consider the CRC applications should be bundled and considered as a **non-complying activity**; and the SDC application considered as a **non-complying activity**.

### Statutory Considerations

111. In terms of our responsibilities for giving consideration to the applications, we are required to have regard to the matters listed in sections 104, 104D, 105 and 107 of the Act.
112. In terms of section 104(1), and subject to Part 2 of the Act, which contains the Act's purpose and principles, we must have regard to-
- (a) *Any actual and potential effects on the environment of allowing the activity;*
  - (ab) *Any measure proposed or agreed to by the applicant for the purpose of ensuring positive effects on the environment offset or compensate for any adverse effects on the environment that will or may result from allowing the activity;*
  - (b) *Any relevant provisions of a national environmental standard, other regulations, a national policy statement, a New Zealand coastal policy statement, a regional policy statement or a proposed regional policy statement, a plan or proposed plan; and*
  - (c) *Any other matters the consent authority considers relevant and reasonably necessary to determine the application.*
113. Section 104(2) states that when forming an opinion for the purposes of section 104(1)(a), we may disregard an adverse effect of the activity on the environment if a national environmental standard or the plan permits an activity with that effect. This is referred to as consideration of the 'permitted baseline'.
114. In terms of section 104(3)(a)(ii), in considering the applications, we must not have regard to any effect on any person who has given written approval to the application. In reply, Ms Hunter confirmed that Matariki Forests and Avoca Trust had provided written approval for the SDC land use consent.
115. In making our assessment under section 104D(1) of the RMA, we can only grant consent for a non-complying activity, if either of the following 'gateway tests' is passed:
- (a) *The adverse effects of the activity on the environment will be minor; or*
  - (b) *The application is for an activity that will not be contrary to the objectives and policies of –*

- (i) *the relevant plan, if there is a plan but no proposed plan in respect of the activity; or*
- (ii) *the relevant proposed plan, if there is both a plan and a proposed plan in respect of the activity; or*
- (iii) *both the relevant plan and the relevant proposed plan, if there is both a plan and a proposed plan in respect of the activity.*

113. In terms of section 105, when considering section 15 (discharge) matters, we must, in addition to section 104(1), have regard to -

- (a) *The nature of the discharge and the sensitivity of the receiving environment to adverse effects; and*
- (b) *The applicant's reason for the proposed choice; and*
- (c) *Any possible alternative methods of discharge, including discharge to any other receiving environment.*

114. In terms of section 107(1), we are prevented from granting consent allowing any discharge into a receiving environment which would, after reasonable mixing, give rise to all or any of the following effects, unless one of the three exceptions specified in section 107(2) exist (i.e. exceptional circumstances, temporary discharges, and/or maintenance works) –

- (c) *The production of any conspicuous oil or grease films, scums or foams, or floatable or suspended material;*
- (d) *Any conspicuous change in the colour or visual clarity;*
- (e) *Any emission of objectionable odour;*
- (f) *The rendering of fresh water unsuitable for consumption by farm animals;*
- (g) *Any significant adverse effects on aquatic life.*

115. We consider each of these sections of the RMA below.

### **Existing Environment**

116. In making our assessment, we are required to consider the actual and potential effects of the activities on the existing environment. The existing environment is that which exists at the time this determination is made and includes lawful existing activities, permitted activities and activities authorised by existing resource consents.

117. This includes the future state of the environment as it might be modified by the utilisation of rights to carry out permitted activities, the implementation of resource consents granted and those that have, or are likely to be, implemented.

118. The current resource consents held by BCL form part of the existing environment as a basis for the assessment of effects on the environment of the proposed activity. These resource consents are set out in Appendix 12 of the CRC s42A Report and paragraph 16 of the SDC s42A Report.

119. Ms Dawson highlighted the existing environment did not include effects associated with non-compliant or unconsented activities, and that this was unrelated to whether the application needs to authorise or rectify those non-compliant discharges. Appendix 13 of

the CRC s42A Report set out non-compliances with existing consents for discharge to water up until May 2021.

120. The existing environment does not include unlawful activities or environmental effects outside the scope of the existing consents and those for which retrospective consent is required. Mining activities outside the physical area identified in the existing consents and effects from non-compliances do not form part of the existing environment. Neither does retrospective mining activity exceeding the consented volumes under the relevant SDC consents. We do however acknowledge that mining under the existing SDC consents could have occurred within the consented areas if the volume limits had been complied with and that the landscape effects on landforms and removal of indigenous vegetation associated with those consents could have occurred over a longer period of time, albeit at a lesser annual volume. Other adverse effects, particularly those relating to vehicle movements and noise would have exceeded those of the consented activities.
121. We are required to assess the effects of the applications on the environment as if the unauthorised activities and non-compliant discharges have not occurred. This includes the unauthorised land use activities, the removal of wetlands within the MOA, unconsented hydrological changes and the effects on the receiving environment from non-compliant and unauthorised discharges.
122. This has been a key issue given the Applicant's assessment of effects is based on site surveys and data collected from the receiving environment as it existed at the time of survey, which includes adverse effects from non-compliant and unauthorised activities. In contrast, the Councils' experts have attempted to assess the scale and significance of the adverse effects of unconsented discharges and hydrological changes caused by mining activities.
123. Ms Hunter's evidence set out her understanding of the CRC consented environment for AMD management and her Figure 9 showed the areas of the MOA where discharges were authorised by consent or subject to the current applications. Ms Dawson largely agreed with Ms Hunter's Figure 9, except a small area (shown in orange) north of the pit face which she considered did not require consent. Ms Dawson agreed that consented wetland removal on the North ELF formed part of the existing environment, but that wetlands removed within the Tara catchment were not and would have required consent prior to 2012 under the previous regional plan. Ms Hunter disagreed with Ms Dawson and noted that consent was not sought for activities prior to 2012, as operation of the CCM and any past non-compliance sits with the previous operator of the site. Ms Hunter noted that it was difficult to determine whether 'wetlands' existed prior to 2012 and there was no need for BCL to offer additional compensation for the loss of any wetlands.
124. We note that no CRC land use consent for earthworks on erosion prone land was required within the MOA prior to 2012<sup>16</sup>. The CRC s42A Report assessed earthworks over the entire MOA due to difficulties in distinguishing this area. We consider it is appropriate to assess the effects of earthworks for the entire MOA given the scale and extent of earthworks at

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<sup>16</sup> The Canterbury Land and Water Regional Plan (LWRP) was notified on 11 August 2012 and the rules relating to earthworks on erosion prone land took legal effect on this date.

CCM prior to BCL taking over operations and significant expansion in the area disturbed since this time.

125. Ms Dawson clarified that the removal of wetlands required resource consent prior to 2012 under the previous regional plan. There was disagreement between the Applicant and CRC regarding the extent of wetlands removed and what needed to be retrospectively consented. Dr Bramley considered consent was sought for the removal of 0.45 ha of seepage wetland and wīwī rushland vegetation. Ms Dawson considered consent was required for 0.65 ha based on Areas 'E', 'F' and 'I' of Dr Bramley's Figure 1. Dr Grove considered a total of 1.2 - 1.4 ha of wetland removal had occurred across the SDC and CRC consents combined.
126. The Applicant holds CRC consents to disturb and excavate a wetland within Tara Stream (CRC183000<sup>17</sup>) and to remove vegetation from a wetland within the North ELF (CRC173889 and CRC190172). In addition, SDC has consented 0.17 ha of wetland removal by way of historic earthwork consents (RC135383 subsumed by RC165238). However, the Applicant acknowledged in closing that consents were required from both Councils for wetland removal and that 0.28 ha of wetland removal had not been consented by either Council. The Applicant also clarified that offsetting or compensation for the 0.72 ha of wetland removal at the North ELF (consented under CRC190172) had not yet been provided for and that for this reason a wetland compensation package for the entire 1.17 ha of wetland loss had been proposed.
127. We consider the wetland habitat removed which requires consent from both Councils does not form part of the consented baseline. We have therefore assessed the effects of the removal of 1.17 ha of wetland applied for and the additional 0.25 ha removed prior to 2012. We consider the fact that wetlands were removed as part of CCM operations and that wetland removal was not permitted under the previous regional plan, requires the effects of this loss to be included in the overall total of wetland habitat lost. We have therefore assessed the removal of a total of 1.42 ha of wetland, which accords with evidence of Dr Grove. We consider this represents a precautionary approach to our assessment given the uncertainty regarding the extent and value of wetland lost within the MOA. We consider the additional 0.25 ha would have had similar ecological value to the 1.17 ha of wetland habitat assessed.
128. We note that in closing, the Applicant submitted that the additional 0.25 ha was not within the scope of the consents sought. However, we disagree given the applications seek all necessary consents to retrospectively authorise unconsented activities which have occurred at the CCM during operations and future activities required to close and rehabilitate the mine.
129. We accept that Regulation 38 of the Resource Management (National Environmental Standards for Freshwater) Regulations 2020 (**NESF**) permits activities to restore natural wetlands and that Regulation 55 regarding general conditions on wetland activities must be complied with. LWRP Rule 5.159 permits enhancing, restoring or creating of a wetland.

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<sup>17</sup> Removal of 540 m<sup>2</sup> of wetland subject to compensation of 2,900 m<sup>2</sup> of new wetland area.

130. Ms Dawson stated that the plantation forestry undertaken by the landowner on the North ELF was required to be in accordance with the Resource Management (National Environmental Standards for Plantation Forestry) Regulation 2017 (**NES-PF**) and was permitted under the provisions of the LWRP. However, she noted that any forestry planting was required to meet conditions regarding setbacks to waterways and wetlands and 'significant natural areas'. Mr Henderson confirmed consent for the recent forestry planting on the North ELF was required under the operative SDP as a restricted discretionary activity if it had been undertaken prior to 1 May 2018 (the date the NES-PF came into force).
131. On our site visit, we observed plantation forestry had been planted very close to the ponds and the remaining wetlands below the North ELF, and the created lizard habitat which was required to be established and maintained as part of compensation for consented mining activity. We consider this should be addressed through appropriate enforcement action by the Councils.

#### **Section 104(1)(a) Actual and potential effects on the environment**

132. We have considered all of the actual and potential effects in relation to the applications, as outlined in submissions and the s42A Reports.
133. A large number of submissions were concerned about greenhouse gas emissions and effects on climate change from coal combustion. We accept that the effects on climate change of extracting and using (burning) coal are not relevant considerations under the current RMA framework. Section 7(i) requires us to have regard to the effects of climate change. We have had regard to the effects of climate change in terms of predicted future weather and rainfall changes.
134. We accept that many of the concerns regarding the effects on the environment raised in submissions are no longer relevant or are greatly reduced given the mine's closure. However, we are required to assess the effects of the activities for which consent is sought, which includes retrospective activities for the mine operation which were undertaken outside of the scope of the existing consents. While it may be convenient for the Applicant to focus their assessment of the environmental effects post closure, this approach ignores the need to assess the environmental effects of the unconsented operational and active mine closure activities which have occurred up until active mine closure, as well as post closure.
135. Ms Hunter stated that the proposed water management would ensure there was no detrimental change from the existing conditions in the downstream waterbodies following closure and rehabilitation of the site. In reply, she considered the CRC witnesses had given insufficient consideration to the effects on the environment that were consented or were consented in the past. She outlined the limits of the current AMD consent (CRC170540 and CRC170541), the pre-2017 consents and her updated Figure 9 (see her Appendix C) showing the existing consented area authorised to discharge to Tara Stream. She noted the consents sought did not alter the onsite water management system, or result in an increase in



anticipated discharge volume or contaminants from the site. She considered the consents sought were ‘...more administrative in nature as they seek to provide legal authorisation of additional land parcels to discharge to Tara Stream, rather than increasing contaminant discharges’ (para 21, pg. 7).

136. This approach ignores the significant adverse effects in the receiving environment which have already occurred as a result of unauthorised and non-compliant discharges from mining activities, and from the current water management system of diverting surface water flows to water treatment ponds. We do not agree with Ms Hunter that these adverse effects were anticipated or authorised by the existing consents held (CRC170540 and CRC170541). While there may not be an evidential baseline of the ecological values and their condition pre-mining activity, there is clear evidence of degradation of the wetland ecosystem between monitoring sites CC02 and CC03 from both the discharge of contaminants and reductions in water flows. We strongly disagree that the consents sought are ‘administrative in nature’, as they seek to authorise the significant unconsented expansion of the mining activity and the associated adverse effects that have occurred outside of the scope of the existing consents and up until water flows are returned to Tara Stream post closure.
137. In our view, there is no doubt that mining activities have significantly contributed to the current degraded state of Tara Stream. Ecological values have been significantly adversely affected by contaminant discharges and more recently by reductions in water flows. We strongly disagree with Dr Hogsden that the two years of monitoring data collected in Tara Stream and Bush Gully Stream from 2020 to 2022 is baseline monitoring, rather it records the current degraded state of the receiving environments as affected by both consented and unlawful activities. In this regard, we agree with Dr Grove that documenting the existing degraded state of Tara Stream under the closure phase leaves little room to demonstrate further degradation. For the Applicant to claim the receiving environment will be maintained and potentially improved through more consistent low flows post closure assumes the baseline for our assessment is the current degraded state of Tara Stream. This is incorrect.
138. The correct baseline is the Tara Stream and wetland environment as it would have been modified by any lawful or consented activities. The fact that numerous unconsented activities have occurred and continue to occur does not make the adverse effects of these activities part of the existing environment. The consents sought here and the resulting adverse effects are not part of the existing environment, particularly the significant adverse effects on Tara Stream from the current water management and diversion. In our view, the Applicant’s case has wrongly disregarded these adverse effects on the basis these are part of the current water management and active closure strategy.
139. The SDC s42A report took a similar approach to the Applicant and focussed the assessment on post closure effects. This was reflected in the conclusions reached regarding environmental effects and consequently in the conclusions reached regarding consistency with the relevant objectives and policies, with the exception of the loss of indigenous biodiversity. For example, the SDC s42A Report concluded that any transport effects of the rehabilitation and closure of the mine would be no more than minor on the basis of the

transport peer review of Mr Fuller on behalf of the SDC. Whereas, we consider the greatly increased unconsented truck movements to and from the site during the active mining phase resulted in significant adverse effects on the amenity of the surrounding community, as stated in submissions. Similarly, the Applicant's noise assessment by Marshall Day Acoustics and the peer review of by Dr Trevathan on behalf of the SDC focussed on the potential noise and vibration effects from truck movements to and from the site during rehabilitation and closure. Mr Boffa and Mr Densem concluded that the landscape and visual effects post closure would be minor.

140. In response to questions at the hearing, Mr Henderson agreed that this narrow approach to the assessment was 'pragmatic' but legally incorrect given the scope of the application. He acknowledged that a full assessment of the effects of the retrospective activities was required.
141. In taking the correct wider approach to the assessment of the environmental effects of the SDC land use consent sought, we conclude that overall the environmental effects of the retrospective activities associated with the operation of the CCM mine were more than minor.
142. The CRC s42A Report took the correct wider approach to the assessment of environmental effects by including all activities for which consent was sought. The CRC provided a significant amount of expert evidence to support the conclusion reached that the adverse effects of the unconsented mining activities on the loss and values of wetlands and water quality were more than minor; and that the effects on tangata whenua values may also be more than minor. We agree.
143. We are satisfied that the final landforms achieved result in similar catchments to pre-mining and minor changes to surface water flows post closure. We note there will be changes to the flow regime of Tara Stream from the buffering effect of the N02 Pit Pond, which will reduce peak runoff and sustain low flows (to the extent determined by the spillway threshold).
144. We are satisfied that subject to the imposition of appropriate discharge standards and consent conditions, any adverse effects water quality effects in the receiving waters post closure could be limited to be no more than minor with remediation works. We discuss this in relation to the conditions proposed by the Applicant below.
145. It is agreed that the Waianiwaniwa catchment provides important habitat for the Canterbury mudfish/kōwaro, which has a conservation status of 'Threatened (Nationally Critical)' and other threatened indigenous species. We accept the evidence of Dr Meredith that Tara Stream and Bush Gully Stream are important parts of the Waianiwaniwa catchment (comprising two of the four main catchments) and should support breeding population of kōwaro on the basis of their size and location.
146. There is a fundamental disagreement between the Councils' ecological experts and the Applicant's ecological expert as to the magnitude of adverse effects on significant indigenous biodiversity and ecosystems during the operation of the mine and the value of

wetlands removed. Our assessment below focuses on adverse effects on significant indigenous biodiversity and ecosystems in the Tara Stream wetlands and the Bush Gully Stream and wetlands, and the loss of ‘significant’<sup>18</sup> wetlands from within the MOA.

### *Tara Stream*

147. Dr Hogsden assessed the ecological changes in Tara Gully based on macroinvertebrate and fish community survey data available between 2014 and 2020. She considered that the similarities in community composition over time suggested that water quality effects from recent mining were not the main driver of macroinvertebrate communities in the receiving waterways. She emphasised the degraded aquatic ecology in Tara Stream from adverse effects of the surrounding land uses (mining, plantation forestry and agriculture) over time and considered this was part of the existing environment. She noted that post closure the continuous base flows proposed for Tara Stream were expected to increase the wetted habitat area of the stream downstream of monitoring site CC02. She considered this was likely to be a positive effect when compared to what could occur under the existing consented baseline. We disagree and consider this is a reduction of significant adverse effects exceeding the consented baseline. It is not a positive effect. As discussed above, we consider the survey data relied from 2014 and 2020 does not reflect the environmental effects of the consented baseline.
148. Dr Meredith highlighted the adverse effects of hydrological changes in Tara Stream from the water management during the operational and active phases of closure. He noted the long periods of time (years) that non-compliant and unconsented discharges of sediment and contaminants had occurred into Tara Stream; and the accumulation of these contaminant loads in Tara Stream between monitoring sites CC02 and CC03. He noted the potential for future releases of accumulated contaminants and the need to monitor parameters such as iron and aluminium, as well as hardness and alkalinity. He highlighted that the recent water quality compliance had mainly been achieved through discharging to Tara Stream less often, but that this had resulted in significant lengths of the stream becoming dry and uninhabitable to aquatic biota. He considered this reduction in water flows had result in significant adverse effects by drying the reach below Tara Pond. He noted much of the discharge monitoring data from 2018 to 2021 was compliant because no discharge had occurred and that this was not representative of the mine site discharge water condition. He considered the adverse effects of dewatering the upper reaches of Tara Stream were as significant or more damaging than the 2015-2017 discharges from the CC02 underdrain and the discharge exceedances. He agreed that the Tara Pond would provide a base flow once commissioned, but noted that small fresh events to the stream and wetland which are very important for maintaining habitat had been stopped since 2018.
149. The evidence presented by Dr Meredith and the documented history of the frequency and magnitude of adverse water quality effects shows that prior to the current water management strategies implemented in 2018, Tara Stream and wetland were regularly subject to mine discharges of sediment and contaminants above consented limits. We accept the evidence of Dr Meredith that unconsented and non-compliant discharges of

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<sup>18</sup> In terms of section 6 of the RMA.

contaminants have had severe adverse effects on the ecological values of Tara Stream and wetland from monitoring site CC02 to CC03.

150. Dr Hickey noted the marked reduction in boron concentrations from the CC02-tele monitoring site and the downstream CC03 monitoring site under current water management (no discharge) and expected this would persist in the future. Again, we consider this is a reduction only and does not fully remedy or mitigate the adverse effects and therefore is not a positive effect.
151. We note that the recent recording of kōwaro at monitoring site CC03 in Tara Stream by NIWA, contrasts with all previous survey results from 1998 to 2019, prior to improved water treatment and management at the mine. These results appear to coincide with the Applicant's measured improvements in water quality in the receiving environment since 2018. It supports the premise that water quality has improved sufficiently at monitoring site CC03 to enable kōwaro to recolonise the reach closer to the mine where contaminant levels were previously high. We consider this demonstrates the significant adverse effect the mine discharges have had on the life supporting capacity of Tara Stream and the available habitat for kōwaro over a significant length of wetland habitat.
152. We agree with Dr Grove and Dr Meredith that protection and enhancement of such significant habitat is a matter of national importance and must be a key objective of the mine closure. In our view, such significant adverse effects on significant ecological habitats require not only cessation of adverse effects, but also warrant habitat remediation and restoration. We agree with Dr Meredith that remediation to reinstate more viable wetland conditions and kōwaro refuge conditions should be undertaken between monitoring sites CC02 and CC03 given this reach has suffered the greatest sediment and contaminant loads. We agree this should be achieved through the removal of accumulated contaminated sediments immediately downstream of the discharge and construction of habitat nodes. We accept the evidence of Dr Meredith that this can be achieved 'offline' without releasing contaminants downstream and with minimal disturbance.
153. Dr Hogsden agreed that creation of habitat within the catchment would be valuable given the habitat degradation. We have had regard to her concerns that the creation of habitat nodes would not provide long term benefits due to the potential for infilling with sediment, lack of connection with downstream habitats and current low availability of food resources. We agree that these factors are important in addressing the current habitat degradation. We also agree with her that the created nodes would require ongoing monitoring and maintenance.
154. Since 2018, the reach below Tara Pond has received infrequent water flows resulting in a drying of the wetland conditions between monitoring sites CC02 and CC03. This is supported by the evidence of Ms Dodson that the MALF(7d) in Tara Stream has been reduced to zero under current water management and during active closure. We accept the evidence of Dr Meredith that these hydrological changes in water flows and reductions in wetted areas have been and continue to be as 'significantly adverse' on ecological values as the previous 'severe effects' on water quality from high contaminant loads.

155. Dr Grove was also concerned that the Applicant was relying on utilising a natural wetland to reduce contaminants such as boron and that this was inappropriate. He considered any required removal of contaminants should be undertaken in a wetland constructed for this purpose. We agree that use of the natural wetland to achieve appropriate discharge standards for boron is not appropriate. The Applicant has addressed this post closure by agreeing to monitoring discharge quality post closure at the bottom of the Tara Pond spillway. However, this does not address the adverse effects of using the natural wetland for contaminant removal up until the proposed water treatment is commissioned.
156. On the basis of the evidence, we find that the adverse effects of unconsented mining activities on the Tara Stream and wetland have been significantly adverse; and have resulted in a significant loss in the extent, form and function of the stream and wetland habitat.

*Raised Spring, Seepage Wetlands and Bush Gully Stream*

157. There was disagreement regarding adverse effects from the hydrological changes on the remaining seepage wetlands and the raised spring, which ultimately flow into Bush Gully Stream.
158. Dr Griffiths disagreed with Dr Alkhaier regarding the relative contributions of water from the three hydrological sources and observed the seepage wetlands and raised spring had continued to exist despite removal of the upgradient ridge. Dr Griffiths agreed the extent of long-term impact was unknown given the extent that groundwater contributes to the raised spring was uncertain.
159. Dr Grove and Mr Harding considered there was doubt regarding the long-term survival of the seepage wetlands and raised spring and that this needed to be included in the compensation package.
160. The evidence of Dr Alkhaier and Dr Grove highlighted the hydrological effects of removing the north-west seepage wetlands on the remaining wetlands within the catchment by halving their former surface and shallow subsurface flow. The evidence of Ms Dodson concluded there would be a consequential reduction in baseflow in Bush Gully Stream, but that the effect this reduction in flows was difficult to determine.
161. We note the Applicant did not assess these adverse effects on Bush Gully Stream, except for the evidence of Dr Griffiths which suggested there had been no observable impact on the raised spring.
162. We accept Dr Grove's estimate that this would adversely affect approximately 0.35 ha of additional seepage wetland and that this would give rise to at least a 'moderate' level of effect due to habitat fragmentation and hydrological changes. We note Dr Griffiths' observations regarding the survival of the raised spring and wetland were not informed by any baseline survey or monitoring. We accept the evidence of Dr Grove and Mr Harding that adverse effects on these wetland features could be gradual and take time to manifest. We accept Mr Harding's opinion that compensation is required for the loss of functioning

seepage wetlands system at the North ELF. We agree that a focussed monitoring programme for the raised spring and wetland, including a detailed baseline survey to establish its extent, elevation profile, vegetation composition, and state and condition of the underlying peat substrate is warranted, with follow up surveys to assess changes.

163. We find that potential adverse effects on the raised spring and seepage wetlands are at least moderate, given the significant permanent changes to the upgradient catchment. We consider the raised spring and 0.35 ha of additional seepage wetlands from reduced flows should be included in the compensation package for adverse effects on wetlands. We also agree with Dr Grove that additional compensation should be required in the event the raised spring and wetland habitat deteriorate over time, despite the Applicant's proposed fencing and weed management.
164. We find the reduction in baseflows in Bush Gully Stream should be included in the compensation package, regardless of difficulties in quantifying the magnitude of effect. We accept such effect is likely to be more than minor given the location within the head of the catchment. Any reduction in flows will have a cumulative effect on top of ecological degradation caused by previous mining activities, farming and forestry. The adverse impacts of these other activities do not reduce the cumulative effect of the reduction in baseflow to the remaining wetlands and Bush Gully Stream. While it is acknowledged Bush Gully Stream is not a pristine environment, it is significant habitat requiring protection from further degradation and restoration as compensation for hydrological changes from the permanent loss of the removed seepage wetlands.
165. We consider the Applicant should work with the landowner to ensure the long-term protection of the values of Bush Gully Stream from any adverse effects of future farming and forestry activities which have the potential to further degrade these areas. We do not see this as being any more difficult to achieve post closure than ensuring the ongoing need for and protection of the use of the water treatment infrastructures, including the N02 Pit Pond and Tara Pond.
166. We note there was also no evidence regarding the long-term hydrological changes from leaving the North ELF water treatment ponds *in situ* or of the effect of current spillways on flows. We note the Applicant's claims that these ponds are not the subject of this decision but raise concern as to the unassessed and ongoing effects of these ponds remaining and the risk posed to downstream habitats if accumulated contaminants were released in the future. We consider that at the very least, the hydrological effects of these ponds should be assessed, and the contaminant risk removed through the removal of accumulated sediments.

### *Removal of Wetlands within the MOA*

167. Mr Harding and Dr Grove highlighted Dr Bramley’s use of the EIANZ guidelines to assess the ecological value of the seepage wetland as ‘low or very low’ and his assessment of the wetlands in isolation. They noted flaws with the guideline’s approach at this scale and considered the appropriate assessment criteria was in RPS and SDP. We accept the evidence of Dr Grove and Mr Harding that use of the EIANZ guidelines is problematic and that these guidelines have not been endorsed by Councils, the Ministry for the Environment, the Department of Conservation, or the New Zealand Ecological Society. We agree that Dr Bramley’s comments on the ‘low’ value of the wetlands removed are speculative given the lack of baseline ecological information on the wetlands removed. We agree that in order to conclude the permanent loss of the seepage wetlands was of ‘negligible magnitude’, data would be required on the total natural extent across the Whitecliffs ED together with data on their current extent and conditions. This was not undertaken by Dr Bramley.
168. We disagree with Dr Bramley that the difference in assessment was down to the scale of assessment undertaken (local versus ED context). We accept Dr Grove’s evidence that the key difference was the statutory context of his assessment (national and regional policies) versus Dr Bramley’s non statutory assessment under the EIANZ guidelines. We are concerned that Dr Bramley’s use of the EIANZ guidelines at this scale can result in such a wide difference in assessed ecological value and magnitude of effect. While agreeing to the significance of the wetlands under Part 2 of the Act, we consider Dr Bramley understated their ecological value based on their condition and the presence of exotic plant species. In our view, such an approach to an assessment of effects will not address the ongoing reductions in the extent, form and function of the remaining wetlands throughout New Zealand.
169. We accept the evidence of Dr Grove that the removed wetlands would have met Criteria 1, 3, 6 and 8 of the RPS, despite only having to meet one criterion to be considered ‘significant’ under section 6 of the RMA. We prefer the conclusions reached by Mr Harding that the wetlands removed had ‘moderate’ ecological value based on the RPS and SDP criteria. We also note the evidence of Mr Harding regarding the ecological significance of the wetlands in terms of the plant communities and the contribution the wetlands made to the wider hydrological systems and downstream habitats.
170. On the basis of the evidence of Dr Grove and Mr Harding, we find that the wetlands removed from within the MOA were likely to have been significant wetland ecosystems providing rare habitat for indigenous species. We agree with Dr Grove and Mr Harding that seepage wetlands ecosystems with indigenous vegetation are rare nationally and locally (within the Whitecliffs ED), regardless of the presence of exotic vegetation, and that their ecological values and life supporting capacity must be protected.
171. We accept the evidence of Dr Grove that the removal of the wetland habitats within the MOA is a significant adverse effect given the total, or near total loss of significant ecological values in these wetland areas. We accept that the context and location of the wetlands and

the direct links to the hydrology of the catchment make their loss greater than just the areal extent lost.

**Section 104(1)(ab) Any measure proposed or agreed to by the applicant for the purpose of ensuring positive effects on the environment offset or compensate for any adverse effects on the environment that will or may result from allowing the activity**

172. The CRC s42A Report stated that it is not possible to assess compliance of the proposed compensation activities with Regulation 38 of the National Environmental Standard for Freshwater 2020 (NES-F) or the need for consents under the Canterbury Land and Water Regional Plan (LWRP). It also noted that the Regulation 55 of the NES-F must be complied with. We accept this position.
173. The Applicant's proposed compensation package to compensate for adverse effects has changed throughout the hearing process. In reply, Dr Bramley confirmed the proposed compensation package comprised six elements, including enhancement and restoration of the North Property Wetland, fencing the raised spring and planting the margins of drains and ponds. He calculated the restoration sites occupy approximately 3.4 ha, with 2.2 ha of wetland and 1.24 ha of riparian and dryland habitat. This is the compensation package we have assessed.
174. Dr Bramley stated that the proposed Bush Gully Stream wetland had been removed from the compensation package because BCL do not own the land, there are no natural boundaries, the area is poorly buffered from the surrounding forestry, and the consolidation of the restoration into one contiguous area to reduce edge effects and improve overall ecological outcomes. He concluded the six elements proposed would *'...have ecological benefits beyond the status quo'* and that the potential for ecological benefits at the sites within the CCM were limited because BCL do not own the land.
175. We consider Dr Bramley has incorrectly assessed the positive effects of the proposed compensation package against the existing environment, as it has been changed by unlawful and unconsented activities as *'the status quo'*. In our view, the correct assessment is to weigh the positive effects (ecological compensation) against the adverse effects of the activities to be authorised, against an environment that does not include unconsented activities.
176. We accept the evidence of Dr Hogsden that the proposed riparian planting onsite and at the North Property wetland would have localised habitat benefits. Her evidence confirmed the benefits to aquatic ecology will be limited to a 250 m reach at the North Property wetland. Despite this evidence, the Applicant submitted in reply that the proposed North Property wetland represented a *'trading up'* of ecological wetland values. We do not accept this claim on the basis of the evidence.
177. Dr Hogsden acknowledged that the proposed aquatic monitoring objectives for the proposed wetland were focussed on understanding the potential improvements from the mitigation and compensation actions and improving understanding of kōwaro population



in the catchment. We agree with Dr Meredith that such monitoring is not compensation or remediation.

178. Dr Grove drew our attention to the guideline document ‘Biodiversity Offsetting under the Resource Management Act’<sup>19</sup>. He highlighted that to achieve no net loss from the removal of significant wetlands, proposed compensation must restore or recreate new replacement wetlands of at least an equivalent area and type, in conjunction with a range of other wetland protection/enhancement actions. He concluded the proposed North Property Wetland was inappropriate and provided inadequate compensation for the direct loss of the seepage wetlands. Mr Harding agreed with Dr Grove and considered that a compensation ratio of 1:1 would only be appropriate for the re-creation of seepage wetlands. He highlighted that a compensation ratio would need to be much greater for the improvement of an existing wetland.
179. We agree with Dr Grove and Mr Harding that the direct loss of significant wetland habitat within the MOA cannot be compensated by improving the quality of existing/remaining wetland habitat at the North Property wetland. We agree that such an approach is contrary to the national objectives for achieving no further loss in extent or function of wetlands. We also agree with Dr Grove that the monitoring and financing of the proposed North Property Wetland until 2026 is insufficient to guarantee success and long-term sustainability.
180. Mr Harding concluded compensation for the removal of seepage wetlands required the restoration/enhancement to increase the extent of and provide sustainable protection for wetland ecosystems, preferably in Bush Gully Stream. He considered this should include protection of the ecological and hydrological processes that maintain the ecological integrity of that wetland ecosystem as a whole. He noted that this was supported by the Rūnanga who recommended that restoration should extend to all waterways and riparian margins.
181. Dr Grove considered any compensation package should include the direct loss of the seepage wetlands removed, adverse hydrological effects on the remaining seepage wetlands and raised spring, and adverse effects of unconsented mining activities discharges into Tara Stream and water management/diversions. He considered that ‘as a bare minimum’ for the removal of wetlands at least an equivalent area of new wetland habitat should be created and qualitative improvements to other adversely affected wetlands habitat should be required in Tara Stream, Bush Gully Stream and the raised spring wetland.
182. We agree with Dr Grove that compensation is required for the direct loss of the seepage wetlands removed, adverse hydrological effects on the remaining seepage wetlands and raised spring, and adverse effects of unconsented mining activities and unconsented discharges into Tara Stream. This includes adverse effects of reduced flows to Tara Stream since 2018 during active mining and mine closure. We agree with Dr Grove that any compensation should be informed by the RPS ecological significance criteria met and have relied upon his assessments using the RPS criteria in Table 1, Table 2 and Table 3 of his

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<sup>19</sup> Maysek *et. al.* (2018).

evidence. We acknowledge that the assessment of the effects on wetlands and consequential assessment of the appropriateness and adequacy of the proposed compensation has been difficult due to the lack of comprehensive ecological surveys and descriptions of affected wetland habitats.

183. Mr Harding recommended protection and enhancement of the stream/wetland/riparian habitats along Bush Gully Stream, including the North Property Wetland; or/and protection of the Tara Stream and wetland habitat downstream from Tara Pond. He noted the long-term protection required restoration actions and ongoing management of threats. He noted non-compliance with restoration plans was common, as was a lack of enforcement. He considered it was important that a sufficient bond was held to ensure ongoing compliance with the restoration plan happens. He acknowledged that land ownership to ensure protection was preferable, but that other protection options were possible in the absence of land ownership. He noted the protection of a wetland in isolation, like that proposed for the North Property Wetland was not ideal and had little regard to the magnitude of the loss in the head of the catchment.
184. There are clearly opportunities to remediate and restore significant ecological values still present in the receiving environment; and to ensure these values are protected into the future. It is up to the Applicant and the landowners to achieve this if unauthorised activities are to be consented. We find the proposed compensation package does not take into account the very high conservation values of the kōwaro, the importance of the adversely affected habitat and the need to address degradation.
185. We agree with Dr Grove that the North Property wetland is insufficient to compensate for the direct loss of seepage wetland habitats within the MOA. We agree with Dr Grove that no compensation has been proposed for the changes to hydrology and ecology of the remaining seepage wetlands and the raised spring north-west of the MOA; and that the future survival of these significant wetland habitats is uncertain. We also agree with Dr Grove that no compensation or remediation has been included for the adverse effects on Bush Gully Stream and Tara Stream from unconsented mining activities.
186. Dr Meredith considered significant adverse hydrological effects on Tara Stream had been ignored in achieving water quality criteria, and should be compensated by constructing pond like nodes at several positions between sites CC02 and CC03. Ms Dawson agreed that these adverse effects on Tara Stream and wetland needed to be accounted for in the compensation and remediation required. As discussed above, we agree.
187. The Councils' ecologist experts have helpfully suggested a range of ideas on what adequate and effective ecological compensation might look like throughout the hearing process and expert conferencing. The Applicant has chosen to focus on improvements to the North Property wetland because of landownership constraints. This approach ignores options for meaningful compensation to restore or increase the extent of the affected wetland and aquatic ecosystems in Bush Gully and Tara Stream; and options for protection of the ecological and hydrological processes required to maintain the integrity of these ecosystems.

188. We agree with the Reporting Officers that the Applicant's claimed constraints on the compensation offered could be overcome by access agreements, easements, covenants or financial transactions. The Applicant's evidence that affected landowners are unwilling to enter into such agreements does not negate the requirement for adequate compensation for ecological losses on their land. We consider that without adequate compensation the consents sought cannot be granted and landowners will still have ongoing legal responsibility for unlawful activities and any associated adverse effects.
189. Given the requirements of the NPS-FM and NESF regarding protection of the extent, form and functioning of wetlands, regardless of these applications, it is difficult to understand why measures to restore, enhance and protect Tara Stream and Bush Gully would not be welcomed by landowners.
190. Overall, we are concerned that the ongoing adverse cumulative effects from mining, forestry and farming have not been addressed by the Applicant and the landowners in an integrated approach to achieve long-term protection of the significant wetland habitat of Tara Stream and Bush Gully.

#### **Section 104(1)(b) Relevant objectives and policies**

191. Analyses of the relevant provisions of the NPS-FM, RPS, LWRP, and the proposed and operative SDC Plans were provided in the application, the s42A Reports and in the evidence of Ms Hunter.
192. We accept the NESF regulations regarding the drainage of wetlands are not applicable and that consent is only required under the provisions of the LWRP.
193. We accept that the LWRP provisions give effect to the NPSFM-2017, but are yet to be reviewed to give effect to the NPSFM-2020. We acknowledge that is up to the consent authority to *give effect* to the NPSFM-2020, by way of a notified plan change by 2024. We are obliged to *have regard* to the objectives and policies of the NPSFM-2020. In doing so, we have focused our assessment on the direction of the NPSFM-2020 and the concept of Te Mana o te Wai.
194. We have had regard to the need to prevent any further degradation of freshwater, to make intermediate improvements within the next five years, and to reverse past damage to bring waterways and ecosystems into a healthy state within a generation.
195. We have had regard to the requirement to manage the resource in a way that prioritises the health and well-being of water bodies and ecosystems first, the health needs of people (drinking water) second, and the ability of people and communities to provide for their social, economic and cultural well-being third.
196. The LWRP does not give any of its single objectives (region wide) or policies (sub-regional) more importance than another. We consider the NPSFM-2020 supports priority being given to objectives and policies which seek to safeguard the life supporting capacity of ecosystems

and ecosystem health. These provisions cannot be balanced against objectives and policies that enable resource use for social and economic wellbeing.

197. LWRP Objectives 3.17 and 3.18 seek to protect the significant indigenous biodiversity values of the wetlands and Policy 4.81 directs that any discharge of contaminants within a wetland do not adversely affect the significant values of the wetland. We disagree with Ms Hunter that '*...the wetland values at issue were unlikely to have been significant*'<sup>20</sup>. The evidence of Dr Grove and Dr Meredith highlight the significance of the remaining wetland values of Tara Stream and Policy 4.81 relates to adverse effects without qualification of significance. Dr Bramley's evidence confirms ongoing adverse cumulative effects on these significant wetland values, regardless of the lack of baseline information. The evidence supports a conclusion that retrospective and non-compliant activities have had long-term adverse effects on Tara Stream resulting from reduced flows, and sediment and contaminant discharges. We also disagree with Ms Hunter that these effects are mitigated or somehow acceptable because there is no pre-mining baseline data or because the wetland has been modified by other land use practices.
198. LWRP Policy 2A.3 requires the loss of extent of natural inland wetlands is avoided, their values protected, and their restoration promoted. This is a directive policy. Ms Hunter considered the wīwī rushlands were explicitly excluded from the definition of these wetlands and were therefore not relevant; but conceded that if the policy was deemed relevant their loss would be contrary to this policy. She stated the compensation proposed and implementation of the WMP would result in net benefits to biological diversity and overall wetland health; and would achieve a better ecological outcome than would be the case if mining had not occurred at all. We disagree given our findings on the existing environment. We accept the evidence of Dr Grove that the effect of wetland loss has not been avoided, and the compensation package offered by the Applicant does not fully protect their values nor provide adequate compensation or restoration.
199. RPS Policy 9.3.1(3) requires the protection of ecologically significant areas to ensure no net loss of indigenous biodiversity or values as a result of land use activities; and NPS-FM Policy 6 requires that there is no further loss of extent and values of wetlands. We find that whilst the proposals may result in no further loss of the present values of wetlands, this is not the case when the effects of unconsented activities are considered.
200. Overall, we find that without sufficient compensation to achieve no net loss of wetland extent, value and function, the CRC applications are contrary with the direction of the key objectives and policies of the NPSFM-2020, RPS and LWRP.
201. In his final reply comments, Mr Henderson noted that the relevant operative SDC Plan objectives and policies relating to ecological impacts were not directive. He considered that, as the proposal stood, it would be inconsistent with some provisions in the SDC Plan relating to ecological impacts, but was not *contrary to* the overall objectives and policies for the purpose of section 104(1)(b). He also considered that subject to inclusion of further conditions, as suggested by Mr Harding, the proposal could be consistent with the relevant

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<sup>20</sup> Statement of Evidence of Claire Elizabeth Hunter, para 162, pg. 36)

ecological objectives and policies, and the consents sought could be granted. However, he acknowledged this was not what was proposed by the Applicant following further expert conferencing.

202. Given that the non-complying activity status of the SDC consents arises primarily due to the clearance of indigenous vegetation, we consider that the objectives and policies relating to ecological impacts are a key consideration. Contrary to Mr Henderson’s advice, we consider that the operative SDC Plan does provide direction as to appropriate weighting. We consider that the direct relevance of the ecological impact matters contained in Objectives B1.2.1 and B1.2.3 and their associated policies means that we should place a greater weight on them than suggested by Mr Henderson.
203. We note that Objective B1.2.3 seeks to *‘Protect, and where practicable enhance indigenous vegetation along riparian margins and wetlands generally’*. We consider that the use of the word *“protect”* is directive in nature. We find the proposal is contrary to this objective because indigenous vegetation will not be protected or enhanced. We consider that opportunity for protection and enhancement of significant indigenous vegetation exists in the affected receiving environments, but the compensation package offered is presently inadequate to achieve this.
204. We also consider that due to the ongoing adverse effects on Tara Stream water quality and habitat, the proposal is contrary to SDC Objective B1.3.6 in that the land use activities have not and will not be *‘managed within catchments and riparian areas to protect water quantity and quality, aquatic habitat, and natural character’*. Again, we find the requirement to *‘protect’* to be directive in nature.
205. We find the proposal is also contrary to related SDC Policies B1.3.4 and B1.3.10 as adverse effects on surface water quality and aquatic habitat are not adequately avoided, remedied or mitigated, and the ecological integrity and functioning of wetlands is not adequately protected.
206. Overall, we find the proposal contrary to the key objectives and policies of the operative SDC Plan.
207. The proposed SDC Plan is presently at the hearing stages, and no decisions have been issued. Whilst the proposed plan provisions do not yet have legal effect, we are required to consider under section 104D(1)(b)(iii) whether the activity will be contrary to the objectives and policies of *‘both the relevant plan and the relevant proposed plan, if there is both a plan and a proposed plan in respect of the activity’*. Given our findings that the proposal is contrary to the objectives and policies of the operative SDC Plan, and that no decisions have been issued on the proposed SDC Plan provisions, we do not consider that significant weight should be placed on the proposed SDC Plan.

### **Section 104(1)(c) Other matters**

208. We have had regard to the submissions received. The submissions from the Director General of Conservation, Te Taumutu Rūnanga, Environmental Defence Society, Forest & Bird, Malvern Hills Protection Society and Selwyn Waimakariri Green all raised particular concern regarding adverse effects on wetlands and wetland ecology.
209. We note the relevance of the Canterbury Water Management Strategy 2009 (**CWMS**), Te Rūnanga o Te Ngāi Tahu Freshwater Policy Statement, Te Whakatau Kaipapa Resource Management Strategy and Mahaanui Iwi Management Plan 2013. We have had regard to the outcomes sought in these documents.
210. We have had regard to the Cultural Impact Assessment provided. We acknowledge that the loss of wetlands and threats to indigenous biodiversity are key concerns of Te Taumutu Rūnanga. We have had regard for the need to take a holistic approach to the assessment of effects and a catchment wide view to the receiving waters and its values.
211. We have also had regard to the letter from Mahaanui Kurataio Ltd (dated 22 February 2022) regarding consultation on updated wetland remediation and restoration plans.

### **Section 104D**

212. On the basis of the evidence, we conclude that the adverse environmental effects of the activities for which consents are sought are more than minor. We find the CRC and SDC applications fail to satisfy section 104D(1)(a).
213. We conclude the CRC applications are contrary to the key objectives and policies of the RPS and LWRP, without sufficient compensation to achieve no net loss of wetland extent, value and function; and imposition of consent conditions to ensure the protection of the life supporting capacity the receiving waters. We find the CRC applications are contrary with the direction of the key objectives and policies of the RPS and LWRP overall.
214. We conclude the SDC application is contrary to key objectives and policies of the operative SDC Plan relating to ecological values, without adequate compensation for the loss of indigenous vegetation. We find the application is contrary to the objectives and policies of the operative SDC Plan overall.
215. We find the proposal fails to satisfy to satisfy section 104D(1)(b) in respect of both the CRC and SDC consents sought.
216. We find section 104D(1) therefore prevents the grant of the consents sought from both SDC and CRC.

## Sections 105 and 107

217. For completeness, we record our consideration of sections 105 and 107, with regard to the CRC discharges to water. We consider the receiving environments of Tara Gully and Bush Gully Stream to be highly sensitive to any discharges of contaminants and flow reductions given the significant ecological values present downstream of the MOA and their current degraded state.
218. Section 107 specifies that we must not grant a discharge permit allowing the discharge of a contaminant or water into water if, after reasonable mixing, the contaminant or water discharged (either by itself or in combination with the same, similar, or other contaminants or water), is likely to give rise to all or any of specified effects in the receiving waters, as set out in section 107(1)(c)-(g), which includes significant adverse effects on aquatic life.
219. There was disagreement at the hearing regarding the appropriate level of protection for aquatic biota and contaminants of concern such as boron and the level of adverse effect of these contaminant concentrations on aquatic life in the receiving waters. The water quality monitoring results for the CC02 underdrain and the CC02-tele monitoring sites since January 2019, show the median boron concentration in the discharge was 2.4 mg/L and the maximum of 4.3 mg/L. We note Dr Weber used the 90<sup>th</sup> percentile value for boron of 3.7 mg/L as a representative value for his water quality summaries related to his discharge scenarios. The Applicant has proposed a limit of 1.5 mg/L to be met at the at the base of the Tara Pond mixing structure.
220. Dr Hogsden noted Dr Weber’s modelling data indicated contaminant exceedances could occur for boron, manganese and/or zinc under low flow untreated and undiluted scenarios, but that this would likely occur infrequently (during prolonged, dry periods when the N02 Pit Pond dries and an alternative source of dilution flows were unavailable). She considered the extent of contamination under this scenario would be localised in Tara Stream wetland just below the discharge point; and that predicted boron concentrations were not expected to have lethal or sub-lethal effects on kōwaro.
221. Dr Hickey noted that Dr Webber’s modelling for a 32-year period showed there was potential for acute (short term) and chronic exposure (long-term) from boron concentrations when the dilution flow available from the N02 Pit Pond was less than the decant discharge rate. He noted the ANZG<sup>21</sup> toxicants in water were derived for chronic exposure to elevated chemical concentrations not acute exposure. He provided the species sensitivity distribution data for 22 species with chronic data for the boron derivation (his Appendix 6), including for juvenile Canterbury mudfish and filamentous alga. He noted the Canterbury mudfish have a chronic sensitivity of 10.2 mg/L based on a 40 day toxicity test and filamentous algae sensitivity was 1.7 mg/L based on a growth test study<sup>22</sup>. Based on this, he considered the proposed consented standard for boron at monitoring site CCO2-tele of 1.5 mg/L had a 6.8x safety factor for Canterbury mudfish and 1.1x safety factor for protection of algal species from long-term effects from boron. He noted the most sensitive

<sup>21</sup> Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2021.

<sup>22</sup> Hickey, C. W., Thompson, K. J., Bell, S., and Arnold, J. (2019) Chronic sensitivity of juvenile Canterbury mudfish (*Neochanna burrowsius*) and periphyton (*Rhizoclonium* sp.) to boron. NIWA report prepared for Bathurst Resources Ltd: 87.

species for boron exposure were aquatic plants and that a limit of 1.5 mg/L would have sub-lethal effects on growth. While he acknowledged increasing the boron discharge concentration to 3.7 mg/L<sup>23</sup> for chronic duration periods had the potential to result in chronic effects on multiple species, he highlighted this was only expected to occur infrequently. He considered prolonged exposure to boron at 3.7 mg/L would be highly unlikely to result in mortality to juvenile mudfish but acknowledged the sensitivity of embryos was unknown. He noted rainbow trout embryos (although not found downstream) had a sensitivity value of 6.6 mg/L.

222. Dr Bramley noted that plants typically have a very narrow tolerance range which varies according to species and that environmentally safe levels for boron remain poorly defined, including native species. In response to questions, he agreed that it was appropriate to take a precautionary approach to boron limits in the receiving water given this uncertainty.
223. Dr Hickey noted that without appropriate treatment in the MSR, iron and manganese would precipitate in the wetland environment under oxidising conditions and will become redissolved when the wetland is saturated with water, allowing transportation downstream and reprecipitate in the aerated stream environment.
224. Dr Hickey acknowledged the current contaminant removal in the Tara Stream wetland and uptake of boron by plants. He recommended monitoring to quantify the effectiveness of the wetland for the uptake and removal of boron. He recommended that once the effectiveness of the wetland had been established, future monitoring and compliance conditions should be revisited to integrate the hydrology and water quality modifying process as they relate to the protection of downstream ecology in the receiving waters.
225. Dr Meredith considered discharge limits should apply at the point of discharge to protect aquatic life and because it is not appropriate to use a natural wetland for fine sediment to settle out. He noted potential for future increases in contaminant loads given the disposal of large quantities of CCR and its high concentrations of contaminants; and the reliance on 'clean water' from the N02 Pit Pond which drains the ELF for dilution. He noted the monitoring required under CRC170541 was 'minimal for such a significant mining operation' and that additional contaminants should be monitored such as arsenic and sulphate. He cautioned against the use of electrical conductivity as a diagnostic parameter given the relationship between this and boron is not strong. He noted the Canterbury mudfish/kōwaro preferred 'soft water', while the water treatment strategies increase hardness and alkalinity, which may defeat contaminant reductions for habitat improvements. He considered monitoring regimes should strive to provide adequate flow and water quality to maintain a viable habitat immediately downstream of the mine discharges.
226. The Reporting Officer considered that the discharge could give rise to significant adverse effects on aquatic life which would prevent the grant of consent. She highlighted the required treatment dilution for boron concentrations relies entirely on adequate 'clean'

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<sup>23</sup> 90<sup>th</sup> percentile value for boron from Dr Weber's water quality summaries.



water quality being available in sufficient quantities for the ongoing discharge from the engineered landforms over the long-term.

227. We are extremely conscious that adequate treatment of the CC02 underdrain discharge into Tara Stream relies on ongoing effective contaminant reductions through the MSR and by continuous dilution of the discharge. We accept that studies show elevated contaminant concentrations of iron, manganese and zinc will be reduced by treatment in the MSR. Dr Weber estimated the MSR would conservatively remove more than 80% of the iron and approximately 30% of the manganese. The potential for the precipitation of contaminants, as outlined by Dr Hickey, underlines the importance of ensuring the long-term effective treatment is achieved to avoid contaminants being released downstream. Boron concentrations will not be reduced by treatment in the MSR and will be reduced through dilution with 'clean water' from the N02 Pit Pond. The modelling undertaken by Dr Weber (Scenario 7) shows that for majority of the time (94.4%) the N02 Pit Pond discharge rates are likely to be equivalent to the decant discharge rate (0.48 L/s), with higher flows occurring approximately 4.3% of the time when the N02 Pit Pond is spilling. The modelling shows there would be zero decant discharge occurring for 1.3% of the time, occurring infrequently on a 2 to 7 year basis, with 21 zero decant events (over the modelled 32 year Whitecliffs rainfall record) ranging from a 1 to 18 day duration, with an average of 7 days.
228. To address any occasions when a continuous supply of 'clean water' is not available from the N02 Pit Pond, the Applicant proposes to provide an alternative supply of clean water to dilute the discharge. However, no further details were provided as to how this can be achieved. The modelling undertaken did not account for any proposed water takes from the N02 Pit Pond for irrigation or dust suppression which could increase the frequency or duration of zero decant discharge occurring.
229. Overall, we are not satisfied that the final set of conditions, as proposed by the Applicant, sufficiently avoids any significant adverse effects on aquatic life in the receiving waters. We consider there is insufficient certainty regarding availability of a continuous supply of 'clean water' to dilute the discharge. We consider a boron limit of 1.5 mg/L in the receiving waters must be achieved to avoid significant adverse effects on threatened indigenous species. We note this may still result in sub lethal effects on plants and alga, which are critical to sustaining aquatic macroinvertebrates and fish.
230. We find we are prevented from granting the consents sought under s107(1) without imposing additional conditions protecting the life supporting capacity of Tara Stream and remedying adverse effects of the discharge.

## **Part 2 of the Act**

231. The SDC s42A Report agreed with the Applicant's assessment that the proposal would be consistent with section 6(a) and (c), however this was on the basis it will enable the rehabilitation and closure of the site, while not adversely affecting amenity values or the quality of the overall environment. We find this assessment approach incorrect, as it was based on the existing environment which includes unconsented activities. For reasons outlined in this decision, we consider that the proposal does not adequately recognise or

provide for preservation of the natural character of wetlands, nor protect significant indigenous vegetation.

232. Notwithstanding this, we consider that these matters are already reflected in Objectives B1.2.3 and B1.3.6 of the operative SDC Plan which we have discussed above.
233. The CRC s42A Report noted that consideration of Part 2 of the Act is not prevented, but that it cannot be used to justify an application that is otherwise not supported by objectives and policies of the relevant plans. It noted that the objectives and policies of the LWRP hold significant weight and would be largely determinative.
234. We agree that the provisions of the LWRP should be given significant weight. However, we consider that these should be read with regard of the clear priorities set out in the NPS-FM 2020. We accept that the NPS-FM-2020 gives effect to Part 2 of the Act.
235. We do not consider that reference to Part 2 would add anything to the evaluative assessment we have undertaken under sections 104 and 104D.

### **Overall Conclusion**

236. The Applicant seeks an effective, long term ‘passive water treatment’ system for AMD discharge from the ELF, which requires little maintenance and minimal long-term monitoring after commissioning. This is understandable given BCL’s intention is to fulfil their agreements with the landowners and return use of the rehabilitated MOA. However, the designed ‘passive’ water treatment system relies on adequate provision of ‘clean water’ to dilute the AMD discharge and ongoing effective treatment through the MSR, which come with environmental risks if this is not achieved. The Applicant proposes to address these environmental risks using adaptive management and TARPs. We accept this is an appropriate approach to address uncertainty, but we consider it is inappropriate to use adaptive management to protect significant habitats and threatened indigenous species when adverse effects must be avoided. To achieve this, we consider there must be more certainty of the provision of an alternative water supply for dilution to address any water quantity and quality issues over the long term, potentially for decades. We do not consider this has been adequately addressed.
237. Throughout the hearing process, we have highlighted the areas of inadequacy in the applications and the significant disconnects between the Applicant’s approach to the assessment of effects and the assessment required under the RMA. We have considered the parties desires for a positive outcome from the hearing process and the need to authorise unconsented activities to achieve the purpose of the RMA over the long term.
238. In our view, the Applicant has failed to recognise the significant scale and extent of unconsented mining activities that have occurred and ultimately has failed to adequately assess the environmental effects of the activities pre-closure. It has also failed to recognise the significant cumulative effects of mining activities, forestry and farming on the Tara Stream and Bush Gully Stream and the need to address degradation.

239. We considered issuing an interim decision indicating a refusal of the consents sought, in order to enable the Applicant to propose further compensation commensurate with the level of adverse effects on the environment. However, we concluded we had already provided several opportunities for further expert conferencing and for to the Applicant to amend the compensation proposed to satisfy the Councils experts.
240. The Applicant’s final compensation package remains relatively unchanged from that proposed in the hearing when the proposed Bush Gully wetland part of compensation package was removed. We agree with the conclusion of both Councils that the compensation package proposed is inadequate to grant the consents sought.
241. We agree with the CRC that consent should not be granted for take and use water for irrigation or dust suppression purposes given current overallocation in the catchment. We consider the Applicant should find an alternative water supply for such purposes.
242. We consider the complex and protracted resource consent process reflects the Applicant’s disregard for the RMA and its requirements when taking over and significantly expanding the CCM. BCL and the landowners are jointly responsible for the environmental effects from mining activity and the requirement to avoid, mitigate and remedy those effects.
243. We determine that the requirements of section 104D and section 107 prevent us granting the consents sought subject to the conditions proposed by the Applicant.

### **Conditions**

244. The expert evidence agrees that there will be a need to provide for long term (decades) of passive treatment and dilution of discharge from the rehabilitated site into Tara Stream. We have kept this in mind in considering appropriate consent conditions.
245. At the closure of the hearing, there remained significant differences of opinion regarding appropriate conditions for the CRC consents. These primarily related to appropriate discharge monitoring standards and parameters, timeframes for monitoring various parameters, TARP certification and reporting requirements, and the need for remediation of the receiving environments. This section of our decision summarises some of the key agreements and disagreements in relation to the proposed conditions at the close of the hearing and our evaluation.
246. Dr Weber noted agreement to monitor the post closure discharge at the bottom of the Tara Pond spillway after mixing has taken place (CC02-TSMS) and at the current monitoring site (CC02-tele). He set out the agreed compliance monitoring in his Table 1. He noted the requirement to measure dissolved aluminium and iron at all times and his reservations about the effects of colloidal metals on compliance monitoring. He outlined that dissolved aluminium and iron analyses could be problematic when colloidal metals were present and recommended the conditions include the ability to resample. He disagreed with Dr Massey that there was a need for continuous DO monitoring given the MSR achieves steady-state conditions and aeration would be via a corrugated pipe. Dr Weber noted that DO

monitoring would be part of the MSR commissioning work to confirm DO was acceptable and would also be measured using a hand-held DO meter at monitoring site CC02-tele.

247. Dr Massey noted the importance of pH and alkalinity in the effective removal of trace metals and zinc in the MSR and adequate dissolved oxygen. He highlighted a study (Dyer *et. al.* 2004) which showed 80% of zinc remained at a pH 4 and 10% remained at pH 7. He noted the need for periodic replenishment of the mussel shells and sludge removal to avoid declining treatment performance. He considered monitoring of the performance of the treatment system should be required for longer than a couple of years.
248. We consider the agreements reached regarding monitoring the discharge at the point of discharge, including dissolved aluminium and iron, and conditions regarding maintenance of the MSR the are important measures. We agree with Dr Massey that DO should be monitored continuously given its critical importance.
249. Dr Weber considered the toxicity characteristic leaching procedure (TCLP) indicated monitoring for a wide range of contaminants was unnecessary. He provided further evidence on the potential contaminants of concern in the Tara catchment (Appendix 2) and considered this (combined with the data in his Evidence in Chief) indicated their effect on water quality was low. He noted that given the longevity of CCR placement at the site since 2009 and the presence of acid rock drainage since 2004, it was reasonable to assume any water quality effects would have been identified in monitoring by now. In recognition of the concerns raised, he supported annual performance monitoring to validate the current contaminant trends, with the exception of PAHs for which there was limited data. He set out the agreed performance monitoring in his Table 2. He agreed with Dr Meredith that some trend monitoring was appropriate for the discharge to Oyster Gully given there was a low level of risk and that TARPs would only be developed if required. He considered the concerns raised regarding maintenance of the MSR and the potential for stratification of the N02 Pit Pond had been addressed by conditions and TARPs. He noted that there were uncertainties relating to water quality and quantity, but considered the TARPs had been developed to address these and would be updated over time as more information was available.
250. Dr Massey and Dr Meredith highlighted the uncertainty regarding the deposited CCR and waste rock used at the site and potential contaminant discharges. Dr Massey noted there was a low level of certainty regarding the range and mass loads of contaminants disposed of at the site. He highlighted the characterisation of the CCR material was based on five samples and interpretation by leachate testing (TCPL). Dr Massey considered the characterisation provided was very limited and recommended monitoring of the discharge should include arsenic, cadmium, copper, nickel, lead, PAHs and mercury. He noted the Applicant's TCLP reported arsenic levels as  $<0.021 \text{ g/m}^3$  and that the relevant toxicant guideline value for the protection of aquatic species is  $0.024 \text{ g/m}^3$ . He considered the Applicant's use of the Class B landfill TCLP waste acceptance criteria were not suitable for the protection of ecological values and that the ANZECC guidelines were relevant.
251. We consider there is a high level of uncertainty regarding the legacy contaminant load which has been deposited at the top of two ecologically significant catchments. The CCR

material has been poorly characterised and has come from multiple sources. TCLP undertaken by the Applicant does not address this uncertainty and cannot account for changes in the geochemical conditions that might result in the mobilisation of contaminants. It is not possible to retrospectively characterise the CCR material or to representatively evaluate the potential range and mass load of contaminants deposited at the site. Given the significance of Tara Stream and wetland, it is appropriate to take a precautionary approach and monitor for a wide range of contaminants that pose an ecological risk to the receiving environments for a reasonably long period, as recommended by Dr Massey.

252. Minimising and avoiding the release of contaminants into the receiving environment from the rehabilitated land relies on ongoing maintenance of stable and vegetated ELF. The integrity of the ELF requires long term protection from land disturbance activities. Future earthworks and soil disturbance of the ELF must be avoided to prevent contaminant releases.
253. Dr Meredith recommended monitoring to demonstrate achievement of the recolonisation and persistence of mudfish/kōwaro populations in adversely affected reaches of the Tara Stream between monitoring sites CC02 and CC03, and CC03 and CC09 through targeted surveys in late winter/early spring and during low flow (December). He considered the Applicant should rectify the fine sediment siltation accumulated in the reach between monitoring sites CC02 and CC03, and excavate refuges/habitat nodes (3-4 nodes) as part of habitat restoration. We agree that such a requirement would be critical to remediating and recreating suitable kōwaro habitat to offset the adverse effects of mining activities, including use of a natural wetland for contaminant reductions.
254. Dr Meredith also highlighted that sustaining water flows (particularly small freshes) was as important to protecting ecological values as maintaining adequate water quality during discharge events. We consider it is critical that the water management systems (N02 Pit Pond and Tara Pond) are commissioned and maintained provide for sustaining flows through appropriate decant and spillway designs.

## Decision

**255. For the above reasons, it is the decision of the Canterbury Regional Council and the Selwyn District Council, pursuant to sections 104, 104D, 105 and 107, and subject to Part 2 of the Resource Management Act 1991, to REFUSE the following applications by Bathurst Coal Limited for resource consents to authorise retrospective activities and activities associated with the operation, rehabilitation and closure of the Canterbury Coal Mine:**

**Canterbury Regional Council:**

- CRC184166
- CRC200500
- CRC201366
- CRC201367
- CRC201368
- CRC203016
- CRC214320
- CRC214321

**Selwyn District Council:**

- RC185622
- RC185640

Dated at Christchurch this 17<sup>th</sup> day of June 2022



**Sharon McGarry**  
Independent Hearing Commissioner



**Graham Taylor**  
Independent Hearing Commissioner