

BEFORE THE CANTERBURY REGIONAL COUNCIL

IN THE MATTER OF

The Resource Management Act 1991

AND

IN THE MATTER OF

an application by **Birchwood Run Ltd** filed under

CRC012291 for a water permit to divert water from Spring Creek and to take and use surface water at Twizel-Omārama Road (State Highway 8), Twizel.

CRC012290 for an activity in the bed of a lake or river at the confluence of Wairepo Stream and Spring Creek, Twizel-Omārama Road, Twizel.

REPORT AND DECISION OF HEARING COMMISSIONERS PAUL ROGERS, MICHAEL BOWDEN, DR
JAMES COOKE AND EDWARD ELLISON

PART B – SITE SPECIFIC DECISION

TABLE OF CONTENTS

1 INTRODUCTION 3

2 THE PROPOSAL 3

3 DESCRIPTION OF THE ENVIRONMENT 5

4 PLANNING INSTRUMENTS 5

5 NOTIFICATION AND SUBMISSIONS 6

6 THE SECTION 42A REPORTS 7

7 THE APPLICANT’S CASE 8

8 SUBMITTERS 14

9 UPDATES TO THE SECTION 42A REPORTS 15

10 APPLICANT’S RIGHT OF REPLY..... 16

11 STATUTORY CONTEXT 17

12 EVALUATION OF EFFECTS 17

13 EVALUATION OF RELEVANT PLANNING INSTRUMENTS 22

14 EVALUATION OF OTHER RELEVANT S104 MATTERS..... 25

15 PART 2 RMA 26

16 OVERALL EVALUATION 27

17 CONDITIONS..... 28

18 DURATION 28

19 DECISION..... 30

APPENDIX A: CONDITIONS OF CONSENT (CRC012291) 32

APPENDIX B: CONDITIONS OF CONSENT (CRC012290) 42

PLAN CRC012291-A..... 45

1 INTRODUCTION

- 1.1 This is a decision on two applications by **Birchwood Run Limited** (the applicant). It is one of many decisions we have made on 104 applications by various applicants for water permits and associated consents in the Upper Waitaki Catchment.
- 1.2 The decision should be read in combination with our Part A decision, which sets out our findings and approach to various catchment wide issues that are common to multiple applications. References to our Part A decision are made throughout this decision as appropriate.

2 THE PROPOSAL

- 2.1 This proposal is to replace consents for irrigation on the property that expired in 2001, and which the applicant is currently operating under s124 continuation. The following description includes modifications made to the proposal since notification, which we discuss further below.
- 2.2 The applicant proposes to divert, take and use surface water from Spring Creek (a tributary of the Wairepo Creek) for border-dyke irrigation of 56 hectares at Glenbrook Station. The maximum rate of take will not exceed 57 litres per second, with an annual volume not exceeding 336,000 cubic metres per year.
- 2.3 Water will be conveyed from the diversion point through a race system that feeds the border-dyke system. No discharge is proposed from this race network as any small amounts of excess water at the end of the border system will soak away to land as there is no immediately adjacent watercourse.
- 2.4 In addition to the above, the applicant proposes to disturb the bed and banks at the confluence of Wairepo Stream and Spring Creek for the purpose of maintaining a diversion bund. The diversion consists of a gravel weir to control flows diverted into the irrigation race and a wooden bund through and over which residual flows in Wairepo Creek are directed. Maintenance works required to re-build the diversion bund after heavy rain and/or flooding.
- 2.5 Figure 1 below illustrates the location of the proposed diversion and the irrigation area.

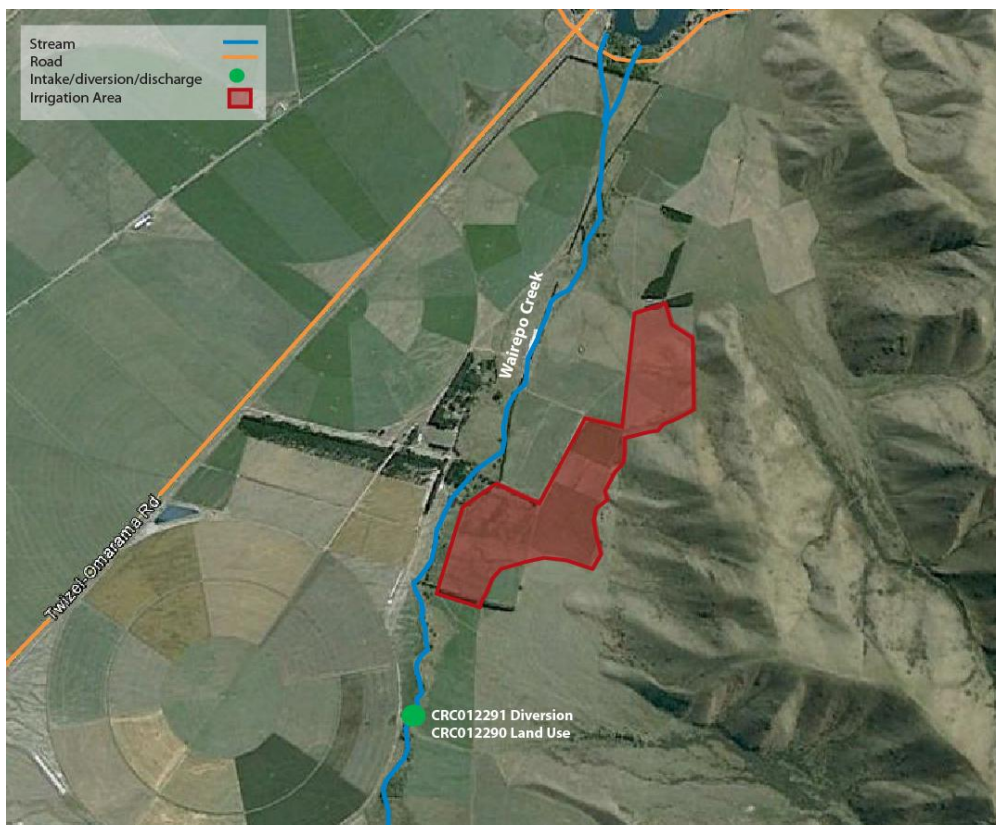


Figure 1 Indicative location plan

The applications

Take and use

- 2.6 The application is for a water permit to take and use surface water pursuant to section 14 of the RMA. Consent is required under the Waitaki Catchment Water Allocation Regional Plan (WCWARP) as discussed below.
- 2.7 The application (CRC012291) was lodged with the Canterbury Regional Council (the Council) on 23 April 2001 prior to the WCWARP becoming operative in July 2006. This application was publicly notified and there were a number of submissions that are referred to later in this decision. The application is for replacement consent and requested a consent duration for 35 years.

Disturb bed

- 2.8 The application is for an activity in the bed of a lake or river pursuant to section 13 of the RMA. Consent is required under the Natural Resources Regional Plan (NRRP), as discussed below.
- 2.9 The application (CRC012290) was lodged with the Canterbury Regional Council (the Council) on 24 April 2001 prior to the WCWARP becoming operative in July 2006. This application was publicly notified and there were a number of submissions that are referred to later in this decision. The application is for a new activity and requested a consent duration of 35 years.

Modifications after notification

- 2.10 The location of the land use permit in the application is at the location of the diversion. However, the location in the public notification notice was H39:7427-4823 which is in the middle of a paddock, approximately 700 metres west of the actual location NZMS H39:753-483. It appears that the grid reference in the notification wording was an error and the details in the application itself have not changed. We consider there is no issue with assessing the proposal on the basis of the corrected location.
- 2.11 The applications were originally lodged by Glenbrook Run Co Ltd, however the property was sold in 2004, and the applications have since been transferred to Birchwood Run Ltd.
- 2.12 In addition to taking water for irrigation, the original application also sought to take for stock water supply. However we note that the volume of water sought does not make any allowance for stockwater. In addition, the evidence received and the final condition set proposed by the applicant refer solely to the use of water for irrigation and not stock water supply.
- 2.13 On this basis, we have not considered the issue of stock water in this decision. Any discussion of appropriate take volumes relates to the water required for irrigation purposes. As discussed in our Part A decision, the applicant retains the ability to take water for stock and domestic use without the need for resource consent, subject to the limits in section 14(3) of the RMA.
- 2.14 Finally, we note that the final condition set received from the applicant referred to the irrigation of 100ha and attached a revised map covering a much larger area than originally sought. However there was no explanation for this change and all of the evidence and reports we received assessed the proposal with a 56ha irrigation area. We have therefore not considered the 100ha referred to in conditions in our decision, as we consider that to do so would be outside scope of the original application.

Related consents and applications

- 2.15 The applicant also holds the following consents - CRC940428A.1, CRC940428B.1 and CRC940428C.1 – to dam, take and use up to 90 litres per second from three tributaries of Wairepo Creek for stock water and irrigation of up to 90 hectares.
- 2.16 The applicant also holds shares in Benmore Irrigation Company (BIC), which supplies water under consent CRC981619.1, for irrigation of part of the property. It would appear from plans on the BIC file that the applicant could irrigate up to 1000 hectares of land with water from the scheme once fully developed.

3 DESCRIPTION OF THE ENVIRONMENT

- 3.1 Spring Creek is a tributary of Wairepo Creek that flows into the Wairepo Arm of Lake Ruataniwha. Wairepo Creek, along with a number of other small tributaries, is recognised as providing approximately 5% of the annual inflows into Lake Benmore
- 3.2 Lake Ruataniwha is recognised as having high habitat values for brown trout, medium habitat values for rainbow trout and presence of sockeye and Chinook salmon. While other small tributaries provide habitat for koaro, upland and common bullies, longfinned eels, common smelt, Canterbury galaxias, bignose galaxias and lowland longjawed galaxias.
- 3.3 According to the Reporting Officer many of the above species above are likely to be present in the diversion channel, but have not been confirmed via any ecological survey.
- 3.4 Fish and Game in its December 2008 submissions, provide further description of the Wairepo Creek catchment. It stated that Wairepo Creek contains a moderate brown and rainbow trout fishery and exhibits a healthy instream environment, but recently the flow has been substantially reduced. They consider that with other applications in this area, there may be adverse cumulative effects on the flows in this catchment.
- 3.5 Further description of the environment, including the applicant's property, is provided in our summary of the evidence received from the applicants and submitters below.
- 3.6 We detailed our site visits in Part A and we do not repeat this information here except to record that did not go onto the property but were able to observe the general command area from SH8, we also inspected the lower reaches of the Wairepo Creek and its confluence with the Wairepo Arm. We made a flight over the general command area of the Wairepo Arm during our helicopter reconnaissance of the Basin.

4 PLANNING INSTRUMENTS

- 4.1 As discussed in our Part A decision, there is a wide range of planning instruments that are relevant under the RMA. This includes national and regional policy documents, along with regional and district plans. The key planning instruments relevant to these applications are as follows:
- (a) Waitaki Catchment Water Allocation Plan (WCWARP);
 - (b) Natural Resources Regional Plan (NRRP);
 - (c) Proposed and Operative Canterbury Regional Policy Statement (CRPS); and
 - (d) Mackenzie District Plan (MDP)
- 4.2 The provisions of these planning instruments critically inform our overall assessment of the applications under s104(1)(b) of the RMA, as discussed in Section 14 of this decision. In addition, the rules within the relevant planning instruments determine the status of the activities, as set out below.

Status of the activity

- 4.3 In our Part A decision we provide a detailed discussion of our approach to determining the status of activities. We now apply that approach to the current applications.

Divert, take and Use (CRC01291)

- 4.4 This application is listed in Schedule 2 of the Resource Management (Waitaki Catchment) Amendment Act 2004. Section 88A therefore does not apply and the relevant plan for this activity is the operative WCWARP.
- 4.5 The following rules from the WCWARP are applicable to this application:
- (a) Rule 2, clause (1) – The applicant proposes a minimum flow of 30 litres per second in Wairepo Creek upstream of Wairepo Lagoon (Table 3, row (viii)(a)).

- (b) Rule 2, clause (1)(b) – This activity is a replacement consent and it is not required to fit within the allocation limits. It falls outside the allocation limit of 0.2 cubic metres per second for the Wairepo Creek and tributaries (Table 3, row (viii)(c))
 - (c) Rule 6 – The activity is within the allocation limit of 275 million cubic metres for agricultural activities upstream of Waitaki Dam.
 - (d) Rule 15 - Classifying rule – discretionary activity.
- 4.6 Overall, the proposed water permit is a **discretionary activity** under Rule 15 of the WCWARP and resource consent is required in accordance with section 14 of the RMA.

Disturb bed (CRC012290)

- 4.7 This application is listed in Schedule 2 of the Resource Management (Waitaki Catchment) Amendment Act 2004. Section 88A of the RMA therefore does not apply and the relevant plan for determining the status of this activity is the operative NRRP.
- 4.8 The relevant provisions of the NRRP are as follows:
- (a) Rule BLR 2 – permits the use and maintenance of structures that were lawfully erected or placed before 1 November 2010, subject to compliance with a range of conditions
 - (b) Rule BLR5 – permits the excavation, drilling, tunnelling, depositing, reclamation, drainage or disturbance in, on, under or over the bed, subject to compliance with a range of conditions
- 4.9 It is possible that these activities could be carried out to meet the permitted activity criteria, however from the information available it is not clear that they will. In particular, conditions 6(b) of Rule BLR2 and conditions 2 and 4 of Rule BLR5 are unlikely to be complied with. The activity is therefore classified as a **restricted discretionary** activity under Rule BLR5.
- 4.10 As a restricted discretionary activity, the matters we can consider are limited to those specifically identified in Rule BLR5 of the NRRP. However these matters are wide ranging and effectively include all of the key issues that we would be considering if the application was fully discretionary, including effects on bank stability, flooding, other activities, water quality and ecosystems

Overall status of the proposal

- 4.11 Based on the above, we have assessed the entire proposal as a **discretionary activity**.

5 NOTIFICATION AND SUBMISSIONS

- 5.1 The application was publicly notified on 4 August 2007 and 21 submissions in total were received, including:
- (a) 2 in support;
 - (b) 17 in opposition; and
 - (c) 2 neither in support nor opposition.
- 5.2 Table 1 is based on the relevant s42A reports and summarises those submissions that directly referenced the application. In addition to those listed, there were other submitters that presented evidence at the hearing that was relevant to this application. The relevant evidence from submitters is discussed in more detail later in this decision. Please note that all submissions hold equal importance, even if not specifically listed below.

Table 1. Summary of submissions on application [CRC012291]

Submitter	Reasons	Position
Fish & Game	Over the allocation limit for this catchment	Oppose
Department of Conservation	High proportion of flow in creek to be taken, potential effects on instream	Oppose

	ecosystems, fish screens, water quality.	
Canterbury Aoraki Conservation Board	Consent duration, runoff control in terms of water quality, potential effects on instream ecosystems, natural character of water bodies, and landscape.	Oppose
B Hutton	Need to protect smaller streams from irrigation extraction, should be from canals and larger water bodies	Oppose
Ōhau Co Trust	Amount of water being sought exceeds allocation for the Wairepo catchment, timeframe exceeds MEL consents, need sharing regime for water & reassessment of minimum flows	Oppose
Meridian Energy Ltd	Concerned about water quality, metering, duration and reasonable use	Oppose

- 5.3 Overall the key issues of concern to the submitters included effects on: ecosystems, water quality, allocations, minimum flows, natural character and landscape, efficiency and cultural values.
- 5.4 Meridian Energy Ltd have provided derogation approval however the application is a renewal of an existing permit and also the applicant is proposing that the take be metered in accordance with the WCWARP. Whether or not the take will impact upon water quality, is addressed later in the decision.
- 5.5 With respect to Fish & Game's submission, these applications are renewal of existing consent that has already been accounted for within the overall allocation regime for the Wairepo Creek. Thus the granting of this permit will not result in the allocation limit for the Wairepo Creek as set out within WCWARP being exceeded.
- 5.6 The Ōhau Company Trust has withdrawn their submission on this application.

6 THE SECTION 42A REPORTS

- 6.1 A section 42A report on the application and submissions was prepared by the Council's Consent Investigating Officer, Ms Claire Penman.
- 6.2 The primary report was supported by a number of specialist s42A reports prepared by Messrs Heller, Hanson, Glasson, McNae and Stewart, and Drs Clothier, Schallenberg, Meredith and Freeman. The key issues addressed by these reports were cumulative water quality effects, landscape effects, and environmental flow and level regimes.
- 6.3 All reports were pre-circulated in advance of the hearing. We have read and considered the content of the reports and refer to them as relevant throughout this decision. Specific points noted from the s42A report are summarised below.
- 6.4 At the time the primary report was prepared, there was insufficient information for Ms Penman to reach firm conclusions on the effects of the proposal. Matters that were identified as outstanding at that time were localised and cumulative impacts on water quality, and effects on cultural values. For the land use consent Ms Penman could not determine what the actual and potential effects of the activity might be because only limited information had been provided by the applicant.
- 6.5 Ms Penman used WQN9v2 to assess whether the annual volume requested by the applicant could be considered efficient. She noted that the amount she calculated (287,450 m³) would be considered an efficient volume of water for spray irrigation of 56 ha. However, she also noted that this methodology assumes an irrigation efficiency of 80% (which is largely unachievable for border dyke systems) and that the system proposed by the applicants was 70% efficient.
- 6.6 She also noted that Policy 16(b) of the WCWARP only required consideration of an irrigation application efficiency of 80%, and that as this was an existing border-dyke system which had been proven to be efficient, she was satisfied that application efficiency of this system has been maximised and that the annual volume sought by the applicant (336,000 m³) was appropriate for the area and method of irrigation proposed.

- 6.7 Ms Penman noted that as this was a replacement application, the applicant considered that effects on water quality would continue to be minor. She did not agree that this was an appropriate starting point for the assessment of the water quality effects associated with these applications and that there could be no presumption that the effects of the use of water authorised under the previous consents would continue to be authorised under any new consent.
- 6.8 Amongst the points contributing to her disquiet about water quality effects were:
- (a) Stock have access to Wairepo Creek and the stock and irrigation races running through the property;
 - (b) No "nitrates assessment" had been provided and the depth to groundwater was unknown; and
 - (c) No mitigation measures had been proposed or any assessment of their effectiveness.
- 6.9 Ms Penman also noted that Dr Freeman and other experts were of the view that it was premature to make conclusions about potential adverse cumulative effects.
- 6.10 Because there were a number of submissions that identify cultural values that had yet to be heard, Ms Penman was unable to determine the scale of actual and potential effects on cultural values.
- 6.11 Ms Penman assessed the effects of ecosystems, other water users, and people, communities and recreational values to be either minor or not significant. The assessment on ecosystems was predicated on there being a suitable fish screen installed.
- 6.12 In particular she noted that there were no landscape issues associated with this particular application. The irrigation area set well back from the State Highway and is not visible to general traffic. The applicant has not dealt with cumulative landscape effects, but they are seeking a replacement consent and are not within the "Outstanding Natural Landscape" areas. Mr Chris Glasson (Report 5) agreed that effect on landscape from this proposal were acceptable.
- 6.13 Ms Penman also concluded that effects on other users were acceptable. As there were no other applicants or users downstream, she concluded there were no effects on other users. She acknowledged that all takes on the Wairepo Creek were over the allocation limit, but that because this is a replacement application, it can be included in allocation limits. There is only one other applicant (M Horo) who is upstream of the intake, has a lower priority, and is proposing to comply with a "B permit" minimum flow which is substantially higher (300 litres per second).

7 THE APPLICANT'S CASE

- 7.1 Legal counsel for the applicant, Ewan Chapman, presented opening submissions and called several witnesses, as summarised below.

Opening legal submissions

- 7.2 The applicant is part of the Upper Waitaki Applicant Group, as described in our Part A decision. Mr Ewan Chapman presented comprehensive opening legal submissions on behalf of all UWAG applicants. He said that there may be matters of a specific legal nature relating to certain applications and those issues will be raised when the specifics of the applications were discussed in closing.
- 7.3 Mr Chapman also said that UWAG has not tabled a final set of conditions or final farm management plans. These matters will be worked through and provided to all parties as the hearing progressed. UWAG was of the view that one suite of conditions was inappropriate. There were variables between sub-catchments, take points, and the "type" of consent applied for which mean individual conditions would need to be worked through. When possible, he said UWAG would engage with the consent authority and submitters informally on the wording of conditions.
- 7.4 Mr Chapman told us that UWAG represents some 72% of all applicants for water takes. This equates to 31% of the total water volume applied for (excluding stockwater and non-consumptive diverts) and 29% of the total irrigable area.
- 7.5 Mr Chapman emphasised that despite the collective approach adopted for these hearings, each application needs to be considered in isolation from others (allowing for priorities). However Mr

Chapman noted that UWAG is not producing any other evidence to support its own assessments of cumulative effects and adopts the MWRL evidence to the extent that it defines nodal thresholds.

- 7.6 While raising some challenge to the outcomes of the mitigation measures proposed by MWRL resulting from the WQS study, Mr Chapman told us that the UWAG members were not presenting their case to say that they cannot or will not meet an area-based NDA threshold. To the contrary, he said that we would be shown that they have taken the model and applied it to all properties and will, with mitigation, meet the thresholds.
- 7.7 Mr Chapman then addressed us on the issue of allocation of assimilative capacity. He contended the approach taken by MWRL that essentially resulted in some farming units mitigating for the nutrient loss of other farming units, was inappropriate. He submitted a more appropriate method of allocation is on the basis of productive use of land. The productive use of the land he said represents the level of nutrient discharge of each farming unit and that should be used; and that the method of allocation based on dividing allocation on a per hectare basis should not be utilised.
- 7.8 He submitted that by assessing allocation of assimilative capacity on the basis of productive land use to reflect the NDA for each unit, these methods would be more representative and realistic of the nutrient discharge of each farming unit.
- 7.9 In terms of conditions concerning the nodal approach, he told us the essential issue lies with pinpointing who is exceeding their NDA if exceedances are detected at the nodal point. He told us the UWAG applicants' preference is for on-farm management of total nutrient discharge and annual auditing of individual FEMPs. He then referred us to a draft condition from the Rakaia Selwyn groundwater zone hearing, noting it was a very much site-specific condition.
- 7.10 He submitted that on-farm monitoring should be favoured over monitoring at nodal points. He said this did bring in the practicalities of the purpose of employing the FEMP with the result that if a breach of the FEMP occurs, the consent authority would have control to enforce the conditions of the consent against the individual applicant. It also reflects the reality that each farm will be different depending on the type of activity that is undertaken on that farm with their individual tailored farming management practices.
- 7.11 Mr Chapman also said that UWAG had not tabled a final set of conditions or final farm management plans. He told us these matters would be worked through and provided to all parties to the hearing as the hearing itself progressed. He told us UWAG was of the view that one suite of conditions was inappropriate. There were variables between subcatchments, take points, and the "type" of consent applied for, which would mean that individual conditions would need to be developed and worked through.

Ms Begley

Farm details

- 7.12 Ms Begley told us that the applicant operates, in total, a 5,700 ha high country run located on both the western and eastern side of the Twizel-Omārama Road (SH 8) to the south of Lake Ruataniwha. Following the purchase of the property in 2004, the applicant has undertaken extensive development of the property, which has included increasing the area being irrigated using water from the Benmore Irrigation Scheme. This development along with existing irrigation on the property has allowed the property to be split into two economic units. Simon Williamson (one brother) is farming approximately 3,700 ha area and Henry Williamson (the other brother) is farming the other 2,000 ha in area. It is the latter unit that the applications subject to this hearing are located in.
- 7.13 The renewal of these applications is an integral part of the overall farm management which is mainly fine wool, lamb and steer finishing operation. The applicant currently runs approximately 200, 18 month old beef steers and 3,200 merino ewes. The 56 ha block is used primarily to provide sufficient feed for the 3,500 lambs which are weaned in late January early February. This takes the pressure off other irrigated areas which are used to grow winter feed, which at this time most years is very hot and dry when winter feed needs to be produced.
- 7.14 The lambs weaned on to the 56 ha block are rotated around this block with the aim to be to get these lambs live weight as high as possible before winter. These lambs are then taken through

the winter, which enables the applicant to get a wool clip off them in mid-September before they are killed before Christmas.

- 7.15 This allows the applicant to provide lambs to the market when lamb numbers are low and prices are generally higher. Having irrigation also allows the applicant to retain all the lambs bred on farm rather than having to purchase store lambs with associated costs. Further it allows the applicant to retain the lambs over the winter months and get a wool clip off them. This would not be possible without irrigation.

Hydrology and allocation

- 7.16 Ms Begley said that the applicant seeks to divert and take water from the lower reaches of the Wairepo Creek. The Wairepo Creek from a hydrological perspective is a complex system. In its upper reaches a consent is held (CRC011266) which allows the entire flow of the stream to be diverted from its original course towards the Willowburn and the Ahuriri River. She understood that only during heavy rain does the Wairepo Creek follow its natural path and flow from its source (the Wairepo Springs located at the toe of the Ōhau Range), to the Wairepo Arm of Lake Ruataniwha. This diversion has led to confusion, she said, as there are now two Wairepo Creeks one flowing into the Ahuriri River the other flowing into the Wairepo Arm of Lake Ruataniwha.
- 7.17 Ms Begley said that there are no other surface water abstractors either up or downstream of the proposed point of take. This is due to the fact that the land through which the Wairepo Creek flows from the Wairepo Swamp to the Wairepo Arm of Lake Ruataniwha was controlled by the applicant. The take from the Wairepo Creek would therefore not impact upon any other water user that relied upon this stream for other purpose such as domestic and stock water.
- 7.18 Ms Begley said that Table 3 of the WCWARP provides an overall allocation limit for the Wairepo Creek of 0.2 m³/s. She said that if all resource consents subject to this hearing that are to take water from the Wairepo Creek were granted, the total allocation for the stream may be exceeded. However, she noted, this application seeks to replace existing applications at the same rate as was previously authorized. She pointed out that Policy 28 (c) of the WCWARP provides for replacements of existing consents to be maintained within *"...any allocation limits and priority bands on the water body concerned."* Further, Rule 2 (1) (a) allows for replacement consents to be exempt from the allocation limits set out within Table 3 of the WCWARP.
- 7.19 This proposed take is within the area defined as Upstream of Waitaki Dam, but not Upstream of the outlets of the Glacial Lakes in Table 5 of the WCWARP. This table sets a cumulative allocation of 275 million m³/year for this area. Granting this application will not result in the cumulative allocation limit of 275 million cubic meters per year being exceeded.

Effects on instream values

- 7.20 Ms Begley said that Table 3 of the WCWARP sets specific minimum flows for the Wairepo Creek to ensure that the instream values of the waterway were protected. The applicant was proposing to cease taking water whenever the flow in the Wairepo Creek was less than 30 L/s as set-out within Table 3 of the WCWARP. It was her opinion that the taking of water from Wairepo Creek would therefore be unlikely to impact upon aquatic values.
- 7.21 Ms Begley said that since lodging CRC012291, some 8 years ago, the property has changed ownership from John and Guy Kelland (Glenbrook Trust and Kelland Family Trust) to Birchwood Run Ltd. Also the applicant was currently in the process of subdividing the property into two smaller units. One approximately 3,700 ha in area the other approximately 2,000 ha in area. The two properties are being run as separate farming units. This application relates to the 2,000 ha block.
- 7.22 There was no fish screen in place upon either at the point at which water was diverted from the stream or where irrigation water was taken from the diversion race. Ms Begley said that the diversion had been occurring for some time, since at least 1969 (some 40 years). The applicant was proposing a mitigation measure which would require them to "as far as is practicable" exclude fish from entering the irrigation race feeding the border dyke irrigation system. To this end, prior to the exercising of this consent, the applicant would have their intake inspected and a fish screen designed, installed and certified to ensure that their fish screen as far as was practicable excluded fish and is in general accordance with the NIWA Fish Screening Guidelines (2007).

Effects of inefficient water use

- 7.23 Ms Begley said that the applicant would be applying no more than 61.5 mm per 7 days which is less than half of the average water holding capacity of the soil, and as such is considered to be an efficient use of water.
- 7.24 The application proposed an annual volume of 336,000 m³/year which was based upon the applicants applying no more than 600 mm/ha/year. Ms Begley debated the figures derived by herself and Ms Penman using the same methodology, but since Ms Penman thinks that the volume applied for is acceptable we consider this debate superfluous to our deliberations.
- 7.25 Ms Begley added that Policy 21 of the WCWARP required all water takes to be metered. To ensure that this application is consistent with this policy, the applicant proposed to meter their take.

Effects of the use of water on water quality

- 7.26 Ms Begley said that the cumulative effects on water quality have been addressed by Mackenzie Water Resources Limited (MWRL) study. As a member of the UWAG group the applicant had adopted the findings of that study which calculated N and P thresholds for individual properties which cumulatively could be assimilated by the water bodies that were the receiving environment.
- 7.27 The calculated nutrient mitigation requirement of the receiving environments determined in the MWRL Study has identified the N and P thresholds for the property. These are shown in the table below.
- 7.28 OVERSEER® had been run by a qualified person to model the N and P outputs from the proposed farming system. The results of the model have been incorporated in to the table below. This table showed that the applicant could meet the property thresholds (nominated by MWRL) which are the most restrictive.

	Nitrogen Threshold (Kg/Farm)	Phosphorus Threshold (Kg/Farm)
MWRL Water Quality Study Property Thresholds	24,031	795
OVERSEER® outputs	6,988	260

- 7.29 Ms Begley said that the applicant is committed to implementing the "Mandatory Good Agricultural Practices" set out within the Farm Environmental Management Plan (FEMP). Implementing those practices would ensure that the OVERSEER® results are validated. This along with ensuring that the property thresholds of the WQS (set out in the table above) are not exceeded, she said, would ensure that the cumulative effects of the use of water for irrigation on water quality are no more than minor.
- 7.30 The MWRL Water Quality Study also identified that the applicant still had to consider specific on farm effects and the impacts these activities could have on the local receiving environment. This required a specifically developed Farm Environmental Management Plan (FEMP) to identify and implement appropriate mitigation measures.
- 7.31 At a workshop held in Twizel in August 2009, the applicants met with Ms Melissa Robson of GHD Limited. A "desk top" on farm risk assessment was undertaken. This was considered to be the "starting point" of the FEMP.
- 7.32 The workshop identified potential on farm risks specific to each farm along with possible mitigation measures. The on farm risks identified during the desktop risk assessment need to be verified by an appropriately qualified person who has carried out a site visit. It is anticipated that this will occur should the application be granted.
- 7.33 Ms Begley said that for Birchwood Run Ltd, the desktop risk assessment identified the following potential risks:
- (a) The large number of surface water bodies that flow through the property;
 - (b) Extensive tracking; and

(c) Use of full cultivation.

- 7.34 The applicant had committed to implementing the FEMP including an on farm risk assessment, appropriate mitigation, monitoring and auditing before the first exercise of this consent. The FEMP had been proposed as condition of consent.
- 7.35 Ms Begley said that because the N and P thresholds from the MWRL Study could be met, and the applicant was committed to addressing on farm risks with the implementation of the FEMP, the effects of the use of water on water quality for both the local receiving environment and cumulative effects were considered to be minor.

Effects on Tangata Whenua Values

- 7.36 Te Runanga O Ngāi Tahu submitted on all applications in the catchment, seeking that all applications be declined. Ms Begley considered the primary reasons for this were that the applications were considered to be inconsistent with the policies and objectives of the WCWARP, and also at odds with the cultural objectives of the RMA.
- 7.37 Ms Begley acknowledged that Te Runanga O Ngāi Tahu had a significant relationship with the Waitaki Catchment, and as such, appropriate minimum flow conditions, and management of water quality effects is proposed by the applicant to ensure that the potential effects on the environment, including tangata whenua values are minor.

Effects on People, Communities and Amenity Values

- 7.38 Ms Begley said that the applicant had proposed an appropriate minimum flow condition for the water body from which they have applied to take and use water. Maintaining the minimum flow she considered would adequately protect people, community and amenity values.
- 7.39 She said that the activities all occur within a rural setting, where the dominant land use is pastoral farming. And, given that the proposed activities all occur on private farmland the use of water is unlikely to adversely affect amenity values.
- 7.40 Ms Begley then said that the WCWARP sets an annual allocation "cap" for agricultural and horticultural activities within defined areas (Table 5). The applicant had proposed an annual allocation limit for their own resource consent for the use of water, as well as implementing Farm Management Plans, which require existing irrigation systems to be audited and improved where possible, and new systems to be designed and installed by accredited personnel, and implementing initiatives to ensure that water was used wisely.
- 7.41 She believed the primary objective of an annual allocation is to ensure that the water is used efficiently and effectively for the land use, soil type and climatic conditions. The applicant has proposed an annual volume that is considered to reflect reasonable and actual use and this is within the allocation limit defined by Table 5. Therefore, given the applicant's commitment to ensuring efficient use of water on their properties, and that the take is within allocation limits set to protect in-stream values and other users, she considered that effects on people and communities would be minor.

Effects of works in the bed

- 7.42 Ms Begley said that this application seeks the ability to maintain an existing diversion structure within the bed of the Wairepo Creek. The existing structure consists of a concrete weir across the stream, with the walls of the structure consisting of sandbags and corrugated iron. This structure facilitates the diversion of water from Wairepo Creek into the stock/irrigation race.
- 7.43 Ms Begley said that the structure has been in place for some time, without impacting upon the way in which the stream reacts during a flood event. As this application simply seeks to have the ability to maintain the structure it was her opinion that to allow the structure to remain in place will not change the way the stream reacts during a flood event.
- 7.44 Ms Begley said that because it was not practical to avoid working in flowing water when undertaking maintenance of the structure. The applicant has proposed to adopt the best practicable options to:

(a) Minimise soil disturbance and prevent soil erosion;

- (b) Prevent sediment from flowing into any surface water; and
- (c) Avoid placing cut or cleared vegetation, debris, or excavated material in a position such that it may enter surface water.

- 7.45 Ms Begley said that the structure has been in place for some time without significant erosion of the bed and/or banks of Wairepo Creek. Further, the applicant proposes to monitor the structure, and should the bed or banks of the stream start to erode, action would be undertaken to remedy the problem. This aspect has been identified as an environmental farm risk and would be addressed as part of the FEMP which will ensure that the applicant actively monitors the site for any erosion. Should erosion be detected measures will be undertaken to remedy the problem.
- 7.46 Ms Begley was unaware of any artificial structures, which are not either owned or maintained by the applicant within a 1.4 km radius of the existing structure.

Mr Andrew Craig – landscape architect

- 7.47 Mr Andrew Craig gave his evidence in two parts. The first part dealt with the general landscape and his overview of the Upper Waitaki landscape and its values. The second part of his evidence dealt more directly with the individual applications.
- 7.48 In his part A evidence, Mr Craig discussed in detail Mr Glasson’s mitigation approach and tools, and addressed us on statutory matters concerning the effects of landscape. Broadly, for reasons advanced in Part A, we agree with Mr Craig’s assessment of the statutory planning documents in terms of landscape.
- 7.49 Unlike other applications by UWAG members, Mr Craig did not present a separate brief of evidence in respect of the current application. The reason for this was that he only prepared a separate brief of evidence where he considered the proposed irrigation was on a sensitive site. Visual sensitivity was determined by the location of publicly accessible vantage points and the views that could be had from them in relation to irrigation areas. In relation to the current application, Mr Craig considered that it was not a sensitive location in terms of landscape and that the proposal would therefore not negatively impact on landscape values.

Mr Robert Batty, planner

- 7.50 Mr Batty addressed us in relation to planning issues. He set out his broad view as being:
- (a) whether or not granting any of the applications before us, including this application, would undermine the operational integrity of the WCWARP, regional plans and district plans;
 - (b) whether cumulative effects would arise from a grant;
 - (c) whether grants would promote reasonable efficiencies and sustainable management of the natural and physical resources concerned; and
 - (d) whether the grant of consent would derogate from any other consent.
- 7.51 He was critical of the section 42A officers’ collective approach and suggested each application needs to be considered on its own merits. A move away from the generic approach of the reporting officers was required, he said, to enable a proper analysis of each application to occur.
- 7.52 He supported Mr Kyle’s planning analysis on behalf of MWRL and he set out for us relevant policies and objectives in the district and regional plans. In conclusion, he was of the view that granting this consent and all other UWAG consents was appropriate.

Mr Andrew Macfarlane, farm management consultant

- 7.53 Mr Macfarlane is a farm management consultant with 29 years experience. He provided us evidence on behalf of all of the UWAG applicants.
- 7.54 He assessed the viability of the farm management plans and practicality and robustness of the mitigation measures and the ability to monitor progress.

- 7.55 He discussed a range of mitigation measures that had been examined and/or adopted by the UWAG farmers to deal with discharges from their properties consequent upon irrigation.
- 7.56 Mr Macfarlane also discussed with us the costing of various typical irrigation developments.
- 7.57 He considered on-farm monitoring, noting that on-farm monitoring had lifted in its intensity and in detail over the last 10 years, being driven by economic returns and a need to prove environmentally sustainable methods were being utilised. Overall, he held a high degree of confidence in progress concerning the ability to monitor and interpret interfaces between environmental science and management.
- 7.58 He raised with us the advantages of reliable availability of water and pointed out for us the benefits of irrigation, noting that while generally irrigation typically only represents a small part of the total farm area, but it does result in high productivity increases with a resultant favourable impact on economic viability of farming operations. He concluded with the correct planning, management and monitoring any negative environmental impact of intensification of a small area would lead to positive environmental outcomes on the balance of the property. It was his view a net positive balance was certainly possible.

8 SUBMITTERS

- 8.1 Set out below is the summary of the issues raised by submitters who appeared before us. We emphasise that we have read and considered all submissions made, both in support and in opposition to the application, as well as reviewing and carefully considering evidence advanced before us.

Mr Scarf – Hydrologist Fish & Game

- 8.2 Mr Scarf (Fish & Game Hydrologist) said that the Wairepo situation was far from clear and in his opinion required detailed examination to establish clearly the natural hydrology and the distribution and allocation of the resources within this catchment.
- 8.3 He noted that the catchment area above the Wairepo Arm outlet was about 190 km². Based on isohydral mapping, he assessed the natural 1:5 yr LF for this site should be about 110 L/s. This he said was considerably higher than the 30 L/s minimum flow provided for within the Plan.
- 8.4 Mr Scarf referred us to Rule 2 Table 3 (viii), which sets out the rules surrounding allocation and minimum flows for Wairepo Stream as follows:
- (a) For the Wairepo stream upstream from SH8; a minimum flow of 30 L/s at the point where the creek is closest to Lake Ōhau Road (interpreted as map reference H39:710-464).
 - (b) For the Wairepo catchment downstream from SH8; a minimum flow of 30 L/s upstream from Wairepo Lagoon (H3 9:763 517)
 - (c) For the whole catchment (i) an allocation limit of 200 L/s and (ii) a flow sharing threshold of 300 L/s upstream from Wairepo Lagoon.
- 8.5 Mr Scarf noted that in the summary prepared by Ms Penman, she concluded that existing consents total 220 L/s; marginally in excess of the allocation limit of 200 L/s. This led him to the conclusion that any replacement or new applications (including these applications) would need to comply with the threshold provision.
- 8.6 If approved, Mr Scarf recommended that these consents should be subject to a 300 L/s minimum flow as measured at Wairepo Lagoon. Additionally, Mr Scarf recommended a 1:1 sharing for flows in excess of that minimum.

Mr Horgan - Environmental Advisor Ngāi Tahu

- 8.7 Mr Horgan told us that Ngāi Tahu had taken a balanced approach when assessing the applications and resisted the temptation to simply oppose all applications in their entirety. More particularly, Ngāi Tahu has generally placed its emphasis upon the new (rather than replacement) consent applications and those that will result in large scale land use intensification, rather than the taking of water so as to provide security of supply for existing farming operations.

- 8.8 Mr Horgan told us that Ngāi Tahu had identified two cultural focal points against which they assessed the applications; the Haldon Arm is one of those points, which Ngāi Tahu had also identified for mahinga kai restoration.
- 8.9 Mr Horgan told us that provided the smaller applicants carry out appropriate riparian planting and fencing and undertake not to significantly increase the intensity of their farming operations, then Ngāi Tahu were not opposed to the granting of consent.

Mr John Ryan

- 8.10 Mr Ryan is a registered valuer and a registered farm consultant he said he had been associated with the Ōhau Company Trust since it first purchased the Shelton Downs property in mid 1999.
- 8.11 Mr Ryan was concerned about what he believed were the limitations and inconsistencies of the proposed allocation of the Wairepo and Quailburn water bodies.
- 8.12 Mr Ryan said that the Wairepo Creek is in fact two separate creeks either side of State Highway 8. West Wairepo runs south from Lake Ōhau Road and has its outlet into the Ahuriri River. East Wairepo runs in a northerly direction east of Ōhau Road and has its outlet into the Wairepo Arm of Lake Benmore (we assume Mr Ryan means Lake Ruataniwha).
- 8.13 The Birchwood Run Limited Consent Application has been allocated out of West Wairepo water when in actual fact it draws from East Wairepo.
- 8.14 The allocation limit, minimum flow and flow sharing thresholds as outlined by Environment Canterbury in Mr Ryan's opinion did not appear to be scientifically based and he believed that an informed decision could not be made until a scientific study was made. He understood this was possible under Section 92 of the Resource Management Act and that the findings were open to discussion with the applicants.
- 8.15 Mr Ryan said that whilst allocation limits and minimum flow were difficult enough, the flow sharing adjustment was hypothetical in the extreme and when challenged elsewhere had invariably been found wanting.
- 8.16 Mr Ryan then said that there are inconsistencies in the ECan flow sharing regimes between the Wairepo and the Quailburn Creeks with both of these limits effectively blocking Ōhau Company Trust from access to A band water from both Creeks.
- 8.17 Finally Mr Ryan said that all three applicants for Wairepo water excluding Ōhau Company Trust have substantial allocations from the Benmore Irrigation Scheme. This scheme currently had a surplus allocation to even planned use of 1200 L/s. A further Benmore shareholder had priority allocation over Ōhau Company Trust for Quailburn water. From a straight out design point of view, Birchwood, Sutherlands, McAughtrie and Ellis-Lea Farm Ltd all had sufficient allocation for their needs from the Benmore Scheme let alone small additional amounts from the Wairepo and Quailburn.

Mackenzie Guardians – Dr Susan Walker

- 8.18 Dr Susan Walker (Plant Ecologist, Landcare Research) was engaged by the Mackenzie Guardians to provide evidence at the hearing detailing the effects on terrestrial ecology from the proposed irrigation of an additional 25,000 ha. The majority of Dr Walker's evidence related to the proposed irrigation in all of the Upper Waitaki catchment. A summary of this evidence has been included in Part A of this decision.
- 8.19 In relation to individual applications, Dr Walker's Attachment 15 contained her more particularised reviews in respect of each site. Dr Walker assessed the property as being approximately 98%% converted. She noted that it was mainly developed already and concluded that the proposal had the "least" potential effects of irrigation on terrestrial biodiversity compared to other proposals she considered.

9 UPDATES TO THE SECTION 42A REPORTS

- 9.1 Ms Penman commented on modifications to proposed conditions made by Ms Begley. While she agreed with deletion of a backflow preventer as water is conveyed in an open channel. However she disagreed with the deletion of flow measurement of Wairepo Creek because without it would

not be possible to gauge compliance with minimum flow requirements. She also disagreed to changed wording concerning installation of the fish screen.

- 9.2 Ms Penman also noted the applicant had submitted their draft FEMP since her original s42A report. She noted that in relation to the OVERSEER input parameters used by the applicant, for irrigation area, 3 blocks were identified of 113 ha (Pivot 1&2), 40 ha(border-dyke) & 40 ha(k-line) respectively. She noted that a 56ha border dyke area was applied for under this consent and assumed Benmore Irrigation Co shares and their existing water permit covered the remaining area.
- 9.3 The draft FEMP and water quality assessment provided by Ms Begley, and MWRL, was audited by Environment Canterbury's technical experts who considered that there are some uncertainties about the potential adverse effects and suggest that either more information is needed or strict monitoring and response conditions would be needed to address cumulative water quality effects. Ms Penman noted that to date, no appropriate conditions addressing water quality on a local or cumulative scale had been proposed by the applicant. Additionally she noted the table attached to Mr McNae's s42A report identified areas of concern with the parameters used in the running of OVERSEER for this applicant. Therefore, she concluded, local and cumulative water quality effects remained outstanding for this application.
- 9.4 In relation to the land use consent Ms Penman noted that although Ms Begley had provided an assessment of the effects of the works to maintain the existing diversion structure, she had not provided a description of what the maintenance works will entail. Whilst some "standard" mitigation measures could be recommended to minimise effects of general works in watercourses, she could not determine what the effects might be from the proposed maintenance works or comment on Ms Begley's proposed conditions.

10 APPLICANT'S RIGHT OF REPLY

- 10.1 As for his opening, Mr Chapman's right of reply was presented on behalf of all UWAG members. However he also provided some specific comment on individual proposals. Mr Chapman did not make any comments specific to Birchwood Run other than to note it was a renewal.
- 10.2 Turning to more general comments, Mr Chapman challenged Dr Freeman's Table 5, contained within his first addendum report dated 12 January 2010. Mr Chapman considered the correct approach for the ranking of the applications was to determine where they sit in relation to the existing environment.
- 10.3 He noted there had been much emphasis on nutrient management but he contended we should also be considering sustainability of the erosion-prone fragile soils within the catchment. He also submitted we should take note that district plans encourage farming, including irrigation, within these environments; and the tenure review undertaken by the Crown encourages intensification of land use retained in freeholding ownership in order to release more vulnerable pastures to be set aside under Crown ownership.
- 10.4 He also contended we should consider economic implications on the survival of these farms given their investment in infrastructure as a factor. He also noted we should take into account managing the land in light of weed and pest problems and how irrigation assists in that regard.
- 10.5 In terms of staging of implementation, Mr Chapman told us that undoubtedly those UWAG applicants, this applicant among them, may choose to stage the introduction of a new system of irrigation.
- 10.6 Mr Chapman was critical of Mr Glasson's approach to assessment of landscape effects. He referred to Mr Glasson's position in his oral presentation to us, particularly where Mr Glasson described that the introduction of controls or buffers was a trade-off for the continued right to irrigate. Mr Chapman contended that this approach should be a fundamental misunderstanding of the concept of existing environment, whereby the introduction of exotic grasses has been introduced as a fully permitted activity and continues to be so under the three applicable territorial plans.
- 10.7 Mr Chapman went on to submit to us that the evidence of Mr Craig for the UWAG group is to be preferred, principally on the basis that the development can, as a permitted activity, result in the greening of the landscape and textural changes in the landscape patterns. We agree that in our evaluation of effects we must give weighting to the existing environment as it presents and we must have particular regard to the outcomes provided for in terms of the relevant district plans.

- 10.8 We did subsequently receive from Mr Chapman generic conditions and revised FEMPs applicable to all the UWAG applicants.

11 STATUTORY CONTEXT

- 11.1 The relevant statutory context for a **discretionary** activity is set out in detail in our Part A decision. In accordance with those requirements, we have structured this evaluation section of our report as follows:

- (a) Evaluation of effects
- (b) Evaluation of relevant planning instruments
- (c) Evaluation of other relevant s104 matters
- (d) Part 2 RMA
- (e) Overall evaluation

12 EVALUATION OF EFFECTS

- 12.1 Drawing on our review of the application documents, the submissions, the Officers' Reports, the evidence presented at the hearing and our site inspection, we have concluded that the effects we should have regard to are:

- (a) Other water users- water allocation
- (b) Environmental flows and ecosystems
- (c) Efficiency
- (d) Water quality
- (e) Cultural effects
- (f) Landscape
- (g) Effects of works in the bed (for CRC12990)

Effects on other users – water allocation

- 12.2 Both Ms Penman and Ms Begley concluded that that there were no effects on other users to concern us, because the applicant owned all land downstream to the Wairepo Arm.
- 12.3 However Mr Ryan (for Ōhau Trust) believed that this applicant's water was allocated from West Wairepo (flows toward Ahuriri) when it actually draws water from East Wairepo (towards Lake Ruataniwha). He pointed out that Birchwood, as a significant shareholder in the Benmore Irrigation Company had existing consents that allowed major expansion of its irrigated area, but also had priority over the Wairepo take for a much smaller volume. This, he said, disadvantaged Ōhau Company Trust because as a 'late' applicant it was effectively blocked from accessing A band water from that source.
- 12.4 We acknowledge Mr Ryan's point but it is not within our mandate to rule of matters of fairness. As pointed out by Ms Penman, under Policy 28 of the WCWARP, any application for a replacement consent retains their inclusion in the allocation limit and priority bands. We agree with Mr Ryan that the partial low diversion of the Wairepo Creek towards the Ahuriri does cause confusion, however we do not follow his argument that Birchwood's allocation is from that (west) source.

Environmental flows and ecosystems

- 12.5 The applicant has proposed a minimum flow of 30 litres per second for the Wairepo Creek, below which all abstraction must seek. The amount of water that may be taken gradually increases above 30 litres per second, with the full amount not able to be taken until the flow reaches 230 litres per second. We accept that this arrangement is appropriate to maintain the

flows in Wairepo Creek and that in combination with an appropriate fish screen the instream ecosystems will be protected.

- 12.6 In relation to this screen, we have preferred the condition recommended by Ms Vesey in her addendum report (WP09) to that proposed by the applicant. The condition was the outcome of a fish screen working party and we consider it is the most appropriate condition to ensure that the intake complies with the NIWA fish screening guidelines.

Efficiency

- 12.7 Ms Penman and Ms Begley agreed that the annual volume applied for constituted an efficient use of water for a border-dyke system, even though it fell short of the efficiency expectation expected under the WCWARP (70% instead of 80%). Ms Penman was of the view that that this shortfall was acceptable given the existing investment in border-dyke technology.
- 12.8 We accept this point, but as noted by Ms Begley this system has been in place for 40 years. Our view is that the existing investment will have been recouped and that while it may be an efficient border dyke system, it is still not as efficient as spray. We have been consistent in requiring applicants with border dyke systems to move to a spray system within a 5 year period and if granted, we will also insist on this condition.
- 12.9 We return to the issue of efficiency in our evaluation of the relevant planning instruments.

Water quality

- 12.10 In Part A of this decision we rejected the MWRL proposition that all consents sought in this hearing could be granted (with conditions) and without causing cumulative water quality effects. It is incumbent upon us, therefore, to consider (as far as is possible) whether granting this application, in combination with other water permits we grant, will lead to such effects. In this case it means considering the potential effects of granting this application (in combination with others we grant) on:
- (a) The trophic state of the Wairepo Arm of Lake Ruataniwha of Lake Benmore;
 - (b) The trophic state of the Haldon Arm of Lake Benmore (through nutrient additions to the Ōhau C canal);
 - (c) Groundwater chemistry and in particular the MWRL-proposed threshold of 1 mg/L NO₃-nitrogen; and
 - (d) Periphyton growths in the Wairepo Creek.
- 12.11 The applicant has proposed some mitigation measures to lessen the risk of their activities contributing to cumulative water quality effects.
- 12.12 We need to consider whether the proposed mitigations, are, in our view sufficient to avoid a significant water quality problem occurring, and/or whether refinements to the measures proposed are required.
- 12.13 A starting point for the consideration of effects on points (a) to (c) above is the FEMP. Evidence on the FEMP was given by Ms Begley, but for consistency with other decisions we have independently audited the FEMP. Key points arising from our audit and additional to Dr Robson's evidence are summarised below.
- 12.14 Only a cursory description is given of the soils "Light to medium depth topsoil on hill, some stone with a mixture of soil types on both undeveloped and developed flat land." This is insufficient for us to gauge whether the developed setting is appropriate or whether, as noted in Part A it will underestimate nutrient load.
- 12.15 The property, according to the WQS, lies in the Ōhau River and Wairepo Creek groundwater catchments, and Wairepo Creek surface water catchments. Groundwater mitigation requirements were deemed by the WQS to be the most stringent which capped the properties nutrient discharges at 24,031 kg N per annum and 795 kg P per annum. OVERSEER modelling showed that the predicted nitrogen and phosphorus losses would be only ~ a quarter of this threshold.

- 12.16 Existing mitigation measures shown in the FEMP relate primarily to other irrigation of the property; i.e. pivot irrigating using consents obtained under the Benmore Irrigation Company.
- 12.17 Mitigation measures chosen to ameliorate site specific environmental risks on the farm relating to this consent included:
- (a) Finish fencing stock out of Wairepo/Spring creek through riparian fencing within the irrigation area,
 - (b) 20 metre layback from any water way when applying fertiliser by land based application e.g. bulk spreader
 - (c) Plant a riparian filter strip/settling pond on the Wairepo/Spring Creek as it exits the property before discharging to Wairepo Ponds
 - (d) Monitor and manage stock access, stock type and stock number from all permanently flowing waterways within other non-irrigated intensively farmed areas.
- 12.18 The exclusion of stock from watercourses and by planting a riparian filter and a settling pond is not factored into OVERSEER. We consider this a worthwhile mitigation and could be effective in reducing N and P losses from border dykes if it is well managed. However we note from viewing other similar systems that there is a risk of high turbidity water (and high nutrient) exiting the settling pond if it becomes habitat for water fowl.
- 12.19 The critical issues for us are:
- (a) Is the predicted nutrient load from the farming systems realistic?
 - (b) What effect will the predicted nutrient load (alone and in combination with other applications we grant) have on the receiving water bodies identified above making reasonable assumptions about flow paths?
 - (c) Can the effects be avoided, remedied or mitigated?

Predicted load realistic

- 12.20 The inputs to OVERSEER were audited by Mr McNae who identified a number of issues. In his original audit report he deemed it 'high risk' that the applicant had used only the developed setting of OVERSEER, medium risk that there was a high irrigation rate, and low risk that the drainage was unknown for all blocks. In his final addendum report Mr McNae reported that only the question of the setting used in OVERSEER remained an outstanding issue. We agree and are of the view the nutrient losses may have been underestimated because of the predominance of stony shallow soils.

Effects on waterbodies

Wairepo Arm of Lake Ruataniwha

- 12.21 In Part A MWRL witnesses (Bright and Robson) stated that to maintain the Wairepo Arm in its current mesotrophic state, nutrient losses from the proposed irrigated area will have to be 16.4 kg N/ha and 0.7 kg P/ha less than is estimated to occur under good agricultural practice. This was based on the TLI in the Wairepo Arm being 3.18.
- 12.22 However Ms Sutherland (on behalf of Meridian) submitted that the median summer TLI (from 3 years of data prior to her writing the report) was 3.7, which is towards the eutrophic end of the scale, and, if assessed on TP the TLI was 3.95 (almost at the eutrophic boundary). She argued that water quality in the Wairepo Arm appears to be degrading under the existing land-use intensification, and that by inference, further nutrient additions will push this water body into the eutrophic zone. In her addendum evidence she showed satellite photos (Figure 4), which demonstrated a dramatic increase in pivot irrigation in the Wairepo subcatchment between 2005 and 2009, which supported her premise that water quality was degrading.
- 12.23 We have not received guidance from the s42A officers on how much additional nutrient load the Wairepo Arm could absorb without becoming eutrophic, which all experts agree would be an undesirable consequence. We recognise that although Birchwood is a replacement for an activity that has been ongoing, it has contributed (cumulative effects) to the undesirable state that Ms

Sutherland identified. We also note that the granting of Benmore Irrigation Company consents and the additional irrigation applied to Birchwood Run (Glenbrook Station) as a consequence has undoubtedly been a significant factor in the trend Ms Sutherland observed.

- 12.24 We agree with Ms Sutherland that there is a significant risk that the Wairepo Arm may turn eutrophic and that there is already a significant nutrient load on the Wairepo Arm from recent (2004-2009) irrigation activities which may not yet be exerting its full effect due to travel time considerations.
- 12.25 While we recognise that the nutrient load arising from this particular application is small compared with that arising from irrigation installed more recently it is still contributing to the cumulative effect. We note that we are bound to consider the effects of replacement consents in exactly the same way as we would for new applications. In this case we disagree with the applicant that it having a less than minor effect on water quality. Taken in isolation it could be argued that it was having a minor effect on the trophic state of the Wairepo Arm, but it definitely is contributing to a significant effect. We do not think that any water body in this region should be at risk of becoming eutrophic, but that is precisely the situation that applies in the Wairepo Arm according to Ms Sutherland. As noted in Part A we found Ms Sutherland to be a very credible witness and we have no reason to disagree with her opinion on this matter.

Haldon Arm of Lake Benmore

- 12.26 In Part A we determined that the Haldon Arm of Lake Benmore can assimilate an increased nutrient load from the granting of consents (with mitigation) and remain within an oligotrophic state. While we did not accept the MWRL proposition as a whole (that all consents could be granted) we did accept that the increased nutrient load from irrigation would not cause a more than minor effect to the Haldon Arm of Lake Benmore; mainly because of the high inflows from the Ōhau B/C canal and the concomitant relatively short residence time.

Groundwater

- 12.27 We agree with Dr Bright that effects on groundwater in this case are manifest by interaction with surfacewaters, which are dealt with through policy considerations.

Periphyton growths Wairepo Creeks

- 12.28 Dr Coffey's evidence (MWRL, Part A) included information on periphyton surveys in Wairepo Creek. He reported an increase in average periphyton cover and biomass between Sampling Sites Wairepo Upper and Wairepo Lower, but both cover and biomass were relatively low. He also noted there was no existing irrigation upstream of hard-bottomed Sampling Site Wairepo Upper or Wairepo Lower. However, there was extensive existing irrigation between Sampling Sites Wairepo Lower and the soft-bottomed Wairepo Node. We infer from this description that the applicant's property lies within this reach. We do not have information as to whether Wairepo Creek, as it passes through the applicant's property is hard-bottomed (suitable for periphyton growth) or soft bottomed (not suitable)
- 12.29 In Part A we rejected the MWRL proposal that the threshold for periphyton growth should be a 25% increase in maximum annual biomass calculated from modelled 'current' nutrient concentrations. We found instead, that MfE periphyton guidelines are applicable and should be used to protect streams from nuisance periphyton growths.
- 12.30 MWRL did not consider periphyton growth in Wairepo Creek constituted the most stringent requirement for nutrient mitigation but they may have done so had the MfE periphyton guidelines been adopted.

Avoided, remedied or mitigated

- 12.31 Because this is a replacement consent, we acknowledge that its effects are already manifest in the environment. While there has been no information presented on local effects presented by the applicant, based on Dr Coffey's (MWRL) evidence we accept that these are minor. As noted above, however, our view is that the applicant's activities are contributing to cumulative effect and these cumulative effects are significant.
- 12.32 The applicant has offered mitigation in the form of fencing out stock, riparian planting and construction of a settling pond. We accept that these are worthwhile mitigations though there

effects on nutrient losses are uncertain. We have taken these mitigation measures into account in making our final decision.

Landscape

12.33 No party raised any issue with the effects of the proposal on landscape values, however for completeness we have covered this off. In summary, based on the existing modified nature of the irrigation area (which is already irrigated), the unobtrusive nature of the irrigation infrastructure (border-dyke) and the low visibility of the site from public viewing points, we consider that there will be no adverse effects on landscape values that require mitigation.

Cultural effects

12.34 There were no property specific issues identified in the evidence of Ngāi Tahu witnesses concerning this application. The application is of a modest scale that seeks the continuation of an existing activity and sits within the range of applications that Ngāi Tahu advised would not pose a risk to cultural values.

12.35 The general concern that Ngāi Tahu expressed relating to the cumulative impacts from this and other irrigation proposals before this hearing are relevant in respect of potential effects on small aquatic habitats and the water quality of receiving waters.

12.36 While the Wairepo Creek and Wairepo Arm do not appear to have a specific cultural value to Ngāi Tahu, they are a feeder for the Haldon Arm of Lake Benmore which is of particular interest to Ngāi Tahu for its potential for mahinga kai habitat and restoration. Mitigating the cumulative effects of the application remains an important task.

12.37 We consider that with the implementation of the FEMP and proposed conditions of consent the effect on cultural values of this proposal will be minor.

Effects of works in the bed

12.38 We accept Ms Penman's concerns that the applicant has not provided sufficient details for her to be sure that the effects of the activity will be minor. However we note that the applicants intended activities here are restricted to maintenance works needed to re-build the diversion bund after heavy rain and/or flooding has washed the bund away.

12.39 Our view is that any effects of this activity will be temporary in nature and will not result in more than minor effects provided the guideline that the applicant has agreed with are followed.

Key conclusions on effects

12.40 In relation to the actual and potential effects of the proposal, our key conclusions are as follows.

12.41 There are no effects on other users as a result of granting this consent other than preventing other applicants with lower priority from getting consent. This is not an environmental effect but rather a matter of law.

12.42 Granting this consent would not result we think in an efficient and effective use as sought under the WCWARP a matter we will return to later. However, we do acknowledge that for a border-dyke system it does reach a higher level of efficiency.

12.43 We agree with the proposed flow regime for Wairepo Creek and associated mitigation measure to protect instream flows and ecosystems.

12.44 Although this is a replacement consent it is contributing to significant environmental effects on the Wairepo Arm of Lake Ruataniwha. The mitigations offered by the applicant are worthwhile but their effects on reducing nutrient losses (and hence effects on the Wairepo Arm) are uncertain.

12.45 The effects on cultural values will be minor.

12.46 Based on Mr Glasson's assessment we accept there will be effects which can properly be described as no more than minor in terms of landscape.

12.47 In terms of the activities in the bed of the river we are of the view the effects of maintaining the bund will be temporary in nature and in any event will be no more than minor.

13 EVALUATION OF RELEVANT PLANNING INSTRUMENTS

- 13.1 Under s 104(1)(b) of the Act, we are required to have regard to the relevant provisions of a range of different planning instruments. Our Part A decision provides a broad assessment of those planning instruments and sets out the approach we have applied to identification and consideration of the relevant provisions. The following part of our decision should be read in combination with that Part A discussion.
- 13.2 In relation to the current applications, we consider that the most relevant and helpful provisions are found in the regional plans, including in particular the WCWARP and the NRRP. The following sections of this decision provide our evaluation of the key objectives and policies from these planning instruments. We have organised our discussion in accordance with the key issues arising for this application.

Efficient use of water

- 13.3 Stepping back from the issue a little we are alive to the point that the WCWARP allocates and provides through the resource consenting process access to a public resource. Those using the resource have a responsibility to use it wisely and exercise a stewardship role. The plan objectives and policies on efficient use demonstrate this ethic of stewardship in action principally through the objective of avoiding waste ensuring that economic, social and cultural wellbeing is maximised through using water efficiently and effectively.
- 13.4 We are also alive to the point that the policies within the plan directed at efficient and effective use do not have an associated rule. That means that we have full discretion over whether or not to grant the resource consent after considering a number of factors including those relevant policies.
- 13.5 We are clear in our view that the plan retains and expects a high level of irrigation application efficiency and in our view seeks improvements and gains an efficient use of water.
- 13.6 This is especially so we think in respect of existing resource consents seeking renewal. It is clear and obvious that there is no other occasion once a resource consent has been granted to reconsider the effective and efficient use of water. The provisions of the plan are only available when a consent is being sought or a new replacement application has been made as is the case before us.
- 13.7 The authors of the plan we note have been deliberate in addressing efficiency by assuming a high level of technical efficiency in the allocation to activities through policy 18 and critically in this case through policy 28 on replacement consents.
- 13.8 Policy 28 as we see it requires considering and balancing a range of issues. Firstly whether all reasonable attempts to meet the efficiency expectations of the plan have been undertaken. Next to recognise the value of the investment of the existing consent holder and finally to maintain the inclusion of the consent if granted and any allocations limits and priority bans.
- 13.9 In this instance we have considered carefully the attempts made to meet the efficiency expectations of the plan. Other than focusing on annual volume we did not receive any quality material on reasonable attempts to meet the efficiency expectation of the plan. The core element in terms of meeting the efficiency expectations of the plan revolved around annual volume as distinct from direct improvements to the border dyke system. In any event we do acknowledge there is only so much that can be done in that regard.
- 13.10 The way that we read policy 28 is that the core consideration is the efficiency of the water being used under the existing consent. That is critical to ensure that the efficiency expectations of the plan are implemented. In this case while the border dyking system is efficient for a border dyke system it still falls short of the irrigation application efficiency of 80%.
- 13.11 We acknowledge that it is to be seen as consideration of irrigation application efficiency as distinct from a slavish adherence to a percentage figure. However if we do not take this opportunity to address the issue then this applicant could continue their border dyke system with this inherent inefficiency for the duration of the consent. We do not think that best meets the objectives and policies of the WCWARP.
- 13.12 We do acknowledge the investment made by this applicant in our considerations. We have already noted the age of the border dyke system. We also acknowledge that it is expensive to

convert from border dyke to some form of spray system. However we are aware that conversion to k-line spray systems for smaller areas is certainly economically achievable.

- 13.13 In simple terms we think that given this is the singular opportunity to address the efficient and effective use of the public resource we need to give this issue significant weight in our considerations.
- 13.14 Objective (4) of the WCWARP seeks to promote “*the achievement of a high level of technical efficiency in the use of allocated water*”. The technical efficiency of this application is inconsistent with the provisions of the WCWARP.
- 13.15 Policies 15 – 20 deal with efficient and effective use of water and are applicable to this application. The Policies provide for an efficient use of water so that net benefits are derived from its use and are maximised and waste minimised. We are not satisfied that the rates and annual volumes sought by the applicant reflect an efficient and effective use of water and that the reasonable use test can be met. We note that we need only consider how the application meets the policies under the plan and that we may take into account other factors (such as the value of existing infrastructure). Having considered those factors our view that the proposed irrigation will not comply with the reasonable use and efficiency provisions of the WCWARP and that to grant a consent of long duration with inefficient use of water is not consistent with the important objectives and policies of the WCWARP.

Water Quality

WCWARP

- 13.16 In relation to the WCWARP, we consider that Objective 1 is the critical objective. In particular, Objective 1(b) seeks to safeguard life-supporting capacity of rivers, lakes, and Objective 1(d) seeks to safeguard the integrity, form, functioning and resilience of a braided river system.
- 13.17 We have determined that in granting these consents the load arising from this activity will contribute to a significant cumulative effect: i.e. the trophic level of the Wairepo Arm of Lake Ruataniwha. However we consider that the measures offered by the applicant in the FEMP are sufficient to mitigate the effects of the activity. We note that the current border dyke system does not have any direct discharge to surface waters.
- 13.18 Overall, we conclude that a grant of consent, with conditions, would be consistent with Objective 1(b) and 1(d) WCWARP.
- 13.19 Objective 1(c) requires us to manage waterbodies in a way that maintains natural landscape and amenity characteristics and qualities that people appreciate and enjoy. Given our findings in terms of effects on water quality then our view is that granting consent can be consistent with Objective 1(c).
- 13.20 We note that Objectives 2, 3, 4, and 5 are “in the round” deal with and provide for the allocation of water. The critical qualification is that water can be allocated provided that to do so is consistent with Objective 1. Given the findings we have made about Objective 1 we conclude that allocating water in terms of the balance objectives would be consistent with the overall scheme of the WCWARP. We reach this view taking into account the national and local costs and benefits (environmental, social, cultural and economic) of the proposal, as required by Objective 3.
- 13.21 Policy 13 links the WCWARP to the PNRRP (as it existed at the time) by requiring us to have regard to how the exercise of the consent could result in water quality objectives of the PNRRP not being achieved. As we explained in our Part A decision, we have considered the objectives of the PNRRP and the now operative NRRP in relation to the current proposal. However we have generally given greater weight to the NRRP provisions on the basis that they represent the current approach for achieving the common goal of protecting water quality.

NRRP

- 13.22 Under the NRRP, the Wairepo Arm of Lake Ruataniwha is classified as an “Artificial Other Lake”. Objective WQL1.2 of the NRRP seeks to ensure that the water quality of the lake is managed to at least achieve the outcomes specified in Table 6, including a maximum Trophic Level Index (“TLI”) of 4 (i.e. mesotrophic-eutrophic boundary). For the reasons discussed above, we consider that granting consent to the proposal with mitigation conditions is consistent with this

objective and would not (in combination with others we grant) cause the TLI maximum to be breached.

- 13.23 Wairepo Creek is classified as Hill-Fed Upland Rivers under the NRRP. Objective WQL1.1 of the NRRP seeks to ensure that the water quality of such rivers is managed to at least achieve the outcomes specified in Table 5. A key indicator for these applications is that maximum chlorophyll-*a* should be less than 50 mg /m² (periphyton guideline for safeguarding aquatic biodiversity and also recreation). Hill-fed upland rivers also have associated water quality performance standards for DRP and DIN (Table WQL16) of 0.006 and 0.21 mg/L, respectively.
- 13.24 We understand that the applicant and reporting officer agreed on periphyton water quality conditions that included a 120 mg/m² Chlorophyll *a* standard (and an early warning trigger of 90 mg/m² Chlorophyll *a*) for Wairepo Creek. We appreciate that when those parties reached that agreement the NRRP was not operative, and issues relating to water quality objectives and standards had not reached the status that we have today.
- 13.25 We must have regard to the current provisions of the NRRP and therefore we have given considerable thought to the situation that applies to the Wairepo Creek. We note the following:
- (a) Dr Coffey's (MWRL) evidence that periphyton cover and biomass indicated a progressive increase in available plant nutrients moving downstream in Wairepo Creek but that periphyton biomass at the lower site was still "low".
 - (b) Dr Coffey's evidence the structure of aquatic macroinvertebrate communities indicated instream habitat quality reduced from very good at the Upper Wairepo site to fair at the lower site, and poor at the Wairepo node. We note the node site was soft-bottomed and that substrate rather than water quality was the chief determinant of macroinvertebrate community index.
 - (c) Tributaries of Wairepo Creek are also classified as "Hill-fed Upland" which has the same maximum periphyton standard (50 mg/m² chlorophyll *a*) and water quality performance standards as for the main stem.
 - (d) The New Zealand Periphyton Guidelines, that we were provided with at the hearing and heard were a critical source for the NRRP specified outcome, provide for 50 mg/m² chlorophyll *a* as a guideline for oligotrophic streams with diverse "clean-water" benthic invertebrate communities. While there is scant data, Dr Coffey's evidence suggests that this may not apply to the Marfy Burn at present.
- 13.26 Because the plan is unequivocal with respect to water quality outcomes expected for Wairepo Creek and tributary inflows, we consider that the standard trigger for Wairepo Creek should be 50 mg/m² chlorophyll *a* together with water quality performance standards for DRP and DIN of 0.006 and 0.21 mg/L respectively, Because 50 mg/m² chlorophyll *a* is indicative of oligotrophic water quality, and also because the methodology for periphyton biomass estimation below this threshold is subject to significant error, our view is that there is no case for having an early warning trigger. Thus we have modified the condition set to reflect this standard trigger and the provisions for reducing irrigated area in the event these conditions are breached.

Conclusions on water quality provisions

- 13.27 Overall then having regard to the scheme of the WCWARP and the NRRP we reach a conclusion that granting consent to the proposal with conditions agreed by the applicant and additional conditions imposed by us will be consistent with the key objectives and policies of both of these plans relating to water quality.

Landscape and amenity

- 13.28 We discussed the relevant objectives and policies for landscape in our Part A Decision. In summary these are primarily found in the Proposed and Operative CRPS and the NRRP. In broad terms these provisions seek the protection of outstanding natural landscapes from inappropriate use and development.
- 13.29 In considering these provisions we are informed by the provisions of the Waitaki District Plan. In summary, there is nothing in the planning instruments that alters our conclusion that the proposal is appropriate for the environment in which they are located and will therefore be consistent with the relevant objectives and policies relating to landscape.

Tangata whenua

- 13.30 The proposed activity will potentially impact on the matters outlined in Objective 1. In particular, sub-section (a) relating to the spiritual and cultural values of Tangata Whenua. This is an existing small scale irrigation activity; the proposed mitigation measures will ensure that this activity is consistent with the objective. This is particularly so if a grant for a short term period is made.
- 13.31 Objective WQN1 from Chapter 5 of the NRRP seeks to enable present and future generations to access the regions surface water and groundwater resources to gain cultural, social, recreational, economic and other benefits, while sub-section (c) safeguarding their value and providing mahinga kai for Ngāi Tahu. The Ngāi Tahu aspiration to undertake restoration of mahinga kai in the Haldon Arm of Lake Benmore will be unaffected by this activity. Particularly where a short term of consent is granted.
- 13.32 Objective WTL1(a) and (d) from Chapter 7 of the NRRP includes provisions that seek to achieve no overall reduction in the contribution of wetlands and waterways to the relationship of Ngāi Tahu and their culture and traditions with their ancestral lands, water, mahinga kai sites, waahi tapu and waahi taonga. The Ngāi Tahu objective of restoring mahinga kai habitat in the Haldon Arm is reliant on retaining existing water quality and ecosystem health in the tributaries which include the Wairepo Creek and Wairepo Arm. This goal of enhancing water quality will be aided particularly if the border dyke application system is converted to some form of spray in the not too distant future.
- 13.33 We find that the proposed activity with the application of the FEMP and consent conditions will be consistent with the above Objectives. `

Works in the bed

- 13.34 Objective BLR1 cover activities within the beds and margins: This objective aims to ensure that works in the beds and banks of rivers and streams can be undertaken while minimising effects, including flood-carrying capacity, natural character, ecosystems, other structures, erosion, and Ngāi Tahu values. We are satisfied that given the temporary nature of the activity and the minor effects that might ensue, granting the consent is consistent with this objective.
- 13.35 Policy BLR1 governs effects of activities within the bed or margins: This policy aims to control activities within the bed and within 7.5 metres of the banks or any flood control structure to ensure that objective BLR1 is achieved. We are satisfied that granting the consent is consistent with the policy.

Key conclusions on objectives and policies

- 13.36 For all the above reasons we consider that provided the consent for a short term duration and includes appropriate conditions that granting consent would be consistent with the objective and policies of the relevant plans. We have reached this conclusion taking into account the relevant planning provisions in respect of water quality, efficiency, environmental flows, landscape, and tangata whenua values.

14 EVALUATION OF OTHER RELEVANT S104 MATTERS

- 14.1 Under s104(1)(c), we are required to have regard to any other matter that we consider to be relevant and reasonably necessary to determine the application. In addition, s104(2)A requires that:
- “When considering an application affected by section 124, the consent authority must have regard to the value of the investment of the existing consent holder”]*
- 14.2 We record here that we have considered the value of the applicant’s existing investment in coming to our decision. The key point for us here is that the border dyke system is of some age. We have concluded that the applicant has had an opportunity to obtain a return on its investment in the border dyke system.

- 15.1 Section 104(1) states that the matters which we have discussed above are subject to Part 2, which covers section 5 through section 8 inclusive. These sections are set out in full in our Part A decision and are discussed below in the context of the current applications.

Section 6 – Matters of National Importance

- 15.2 Sections 6 identifies matters of national importance that we must “recognise and provide for” when making our decision, including in particular preserving the natural character of lakes and rivers (s6(a)), protecting outstanding natural features and landscapes (s6(b)) and the relationship of Māori with the environment (s6(e)).
- 15.3 In terms of section 6 we are aware that the proposal will include development on the margins of a high natural character waterbody within an area of outstanding natural landscape. However, development has already occurred in this area and therefore this additional development is less problematic. Protection of margins of neighbouring waterbodies, lakes, rivers and streams has been provided for. We are satisfied that the potential adverse effects on habitats of significant indigenous flora and fauna have also been addressed. We are comfortable that there will not be adverse impacts on the relationship of Māori to water.
- 15.4 Regarding Section 6(e), we are cognisant of the relationship that Ngāi Tahu hold with the natural resources of this catchment. While no specific sites or values were specified by Ngāi Tahu in relation to this application, we believe that the mitigation measures and conditions provide for the broader cultural relationship of Ngāi Tahu.
- 15.5 For the above reasons, we consider that granting consent for a short duration to the proposal would recognise and provide for s6 matters, as we are required to do under the RMA.

Section 7 – Other Matters

- 15.6 Section 7 lists “*other*” matters that we shall “*have particular regard to*”. We make the following observations in relation to each of those matters as they are relevant to this application, referring to the sub paragraph numbers of s7.
- 15.7 Sub-section (a) refers to kaitiakitangā. We consider that granting consent for a short duration for the proposed activity with mitigation measures and conditions sits within the acceptable environmental parameters outlined by Ngāi Tahu such that that it will not cause distress to the function of kaitiakitangā.
- 15.8 Sub-section (b) of section 7 relates to the efficient use of water. We do not consider the applicant, for reasons advanced above, has secured substantial efficiency gains but we think that providing a short term duration consent will enable the applicant to do so in the not too distant future.
- 15.9 Sub-section (c) relates to maintenance or enhancement of amenity values. We are of the view that adverse effects arising from the border dyke irrigation system are acceptable in the short term with the mitigation measures provided. However in the not too distant future conversion of the existing border dyke system to a spray irrigation system will not only maintain and enhance amenity values but would improve them.
- 15.10 Sub-section (d) refers to intrinsic values of ecosystems. We are again we are of the view the intrinsic values of ecosystems would be better met if the border dyke system were converted to spray. A grant for a limited duration has due regard to this matter.
- 15.11 Sub-section (f) refers to maintenance and enhancement of the environment. Critically, we think that reducing adverse effects on water quality which would have occurred if the existing system were converted to spray is an important goal. Nevertheless we are satisfied on an interim basis that sub-section (f) matters are addressed by a grant of short duration
- 15.12 Sub-section (h) refers to the protection of trout and salmon, which is relevant to the system conversion and cessation of discharges to Mailbox Swamp Creek. Protection from stock is also necessary for Mailbox Swamp Creek and fish screening is also provided for, which are important matters.

15.13 Having particular regard to the above matters in the context of Section 7 we conclude that a grant of consent for short term duration can be supported.

Section 8 – Treaty of Waitangi

15.14 Finally, section 8 requires that we shall take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi).

15.15 The cultural values of tangata whenua are appropriately recognised in the relevant planning documents applicable to the Mackenzie Basin sufficient to alert applicants to the need to address such values. We are satisfied that the notification of the appropriate Runanga and tribal authority has been followed and that the applicant was a contributor to the general assessment of the impact of irrigation activities on cultural values.

15.16 We are satisfied that the consultation procedures provided Ngāi Tahu the opportunity to understand and respond to the proposed activity, albeit in conjunction with a large number of applications in the Mackenzie Basin.

Section 5 – Purpose of the RMA

15.17 Turning now to the overall purpose of the RMA, that is, “to promote the sustainable management of natural and physical resources”.

15.18 In our view the proposal will allow the development of land to occur which will continue to provide for the economic and social well being of the community. We are satisfied that farm management plans and the set of conditions included will enable the applicant in the short term to avoid, remedy or mitigate potential impacts on ecosystems and water quality as particularly required by s52(c).

15.19 However we have concluded that granting a consent of the “usual duration” would not meet the Act’s goal of sustainable management because in our view we would not be managing the use and development and protection of the natural and physical resource namely water in a way or at a rate which enables people in communities to provide for their social, economic and cultural well being and their health and safety. This is so because we have included that the border dyke system here proposed does not result in an efficient and effective use of the water resource. That leads us to conclude in all of these circumstances a short term duration consent is appropriate. We discuss the issue of duration further below.

16 OVERALL EVALUATION

16.1 Under s104B of the RMA, we have a discretion as to whether or not to grant consent. This requires an overall judgment to achieve the purpose of the Act and is arrived at by:

- (a) Taking into account all the relevant matters identified under s 104;
- (b) Avoiding consideration of any irrelevant matters;
- (c) Giving different weight to the matters identified under s 104 — depending on our opinion as to how they are affected by the application of s 5(2)(a), (b), and (c) and ss 6-8 — to the particular facts of the case; and then in light of the above; and
- (d) Allowing for comparison of conflicting considerations, the scale or degree of conflict, and their relative significance or proportion in the final outcome.

16.2 In our Part A decision we concluded that it would be risky to grant any new consents in the Wairepo Arm catchment because of the potential for that waterbody to become eutrophic. This application is for a replacement consent and therefore it can be argued it forms part of the existing environment and thus is reflected in the existing TLI of the Wairepo Arm of Lake Ruataniwha. That said, the evidence is that the TLI is very close to 4 (eutrophic) and thus we concluded that this application was contributing to this cumulative effect on the Arm.

16.3 Having said that, we recognise that the area irrigated by this applicant is small compared with the expansion of recent irrigation documented by Ms Sutherland. We note however, that some of this new irrigation is on the applicants property authorised under the Benmore Irrigation Company Consents.

- 16.4 Taking into account the small area of this replacement consent, and the mitigation measures offered by the applicant our view is that granting this consent will not cause the TLI to rise and therefore a grant is possible.
- 16.5 The other issue that gave us concern was that of water efficiency. The WCWARP is, in our view very clear in its expectations of minimum efficiency (80%). While this system is operating at 70% efficiency, which is high for a border dyke system, it still does not meet the WCWARP requirement. Given that this system has been in operation for ~40 years our view is that the property has more than recouped their investment and that it is time to upgrade to a more efficient spray system.
- 16.6 We have been consistent in this approach throughout our decisions. We have therefore decided to grant consent for continuation of the border dyke system for 5 years. This is because to allow a grant for a longer term with the inherent inefficiencies that concern us does not meet either the purpose of the RMA or support the objective and policy base of the WCWARP. In addition, the short term consent will allow the applicant time to design and apply for an alternative spray system with improved efficiency.
- 16.7 Granting consent for only five years to enable conversion to spray will have other resource management benefits such as;
- (a) Reducing nutrient loss, particularly phosphorus losses which are much less in a spray system and,
 - (b) Reduce pressure on the Wairepo Creek in terms of allocation and minimum flow.
- 16.8 Having reviewed the application documents, all the submissions, taking into account the evidence to the hearing and taking into account all relevant provisions of the RMA and other relevant statutory instruments we have concluded that the outcome which best achieves the purpose of the Act is to **grant** consent.

17 CONDITIONS

- 17.1 Given our decision to grant consent, we have given careful consideration to the conditions that are necessary to avoid, remedy and mitigate the potential adverse effects of the proposal. The starting point we have used for this exercise is the final condition set provided by the applicant. This was the result of a collaborative process that occurred after the conclusion of the hearing, as described in our Part A decision.
- 17.2 The condition set provided to us includes comments on discrete issues from Council officers and several submitters. Where any such comments have been made, we have taken this into account when arriving at the final condition set. We are proceeding on the basis that the condition set provided to us incorporates all relevant conditions required by Meridian Energy as part of its derogation approval, which has been confirmed by legal counsel for Meridian.
- 17.3 We have made some modifications and additions to the condition set provided to us. However all modifications respect the conditions attaching to derogation approvals provided by Meridian. Several of these changes relate to matters discussed in the preceding sections of this decision to ensure that any concerns we have about potential effects are adequately addressed.
- 17.4 In addition, we make the following comments on conditions relating to nutrients and thresholds. These comments are written in a general style that applies to all applications before us. However they are directly relevant to this application. We have incorporated the intent of these comments into the conditions attached to this decision.

Nutrients and thresholds

- 17.5 In Part A we rejected the MWRL proposition that we could grant all the applications before us with conditions.
- 17.6 Much of the evidence on conditions presented by all parties to this hearing centred on the issue of determining whether grantees in a particular subcatchment had breached the nutrient allowance at a particular node, and if they had, how ECan could determine either which consent holder had caused the breach and whether one or all consent holders needed to take corrective action.

- 17.7 In rejecting the MWRL case, which relied upon existing irrigators lessening their nutrient load so that there would be assimilative capacity for new irrigators, we need to record our approach to ensuring that consents we grant do not cumulatively result in the trophic level index (TLI) of Lake Benmore exceeding 3.00, or the TLI of the Wairepo Arm of Lake Ruataniwha exceeding 4.00. As we recorded in Part A our view is that for those waterbodies, the difference between current nutrient load, and the load resulting in unacceptable increases in the TLI of these waterbodies is so small that it would be risky to try and allocate that new load. In the case this application to the Wairepo Arm, we are comfortable that it will not result in the TLI threshold being breached because it is a replacement consent and mitigation are offered that should reduce nutrient exported.
- 17.8 For those applications that we are inclined to grant, we have assessed their 'cumulative effects', taking careful note of the complete package of mitigation measures they propose on their property. These mitigation measures may be in relation to a separate application before us but on the same property and therefore 'captured' in the FEMP. We note that priority order is not an issue with respect to this application.
- 17.9 We have kept a check on new irrigation resulting in additional nitrogen and phosphorus loads proposed by applicants in relation to those mitigation measures and not granted consents that would, in our view, lead to a significant net increase in critical catchments.
- 17.10 This approach will, in our view, ensure that the TLI of the critical lake ecosystems does not rise as a result of our granting these applications. This approach is, we believe, consistent with the NRRP, which has as an objective and maintenance or improvement of water quality.
- 17.11 Recognising that streams and rivers in the catchment are nutrient limited by nitrogen and/or phosphorus, and that the NZ (MfE) Periphyton Guidelines provide appropriate thresholds for managing nuisance periphyton growths does, we believe, provide another monitoring tool for not only ensuring that streams and rivers are suitable for recreation and provide suitable habitat for invertebrates and fish, but also provide another defence to downstream lake ecosystems. The reporting of breaches in periphyton guidelines together with correction mitigation actions, provide a tool to prevent excess nutrients reaching the lakes as well as safeguarding the river concerned.
- 17.12 We recognise that that where leachate enters groundwater that does not discharge to streams or rivers prior to entering Lake Benmore, periphyton monitoring is not appropriate. However for the majority of the applications before us, there is a stream or river downstream that provides a logical focus for offsite monitoring efforts. That is the case is relation to this application.
- 17.13 The advantage of stream water quality and periphyton monitoring is that it puts more emphasis on local monitoring and less emphasis on uncertain (given our findings on the WQS) modelling. We are of the view that as far as possible, consent monitoring should be related directly to the applicant's activities.
- 17.14 We noted that the agreed conditions between the applicant, Council Officer and submitters included a condition to monitor Wairepo Creek, but the thresholds that triggered a management response from the consent holders were more lenient (90 mg/m² chlorophyll than the 50 mg/m² condition we have imposed. This is because the now operative NRRP classification of the Wairepo Creek indicates it is a high value water body and deserving of that protection. We note that the applicant should be able to comply with this condition with the additional conditions we have prescribed, but that if they cannot, then they will have to devise a strategy to ensure compliance.
- 17.15 We did consider whether or not any useful resource management purpose would be served by requiring those applicants draining into the Haldon Arm to monitoring lake TLI. For replacement consents where effects are minor or very small areas of new irrigation, we consider that such a monitoring requirement would be excessive. However for applicants seeking sizeable areas of new irrigation (particularly those that have proposed monitoring conditions), we consider that monitoring should take place. As this is a replacement consent, we carefully considered whether lake monitoring would serve a useful purpose.
- 17.16 We do note that the agreed conditions included monitoring the Haldon Arm of Lake Benmore. Our view was that if lake monitoring was to be imposed in this case it should be for the Wairepo Arm of Lake Ruataniwha, which is the proximate water body to Birchwood Run and is under more stress than the Haldon Arm.
- 17.17 However on balance, we decided to exclude lake monitoring conditions because:

- (a) It is a replacement consent,
- (b) Although contributing to cumulative effects on the Wairepo Arm, the area under irrigation is small compared with other irrigation in the catchment that are outside of this consent process, and to impose conditions requiring a reduction in irrigation for this applicant while the main contributing irrigation areas were excluded, would serve no useful resource management purpose,
- (c) We have imposed stream monitoring conditions which, if complied with, should ensure there are no 'additional' effects on the lake that could not have been predicted, and,
- (d) We are granting for only 5 years.

18 DURATION

- 18.1 Efficient use of water is the key issue for determination in this decision. We do not think that a grant of consent for 35 years as sought particularly taking into account in particular the inefficient use of water that would arise from that outcome is consistent with sustainable management. We have considered the evidence in terms of the quantity of water that would be required to irrigate this area using a more efficient application system. We think that to allow continued use of this high volume of water is not sustainable while there exist options to utilise the water resource in a much more efficient manner.
- 18.2 In arriving at this conclusion we have considered the applicant's approach to avoiding, remedying or mitigating adverse effect of the consented activity. We have also considered the costs and benefits of the activity to the community as best we are able and we have had regard to the consent holders' capital investment in the pre-existing activity.
- 18.3 Unlike many other proposals before us, the applicant did not offer to convert to spray within five years or provide any details of a spray system that could replace the existing border dykes. We therefore did not have the option of granting a longer term consent with a requirement for conversion after five years and a corresponding reduction in annual volume.
- 18.4 For the reasons discussed earlier in this decision, we consider that the appropriate approach is to grant consent for a limited duration of five years for both applications to provide the applicant time to design and apply for an alternative spray system to replace the existing border dyke system.

19 DECISION

- 19.1 Pursuant to the powers delegated to us by the Canterbury Regional Council; and
- 19.2 For all of the above reasons and pursuant to sections 104 and 104B of the Resource Management Act 1991, we **GRANT** application by Birchwood Run Ltd for the following activity:
- CRC012291** - To divert surface water from Spring Creek to an irrigation race and take and use water from the irrigation race at a maximum rate not exceeding 57 litres per second, and a volume not exceeding and 336,000 cubic metres per year for the border dyke irrigation of 56 hectares of crops and pasture at Birchwood Run Station, Twizel-Omārama Road; and
- CRC012290** - To disturb the bed and banks at the confluence of Wairepo Stream and Spring Creek for the purpose of maintaining a gravel bund
- 19.3 Pursuant to section 108 RMA, the grant of consent is subject to the conditions specified at **Appendices A and B**, which conditions form part of this decision and consent.
- 19.4 The duration of these consents shall be five years from the commencement of this consent.

DECISION DATED AT CHRISTCHURCH THIS 29TH DAY OF MARCH 2012

Signed by:

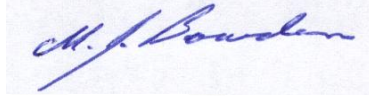
Paul Rogers



Dr James Cooke



Michael Bowden

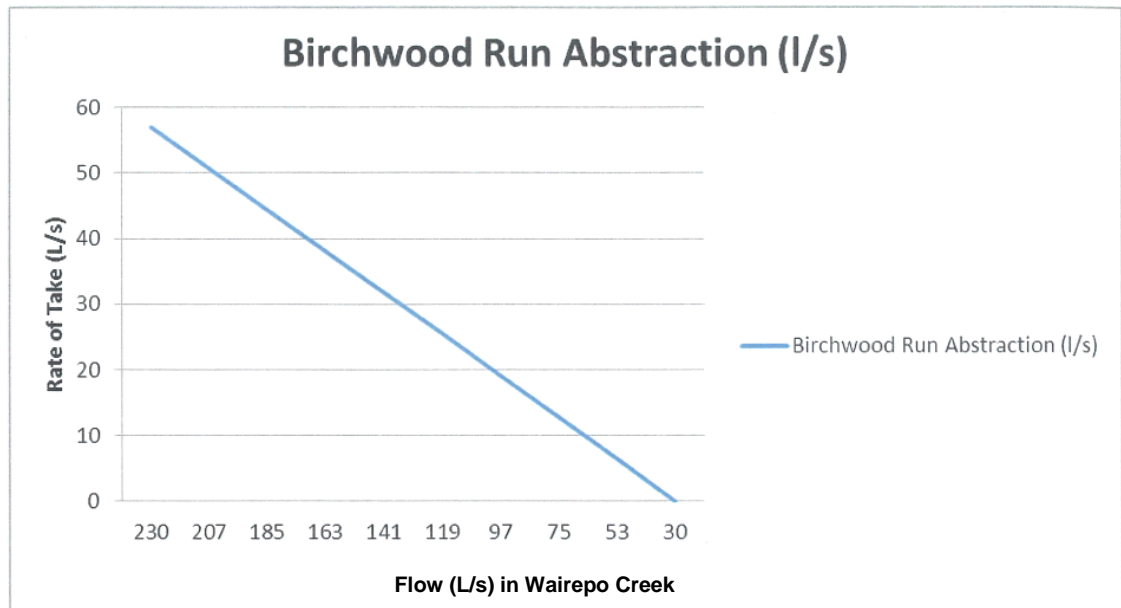


Edward Ellison



Diversion and take of water

1. Water shall only be diverted from the Wairepo Creek , at or about map reference NZMS 260 H39:7534-4837
2. Water for irrigation purposes shall only be taken from the race at a rate not exceeding 57 litres per second, with a volume not exceeding 4,924 cubic metres per day and 336,000 cubic metres per year between 1 July and the following 30 June.
3. Subject to Condition 4, whenever the flow in Wairepo Creek, immediately upstream of Wairepo Lagoon, as measured by the Canterbury Regional Council calculated as the mean flow for the previous 24 hour period (midnight to midnight) at map reference NZMS 260 H39:7618-5177:
 - (a) is equal or greater than 230 litres per second, the maximum rate at which water is taken shall not exceed 57 litres per second;
 - (b) falls below the flow shown for irrigation on the horizontal axis of the Minimum Flow Graph attached to these conditions, then the rate of abstraction permitted in terms of this permit shall not exceed those shown as corresponding flows on the vertical axis;
 - (c) is equal to or less than 30 litres per second the taking of water in terms of this permit for irrigation purposes shall cease.



4. Where the Canterbury Regional Council, in consultation with a Water Users Committee representing, but not limited to, surface water and hydraulically connected groundwater users who are subject to the above minimum flow, has determined upon a water sharing regime that limits the total abstraction from the resource as referred to above, then the taking of water in accordance with that determination shall be deemed to be in compliance with Condition 3.

Use of water

5. Water shall only be used for the irrigation of 56 hectares of crops and pasture per irrigation season for grazing sheep, beef, cattle and deer within the area of land shown on attached **Plan CRC012291-A**, which forms part of this consent.
6. There shall be a minimum 5 metre setback, where there is no irrigation, from any permanently flowing waterways within the irrigation area marked on **Plan CRC012291-A**.

7. The consent holder shall take all practicable steps to:
 - (a) Ensure that the volume of water used for irrigation does not exceed that required for the soil to reach field capacity; and
 - (b) Avoid leakage from pipes and structures; and
 - (c) Avoid the use of water onto non-productive land such as impermeable surfaces and river or stream riparian strips.
8. The consent holder shall ensure water races used to convey water diverted in terms of this permit are well maintained to minimise losses.

Water metering – Minimum flows

9. The consent holder shall, prior to exercising this consent, install:
 - (a) a water level measuring device in a stable reach of Wairepo Lagoon at map reference NZMS 260 H39:7618-5177 that will enable the determination of the continuous rate of flow in the reach of the water body to within accuracy of ten percent.
 - (b) a tamper-proof electronic recording device such as a data logger(s) that shall time stamp a pulse from the flow meter at least once every 15 minutes.
10. The measuring device shall be installed at a site that will retain a stable relationship between flow and water level. The measuring device shall be installed in accordance with the manufacturer's instructions.
11. The recording device(s) shall:
 - (a) be set to wrap the data from the measuring device such that the oldest data will be automatically overwritten by the newest data (i.e. cyclic recording); and
 - (b) store the entire season's data in each 12-month period from 1 July to 30 June in the following year, which the consent holder shall then download and store and provide to the Canterbury Regional Council in a format and standard specified in the Canterbury Regional Council's form for Water Metering Data Collection; and be readily accessible to be downloaded by the Canterbury Regional Council or by a person authorised by the Canterbury Regional Council: RMA Compliance and Enforcement Manager; and
 - (c) shall be connected to a telemetry system that collects and stores all of the data continuously with an independent network provider who will make that data available in a commonly used format at all times to the Canterbury Regional Council and the consent holder.
12. The measuring and recording devices described in Condition 9 shall be available for inspection at all times by the Canterbury Regional Council.
13. Data from the recording device and the corresponding relationship between the water level and flow, and any changes in that relationship shall be provided to the Canterbury Regional Council annually in the month of June, and shall be accessible and available for downloading at all times by the Canterbury Regional Council.

Water metering – Take of water

14. The consent holder shall, before the start of the next irrigation season following the commencement of this consent, install:
 - (a) water level measuring device(s) in a location that will enable the determination of the continuous rate of flow and volume of water being diverted and taken to within an accuracy of ten percent; and
 - (b) tamper-proof electronic recording device(s) such as a data logger(s) that shall time stamp a pulse from the flow meter at least once every 15 minutes.

15. The measuring device shall, as far as is practicable, be installed at a site likely to retain a stable relationship between flow and water level. The measuring device shall be installed in accordance with the manufacturer's instructions.
16. All data from the recording device and the corresponding relationship between the water level and flow, shall be provided to the Canterbury Regional Council annually in the month of June, and shall be accessible and available for downloading at all times by the Canterbury Regional Council.
17. The measuring and recording device(s) specified in Condition 14 shall:
 - (a) be set to wrap the data from the measuring device(s) such that the oldest data will be automatically overwritten by the newest data (i.e. cyclic recording);
 - (b) store the entire season's data in each 12-month period from 1 July to 30 June in the following year, which shall be downloaded and stored in a commonly used format and provided to the Canterbury Regional Council upon request in a form and to a standard specified in writing by the Canterbury Regional Council;
 - (c) unless certified by a suitably qualified person that telemetry is not feasible, be connected to a telemetry system which collects and stores all of the data continuously with an independent network provider who will make that data available in a commonly used format at all times to the Canterbury Regional Council and the consent holder.
 - (d) be installed by a suitably qualified person in accordance with ISO 1100/1-1981 (or equivalent) and the manufacturer's instructions;
 - (a) be maintained throughout the duration of the consent in accordance with the manufacturer's instructions; and
 - (b) be accessible to the Canterbury Regional Council at all times for inspection and/or data retrieval.
18. No data in the recording device(s) shall be deliberately changed or deleted.
19. All practicable measures shall be taken to ensure that the water meter and recording device(s) specified in Condition 14 are at all times fully functional and meet the accuracy standard stated in that condition.

Water metering – Compliance Checks

20. Within one month of the installation of the measuring or recording device(s) specified in Conditions 9 and 14 (or any subsequent replacement devices), the consent holder shall provide a certificate to the Canterbury Regional Council, attention: RMA Compliance and Enforcement Manager, signed by a suitably qualified person certifying, and demonstrating by means of a clear diagram, that:
 - (a) the measuring and recording device(s) is installed in accordance with the manufacturer's specifications; and
 - (b) data from the recording device(s) can be readily accessed and/or retrieved in accordance with these conditions.
21. At five yearly intervals or at any time when requested by the Canterbury Regional Council, the consent holder shall provide a certificate to the Canterbury Regional Council, attention: RMA Compliance and Enforcement Manager, signed by a suitably qualified person certifying that:
 - (a) the water meter(s) is measuring the rate of water taken as specified in these conditions; and
 - (b) the tamper-proof electronic recording device is operating as specified in these conditions.

Fish Screen

22. The consent holder shall, before the start of the next irrigation season following the commencement of this consent, install a fish screen with a maximum mesh width and height size of 3 millimetres or slot width and height of 2 millimetres across the intake to ensure that fish and fish fry are prevented from passing through the intake screen.
23. The fish screen shall be positioned to ensure that there is unimpeded fish passage to and from the waterway and to avoid the entrapment of fish at the point of abstraction, and to minimise the risk of fish being damaged by contact with the screen face.
24. The fish screen shall be designed and installed to ensure that:
 - (a) the majority of the screen surface is oriented parallel to the direction of water flow; and
 - (b) where practicable, the screen is positioned in the water column a minimum of 300 millimetres above the bed of the waterway and a minimum of one screen radius from the surface of the water; and
 - (c) the approach velocity perpendicular to the face of the screen shall not exceed 0.06 metres per second if no self-cleaning mechanism exists or 0.12 metres per second if a self-cleaning mechanism is operational; and
 - (d) the sweep velocity parallel to the face of the screen shall exceed the design approach velocity.
25. The fish screen shall be designed or supplied by a suitably qualified person who shall ensure that the design criteria specified in Conditions 22 to 24 inclusive of this consent is achieved. Prior to the installation of the fish screen, a report containing final design plans and illustrating how the fish screen will meet the required design criteria and an operation and maintenance plan for the fish screen shall be provided to Environment Canterbury, Attention: RMA Compliance and Enforcement Manager.
26. A certificate shall be provided to Environment Canterbury by the designer or supplier of the fish screen to certify that the fish screen has been installed in accordance with the details provided to Environment Canterbury in accordance with Conditions 22 to 24 inclusive of this consent.
27. The fish screen shall be maintained in good working order. Records shall be kept of all inspections and maintenance, and those records shall be provided to Environment Canterbury upon request.

Nutrient Loading

28. For the purposes of interpretation of the conditions of this consent Birchwood Run Station shall be defined as the areas in certificates of title and Pastoral Lease numbers OT6732, OT447928, OT447927, OT174487, which total 5732 hectares
29. The consent holder shall prepare once per year:
 - (a) an Overseer[®] nutrient budgeting model report not less than one month prior to the commencement of the irrigation season; and
 - (b) a report of the annual farm nutrient loading for Birchwood Run using the model Overseer[®] (AgResearch model version number 5.4.3 or later).
30. When undertaking the modelling outlined in Condition 29, the consent holder shall use either weather records collected on-farm or from constructed data from the nearest weather station.
31. A copy of the reports prepared in accordance with Condition 29 shall be given to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager within one month of their completion.
32. The consent holder shall not commence annually irrigation under this consent unless the annual (1 July to 30 June) nutrient loading (the nutrient discharge allowances (NDAs)) as estimated in accordance with Condition 29 from Birchwood Run Station does not exceed

- 24031 kg of Nitrogen and 795 kg of Phosphorus. Where the NDAs have been reduced by the application of a receiving water quality nutrient trigger condition, the reduced NDA shall apply.
33. The NDAs, incorporating any reductions required by receiving water quality nutrient trigger conditions, shall be complied with from the commencement of this consent.
 34. Where Overseer, or Overseer modelling, is referred for the purposes of calculating or determining compliance with the NDA limits associated with activities on the property, it shall be undertaken by an independent person with an Advanced Sustainable Nutrient Management Certificate issued by Massey University or an equivalent qualification
 35. The consent holder shall at all times comply with the Farm Environmental Management Plan (FEMP) in particular, the mitigation measures and monitoring set out in section 5 of the FEMP for Birchwood Run Station, a copy of which is attached to these conditions and marked **CRC012291-B** and forms part of these conditions
 36. Subject to Condition 35, the consent holder shall implement, and update annually the FEMP for Birchwood Run Station. The FEMP shall include:
 - (a) Verification of compliance with NDAs (incorporating any reductions required by receiving water quality nutrient trigger conditions) by farm nutrient modelling using the model Overseer (AgResearch model version number 5.4.3 or later).
 - (b) Implementation of Mandatory Good Agricultural Practices ("MGAPS") and requirements to manage in accordance with the Birchwood Run Station Overseer model inputs, specified in the attached Appendix A Overseer parameter report. Appendix A of the FEMP forms part of this consent.
 - (c) The Overseer parameter inputs report, which shall be supplied to the Canterbury Regional Council.
 - (d) A property specific environmental risk assessment (including a description of the risks to water quality arising from the physical layout of the property and its operation which are not factored in as an Overseer parameter) prepared by a suitably qualified person which identifies any farm specific environmental risks along with measures to mitigate the farm specific environmental risks.
 - (e) A requirement to review the risk assessment if there are any significant changes in land use practice.
 37. Detailed records shall be maintained of fertilizer application rates, types of crops (including winter feed/forage crops), cultivation methods, stock units by reference to type, breed and age, prediction of realistic crop yields that are used to determine crop requirements and all other inputs to the Overseer nutrient budgeting model.
 38. A report on Overseer modelling shall be provided within one month of completion of the Overseer modelling by the person with the qualifications described in Condition 34 and no later than two months prior to the start of the next irrigation season to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager. The consent holder shall supply to the Canterbury Regional Council all model inputs relied upon for the annual Overseer[®] modelling.
 39. Changes may be made to the Birchwood Run Station Overseer model inputs, provided that written certification is provided that the change is modelled using Overseer, and that the result of that modelling demonstrates that the NDAs are not exceeded. A copy of that certification plus a copy of the resultant Overseer parameter report shall be provided to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, prior to the implementation of that change.

Subdivision

40. The NDAs shall be recalculated if there is a sale or transfer of any part, but not the whole, of the total farm area of 5732 hectares. The recalculated NDAs shall be undertaken to accurately redistribute the NDA between the resultant properties and shall replace the NDAs specified in Condition 32. The new NDAs may be recalculated on any proportion as long as the total of all the NDAs does not exceed the NDAs of the parent title as set out in Condition 32. The

recalculation of the NDAs shall be undertaken and certified using Overseer, completed and provided to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager together with a copy of the full Parameter report, within one month of the sale or transfer.

Fertiliser and soil management

41. Fertiliser shall be managed and applied in accordance with 'The Code of Practice for Nutrient Management (With Emphasis on Fertiliser Use) NZFMRA 07' or any subsequent updates.
42. The consent holder shall keep a record of all fertiliser applications applied to the property, including fertiliser type, concentration, date and location of application, climatic conditions, mode of application and any report of the fertiliser contractor regarding the calibration of the spreader.
43. For land based spreading of fertiliser:
 - (a) where an independent fertiliser spreading contractor is used the consent holder shall keep a record of the contractor used, which can be supplied to the Canterbury Regional Council upon request; or
 - (b) where the applicant's own fertiliser spreaders are used, the consent holder shall test and calibrate the fertiliser spreaders at least annually, and every five years the fertiliser spreader will be certified by a suitably qualified person in accordance with 'The Code of Practice for Nutrient Management (With Emphasis on Fertiliser Use) NZFMRA 07' or any subsequent updates and the results of testing shall be provided to the Canterbury Regional Council upon request.
44. Nitrogen fertiliser shall not be applied to land between 31st May and 1st September.
45. All fertiliser brought onto the property which is not immediately applied to the land shall be stored in a covered area that incorporates all practicable measures to prevent the fertiliser entering waterways.
46. Applications of nitrogen fertiliser shall not exceed 50 kg nitrogen / hectare per application.
47. If liquid fertilisers, excluding liquid effluent, are stored on-site for more than three working days, the consent holder shall ensure that the fertiliser is stored in a bunded tank, at least 110% of the volume of the tank to avoid any discharge to surface or groundwater and such that it is also protected from vehicle movements.
48. Fertiliser filling areas shall not occur within 50 metres from a water course, spring or bore.
49. For land based spreading, fertiliser should not be applied within 20 metres of a watercourse.
50. Complete mitigation measures offered by the applicant to ameliorate site specific environmental risks on the farm relating to this consent including:
 - a. Finish fencing stock out of Wairepo/Spring creek through riparian fencing within the irrigation area,
 - b. Plant a riparian filter strip/settling pond on the Wairepo/Spring Creek as it exits the property before discharging to Wairepo Ponds
 - c. Monitor and manage stock access, stock type and stock number from all permanently flowing waterways within other non-irrigated intensively farmed areas.
51. Where practicable, the consent holder shall:
 - (a) use direct drilling as the principal method for establishing pastures; and
 - (b) sow and irrigate all cultivated areas within the irrigation area as soon as possible following ground disturbance.

Irrigation Infrastructure

52. The consent holder shall ensure that all new irrigation infrastructure (not on the property at the time of commencement of this consent) is:
 - (a) designed and certified by a suitably qualified independent expert holding a National Certificate in Irrigation Evaluation Level 4, and installed in accordance with the certified design. Copies of certified design documents shall be provided to the Canterbury Regional Council upon request; and
 - (b) tested within 12 months of the first installation of the new irrigation infrastructure and afterwards every five years in accordance with the 'Irrigation Code of Practice and Irrigation Design Standards, Irrigation NZ, March 2007' (code of practice) by a suitably qualified independent expert.
53. Within two months of the testing referred to in Condition 52(b) the expert shall prepare a report outlining their findings and shall identify any changes needed to comply with the code of practice. Any such changes shall be implemented within five years from the date of the report. A copy of the report shall be provided to the Canterbury Regional Council Attention: RMA Compliance and Enforcement Manager, within three months of the report being completed.
54. If existing irrigation infrastructure is being used, the consent holder shall obtain an evaluation report prepared by a suitably qualified person, on the following terms:
 - (a) The evaluation shall determine the system's current performance in accordance with the Code of Practice for Irrigation Evaluation.
 - (b) This report shall be obtained within three months of the first exercise of the consent.
 - (c) Any recommendations identified in the report shall be implemented within five years from the date of receipt of the report.
 - (d) A copy of the report shall be forwarded to the Canterbury Regional Council within three months of the report being completed.

Fertigation

55. If the irrigation system used in association with taking water in terms of this permit is to be used to distribute effluent, fertiliser or any other added contaminant, then one of the following shall be installed upstream of the point of addition of the effluent, fertiliser or other added contaminant:
 - (a) a reduced pressure zone device (RPZD), or
 - (b) a pressure vacuum breaker (PVB), or
 - (c) an air gap backflow prevention system.
56. Installation of a RPZD or a PVB shall be in accordance with section 9 (PVB) or section 12 (RPZD) of Australian/New Zealand Standard AS/NZS 2845.1 Water supply - Backflow prevention devices, Part 1: Materials, design and performance requirements, or an equivalent standard.
57. An air gap backflow prevention system shall have an unobstructed vertical air gap separation of at least twice the diameter of the inlet pipe, from the lowest point of the inlet pipe to the flood level rim of the receptacle into which it discharges.
58. Field testing and maintenance shall be carried out of an RPZD or a PVB at commissioning of the use of the system for application of effluent or fertiliser and annually afterwards, in accordance with AS 2845.3 Water supply—Backflow prevention devices, Part 3: Field testing and maintenance, or an equivalent standard.

59. An air gap backflow prevention system shall be tested at commissioning and annually afterwards. Maintenance shall be undertaken as necessary to ensure that backflow prevention is effective.
60. Installation, testing and maintenance shall be undertaken by a certified irrigation evaluator. A report on the annual testing shall be provided to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, within two weeks of initial commissioning and within two weeks of each annual testing. Each report shall be accompanied with the name, qualifications and experience of the person who undertook the installation, testing or maintenance

River water quality monitoring and response

61. The water quality of the Wairepo Creek shall be monitored from the commencement of this consent as follows:
- (a) The location for monitoring of Wairepo Creek shall be as follows unless minor changes are required to ensure that monitoring occurs upstream of all intakes and downstream of the irrigation area to appropriately monitor the localised river effects arising from the exercise of this consent:
- i. Map reference: NZMS 260 H39:753-483 immediately upstream of all irrigation takes on the Wairepo Creek.
 - ii. Map reference: NZMS 260 H39: 762-517 downstream of the discharge to Wairepo Creek.
- (b) Water quality variables monitored shall include:
- i. dissolved inorganic nitrogen (DIN);
 - ii. dissolved reactive phosphorus (DRP);
 - iii. dissolved oxygen;
 - iv. conductivity;
 - v. turbidity;
 - vi. periphyton biomass as chlorophyll *a* per square metre (chl *a*); and
 - vii. *E. Coli*.
- (c) This monitoring may be carried out on an individual basis, or may be prepared in collaboration with other consent holders, or on a collective basis by a suitable independent body appointed by all relevant consent holders in the sub catchment.
- (d) Frequency of monitoring: Once per month from 01 December to 30 April each year, with a minimum of three weeks between sampling.
- (e) Methods: The methods of sampling and analysis shall be those that are generally accepted by the scientific community as appropriate for monitoring river water quality and periphyton biomass. The methods of sampling shall be documented and made available to the Canterbury Regional Council on request.
- (f) The water quality monitoring shall be undertaken by a suitably qualified and/or experienced person who demonstrates that they understand the appropriate methods to use for surface water quality sampling, including preservation of samples. That person shall certify in writing that each batch of samples has been sampled and preserved in accordance with generally accepted scientific methods. A copy of those certifications and the person's qualifications shall be provided to the Canterbury Regional Council on request.
- (g) The laboratory undertaking analyses shall be accredited for those analyses by International Accreditation New Zealand (IANZ) or an equivalent accreditation organisation that has Mutual Recognition Agreement with IANZ.

- (h) The results of all sampling shall be provided to the Canterbury Regional Council Attention: RMA Compliance and Enforcement Manager by 30 May each year. This shall include copies of reports from the laboratory that undertook the analyses.
62. If the monitoring undertaken in accordance with Condition 61 shows that the average sample result for the downstream monitoring site specified in Condition 61 over the period December to April is greater than 0.21 mg/L of DIN; or 0.006 mg/L DRP; or 50 mg chl *a*/ m² (environmental standard trigger), then the consent holder shall commission a report into the cause of the breach of the environmental standard trigger.
63. The reports referred to in Condition 62 shall:
- (a) be prepared by an expert review panel consisting of two qualified and experienced independent scientists. One of the scientists shall be nominated by the Canterbury Regional Council, and the other shall be appointed by the consent holder; and
 - (b) include the experts' conclusion on whether the exceedance(s) were as a result of natural influences, one off events, or in whole or part by nutrient loss associated with the irrigation authorised by this consent; and
 - (c) include an assessment as to whether the exceedance measured by the monitoring is likely to continue; and
 - (d) be completed by 30 July following the sampling; and
 - (e) be provided to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, by 30 August following the sampling.
64. If both the authors of the report prepared in accordance with Condition 62 conclude, after considering all the relevant available information, including on-site monitoring, sub-catchment monitoring, and catchment resource consent compliance and audit reports made available by the Canterbury Regional Council, that the cause of the breach of the environmental standard trigger was unlikely to have been caused in whole or in part by nutrient loss associated with the irrigation authorised by this consent, then no further action needs to be undertaken by the consent holder.
65. If the report prepared in accordance with Condition 62 concludes that the environmental standard trigger has been exceeded because of farm land use practices, then:
- (a) the NDA, as specified in Condition 32, shall be reduced by 5% x Irrigation Proportion Factor (IPF) for the irrigation season subsequent to the monitoring period. The IPF shall be the proportion of the area under irrigation (at the time of the exceedance) under this resource consent divided by the total farm area (i.e. 190 irrigated hectares divided by the total farm area of 21,513 hectares); and
 - (b) the consent holder shall prepare and implement a Remedial Action Plan in accordance with Condition 67(b).
66. If a required reduction in nutrient load is in effect under 65(a) and monitoring for that period shows that the average sample results for the downstream monitoring site over the period December to April is:
- (a) greater than 0.21 mg/L of DIN; or 0.006 mg/L DRP; or 50 mg chl *a*/ m² (environmental standard trigger), then there shall be a further NDA reduction of 10% x IPF for the subsequent irrigation season.
 - (b) less than or equal to 0.21 mg/L of DIN; or 0.006 mg/L of DRP; or 50 mg chl *a*/ m² (environmental standard trigger), then for the subsequent season no NDA reduction shall be required under this condition, and the full NDA for the property, as specified in Condition 32 shall be restored.
67. In relation to the Remedial Action Plan referred to in Condition 65(b):
- (a) It shall set out the methods and timeframes for altering and/or adapting farm land use practices to ensure that the exceedance in the environmental standard trigger, is returned as soon as practicable to and maintained below the average sample results of

0.21 mg/L of DIN; or 0.006 mg/L of DRP; or 50 mg chl a/ m² (environmental standard trigger) for the downstream monitoring site, over the period December to April.

- (b) It shall be prepared by a suitably qualified and experienced person using Overseer or an equivalent method to demonstrate that the actions to be undertaken will achieve the necessary nutrient reductions as soon as practicable.
- (c) If the Remedial Action Plan is prepared in collaboration with other consent holders who are required to prepare a Remedial Action Plan for this sub catchment a common Remedial Action Plan shall be deemed to comply with this condition.
- (d) Any actions required by the Remedial Action Plan shall be incorporated into the consent holder's FEMP. The amended FEMP shall be implemented as soon as physically possible.
- (e) The consent holder shall provide the Canterbury Regional Council with the Remedial Action Plan and an amended FEMP upon request.

Review of conditions

68. The Canterbury Regional Council may, once per year, on any of the last five working days of March or July serve notice of its intention to review the conditions of this resource consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of the resource consent and which it is appropriate to deal with at a later stage, including (but not limited to) amending the flow in the Wairepo Creek at which abstraction is required to be reduced or discontinued.

Lapse

69. The lapsing date for the purposes of section 125 of the Resource Management Act shall be five years from the commencement of this consent.

Advice notes:

- *The discharge of effluent, fertiliser or any contaminant would require authorisation as a permitted activity or via a discharge permit. Contact the Canterbury Regional Council for advice on the relevant regional rules.*
- *If any additional land use consents are required to carry out the proposed activity, those consents must be obtained before giving effect to this consent.*

Scope and location

1. The works shall be limited to maintenance of intake structures within the bed of Wairepo Creek including excavation of gravel and sediments to maintain an adequate flow of water to the irrigation intake.
2. The works carried out in accordance with Condition 1 shall be located at Wairepo Creek within the area outlined as "Location of diversion structure" on attached Plan **CRC012291-A** at or about map reference(s) NZMS 260 H39:753-483.

Limits of excavation

3. Any gravel, sand and other natural material excavated as part of the works authorised by this consent during the disturbance of the bed of Wairepo Creek, must be deposited on, or near to, the excavation site, and shall be reshaped and formed to a state consistent with the surrounding natural riverbed
4. Works shall not occur within 100 metres of birds nesting or rearing their young. For the purpose of this condition, birds are defined as those species listed in **Schedule 1**.

Erosion protection

5. All practicable measures shall be undertaken to ensure that works do not deflect floodwaters into the berm.
6. Works shall not be undertaken in any manner likely to cause erosion of or instability to, the banks or bed of Wairepo Creek; or reduce the flood-carrying capacity of the waterway.

Prior to excavation

7. Prior to commencing excavation, a copy of this resource consent shall be given to all persons undertaking activities authorised by this consent.
8. The Canterbury Regional Council Compliance Monitoring Officer shall be notified of the intention to carry out works and their intended type and scope at least 48 hours prior to the commencement of work.

Limits on works

9. The consent holder shall adopt the best practicable options to:
 - a. Minimise soil disturbance and prevent soil erosion;
 - b. Prevent sediment from flowing into any surface water; and
 - c. Avoid placing cut or cleared vegetation, debris, or excavated material in a position such that it may enter surface water.
10. To prevent the spread of Didymo or any other aquatic pest, the consent holder shall ensure that activities authorised by this consent are undertaken in accordance with the Biosecurity New Zealand's hygiene procedures

Note: You can access the most current version of these procedures from the Biosecurity New Zealand website <http://www.biosecurity.govt.nz> or Environment Canterbury Customer Services.

11. All practicable measures shall be undertaken to minimise vehicles and machinery entering Wairepo Creek.

12.

- a. All practicable measures shall be undertaken to prevent oil and fuel leaks from vehicles and machinery.
- b. There shall be no storage of fuel or refuelling of vehicles and machinery within 20 metres of the bed of a river.
- c. Fuel shall be stored securely or removed from site overnight.

13. Machinery shall be free of plants and plant seeds prior to use in the riverbed.

14. All practicable measures shall be undertaken to minimise adverse effects on property, amenity values, wildlife, vegetation, and ecological values.

15. The works shall not prevent the passage of fish, or cause the stranding of fish in pools or channels.

Accidental discovery protocol

16. In the event of any disturbance of Koiwi Tangata (human bones) or taonga (treasured artefacts), the consent holder shall immediately:

- a. Advise the Canterbury Regional Council of the disturbance;
- b. Advise the Upoko Runanga of Arowhenua and Waihao, or their representative, and the New Zealand Historic Places Trust, of the disturbance; and
- c. Cease earthmoving operations in the affected area until an area has been marked off around the site, and Kaumatua and archaeologists have given approval for the earthmoving to recommence. Note: This condition is in addition to any agreements that are in place between the consent holder and the Upoko Runanga (Cultural Site Accidental Discovery Protocol) or the New Zealand Historic Places Trust

Upon completion

17. On completion of works, the area shall be restored to its original condition as far as practicable.

Administrative conditions

18. The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.

19. The lapsing date for the purposes of section 125 shall be 5 years from the commencement of consent.

Schedule 1 – List of bird species

South Island Pied Oystercatcher

Black Stilt

Pied Stilt

Wrybill

Banded Dotterel

Black-fronted Dotterel

Grey warbler

Fantail

Bellbird

Silvereye

Spur-winged Plover

Paradise Shelduck

Grey Duck

NZ Shoveler

Grey Teal

NZ Scaup

Black-billed Gull

Red-billed Gull

Caspian Tern

White-fronted Tern

Black-fronted Tern

White-winged Black Tern

Australasian Bittern

Marsh Crake

Spotless Crake

Cormorant/shag colonies

Or any other bird species deemed by a suitably qualified person to require protection

