BEFORE THE CANTERBURY REGIONAL COUNCIL

IN THE MATTER OF	The Resource Management Act 1991
AND	
IN THE MATTER OF	applications by **Bellfield Land Company Ltd** filed under **CRC011987** for a water permit to divert, take and use surface-water from Quailburn Stream for spray irrigation of 190 hectares for grazing sheep and beef **CRC012733 for** a discharge permit to discharge excess bywash water and stock water into tributaries of Quailburn Stream

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REPORT AND DECISION OF HEARING COMMISSIONERS PAUL ROGERS,

MICHAEL BOWDEN, DR JAMES COOKE AND EDWARD ELLISON

PART B - SITE SPECIFIC DECISION

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1 INTRODUCTION

1.1 This is a decision on two applications by **Bellfield Land Company 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 APPLICATION

2.1 The applicant is seeking replacement consents for an existing irrigation scheme that diverts and takes water from the Quail Burn for irrigation of Quailburn Downs.

2.2 The applicant currently diverts water from the Quail Burn at a rate of 140 litres per second. The diversion race directs water from the Quail Burn to an intake structure located approximately 80 metres downstream of the diversion point. Any excess water is by-washed directly back to the stream. The race then flows around the bottom of Cloud Hill to the pump station for the centre pivot irrigator. 190 ha is currently irrigated under this scheme, including 95ha of spray irrigation and 95ha of border dyke, however the border dyke system is generally avoided due to its inefficiency.

2.3 The applicant proposes to continue diverting and taking water from the Quail Burn, at or about map reference NZMS 260 H39:645-364 and H39:646-364, at a rate not exceeding 140 litres per second, with a volume not exceeding 1,557,782 cubic metres per year. Water shall be used for spray irrigation of up to 190 hectares for grazing sheep and beef.

2.4 The indicative location of the key features of the proposal is illustrated in Figure 1 below.

Figure 1. *Indicative location map*

2.5 The original proposal only referred to irrigation by spray. However based on the evidence presented and the final condition set provided, it was clear that the applicant is proposing to retain the ability to operate the existing irrigation system for up to five years until the system is converted to spray. The rate of take and annual volume remain unchanged from that outlined above during this five year conversion period.

2.6 Discharges from the system, being by-wash water at the intake and excess stock water from the races, would be discharged at two points on the property into tributaries of the Quail Burn and Cookes Pond (effectively the Ahuriri River). Water will be discharged at a maximum rate of 140 litres per second.

2.7 In addition to the above, the applicant intends to modify the intake off the diversion channel to install a buried gallery/fish screen in the race system to allow fish passage back to the river via the bywash. As the works for the upgrade would be in the race, no land use consent is required for the works.

2.8 Based on the above, this is a replacement for an existing activity. Ms McCabe in correspondence with ECan (5/12/08) stated that after consultation with Meridian Energy (using the Potts methods) a volume was determined based on historic irrigation practices and what was a "replacement". It was agreed that 95 ha is already spray irrigated and 95 ha remains in border dyke and flood irrigation. This also reflects the old WTK consent which identified an area of 190 ha and the applicant reduced the area under application to achieve consistency. The key change between existing and proposed activities is that the applicant proposes to convert all irrigation to spray, as opposed to the wild flooding that has occurred on the site in the past.

The applications

2.9 There are two separate applications that make up this proposal:

(a) CRC011987 – for a water permit to divert, take and use water from the Quail Burn pursuant to section 14 of the RMA; and

(b) CRC012733 – for a discharge permit to discharge by-wash water back into the Quail Burn pursuant to section 15 of the RMA.

2.10 Consent is required for these activities under the WCWARP and NRRP respectively, as discussed further below.

2.11 Both applications were lodged with the Canterbury Regional Council (the Council) on 29 March 2001. The applications were publicly notified and there were a number of submissions that are referred to later in this decision. The applications requested a consent duration of 35 years.

Modifications after notification

2.12 The replacement applications were previously made in the name of H M Munro but due to the sale of the property, the applicant has since changed to Bellfield Land Company Ltd.

2.13 Since notification, the total irrigation area has been reduced from 208 hectares to 190 hectares, and the annual volume for irrigation has also reduced to the current proposal of 1,557,782 cubic metres.

2.14 The general principle for modifications after notification is that amendments are allowed provided they do not increase the scale or intensity of the activity or significantly alter the character or effects of the proposal. The key consideration is prejudice to other parties by allowing the change. In this case, we are satisfied that the changes do not significant alter the intensity or effects of the proposal and that no party would be adversely affected by allowing the changes.

2.15 In addition to taking water for irrigation, the original application also sought to take for stock water supply. However, subsequent to notification the applicant advised that they were no longer seeking consent for stock water and were instead relying on their rights under section 14(3) of the RMA (s92 response dated 5 December 2008).

2.16 On this basis, we have not considered the issue of stock water in this decision, other than as part of the discharge of excess water. 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.

Related consents and applications

2.17 As mentioned above, these applications are seeking to replace consents WTK702041A, B and C which expired on 1 October 2001. These consents authorised the diversion, taking and discharging of water from and to the Quail Burn at a maximum rate of 140 L/s and 85,000 cubic metres per week. As these applications were lodged 6 months prior to the expiry of the above consents, the applicant is currently operating under s124 of the RMA.

2.18 There are no other existing consented users on the Quail Burn, but there is one application for a replacement consent with higher priority (McAughtrie, Ellis-Lea Farms Ltd & Greenfield Rural Opportunities Ltd - CRC991473) and one other applicant seeking a new consent with lower priority further up the catchment (M Horo).

3 DESCRIPTION OF THE ENVRIONMENT

3.1 Surface flow ceases typically in the Quail Burn from December until April, approximately 200 to 300 metres below the diversion, except for floods.

3.2 The applicant describes the importance of Cookes Pond in ecological terms as it is a natural wetland area that provides habitat for black stilt and other wading birds. Water levels are supplemented by the discharge from the race system.

3.3 On the Council's GIS system, Cookes Pond, covers an area of approximately 12 hectares, and is recognised as a wetland of national significance. It is noted as having carex species along its margins and being rich in bird species, being important for waterfowl and waders as well as black stilt breeding.

3.4 Fish & Game provided comment on the values in the Quail Burn and consider it to be an important spawning and juvenile rearing tributary of the Ahuriri River; particularly for rainbow trout which are tributary spawners. Good angling is available early in the season, in the lower reaches before these are dewatered later in the summer.

3.5 The proposed irrigation area is predominantly flat land at the base of the adjacent hills, and is set back from the main road such that it is not visible to general traffic along State Highway 83. However, it will be visible to traffic travelling to the popular tourist spot of the Clay Cliffs.

3.6 Further description of the environment is provided in our summary of the evidence received from the applicant's and submitters below.

3.7 We did not carry out a ground inspection of the site, but did inspect the site from the air to ensure we were familiar with environment in which the activity was proposed. Part A of the decision lists details of our site visits.

4 PRELIMINARY MATTERS

Ahuriri Water Conservation Order

4.1 Section 217 of the RMA states that where an operative conservation order exists, a consenting authority cannot grant a water right if the exercise of this permit would be contrary to any restriction or prohibition or any other provision of the order.

4.2 The Ahuriri National Water Conservation Order (AWCO) sets out various restrictions designed to protect the outstanding characteristics and features of the Ahuriri River and its tributaries. Clause 3 of the AWCO requires a catchment management approach and declares that "the Ahuriri River and its tributaries include and provide for outstanding wildlife habitat, outstanding fisheries, and outstanding angling features."

4.3 Given that the water body from which the take will occur eventually flows into the Ahuriri River, this proposal is subject to the requirements of the AWCO. This includes ensuring that the minimum flow levels of the Ahuriri River are maintained and that the "protected waters" are not adversely affected by the discharge of contaminants. For the reasons discussed in the balance of the decision, we are satisfied that the application could be granted without breaching any of the provisions of the AWCO.

5 PLANNING INSTRUMENTS

5.1 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) Waitaki Mackenzie District Plan (WDP).

5.2 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

5.3 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.

CRC011987 – Divert, take and use water (s14)

5.4 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.

5.5 The following rules from the WCWARP are applicable to this application:

(a) Rule 2 - The applicant proposes the minimum flow 0.1 cubic metres per second at Hen Burn Road (Table 3, row (xi)(a)) which complies with this rule

(b) Rule 6 – The activity is within the allocation limit of 275 million cubic metres for agricultural activities upstream of Waitaki Dam (see Report 3 for annual allocation and priority tables).

(c) Rule 15 - Classifying rule – discretionary activity

5.6 Overall, the proposed water permit is a **discretionary** activity under Rule 15 of the WCWARP (and TRP) and resource consent is required in accordance with section 14 of the RMA.

CRC012733 – Discharge water (s15)

5.7 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.

5.8 The relevant provisions of the NRRP are as follows:

(a) Rule WQL1 – permits the discharge of water into a river, subject to compliance with a range of conditions

(b) Rule WQL48 – provides for the status of a discharge to water where it fails to comply with any of the conditions in WQL1. Will be classified as either a discretionary or non complying activity, depending on whether it complies with the listed conditions.

5.9 The activity is unlikely to meet Conditions 1 and 3 of Rule WQL1. Therefore the activity falls to be assessed under Rule WQL48. The activity is likely to comply with conditions of Rule WQL48. Therefore, it is classified as a discretionary activity.

5.10 In summary, the proposed discharged is a **discretionary** activity under Rule WQL48 and requires consent pursuant to Section 15 RMA.

Overall status of the proposal

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

6 NOTIFICATION AND SUBMISSIONS

6.1 Application CRC011987 was notified twice; once on 6 December 2003 as part of the ministerial call in, an again on 4 August 2007 along with application CRC012733.

6.2 In the 2003 "ministerial call-in", a total of 314 submissions were received on application CRC991473. In the 2007 public notification, 22 submissions in total were made on the water permit application (CRC011987), including 2 in support, 18 in opposition; and 2 neither in support nor opposition. For the discharge application, a total of 16 submissions were received including 2 in support, 12 in opposition, and 2 neither in support nor opposition.

6.3 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: *Submissions received for consent CRC011987 & CRC012733*

Submitter	Reasons	Position
T J & J Cooke[1]	Long-standing water right should be continued to allow for pastoral development	Support
J J Ryan[1]	Long-standing water right should be continued to allow for pastoral development	Support
Canterbury-Aoraki Conservation Board[1,2]	Concerns regarding effects on instream values, landscape, water quality and consider 35 yr duration too long.	Oppose
Fish & Game[1,2]	Quail Burn is important spawning tributary and stream is over-allocated	Oppose
DW McAughtrie[1]	Had replacement consent on stream that may be affected by this take, need to establish flow sharing regime	Oppose
F I Home[2]	Concerns with cultural values. Minimum flow should be set given large number of applications on Quail Burn	Oppose
Department of Conservation[1,2]	Water quantity, water quality, fish passage, natural character	Oppose
Meridian Energy Ltd[1,2]	Effects on water quality, efficient use and need to meter take	Oppose
Ohau Co Trust[1]	Amount of water being sought exceeds that available and a fair flow sharing regime should be established	Oppose
AJ & WH Sutherland[2]	Concerned about location of abstraction point	Oppose

1 August 2007
2 Call-in 2003

7 THE SECTION 42A REPORTS

7.1 A section 42A report on the application and submissions was prepared by the Council's Consent Investigating Officer, Ms Claire Penman.

7.2 The primary report was supported by a number of specialist s42A reports prepared by Messrs Heller, Clothier, Hanson, Schallenberg, Glasson, McNae and Stewart, and Drs Meredith and

Freeman. The key issues addressed by these reports were cumulative water quality effects, landscape effects, and environmental flow and level regimes.

7.3 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.

7.4 At the time the primary report was prepared, there was insufficient information for Ms Penman to reach firm conclusions on the effects of the proposed take and use of water. Matters that were identified as outstanding at that time were water quality, efficient and reasonable use, ecosystems, landscape and amenity, and cultural values. We discuss these issues further below after summarising the applicant's case.

7.5 For the proposed discharge, Ms Penman was satisfied that the actual and potential effects of the activity were acceptable and recommended that application (CRC012733) be granted, subject to conditions.

7.6 Mr Chris Glasson commenting on landscape placed this proposal within his Landscape Unit 6 – Omarama.

7.7 He noted the Landscape Unit is at the southern end of the Waitaki Catchment. It is a landscape of an outwash plain and river terraces resulting from action by the Ahuriri River. The surface topography he told us is flat to undulating.

7.8 Mr Glasson noted there are large flat areas, some of which have been transformed into irrigated pasture. He also noted that the landscape was generally a very visible landscape as the State Highway 8 bisects the Unit with a significant amount of traffic, including many tourists, making it a sensitive place in which to make changes.

7.9 He also pointed out for us the surrounding hills of this outwash surface have been identified as a Outstanding Landscape Area (OLA) in the Waitaki District Plan. In his opinion it was a landscape with a legible expression of landforms with a strong horizontal emphasis, and absence of trees, of high naturalness, with a dominating tussock and grassland character. He considered it was a very consistent landscape unified in form, colour, and texture, with low absorption capacity for change to occur.

7.10 He noted that the wide open and flat surface between the two mountain ranges that frame this landscape give the landscape a special quality. In his opinion, the openness allows unimpeded views of the clay cliffs on the northern side of the plain and long distance views following State Highway 8. He recorded modifications as including shelter belts, wilding pines, water races, roads, fences, farm buildings, irrigated pastures, and the settlement of Omarama.

7.11 In terms of this particular application he provided a photographic record of views. It was his opinion due to the close proximity of the site to the Quailburn Road the proposed irrigation site is very visible. He considered with the absence of a riparian buffer along the stream the adverse effects would be moderate to minor. He noted that the application as originally presented did not include any mitigation measures.

7.12 He expressed the view that if mitigation measures such as creating a buffer along Quailburn Road, 50 m each side, and discreetly locating and recessively painting the pump station, then adverse effects would be minor.

8 THE APPLICANT'S CASE

8.1 Legal counsel for the applicant, Mr Ewan Chapman, presented opening submissions. Evidence in support was received from Ms Haidee McCabe, Mr Andrew Craig, and Mr Graham Spittle. In addition, general briefs of evidence were provided by Mr Robert Batty and Mr Andrew McFarlane.

Opening legal submissions

8.2 The applicant is part of the Upper Waitaki Applicant Group (UWAG), 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.

8.3 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.

8.4 He also told us renewal consents applied for by the UWAG members represent some 88% of all renewal applications. For these renewal applications, Mr Chapman emphasised that they need not rely on modelled scenarios undertaken in the WQS. He contended their effects were known and form part of the existing environment. Thus he said we would need to evaluate these applications in a different scientific context than new irrigation development.

8.5 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.

8.6 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.

8.7 Mr Chapman then addressed us on the issue of allocation of assimilative capacity. Relevantly, for this application in terms of the Ahuriri, he told us the assimilative capacity is exceeded. 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.

8.8 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.

8.9 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.

8.10 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 own tailored farming management practices.

8.11 Mr Chapman also said that UWAG had not tabled a final set of conditions or final farm management plans. These matters would 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 would mean that individual conditions would need to be worked through.

Mr Graham Spittle

8.12 Mr Spittle set out some of the history of activities on the proposal site, which he described as Quailburn bounds.

8.13 He told us the property presently operates a 95 hectare 180° pivot with the intention to convert the remaining 95 hectares of replacement to pivot. He told us to improve the total efficiency of water used an extensive upgrade of the old irrigation system had been recently completed. This involved the removal of old water races, all wild flood outlets, border-dykes, k-line, and antiquated spray systems.

8.14 He told us consent for a bore was granted to enable the installation of a totally new pipe-and-trough stockwater reticulation scheme. All necessary requirements for an upgrade of the intake would, he told us, be undertaken on the granting of this consent.

8.15 He then addressed us in relation to the WQS and the issue of water quality. He expressed the concern that while he acknowledged water quality should be monitored over both the proposed and existing irrigation sites (as described in this proposal) he noted that he had no control over water quality prior to this usage. He considered that this could potentially create some major problems in respect of his responsibility in ensuring that all water quality standards required were adhered to.

8.16 He explained to us that in an effort to meet the WQS threshold level via the OVERSEER program, cattle numbers had been reduced for this proposal from a proposed 300 to 120. The application of nitrogen limited to only establishing young grass. He also noted under the OVERSEER program there was the inability to grow either grain, grass seed or forage crops and much of the lucerne used as winter feed would only be able to be fed-out on undeveloped hill country. He noted for us that the threshold levels in the WQS were changed downwards on three separate occasions. This has resulted in the need for the proposal to amend its existing management and stock policies – all of which he noted had been in place and, in his view, were sustainable for many years.

8.17 Mr Spittle also noted that to ensure the environment was not unduly affected by the existing or proposed irrigation plans mitigation measures were proposed as embodied within the FEMP. He noted that, where practical, technology would be used as a means to achieving these goals. He said this involved the use of GPS map fertiliser spreading systems, a commitment to upgrade the remaining replacement irrigation to spray, along with buffer zones from streams, restrictions on fertiliser application, and riparian planting and fencing.

8.18 In conclusion he noted that Bellfield was applying for the renewal of an existing consent and a small increase in a new consent area, namely some 52 hectares.

The Proposal

8.19 Ms McCabe said that Bellfield Land Company Ltd ('the applicant') operated Quailburn Downs; a 2,200 ha freehold hill country property near Omarama. The farm was merino sheep and beef cattle with 22% of the stock made up of cattle and the remaining 78% of sheep. The farm had approximately 95 ha of existing spray irrigation.

8.20 The applicant proposed to continue to farm in a similar manner with this proposed irrigation development. The proposed irrigation development would provide many benefits. It would allow the applicant to fatten increased numbers of hoggets and cattle and would allow the increase stock numbers.

Water Source

8.21 Ms McCabe said that the Quailburn Catchment was located approximately 15 km North-west of Omarama and drained the Diadem and Ohau Range. It had a catchment area of 82 km^2 above the minimum flow site located at the Henburn Rd. The altitude of the upper catchment ranges from 500m to 1900m amsl.

8.22 Several tributaries, including the East Diadem and Serpentine Stream, fed into the Quailburn upstream of the gorge, then into the Ahuriri River. Flows at the minimum flow site were usually continuous; however below this site it was often dry, with surface flows often not continuous to the Ahuriri River.

8.23 The Quailburn provided a limited fishery for spawning and rearing habitat of rainbow and brown trout.

Effects on other water users

8.24 Ms McCabe said that this was the renewal of an existing water right. No increase in rate or weekly volume (as currently authorised) was being sought, and the applicant had proposed a minimum flow in accordance with Table 3 of the WCWARP. A flow sharing regime was being developed.

8.25 There were two other abstractors in the Quailburn Catchment, upstream of the applicant. Quailburn Government Race (include McAughtrie), who was also seeking the renewal of an existing water right and Ohau Company Trust Ltd was also seeking water from the catchment and was a new abstractor.

8.26 Table 3 of the WCWARP specifies an allocation limit of 310 L/s for the Quailburn and tributaries. This was the total rate of take of both the applicant and the Quailburn Government Race existing consents.

8.27 Ms McCabe said that the Ohau Company Trust Ltd sought to take water when flows were above 1,000 L/s (B Permit), and therefore, can only take water at times when there was sufficient water for all to be abstracting.

8.28 This proposed take was 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, which had cumulative allocation of 275 million m^3/year for this area.

8.29 Mitigation was proposed restricting the rate of take, volume per week and the minimum flow including flow sharing. Ms McCabe therefore considered the effects on other users to be minor.

Effects on Ecosystem values

8.30 The applicant had proposed a minimum flow in accordance with Table 3 of the WCWARP and a fish screen would be installed in accordance with recommended guidelines.

8.31 The applicant proposes to accept the minimum flow for the Quailburn Stream as defined in Table 3 of WCWARP. Ms McCabe considered that the minimum flow along with the allocation regime would ensure aquatic values were protected.

8.32 A water level recorder would be installed on the Quailburn Stream to enable compliance with the minimum flow and flow sharing that would be established. The take itself would also be appropriately metered

8.33 The intake was proposed to be fish screened in accordance with "Fish Screening: good practice guidelines for Canterbury, NIWA Client Report: CHC2007.092, October 2007".

8.34 Ms McCabe said that the conditions requiring a minimum flow, proposed flow-sharing to manage the flows above the minimum flow and fish screen, would ensure the effects on the ecosystem values were minor.

Effects of inefficient water use

8.35 Ms McCabe said that the proposed irrigation annual volume for the current system was based on a design system capacity of 1500 mm/ha/year for 95 ha, for a 155 day irrigation season and 6080 mm/ha/yr for a further 95 ha. The irrigation season length was that determined by Mr Rob Potts as the average number of days in the Upper Waitaki Catchment for a border dyke and spray irrigation system.

8.36 The proposed irrigation annual volume was based upon Irricalc which was within derogation approval provided by MEL. Ms McCabe said that the proposed application depth of 15-35 mm per return period is less than 50% of the water holding capacities expected. This was considered to be an efficient use of water and the irrigation systems would be determined and managed to ensure compliance.

8.37 Ms McCabe said that since owning the property, the applicant had substantially reduced their volume of take and improved the system from wild flood and K-line. A 95 ha pivot had replaced much of this already. This was consistent with the policies of the WCWARP in terms of efficiency and effectiveness of use

8.38 The rate 140 L/s equates to a daily application rate for 190 ha of just over 5 mm/day. Ms McCabe considered that efficiency of water use was provided for by ensuring less than 50% of PAW is applied (WP05).

8.39 Ms McCabe said that Policy 28 recognised the value of investment of the existing consent holder, and this had to be given consideration, however, Policy 28 also required a consent holder to take

all reasonable attempts to meet the efficiency expectations of the plan. The applicant had reduced water requirements and proposes to upgrade all the system to spray.

8.40 Policy 19 of the WCWARP encouraged the piping or otherwise sealing of water distribution systems to minimise water losses. Ms McCabe told us that with the conversion to spray irrigation and a troughed system, water would be distributed by pipe from at least the head race/pond, to use the water efficiently and utilize the gravity available, as implemented with the existing pivot.

8.41 Ms McCabe said that an irrigation volume had been proposed which was considered to meet Policy 16 of the WCWARP. The applicant had commenced improving efficiency; the beginning of spray conversion and therefore the effects of inefficient water use were considered by Ms McCabe to be minor.

Effects of the use of water on water quality

8.42 Cumulative effects on water quality have been addressed by Mackenzie Water Resources Limited (MWRL).

8.43 Ms McCabe said that the property, according to the MWRL Water Quality Study, was located within the Henburn and Quailburn catchment and the Henburn, Quailburn, and Ahuriri surface-water catchments. For this property, the Lake Benmore mitigation requirements were the most stringent and were accounted for in the overall property threshold from the MWRL Study.

8.44 The calculated nutrient mitigation requirement of the receiving environments determined in the MWRL Study had identified the N and P thresholds for the property. These were shown in the table below.

8.45 OVERSEER® had been run by a qualified person to model the N and P outputs from the proposed farming system. The results of the modelling were incorporated in to the table below, which showed that the applicant could meet the most restrictive property thresholds allocated by MWRL.

	Nitrogen Threshold	Phosphorus Threshold
MWRL Water Quality Study Property Thresholds	7355	207
OVERSEER® Outputs	7351	196

8.46 Ms McCabe said that the applicant was committed to implementing the "Mandatory Good Agricultural Practices" (MGAP) set out within the FEMP. Implementing these practices would ensure that the OVERSEER® results were validated. According to Ms McCabe, adherence to MGAPs along with ensuring that the property thresholds of the WQS were not exceeded would ensure that the cumulative effects of the use of water for irrigation on water quality were no more than minor.

8.47 Whilst the applicant was within their property thresholds, the MWRL Study 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 set out in the plan.

8.48 At a workshop held in Twizel in August 2009, the applicants met with Dr Melissa Robson of GHD Limited. A "desk top" on farm environmental risk assessment (FERA) was undertaken. This was considered to be the "starting point" of the FEMP.

8.49 The workshop identified potential on farm risks specific to each farm along with possible mitigation measures. For Quailburn Downs, the desktop risk assessment identified the following potential risks:

(a) Evidence of erosion

(b) Runoff from winter feed crops

(c) Laybacks from waterways from fertiliser application – how is this communicated?

(d) Location of troughs

(e) Soil post rye corn

(f) Track runoff - check

(g) Cookes Pond

8.50 Ms McCabe said that 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.

8.51 We note that a final FEMP complete with FERA was presented to ECan on 22 November 2010. We comment on the FEMP in our evaluation of effects (Section 12).

8.52 Given that the N and P thresholds from the MWRL Study could be met, and the applicant's commitment 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 by Ms McCabe to be minor.

Effects on Landscape

8.53 Ms McCabe said that landscape effects have been addressed by UWAG's Landscape Architect, Mr Andrew Craig, who considered that this proposal would have a minor effect on landscape values.

8.54 The irrigation area proposed was already part of a substantially modified environment, whereby land had been progressively cultivated and re-grassed, top dressed, new fences, and existing irrigation including a centre pivot.

8.55 The irrigation area was modified to ensure it was outside the area classified as "Outstanding Natural Character" and as part of the FEMP a buffer from the Quailburn Stream would be developed. The irrigation development is not considered visible from the State Highway and the existing pivot irrigator was already operating within proximity to Henburn Rd.

8.56 We note from our understanding of Mr Craig's evidence that he primarily assessed only those UWAG applications that he considered gave rise to "landscape issues". In the circumstance where it was his opinion that a particular proposal did not give rise to landscape issues that particular application was addressed in Part 1 of his evidence.

8.57 In Part 1 of Mr Craig's evidence he concluded that context in terms of assessing landscape effects is going to be the key factor. He noted that assessments are subject to universal principles or methods but each application site presents unique circumstances.

8.58 He noted for us that the most important landscape consideration in his opinion is going to revolve around the question as to what extent do effects depart from the baseline environment while taking into account the outcomes anticipated by the relevant statutory documents. Following on from this he said the next core question concerns the importance of setting with regard to effects, especially those affecting views. In this regard effects on the wider landscape are considered, particularly in respect of view significance and public expectation.

8.59 He also concluded that it was important to consider whether the proposed activity is revokable or not. In another words, are the effects going to be permanent? For the most part he concluded that the effects of irrigation are essentially ephemeral although they could be enduring.

8.60 It was his overall opinion that the potential adverse effects with regard to the applications he assessed would be significantly less than minor.

8.61 He reached that opinion, relevantly in this case, largely on the basis that all of the application sites are in some way modified or cultivated and the views into them will not change to great or incongruous extent.

8.62 Therefore, Ms McCabe concluded that effects on landscape values would be minor.

Effects on People, Communities and Amenity Values

8.63 Ms McCabe said that the applicant had proposed the minimum flow as specified in the WCWARP for the water body from which they have applied to take and use water.

8.64 The activities would all occur in a rural setting, where the dominant land use was pastoral farming. The proposed activities all occur on private farmland Ms McCabe believed the use of water was unlikely to adversely affect amenity values.

8.65 Ms McCabe said given the applicant's commitment to ensuring efficient use of water on their properties, to the minimum flow and flow-sharing regime protect in-stream values and other users; she considered that effects on people, communities and amenity would be minor.

Effects on Tangata Whenua Values

8.66 Te Runanga O Ngai Tahu submitted on all applications in the catchment, seeking that all applications be declined. Ms McCabe believed 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.

8.67 This application was considered to be within the allocation limits and in accordance with the minimum flows of the WCWARP. However, Ms McCabe acknowledged that Te Runanga O Ngai Tahu had a significant relationship with the Waitaki catchment, and as such, appropriate minimum flow conditions, and management of water quality effects, was proposed by the applicant to ensure that the potential effects on the environment, including tangata whenua values were minor.

Effects of discharge

8.68 Ms McCabe said that the two discharge locations proposed were either into the main stem of Quailburn Stream, which had a good stable stone base, or Cookes Pond which was a swampy/marshy area. This discharge had the positive effect of helping to sustain that aquatic environment.

Effects on flood carrying capacity and erosion

8.69 The two discharges were well established and had been operating since the early 1970's without adverse effects on erosion to those locations. There was no evidence of erosion under the current practice. The discharge was proposed to continue essentially in the same manner. However, the discharge into Cookes Pond would diminish in time with the proposed upgraded intake structure and the conversion to spray irrigation.

8.70 The Cookes Pond discharge would be very minimal if not, non-existent with a consent only required for emergency type situations.

8.71 Ms McCabe said that erosion of the bed and banks of the tributaries of Quailburn Stream from the discharge of water was unlikely to occur, and effects should be minor.

8.72 These discharges were considered by Ms McCabe to be very minor in terms of the receiving environments whereby these discharges have been operated at a higher rate of discharge for nearly 40 years. Therefore the effect on the flood carrying capacity was in her opinion considered minor.

8.73 Given this, flood carrying capacity and erosion from the discharge of water was unlikely to occur and was considered minor by Ms McCabe.

Effects on ecosystem values and water quality

8.74 Ms McCabe said that the water that was discharged into the Quailburn Stream tributaries was excess water that had been diverted. It was un-used (i.e. it had not been used for irrigation prior to the discharge occurring). Therefore, it was of the same quality as that being diverted, and therefore, the quality of water in the tributaries of Quailburn Stream should remain unaltered.

8.75 With the upgrade to spray irrigation, in time this discharge would reduce to fairly much stock water only or for emergency situations. As part of the Farm Environmental Risk Assessment to be conducted to finalise the FEMP, these discharges would be considered further.

8.76 Ms McCabe considered the effects on water quality and ecosystems to be minor,

Effects on amenity, people, communities and Tangata Whenua values

8.77 Ms McCabe said that the receiving water body was a tributary of the Quailburn and Ahuriri River before entering Lake Benmore. The volume discharged was a very small volume of water in proportion to the volume of water in the river and lake, which would reduce further once the full spray system was operational.

8.78 This had been occurring since the early 1970's and the effects are decreasing with the system upgrade as already discussed in the sections above.

8.79 Therefore, effects on amenity, people, communities and Tangata Whenua values were considered by Ms McCabe to be minor.

Mr Robert Batty, planner

8.80 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.

8.81 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.

8.82 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

8.83 Mr Macfarlane is a farm management consultant with 29 years experience. He provided us evidence on behalf of all of the UWAG applicants.

8.84 He assessed the viability of the farm management plans and practicality and robustness of the mitigation measures and the ability to monitor progress.

8.85 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.

8.86 Mr Macfarlane also discussed with us the costing of various typical irrigation developments.

8.87 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.

8.88 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.

9 SUBMITTERS

9.1 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.

9.2 In relation to the discharge application, no submitters appeared in either or opposition to that specific application.

Fish & Game

9.3 Mr Graeme Hughes (on behalf of Fish & Game). described the Quail Burn as a small but lengthy tributary of the Ahuriri River, the lower reaches, approximately one or two kilometres, cease to flow during dry summer periods. In the upper reaches there was limited anecdotal evidence that suggested that at times there are fish to catch, most often in the early season when spawning adults remain for a period before returning to the Ahuriri River. Indications were that the Quail Burn was not well known and was seldom fished. Nevertheless, he noted that the Quailburn was an important spawning tributary of the Ahuriri River fishery.

9.4 Mr Frank Scarf (also on behalf of Fish & Game) said that Rule 2 Table 3 (xi) of the WCWARP limits allocation to 310 L/s and required a minimum flow of not less than 100 L/s to be retained instream at the Hen Burn Road (H39:655355) . A flow sharing regime was to be introduced when flows at Hen Burn Road exceed 1000 L/s.

9.5 He said that McAughtrie et al and Bellfield Land Company sought replacement consents for their existing authorisations, CRC991473 and CRC011987, respectively. The former had applied to divert up to 170 L/s into what was referred to as the Quail Burn Government Race while the latter sought to take to divert and take 140 L/s immediately downstream from the Government Race intake for spray irrigation of 208 ha. Between them, these two applicants have exhausted the allocation of 310 L/s available from the Quail Burn.

9.6 The water management regime (in L/s) would be:

Observed flow	Retained instream	"B" take
1000	1000	0
1120	1060	60 (two pumps)
1240	1120	120 (four pumps)

9.7 Gabities and Horrell estimated that MALF for the Quail Burn immediately upstream from the Government Race intake is about 330 L/s. This in turn, suggests that the 1:5 yr LF is about 220 L/s. From this, Mr Scarf concluded that the 100 L/s minimum flow identified in the Plan was inadequate and this too was something that may need to be addressed in the event of a Plan review.

Tangata whenua

9.8 Mr Horgan told us that Ngai 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.

9.9 Mr Horgan told us that Ngai Tahu had adopted two focal points against which they assessed the applications; the Ahuriri Delta was one of these as it would be one of the most acute receiving environments for the discharge of nutrients from the irrigation proposals. He told us it was also an area where Ngai Tahu proposes to undertake mahinga kai habitat restoration.

9.10 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. We received no specific evidence from Ngai Tahu relating to the Bellfield applications.

Meridian Energy Ltd

9.11 Mr Richard Turner, Planning Manager – Natural Resources, Meridian Energy Ltd, tabled a list of consent applications which were of a concern to MEL from a cumulative water quality perspective based on the sub-catchments in which the properties were located relevant to Meridian's operations and areas of interest.

9.12 The Meridian Energy approach was adopted for two reasons:

(a) the potential environmental effects and impacts on hydro-energy generation operations from intake blockages from macrophyte and periphyton growths and the associated increases in operating and maintenance costs and generating efficiency.

(b) The lack of any cumulative or comprehensive water quality assessment in the resource consent applications that were notified, making it difficult to consider the actual and potential adverse effects of the applications on the operation of the Waitaki Power Scheme.

9.13 The current applications were included in the Meridian Energy Ltd list of consent applications of concern. The principal concern in respect of the sub-catchment concern was in quantifying the nutrient thresholds to ensure that a TLI in Lake Benmore did not exceed 2.75, based on a summer average.

9.14 The other point that Mr Turner made was in relation to the appropriate term of consent for replacement applications. He expressed the view that Meridian considered the term should be decided with particular consideration given to the potential cumulative water quality effects associated with the current applications and the need to re-evaluate the water quality effects in the future to determine whether the prediction of effects were accurate.

9.15 It was for those reasons that Mr Turner sought an expiry date for renewal consents being on the same date as the expiry of the resource consents for the Waitaki power scheme.

9.16 The remaining point that Mr Turner made on behalf of Meridian was that he made it clear that he did not agree with the approach taken by Mr Chapman and Mr Batty in respect of monitoring at subcatchment nodes, in terms of those nodes also acting to assess compliance. He did not agree with Mr Chapman and Mr Batty that if the threshold limits at the subcatchment nodes are exceeded, then there should be no sanction on individual consent holders if they are complying with their on-farm nutrient discharge allowances.

9.17 Mr Turner told us that Meridian considers that consent conditions that manage compliance with on-farm nutrient discharge allowances and subcatchment node thresholds are to be preferred.

Mackenzie Guardians – Ms Di Lucas

9.18 Ms Di Lucas on behalf of Mackenzie Guardians provided us with a broad ranging brief of evidence, much of which we have already commented upon in Part A.

9.19 In terms of this particular "take" application, she identified it as being within her Ahuriri System. Within her written evidence the application did not receive any attention. In her graphic materials she identified the site as Site #32.

9.20 Quite possibly because it is categorised in her evidence as an existing activity, she did not give it any great attention. Nevertheless, we adopted the standpoint that Mackenzie Guardians were opposed to this grant.

9.21 We note when Ms Lucas undertook the analysis contained within her attachments, the site did not "register" as a geo-preservation site but nor did it register as a site with significant inherent values. We note that she gave it a "2" in terms of her natural landscape rating, which she assessed against a scale of 1 to 5, with 1 being the most natural and 5 the least natural. She had no recommendation in terms of mitigation measures though she did refer to Mr Glasson's recommendations.

Mackenzie Guardians – Dr Susan Walker (ecologist)

9.22 We note that Dr Walker gave comprehensive evidence on the cumulative effects of irrigation on vegetation on the Mackenzie Basin. This evidence is discussed in Part A. Her evidence being Basin-wide included that a more in-depth investigation of the individual sites was required. However, she did loosely provide us with Attachment 15, which contained her more particularised reviews in respect of each site.

9.23 In terms of her assessment as per Attachment 15, Dr Walker assessed Bellfield as a whole as being approximately 80% converted. She considered that the potential effects of irrigation on terrestrial biodiversity were moderate.

Department of Conservation

9.24 We have considered the evidence we received from the Department of Conservation. However it was our overall conclusion that the maps and diagrams provided which identified locations of endangered species were at a coarse scale. It was difficult to tell whether or not this application would cause any effects on those endangered species. However if there are any issues of concern about these endangered species we are well satisfied that those concerns are met as a result of the conditions for the intake screens and periphyton monitoring we have included, as discussed further below.

10 UPDATES TO THE SECTION 42A REPORTS

10.1 The addendum s42A report of Ms Penman outlines additional matters or changes proposed by the applicant throughout the hearing and stated that:

(a) There was a discrepancy in relation to the OVERSEER input parameters used for irrigation depth and the irrigation depth applied for under this application over the 190 ha area.

(b) She was satisfied with the inclusion of a fish screen to be located at the intake in accordance with NIWA guidelines.

(c) In response to the mitigation proposed in the FEMP, Ms Penman supported a 20m buffer from waterways for both irrigation and fertiliser use, and riparian fencing and planting and recommended that these be included as conditions.

10.2 In relation to the proposed changes to consent conditions Ms Penman concluded that:

(a) She was in agreement to the correction of the map reference in condition (1).

(b) She recommended that if condition (3) was amended to remove the reference to "excluding milking dairy cows" then the condition should specify that irrigated pasture would be "only for grazing of sheep and beef cattle" instead.

(c) In relation to the proposed change to condition (9) to change telemetry to an option and not a requirement, Ms Penman recommended that telemetry be retained as a requirement where it can be implemented.

10.3 Ms Penman concluded that the following remained outstanding matters for this application:

(a) Water quality

(b) Efficient and reasonable use of water would not be a concern subject to a favourable comparison of irricalc input parameters against field measurements.

(c) The effects on landscape would be acceptable subject to the adoption of the mitigation recommended in the original s42A report of Mr Glasson.

(d) Cultural (Tangata Whenua) values, as the submission from Ngai Tahu had yet to be heard.

10.4 Ms Penman concluded that there were no outstanding matters in relation to the discharge. However, Ms Penman commented on the proposed changes to conditions proposed by the

applicant and agreed with the correction to the map reference in Condition 1 and the deletion of condition 5 (metering requirement).

10.5 In Mr Glasson's supplementary report (after hearing the landscape assessment for this application, noting that it was a replacement and taking into account Mr Andrew Craig's landscape assessment) determined that the mitigation measures that he outlined in his original assessment should remain.

11 APPLICANT'S RIGHT OF REPLY

11.1 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.

11.2 In relation to this particular application, Mr Chapman said that it had already been explained in evidence that Bellfield replacement consent had been required to reduce the possible application rate from 820 mm to 750 mm in the Overseer modelling in order to meet N and P property thresholds. Furthermore in the evidence of Graeme Spittle details were provided of the reduction in current stock numbers and exporting feed from the irrigation area in order to meet thresholds currently proposed.

11.3 However if property thresholds were reviewed they considered Bellfield threshold should be determined based on the higher irrigation application rate should this be granted, and current land practices. It should not be based on N and P Overseer outputs that have already required extensive mitigation in order to meet the threshold currently proposed by MWRL.

11.4 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 contended the list was flawed because applications are placed in the red category solely by virtue of their location within the Ahuriri Catchment. Mr Chapman considered the correct approach for the ranking of the applications was to determine where they sit in relation to the existing environment.

11.5 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.

11.6 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.

11.7 Mr Chapman addressed us on the MWRL proposition in terms of the Ahuriri River, namely a needs plus a buffer approach. Mr Chapman made it clear that the UWAG applicants in the Ahuriri, which includes this application, at the time of reply had only just received information relating to each individual farm's NDA, but noted this approach was of critical concern.

11.8 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.

11.9 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 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.

11.10 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.

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

12 STATUTORY CONTEXT

12.1 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

13 EVALUATION OF EFFECTS

13.1 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) Inefficient use

(b) Water quality

(c) Tangata whenua values

(d) Landscape

(e) Effects of discharge

(f) Positive effects

Inefficient use

13.2 The applicant proposed to take water at a rate not exceeding 140 litres per second and use up to 1,557,782 cubic metres per year for irrigation of 190 hectares. The irrigation volume has been calculated using Irricalc but no comparison of irricalc input parameters against field measurements was presented.

13.3 In contrast, Ms Penman completed her calculation using GIS system and the method outlined in Report U05/15 ("the WQN9v2 approach"). She based this calculation on intensive land use with 165ha light soil (PAW <75mm) and 25ha heavy soils (PAW >110mm) and Effective Summer Rainfall of 190mm. Using these figures, Ms Penman recommended an annual volume of 1,231,250 cubic metres would be a more appropriate and efficient volume of water for spray irrigation of the proposed area.

13.4 Under Policy 16 of the WCWARP there are two acceptable methods for calculating and efficient annual volume. The first is using a soil water balance approach. The applicant contends that Irricalc is such an approach. The second alternative is the WQN9v2 approach used by Ms Penman.

13.5 Of the two alternatives, we consider that the available data allows the WQN9v2 approach to be used for calculating annual volumes. We note that the Irricalc methodology requires supporting data that is not currently available and requires verification when the proposal is in place. We have some concerns about the data and measurements on which the Irricalc calculations were based, which may not be adequate to satisfy the requirements of a soil water balance approach under Policy 16.

13.6 Based on the above, we consider that to adopt the annual volume proposed by the applicant may allocate more water than what is required and result in an inefficient use of water. We therefore

prefer the annual volume of 1,231,250 cubic metres calculated by Ms Penman using the WQN9v2 approach and adopt this as the appropriate volume of water for spray irrigation of the proposed area.

Water quality

13.7 The applicant considered that effects on water quality at the local scale would continue to be minor because this is a replacement application. They said that the areas currently irrigated will be upgraded to spray systems from the previous wild flooding and discharges would be eliminated over time.

13.8 This is not an appropriate assessment of the water quality effects associated for this application. There can be no presumption that effects of the use of water authorised under the previous consents would continue to be authorised under any new consent. The applicant also referred to a report by Dr P Espie regarding irrigation in the Mackenzie Basin (2004) which discussed the ability of modern centre pivot systems to minimise nutrient depletion and water contamination.

13.9 The Quail Burn runs alongside the proposed irrigation area and 20 metre irrigation buffer strip along its length was proposed to protect the surface water quality from runoff and leaching of nutrients as a result of irrigation.

13.10 The applicant has been involved with the study by Mackenzie Water Research Ltd (MWRL) on cumulative effects within the catchment. We address the report by MWRL in Part A of our decision and our findings guide our consideration of the effects of this activity on water quality.

13.11 Subsequent to the presentation of the applicants evidence Dr Freeman listed this application as one of those that, on the basis of the currently available information, are associated with a high level of uncertainty about potential cumulative adverse effects, and because of the scale of the development and therefore the potential consequences of adverse effects, taking account of cumulative water quality effects, the water permit applications should not be granted.

13.12 An Overseer assessment indicated that the applicant was able to comply with the thresholds outlined within the MWRL Water Quality Study. However as discussed in Part A of this decision, we were not convinced that the proposed MWRL thresholds would protect some receiving waters from some unacceptable deterioration. In particular, we were of the view that the granting of significant new irrigation consents in the Ahuriri Catchment would result in the Ahuriri Arm of Lake Benmore becoming mesotrophic (from its current oligotrophic state).

13.13 As noted above, simply being a replacement application does not constitute immunity from an assessment of environmental effects, and, because of the sensitivity of the Ahuriri catchment to water quality effects we are carefully evaluating the effects of existing irrigation practices and improvements proposed to reduce those effects.

13.14 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 unacceptable water quality effects. In this case it means considering the potential effects of granting this application (in combination with others we grant) on:

(a) The Ahuriri Arm of Lake Benmore;

(b) Groundwater chemistry and in particular the proposed threshold of 1 mg/L NO_3-N; and

(c) Periphyton and other ecological effects in the Quailburn Stream and Ahuriri Rivers.

13.15 The applicant has proposed mitigation measures to lessen the risk of their activities contributing to cumulative water quality effects. We need to consider whether the proposed mitigations, are in our view, sufficient to avoid significant water quality effects occurring, and/or whether refinements to the measures proposed are required.

13.16 At the hearing the applicant submitted a draft copy of a farm environmental management plan (FEMP). A final version of the FEMP including a FERA was supplied to ECan on 22 November 2010.

13.17 A starting point for the consideration of effects on points (a)-(c) above is the FEMP. Evidence on the FEMP was given by Ms McCabe, but for consistency with other decisions we have undertaken an independent audit. Key points arising from our audit and additional to Ms McCabe's evidence are summarised below:

(a) No information on soil types was given other than there are approximately 10 different soil types with PAW ranging from 30-140mm, with light to medium depth topsoil on hills, and some stone with mixture of soil types on both undeveloped and developed flat land.

(b) On land irrigated by the existing pivot there are large stones with little soil on 60% of the area, with the balance being medium to heavier soils with some stone.

13.18 Because the Ahuriri Arm of Lake Benmore is the receiving environment, moderately severe nutrient mitigations are required compared to good agricultural practice (the standard referenced in OVERSEER). i.e. An additional 10.70 kg N/ha/y are required to be prevented from leaching (or otherwise lost from the system) and 1.1 kg P/ha/y compared with that achieved using good agricultural practice.

13.19 The mitigations proposed in addition to those assumed in OVERSEER are listed as:

(a) No winter application of fertiliser on the irrigation area;

(b) N fertiliser applications split to under 50 kg N/application;

(c) No P fertiliser within three weeks of irrigation; and

(d) Olsen P of below 30 maintained.

13.20 The above mitigations appear to us to be quite standard and are practices that we would view as conforming to Good Agricultural Practice.

13.21 Mitigation measures proposed to ameliorate site specific environmental risks are:

(a) 20 metre layback from any waterway when applying fertiliser by land based application e.g. bulk spreader;

(b) Irrigation buffer from Quailburn Stream of at least 20m;

(c) Fence the south side of Quailburn Stream within the existing irrigation area to restrict stock access to the Quailburn;

(d) GPS Spreader and maps to be used when applying fertiliser Field Records; and

(e) Monitor and manage stock access, stock type and stock number from all permanently flowing waterways within other non irrigated intensively farmed areas.

13.22 Of the mitigation measures proposed above, we consider that only (b) and (d) may be considered measures in excess of the practices expected using Good Agricultural Practice.

13.23 The critical issues for us for are:

(a) Is the predicted nutrient load realistic?

(b) What effect will the predicted nutrient load (alone and in combination with other applications before us) have on the waterbodies listed in above making reasonable assumptions about flow paths?

(c) Can the effects be avoided, remedied or mitigated?

<u>Predicted load realistic?</u>

13.24 The inputs to OVERSEER were audited by Mr McNae. In his final addendum report he reported as a 'live' issue that the applicants preferred to stay with the developed setting in OVERSEER following advice from Mr McFarlane that a highly developed status would never occur. We accept Mr MacFarlane's point on this but note that our interpretation of Dr Snow's evidence (Part A) was

that she advocated use of the highly developed setting on shallow soils, not because they were likely to reach that status, but rather as a pragmatic response to reflect that OVERSEER would significantly underestimate nitrogen losses on shallow soils. We note that the proposed soils in this case are very shallow and stony and as discussed in part A, our expectation is that OVERSEER (developed setting) will underestimate nitrogen losses from such soils.

Effects on waterbodies

Ahuriri Arm of Lake Benmore

13.25 In part A we determined that the Ahuriri Arm of Lake Benmore was already close to the oligotrophic-mesotrophic boundary. MWRL agreed with this assessment, but submitted that through improvements to replacement consents and significant nutrient mitigation of new consents, all consents could be granted without causing the oligotrophic-mesotrophic boundary to be breached. We disagreed with the MWRL submission for the reasons given in Part A. Therefore we need to assess each application on its own merits, but taking into account other applications before us.

13.26 Dr Freeman's addendum (on behalf of the Regional Council) gave a useful summary of estimated total property nitrogen loads to the Ahuriri Arm associated with irrigation development proposals, together with their priority as determined by Professor Skelton on the basis of the date the application was deemed to be notifiable. The load attributable to this application (Dr Freeman's Table 7, load apportioned) and based on the applicant's own modelling was 5,771 kg N/y. Whilst load apportioned, however, this figure represents the nitrogen load from the entire property and includes the load from dryland farming (permitted activity). The current irrigated area is also a legally permitted activity up to the time this decision is made and will be contributing to the current trophic state of the Ahuriri Arm.

13.27 Nevertheless it is clear that the Ahuriri Arm is close to the becoming mesotrophic and therefore practices that unnecessarily contribute to that status should be discouraged. Wild flooding and border dyke are such practices because they entrain nutrients at the pasture surface and can transport them to the point of discharge to surface waters. This is particularly the case for phosphorus, for which the Ahuriri Arm is particularly sensitive (Dr Romero for MWRL, Part A).

13.28 The applicant has indicated they intend to replace the remainder of their wild flooding/border dyke with spray irrigation. The final condition set provided by the applicant stated that this would occur within 5 years of granting consent. With this condition in place together with the other mitigations offered by the applicant in their FEMP we are confident that the nutrient load generated by the irrigation will decrease.

Groundwater

13.29 We agree with Dr Bright that effects on groundwater in this case are manifest by interaction with surface waters and that groundwater is largely a matter for policy considerations. There was no evidence specific to Quailburn Station on predicted NO_3-N concentrations, nor was there evidence on partitioning groundwater. The final concentration in groundwater will depend upon dilution from upland sources and there has been no evidence presented that allow us to estimate this dilution.

Periphyton growths in Ahuriri River, Henburn Stream and Quailburn

13.30 Dr Coffey's evidence (MWRL, Part A) included information on periphyton surveys in Ahuriri River. He reported periphyton biomass below levels of concern at all the sites he visited (upper, SH8 Bridge, and node). He also reported that the quality of macroinvertebrates declined from good to fair with distance down the river. We note that bed of the Ahuriri River is hard and dominated by cobbles, which would be susceptible to nuisance periphyton growths should nitrogen and/or phosphorus concentrations in the river be above that limiting periphyton growth (under stable flow conditions).

13.31 Dr Coffey also reported on periphyton surveys in the Quailburn. He noted there was no existing irrigation in the Quailburn sub-catchment (which appears inconsistent with this application given that the Quailburn stream runs through the irrigation area) but reduced physical habitat quality at the Quailburn Node site relative to Quailburn Upper. This was reflected in reduced riparian cover and increased periphyton cover at the downstream sampling site. He also noted that both cover and biomass of periphyton would constitute a "nuisance" condition at the downstream site.

13.32 No information was presented on the existing periphyton biomass in Henburn Stream.

13.33 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.

13.34 There are two important elements that will determine whether the MfE guidelines are likely to be breached:

(a) The flow path of drainage water/groundwater with respect to the Quailburn and Henburn Streams and the Ahuriri River,

(b) The amount of dilution as the drainage water mixes with Henburn Stream or Ahuriri River, particularly under summer low-flow conditions.

13.35 Superimposed on both of these elements is the groundwater travel time. However, for our purposes, that only affects the timing of any effect, rather than the effect itself.

13.36 We think it is likely that existing irrigation is contributing to the periphyton growths noted by Dr Coffey at the downstream site. However we also note the applicant has agreed to periphyton monitoring and the ratcheting back of irrigation if such monitoring shows that such periphyton growths exceed 'nuisance' levels. Changing existing wild flooding/border dyke irrigation to spray within a five year period together with the volunteered conditions to apply a 20 m setback distance from the Quailburn Stream will minimise the chances of the periphyton trigger response condition being invoked.

13.37 We provide further comment on the appropriate trigger levels for periphyton monitoring in our discussion of the relevant planning instruments below.

Avoided, remedied or mitigated

13.38 We acknowledge that the applicant has proposed mitigation measures in the FEMP to minimise the effects of their activities. The applicant stated their intention to upgrade remaining wild flooding and border dyke irrigation to spray, but without any timeline for doing so. In our view this is the most important measure to avoid adverse water quality effects and requires a time-based objective to come into effect. This together with the other volunteered mitigation measures should decrease the nutrient load from this property and its overall contribution to cumulative effects.

13.39 In his closing legal submissions, Mr Chapman stated that while some of his applicants may choose to participate in the lock-step approach, many of his clients could not. As this is a replacement application consideration of lock-step approach is not relevant.

13.40 In summary, our view is that the adverse effects on water quality from the proposed activity can be minimised through mitigation options and managed by way of conditions.

Tangata Whenua values

13.41 The proposal is an existing activity that will involve upgrading the remaining border dyke / flood irrigation component (50%) to spray irrigation, installation of a gallery intake, and application of a FEMP and consent conditions.

13.42 Given the proximity of the proposed activity to the lower Ahuriri River, the potential to adversely affect water quality and ecosystems of the Ahuriri Delta and tributaries is of some significance, particularly given the priority Ngai Tahu have placed on restoration of mahinga kai habitat in the Ahuriri Delta.

13.43 The relatively modest increase in the stocking rate proposed as a result of the replacement consent being granted does not constitute "significant intensification of farming activity" that was a matter of concern to Ngai Tahu with a number of the irrigation proposals in the catchment.

13.44 The proposal sits within the category that Ngai Tahu considered would not pose a risk to cultural values: the effects of an existing use are already part of the existing environment. With the replacement of the border dyke/flood component of the irrigation system with spray irrigation

and application of mitigation measures, we consider the proposal will have a minor effect on cultural values.

Landscape

13.45 Mr Glasson, for his part, seemed to be very concerned about the close proximity of the proposal to Quailburn Road. His other prime concern about riparian buffers along the stream had been addressed. There was no discussion about the applicant discreetly locating and recessively treating the pump station to address Mr Glasson's concern about adverse effects.

13.46 As best we understood Ms Lucas did not support the grant of consent. She agreed with Mr Glasson about the high visibility of the subject site from Quailburn Road.

13.47 Mr Craig on the other hand centred his landscape assessment primarily on the point that the irrigation activity had been existing for some considerable period of time and that the immediate surrounds of the application or proposal site had already been modified by way of agricultural activities. The other point of difference we considered to be of some significance was that Mr Craig noted that the Waitaki District Plan did not seek to limit irrigation activity within the Rural Scenic zone. He also noted that farming activity was permitted within this zone.

13.48 In our view, both Mr Glasson and Ms Lucas did not place sufficient weight on the fact that the activities covered by this proposal were consented and the applicant was seeking a renewal. Thus, the effects they were both concerned about, primarily in terms of views from Quailburn Road, were effectively already part of the existing environment.

13.49 That circumstance coupled with the way in which the Waitaki District Plan provided for farming activities and did not seek to limit or restrict irrigation activities resulted in us preferring the assessment of Mr Craig in terms of landscape impacts. In short, we do not think that Mr Glasson's recommendation about a buffer distance from Quailburn Road is required having regard to the circumstances as we have set them out above.

13.50 Overall, particularly taking into account the point that this activity was previously consented, we have concluded that a grant of consent with conditions that deal with setbacks from streams, along with other riparian fencing and planting as proposed in the FEMP will adequately mitigate any adverse landscape effects.

Effects of discharge

13.51 Both the applicant's consultant and the section 42A reporter agree that all adverse effects resulting from this activity are less than minor. We concur with this opinion because the discharge water is bywash from the intake and will be of the same quality.

Positive effects

13.52 The applicant has made a considerable investment in the partial conversion to spray irrigation, which will result in less nutrient discharges from the property. Furthermore, we recognise that continued irrigation of the land will help to improve the productivity of the property and provide positive economic benefits for the wider community.

Key conclusions on effects

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

13.54 Provided that the reduced annual volume recommended by Ms Penman is adopted and the conversion to spray is completed within five years, we accept that the proposal represents and efficient and effective use of water.

13.55 Given the existing irrigation on the property, the conversion to spray, and the mitigation measures proposed through the FEMP, we are satisfied that any potential adverse effects on water quality from the proposed activity can be appropriately managed by way of conditions.

13.56 We conclude that the activity coupled with the proposed mitigation will not have any significant effect on tangata whenua values.

13.57 In relation to effects on landscape values, for reasons already advanced provided the mitigation measures proposed in the FEMP are included, we conclude there will not be any landscape effects of concern arising from a grant of consent.

13.58 We agree that all adverse effects resulting from the proposed discharges will be less than minor.

13.59 We accept that allowing the proposal to occur will provide positive economic benefits for the applicant and provide stability to the overall farm.

14 EVALUATION OF RELEVANT PLANNING INSTRUMENTS

14.1 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.

14.2 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.

Water quality

14.3 In relation to water quality, the key documents we have considered are the WCWARP (incorporating the objectives of the PNRRP) and the operative NRRP provisions.

WCWARP

14.4 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.

14.5 We have determined that granting these consents with conditions including a 5-year timeframe for changing current wild flooding and border dyke irrigation to spray, and incorporating mitigations set out in the FEMP will help to minimise nutrient loss from the irrigated area. This gives us confidence that the off-site nutrient losses will be minimised and the health of the Quailburn Stream flowing through the properties will be enhanced and the contribution to the nutrient load on Lake Benmore/Ahuriri Arm will decrease.

14.6 There is some evidence of nuisance periphyton growths in the lower Quailburn stream and any consent to grant would need appropriate monitoring conditions, which the applicant has agreed to. However, given that this is a replacement consent for existing activities, we consider that the proposed mitigation measures and changes to irrigation infrastructure will decrease the incidence of nuisance periphyton growths from this source.

14.7 Overall, we can conclude that the mitigation measures proposed will reduce the current nutrient load on the Ahuriri River and Lake Benmore. Thus we are able to conclude that a grant of consent would be consistent with Objective 1(b) and 1(d) WCWARP.

14.8 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 and periphyton growths combined with a condition requiring racheting back of irrigation if annual periphyton biomass reaches 'nuisance' levels during summer low-flow conditions, then our view is that granting consent would be consistent with Objective 1(c).

14.9 We note that Objectives 2, 3, 4, and 5 '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.

14.10 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 NNRP provisions on the basis that they represent the current approach for achieving the common goal of protecting water quality.

NRRP

14.11 Under the NRRP, Lake Benmore (including the Ahuriri Arm) is classified as an "Artificial On-River Lake" under the NRRP. 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 3 (i.e. oligotrophic-mesotrophic boundary). For the reasons discussed above, we consider that granting consent to the proposal would be consistent with this objective and would not (in combination with others we grant) cause the TLI maximum to be breached.

14.12 Both the Quailburn and Hen Burn are now categorised as 'Spring-fed upland' 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 periphyton biomass in Alpine upland streams should be less than 50 mg /m^2 chlorophyll *a*. This water quality management unit also has water quality standards for DRP and DIN that apply via Schedule WQL1 and associated rules of 0.007 and 0.10 mg/l respectively.

14.13 We understand that the applicant and reporting officer agreed on periphyton water quality conditions that included an 120 mg/m^2 Chlorophyll *a* standard (and an early warning trigger of 90 mg/m^2 Chlorophyll *a*) for the Quail Burn and Hen Burn. 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.

14.14 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 Quail Burn and Hen Burn. We note the following:

(a) Dr Coffey's (MWRL) evidence that there is no existing irrigation in the Quailburn catchment (although this appears at odds with this application which is a replacement).

(b) Dr Coffey's evidence of increased periphyton cover at the lower Quailburn site accompanied by reduced physical habitat quality

(c) The cobbly bottomed substrate of the Quailburn and its suitability for nuisance growths of periphyton.

(d) The categorisation of a few tributaries in the Quail Burn and many in the Hen Burn as 'Hill-fed – lower" with an Objective WQL1 specified maximum periphyton outcome of 200 mg/m^2 chlorophyll *a* and Schedule WQL nutrient 'standards' for DRP and DIN of 0.006 and 0.47 respectively.

(e) 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/m^2 chlorophyll *a* as a guideline for oligotrophic streams with diverse "clean-water" benthic invertebrate communities.

(f) Objective WQL1.1 of the NRRP which calls for maintenance of the outcomes in Table WQL5 where they are currently being achieved, and progressive improvement in the quality of the water and bed where they are not.

14.15 After considering all the above factors we consider that the early warning trigger for the Quailburn and Henburn Streams should be 50 mg/m^2 chlorophyll a together with performance water quality standards for DRP and DIN of 0.007 and 0.10 mg/l respectively, and the standard trigger should be 90 mg/m^2 chlorophyll a with performance water quality standards for DRP and DIN of 0.007 and 0.18 mg/l, respectively. Whilst this is a compromise between the recommended condition set and the now operative NRRP plan provisions, our view is that it achieves an appropriate balance and its enforcement will achieve the intent of the NRRP classification.

Conclusion on water quality provisions

14.16 Overall then having regard to the scheme of the WCWARP and the NRRP we reach a conclusion that granting consent in this case to the proposal as a whole with suitable conditions would be consistent with the key objectives and policies of both of these plans relating to water quality.

Efficient use

14.17 As we read the provisions of the WCWARP, there is a strong and clear focus on the efficient use of water.

14.18 Policies 15 – 20 provide for an efficient use of water so that net benefits are derived from its use and are maximised and waste minimised. In particular, Policy 16 requires us to consider whether the exercise of these consents would meet a reasonable use test in relation to both the instantaneous rate of abstraction and the annual volume for take, use, dam or divert. As discussed in our evaluation of effects, provided that the lower annual volume calculated by the s42 officer is adopted, we are satisfied that the rates and annual volumes reflect an efficient and effective use of water and that the reasonable use test can be met.

14.19 Objective 3 of the WCWARP requires us to recognise the beneficial and adverse effect on the environment of allocating water, along with the national and local costs and benefits. We consider that if water is allocated inefficiently, then this results in adverse effects on the environment in terms of water quality and also increased costs and lower benefits. On the other hand, if water is allocated in a manner that ensures its efficient use, the reverse is likely to be true.

14.20 Objective 4 of the WCWARP requires us to promote the achievement of a high level of technical efficiency in the use of allocated water. That can be achieved in this instance by converting the border dyke systems, which are technically inefficient, to spray irrigation. Application by spray within the constraints of an annual volume will require a high degree of efficiency to ensure that crops and pasture are not stressed in extreme conditions and water is not wasted.

14.21 Relevant in this circumstance because we are here considering a replacement application, is Policy 28. Under this policy we need to consider whether the applicant has made all reasonable attempts to meet the efficiency expectations of this plan. We must recognise the value of investment that the existing consent holder has made and we must maintain the inclusion of the consent if granted in any allocation limits and priority plans on the waterbody concerned.

14.22 In terms of whether or not all reasonable attempts to meet the efficiency expectations of the Plan have been undertaken, with the proposal to convert the remaining border dyke system to spray irrigation we conclude that the applicant has taken all reasonable attempts to meet the efficiency expectations of the Plan.

Environmental flow and level regimes

14.23 Policies 3 and 4 of the WCWARP refer to the setting of environmental flow and level regimes to achieve the objectives of the WCWARP. In addition, Policy 12 seeks to establish an allocation for each relevant activity within the catchment and requires consideration of the effects on other users. This is reflected in the rules of the PNRRP which specifies minimum flows and levels for water bodies and allocation limits for specific activities.

14.24 As the applicant is proposing to adopt the minimum flow required by the WCWARP and falls within the instantaneous allocation limits, we are satisfied that the proposal is consistent with these policies.

14.25 Policy 40 deal with the environmental flow regime in the rivers and streams in the upper catchment. Policy 40 enables access to water for the activities identified in Objective 2, to the extent consistent with Objective 1.

14.26 As the environmental flow and level regime in the plan was proposed by the applicant, and as it is within the allocation for agricultural and horticultural activities identified in Rule 6, Table 5, the proposal is considered by us to be consistent with this policy.

Landscape

14.27 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.

14.28 In considering these provisions we are informed by the provisions of the Waitaki District Plan which identifies the applicant's property as Rural Scenic zone. Also, we look to the Waitaki District Plan to provide the protection from inappropriate use and development of Outstanding Natural Landscapes that the proposed/operative CRPS and NRRP provide. In this instance, the Waitaki District Plan does not categorise this landscape as being an Outstanding Natural Landscape. We note that Outstanding Natural Landscapes are identified by the Waitaki District Plan and are located in close proximity to the subject site. Furthermore, the landscape assessments we have read and considered do conclude that those Outstanding Natural Landscapes will not be adversely impacted upon by a grant of consent to this proposal.

14.29 For the reasons already advanced we think that with the mitigation measures we have referred to the landscape effects for this proposal are capable of being addressed by conditions and granting consent to this proposal will be consistent with the relevant objectives and policies relating to landscape.

Tangata whenua

14.30 The proposed activity will potentially impact on the matters outlined in Objective (1). In particular, subsection (a) relating to spiritual and cultural values of Tangata Whenua. The application is for a replacement consent and as such the effects are part of the existing environment.

14.31 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 (c) safeguarding their value and providing mahinga kai for Ngai Tahu.

14.32 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 Ngai Tahu and their culture and traditions with their ancestral lands, water, mahinga kai sites, waahi tapu and waahi taonga. The Ngai Tahu objective of restoring mahinga kai habitat in the Ahuriri Delta is reliant on retaining existing water quality and ecosystem health in the tributaries which include the Quail Burn and Cookes Pond.

14.33 We find that through the application of a FEMP and appropriate conditions the consents if granted will be consistent with the above objectives relating to tangata whenua values.

Discharge

14.34 In relation to the discharge application, the key provisions of relevance can be found in the water quality chapter of the NRRP (Chapter 4). This includes Objective WQL1.1 discussed above, along with Policy WQL1 which relates specifically to point source discharges that may enter surface water.

14.35 As discussed in our evaluation of effects, the discharge water will only be that which has been diverted down the race for approx 300m and therefore will not alter the quality of the receiving waters. On this basis we consider that the discharge is consistent with the relevant objectives and policies.

Key conclusions on planning instruments

14.36 For all of the above reasons we consider that, with the imposition of appropriate conditions granting consent would be consistent with the objectives 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, tangata whenua values and discharges.

15 EVALUATION OF OTHER RELEVANT S104 MATTERS

15.1 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. After hearing all the relevant evidence, we consider that no such matters exist in relation to this application.

15.2 We do note that in terms of section 104(2)(a) RMA that when considering an application affected by s124 RMA, we must have regard to the value of the investment of the existing consent holder. We have noted earlier that this applicant seeks a renewal of a previous consent. In terms of the value of the investment of the existing consent holder we do note that the irrigation system utilised by the applicant has been upgraded over time. This upgrade has resulted in significant gains in terms of the efficient use of water. Those upgrades are not without significant financial investment. The cost of irrigation plant and equipment, the cost of installation of the same, and advice from irrigation experts is a significant investment. We have recognised that point in our considerations in respect of this proposal.

16 PART 2 RMA

16.1 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

16.2 Sections 6 RMA 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 Maori with the environment (s6(e)). In respect of s6(a) we recognise that preservation of the natural character of lakes and rivers is the imperative. We think that because of our finding in terms of the water quality issues, which takes into account mitigation measures and full conversion to spray irrigation on the site, the grant of consent recognises and provides for the preservation of the natural character of lakes and rivers.

16.3 In terms of s6(b), we have evaluated the natural features and landscape, primarily by reference to the relevant planning instruments. We reach the view that the grant of consent in this case is not inappropriate because it will not, in our view, diminish the natural features and landscapes such as they are in any significant way.

16.4 In terms of section 6(c), it is our view, taking into account the evidence received, that there are not areas of significant indigenous vegetation and significant habitats of indigenous fauna that are at risk thus requiring protection as a consequence of the grant of consent.

16.5 Regarding section 6(e) RMA, the Quail Burn and associated wetlands, ponds or waterways were part of the cultural landscape that Ngai Tahu identified in the Cultural Impact Assessment and through their evidence relating to their priority to restore mahinga kai habitat. We consider that this is an existing activity that with the proposed mitigation measures and appropriate consent conditions the proposal will be consistent with s6(e) provisions.

16.6 For the above reasons, we consider that granting consent to the proposal would recognise and provide for s6 matters, as we are required to do under the RMA.

Section 7 – Other Matters

16.7 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:

16.8 In relation to sub-section (a), we have taken particular regard of the views of Ngai Tahu and the role of kaitiaki that Ngai Tahu as manawhenua exercise in the Waitaki catchment. We heard from Ngai Tahu about their aspirations to undertake restoration of mahinga kai habitat in the lower Ahuriri catchment. We consider that through the application of the proposed mitigation measures and consent conditions that the activity will have no adverse effect on Ngai Tahu mahinga kai and cultural values associated with the receiving environments.

16.9 Sub-sections (b), (c), and (f) are specifically relevant to this application. Sub-section (b) relates to the efficient use and development of natural and physical resources. Relevantly in this case is water. We have determined that the volumes of water we are prepared to grant and the methodology of its conveyance and distribution, particularly after conversion to spray irrigation, results in the efficient use and development of the water resource. Sub-section (c) refers to the maintenance and enhancement of amenity values. Maintenance and enhancement of amenity values will be achieved in this instance through utilising mitigation measures such as those provided in the FEMP. These steps will ensure the maintenance and enhancement of amenity values.

16.10 In terms of sub-section (d), because of the assessments we have made in relation to ecosystems, we have had particular regard to the intrinsic values of ecosystems and we consider that through the grant of consent with the conditions imposed such values will be safeguarded.

16.11 Sub-section (f) refers to the maintenance and enhancement of the quality of the environment. The applicant has proposed mitigation measures to ensure that this objective is achieved.

16.12 Having particular regard to the above matters in the context of section 7, we conclude that the grant of consent could be supported

16.13 Having particular regard to the above matters in the context of section 7, we conclude that the grant of consent could be supported

Section 8 – Treaty of Waitangi

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

16.15 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.

16.16 We are satisfied that the consultation procedures provided Ngai 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

16.17 Turning now to the overall purpose of the RMA, that is, "*to promote the sustainable management of natural and physical resources*".

16.18 We make the following comments:

(a) We consider the proposal and use of water as outlined is consistent with the purpose of sustainable management;

(b) Irrigation will make a contribution to the overall regional (Waitaki) wellbeing; and

(c) The natural and physical resources of the basin water and land will all be sustained.

16.19 This leaves section 5(2)(c)(a) RMA and the obligation to avoid, remedy or mitigate any adverse effects on the environment. We make the following comments:

16.20 We have concluded that the grant of consent with the conditions we propose will ensure any adverse effects will be avoided, remedied or mitigated.

17 OVERALL EVALUATION

17.1 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.

17.2 For the water permit application, given the reduced annual volume we propose, coupled with the conversion to spray (provided that is completed within five years) then we think that provided the mitigation measures proposed via the FEMP are implemented we are satisfied that any potential adverse effects on water quality from the proposed activity can be appropriately managed by such conditions. Similarly, we are of the view, primarily because this activity has previously been authorised by resource consent, that there will not be adverse effects on landscape values nor will there be cumulative greening effects – again, primarily because this activity has been part of the existing environment for an extensive period of time.

17.3 For the discharge permit application we are satisfied that there are no outstanding adverse effects of the proposed activity that have not been addressed through appropriate mitigation measures. When considering the matters outlined in section 104(1) RMA, we are satisfied that the actual and potential effects of the proposed activity are acceptable.

17.4 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.

18 CONDITIONS

18.1 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.

18.2 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.

18.3 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.

18.4 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

18.5 In Part A we rejected the MWRL proposition that we could grant all the applications before us with conditions.

18.6 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.

18.7 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 the

Ahuriri Arm of Lake Benmore exceeding 2.75, or the TLI of the Wairepo Arm of Lake Ruataniwha exceeding 4.00. As we recorded in Part A our view if that 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.

18.8 For those applications that we are inclined to grant, we have assessed their 'cumulative effects' in priority order, 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.

18.9 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.

18.10 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, and may even decline. This approach is, we believe, consistent with the NRRP, which has as an objective and maintenance or improvement of water quality. It also has the advantage, in our view, of taking the pressure off cumulative effects monitoring with all the ensuing uncertainties and difficulties discussed in Part A,

18.11 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.

18.12 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. In cases where this is not the case we have imposed other monitoring requirements such as lysimeter or piezometer networks, and/or contributing to lake monitoring.

18.13 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.

18.14 We did consider deleting the agreed conditions relating to lake TLI monitoring on the grounds that it was marginal whether trigger response conditions were relevant to replacement consents. The critical issue for us was whether the effects of replacement consents could be considered less than minor (with respect to lake water quality).

18.15 However upon reflection we have decided that (in the case of the Ahuriri Arm of Lake Benmore, and the Wairepo Arm of Lake Ruataniwha) the existing TTLI is very close to the agreed trigger point, and the TLI may increase even without the grant of new consents (due to groundwater lag effects). We are reasonably confident however that this will not occur because by and large these activities have been 'on foot' for a long period of time and we think this is reflected in the current TLI. However, we cannot be completely certain and it seemed to us rather than leave the matter we should do something about it to at least provide a mechanism to respond to groundwater lag effects, if they occurred.

18.16 Thus, if TLI were to increase above the agreed trigger points then the lake monitoring conditions would serve a resource management purpose; particularly in conjunction with the condition to ratchet back existing irrigation. On balance, we have decided to retain the agreed lake monitoring conditions for Lake Benmore and the Wairepo Arm of Lake Ruataniwha.

18.17 An advantage of the approach discussed above is that it rewards applicants (through the granting of consents) prepared to convert from inefficient border dyke systems to modern pivot irrigators. Not only are there efficiency gains to be made by such conversion, but significant reductions in nutrient losses will also result.

19 DURATION

19.1 The applicant has sought a duration of 35 years for the take and use consent. Because this application is a "true replacement" it is not affected by the common conditions sought by Meridian requiring an expiry date of April 2025. This is reflected in the consent conditions provided.

19.2 Meridian, through Mr Turner, suggests that there are benefits in having a common expiry date for all consents to take water within the catchment to do with assessing cumulative effects.

19.3 To determine this issue we have referred to and applied the approach set out within the NRRP, Chapter 1, Section 1.3.5, which sets out some considerations that impact on duration. In particular we have placed weight on the following matters there referred to:

(a) the nature and sensitivity of the affected environment, including:

(i) the degree to which the sensitivity of the affected environment may become more sensitive over time; and

(ii) the probability of future adverse effects arising from the consented activity; and

(iii) the level of knowledge about the affected environment;

19.4 Section 1.3.5 contains a range of other guidance criteria, which includes the consent holder's capital investment in a pre-existing activity. However, we think that the nature and sensitivity of the affected environment plus the three criteria we have listed above are the most significant.

19.5 Given our findings in relation to the current TLI status of the Ahuriri Arm of Lake Benmore and the degree to which the sensitivity of the affected environment, namely the Ahuriri Arm, may become more sensitive over time and the probability or possibility of future adverse effects arising from this consented activity and others, and the level of knowledge about the affected environment, we do support Mr Turner's call for a common expiry date.

19.6 We do recognise this will have impacts upon the consent holder's interests. In particular, the consent holder's need to ensure that there are permanence and economic life of the activity. However, in that regard we do note that provided the consent holder seeks to renew its consent in accordance with the RMA, there is a level of permanence and economic life for the activity. We also think that the term of the grant, which will be approximately 13 years, does provide for a level of permanence and economic life of the activity. A term of this duration would provide benefits to the community and would enable the consent holder to achieve some level of return on capital investment involved.

19.7 In terms of the application to discharge water (CRC012733), we have decided to grant this consents for a period of 35 years notwithstanding the shorter term of the take and use consent. The key reason for this is that the effects of the activities are very minor and there is not the same uncertainty about change in the sensitivity of the receiving environment over time. As such, we consider that there is no resource management basis for a shorter term. If the discharge ceases within this time due to the conversion to spray, then the consent could easily be surrendered by the consent holder.

20 DECISION

20.1 Pursuant to the powers delegated to us by the Canterbury Regional Council; and

20.2 For all of the above reasons and pursuant to sections 104 and 104B of the Resource Management Act 1991, we **GRANT** the following applications by **Bellfield Land Company Limited**:

CRC011987 - to divert, take and use water from the Quail Burn at a rate not exceeding 140 litres per second, with a volume not exceeding 1,231,250 cubic metres per year. Water shall be used for spray irrigation of up to 190 hectares for grazing sheep and beef.

CRC012733 – to discharge up to 140 litres per second of excess by-wash and stockwater at two points on the property into tributaries of the Quail Burn and Cookes Pond

20.3 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.

20.4 The duration of CRC011987 shall be until the 30th April 2025. The duration of CRC012733 shall be for 35 years from the commencement of the consent

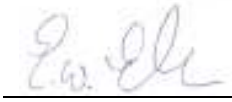
DECISION DATED AT CHRISTCHURCH THIS 16TH DAY OF FEBRUARY 2012

Signed by:

Paul Rogers 

Dr James Cooke 

Michael Bowden 

Edward Ellison 

APPENDIX A: CONDITIONS OF CONSENT (CRC011987) – DIVERT, TAKE AND USE

Diversion and take of water

1. Water shall only be diverted and taken from the Quailburn Stream, at or about map reference NZMS 260 H39:646-364 at a rate not exceeding 140 litres per second, with a volume not exceeding 12,096 cubic metres per day and 1,231,250 cubic metres per year between 1 July and the following 30 June.

2. Subject to Condition 3, whenever the combined flow in Quailburn Stream at Hen Burn Rd, NZMS 260 H39:6553-3542 and the abstracted flows relating to Government Race (CRC991473, CRC991474, CRC991475) and this permit, as estimated by the Canterbury Regional Council:

   (a) is equal or greater than 410 litres per second, the maximum rate at which water is taken shall not exceed 140 litres per second;

   (b) is less than 410 litres per second, and greater than or equal to 100 litres per second, a sharing regime shall apply that limits the combined rate of abstraction to ensure that the flow in the Quailburn at Henburn Road, is equal to or greater than 100 litres per second

   (c) is equal to or less than 100 litres per second the taking of water in terms of this permit for irrigation purposes shall cease.

3. 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 2.

Use of water

4. Water shall only be used for the border dyke and spray irrigation of 190 hectares of crops and pasture for grazing sheep, beef cattle, or non-milking dairying cows per irrigation season within the area of land shown on attached Plan CRC011987/CRC012733, which forms part of this consent.

5. 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 CRC011987/CRC012733.

6. 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.

7. The consent holder shall ensure water races used to convey water diverted in terms of this permit are well maintained to minimise losses.

Conversion

8. The consent holder shall within a period of five years from the commencement date of this consent, convert to spray irrigation and advise the Canterbury Regional Council as to the staging of any conversion.

9. Any rights to continue border dyke and/or wild flood irrigation shall cease five years from the date of this consent. The consent holder shall advise the RMA Compliance and Enforcement Manager at the Canterbury Regional Council of the completion of the conversion prior to the commencement and use of the new completed spray system.

Water metering – Minimum flows

10. The consent holder shall, prior to exercising this consent, install a water level measuring device in a stable reach of the Quailburn Stream at map reference NZMS 260 H39:6553-3542 that will enable the determination of the continuous rate of flow in the reach of the water body to within accuracy of ten percent.

11. The water level 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.

12. The consent holder shall install a tamper-proof electronic recording device such as a data logger(s) that shall:

    (a) time stamp a pulse from the water level recorder at least once every 15 minutes; and

    (b) 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

    (c) 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

    (d) 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.

13. The measuring and recording devices described in Conditions 10 and 12 shall be available for inspection at all times by the Canterbury Regional Council.

14. Data from the recording device described in Condition 12 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

15. The consent holder shall, within six months of the commencement date of this consent at the point of take:

    (a) install a water meter(s) that has an international accreditation or an equivalent New Zealand calibration endorsement suitable for use with an electronic recording device, from which the rate and the volume of water taken can be determined to within an accuracy of plus or minus five percent at a location(s) that will ensure the total take of water from Quailburn Stream is measured; and

    (b) install a tamper-proof electronic recording device such as a data logger that shall record (or log) the flow totals every 15 minutes.

16. The water meter and recording device(s) specified in Condition 15 shall 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); and shall either:

    (a) 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; or

(b) 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. No data in the recording device(s) shall be deliberately changed or deleted.

17. If the water meter specified in Condition 15(a) is not an electromagnetic or ultrasonic meter, the consent holder shall, prior to the first exercise of this consent install or make available an easily accessible straight pipe(s) at a location where the total water take is passing through, with no fittings or obstructions that may create turbulent flow conditions, of a length at least 15 times the diameter of the pipe, as part of the pump outlet plumbing or within the mainline distribution system, to allow the Canterbury Regional Council to conduct independent measurements.

18. The water meter and recording device(s) specified in Condition 15 shall:

    (a) be installed by a suitably qualified person in accordance with ISO 1100/1-1981 (or equivalent) and the manufacturer's instructions; and

    (b) be maintained throughout the duration of the consent in accordance with the manufacturer's instructions; and

    (c) be accessible to the Canterbury Regional Council at all times for inspection and/or data retrieval.

19. All practicable measures shall be taken to ensure that the water meter and recording device(s) specified in Condition 15 are at all times fully functional and have an accuracy standard of five percent.

20. Within one month of the installation of the measuring or recording device(s) specified in Condition 15 (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 Condition 16.

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 Conditions 15 to 19 inclusive; and

    (b) the tamper-proof electronic recording device is operating as specified in Conditions 15 to 19 inclusive.

Fish Screen

22. The consent holder shall within a period of 5 years from the commencement date of this consent and on conversion to spray irrigation (whichever occurs earlier) 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 Quailburn Station shall be defined as the areas in certificates of title and Pastoral Lease numbers OT6A/767-8, which total 2,194 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 Quailburn Station 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. Following conversion 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 Quailburn Station does not exceed 8,761 kg of Nitrogen and 240 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 earlier of the first full year (1 July to 30 June) following completion of the irrigation conversion or five years from the commencement of 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 mitigation measures set out in section 5 of the Farm Environmental Management Plan (FEMP) for Quailburn Station as provided to Environment Canterbury in November 2010 and attached to these conditions.

36. Subject to Condition 35, the consent holder shall implement, and update annually the FEMP for Quailburn 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 Quailburn Station Overseer model inputs.

    (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 Quailburn 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 2194 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. 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

51. 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.

52. Within two months of the testing referred to in Condition 51(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.

53. 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.

River water quality monitoring and response

54. The water quality of the Quailburn Stream shall be monitored within six months of the first exercise of consent as follows:

(a) The location for monitoring of Quailburn Stream 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: 646-364 immediately upstream of all irrigation takes on the Quailburn Stream.

ii. Map reference: NZMS 260 H39: 655-354 downstream of the discharge.

(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.

55. If the monitoring undertaken in accordance with Condition 54 shows that the average sample result for the downstream Quailburn Stream monitoring site specified in Condition 54 over the period December to April is greater than 0.10 mg/l of DIN; or 0.007 mg/l DRP; or 50 mg chl *a*/ m^2 (early warning trigger) but does not exceed 0.18 mg/l of DIN; or 0.007 mg/l DRP; or 90 mg chl *a*/ m^2 (environmental standard trigger), then the consent holder shall commission a report into the cause of the breach of the early warning trigger.

56. The reports referred to in Condition 55 and 60 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 exceedence(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.

57. If both the authors of the report prepared in accordance with Condition 56 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 either:

    (a) the cause of the breach of the early warning trigger was unlikely to have been caused in whole or in part by nutrient loss associated with the irrigation authorised by this consent; or

    (b) that it is unlikely that there is a trend towards exceedance of the environmental standard trigger pertaining to the downstream Quailburn Stream monitoring site,

    then no further action needs to be undertaken by the consent holder.

58. If Condition 57 is not satisfied, 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 total authorised irrigation area developed for irrigation at the time of the exceedance under this resource consent divided by the total farm area (being 190 irrigated hectares on a total farm area of 2,194 hectares); and

    (b) the consent holder shall prepare and implement a Remedial Action Plan in accordance with Condition 59.

59. In relation to the Remedial Action Plan referred to in Condition 58(b) and 62(b)(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 early warning trigger pertaining to the Quailburn Stream monitoring site, is returned as soon as practicable to and maintained below the average sample results of 0.10 mg/l of DIN; or 0.007 mg/l of DRP; or 50 mg chl a/ m^2 (early warning trigger) for the Quailburn Stream 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.

60. If the monitoring undertaken in accordance with Condition 54 shows that the average sample result for the downstream Quailburn Stream monitoring site specified in Condition 54 over the period December to April is greater than 0.18 mg/l of DIN; or 0.007 mg/l DRP; or 90 mg chl *a*/ m^2 (environmental standard trigger), then the consent holder shall commission a report into the cause of the breach of the environmental standard trigger. This report shall satisfy the requirements specified in Condition 56.

61. If both the authors of the report prepared in accordance with Condition 60 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.

62. If the report prepared in accordance with Condition 60 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 10% 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 (being 190 irrigated hectares on a total farm area of 2,194 hectares); and

(b) the consent holder shall prepare and implement a Remedial Action Plan in accordance with Condition 59.

63. If a required reduction in nutrient load is in effect under Condition 58(a) or 62(a) and monitoring for that period shows that the average sample results for the downstream Quailburn Stream monitoring site over the period December to April is:

(a) greater than 0.18 mg/l of DIN; or 0.007 mg/l DRP; or 90 mg chl *a*/ m^2 (environmental standard trigger), then there shall be a further NDA reduction of 10% x IPF for the subsequent irrigation season.

(b) less than 0.18 mg/l of DIN; or 0.007 mg/l DRP; or 90 mg chl *a*/ m^2 (environmental standard trigger), but greater than 0.10 mg/l of DIN; or 0.007 mg/l of DRP; or 50 mg chl *a*/ m^2 (early warning trigger), then there shall be a further NDA reduction of 5% x IPF for the subsequent irrigation season.

(c) less than 0.10 mg/l of DIN; or 0.007 mg/l of DRP; or 50 mg chl *a*/ m^2 (early warning 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.

Lake water quality monitoring and response

64. The water quality of the Ahuriri Arm of Lake Benmore and Lower Lake Benmore shall be monitored in accordance with this condition from the commencement of consent as follows:

(a) Locations:

i. Ahuriri Arm, Map reference: NZMS 260 H39:8027-2667

ii. Lower Lake Benmore, Map reference: NZMS 260 H39:8802-2371

(b) Depths: depth integrated 0-10m, 25m, 50m

(c) Water quality variables:

i. total nitrogen;

ii. ammonia;

iii. nitrate;

iv. nitrite;

v. total Kjeldahl nitrogen;

vi. total phosphorus;

vii. dissolved reactive phosphorus;

viii. Secchi disc depth; and

ix. chlorophyll *a.*

(d) Calculated key water quality variable: Trophic Lake Index (TLI), using the following equations:

i. TLc = 2.22 + 2.54 log (chlorophyll *a*)

ii. TLp = 0.218 + 2.92 log (total phosphorus)

iii. TLn = -3.61 + 3.01 log (total nitrogen)

iv. TLI = Σ (TLc + TLp + TLn)/3

(e) Frequency of monitoring: Once per month from 01 December to 30 April each year, with a minimum of three weeks between sampling.

(f) Methods: The methods of sampling and analysis shall be those that are generally accepted by the scientific community as appropriate for monitoring lake water quality. The methods of sampling shall be documented and made available to the Canterbury Regional Council on request.

(g) The water quality monitoring shall be undertaken by a suitably qualified and/or experienced person that demonstrates that they understand the appropriate methods to use for lake water quality sampling, including depth integrated sampling, and 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.

(h) 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 and shall be capable of analysing the variables listed in subparagraph c above with detection limits generally recognised by the scientific community as appropriate for oligotrophic lakes.

(i) The results of all sampling including the calculated average summer TLI, 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.

65. If the monitoring undertaken in accordance with Condition 64 shows that the average TLI for the 1 - 10 m depth integrated samples for either the Ahuriri Arm monitoring site or the Lower Benmore monitoring site over the period December to April is greater than 2.75 (early warning trigger) but does not exceed 3.0 (environmental standard trigger), then:

(a) the NDA, as specified in Condition 32, shall be reduced by 5% x the Irrigation Proportion Factor (IPF) for the irrigation season subsequent to the monitoring period. The IPF shall be the proportion of the area developed for irrigation under this resource consent i.e., 190 hectares divided by the total farm area of 2,194 hectares; and

(b) a report into the cause of the breach of the early warning trigger shall be prepared by a person with an appropriate post-graduate science qualification, by 30 July following the sampling. A copy of this report shall be provided to the Canterbury Regional Council Attention: RMA Compliance and Enforcement Manager, by 30 August following the sampling.

66. If a reduction in nutrient loading is required under Condition 65(a) and monitoring in the period that that reduction applies shows that the average TLI for the 1 – 10 m depth integrated samples for the monitoring site over the period December to April:

    (a) continues to be greater than 2.75 but does not exceed 3.0 then there shall be a further NDA reduction of 5% x IPF for the subsequent irrigation season.

    (b) is less than 2.75, then for the subsequent season the full NDA for the property, as specified in Condition 32 shall be restored.

67. If the monitoring undertaken in accordance with Condition 64 shows that the average TLI for the 1 - 10 m depth integrated samples for either the Ahuriri Arm monitoring site or the Lower Benmore monitoring site monitoring site over the period December to April is greater than 3.0 (environmental standard trigger), then

    (a) the NDA, as specified in Condition 32, shall be reduced by 10% x Irrigation Proportion Factor (IPF) for the irrigation season subsequent to the monitoring period. The IPF shall be the proportion of the area authorised for irrigation under this resource consent (190 ha) divided by the total farm area (2,194 ha); and

    (b) a report into the cause of the breach of the environmental standard trigger shall be prepared by a person with an appropriate post-graduate science qualification, by 30 July following the sampling. A copy of this report shall be provided to the Canterbury Regional Council Attention: RMA Compliance and Enforcement Manager, by 30 August following the sampling.

68. If a reduction in nutrient loading is required under Condition 67(a) and monitoring in the period that that reduction applies shows that the average TLI for the 1 – 10 m depth integrated samples for either the Ahuriri Arm monitoring site or the Lower Benmore monitoring site over the period December to April:

    (a) continues to be greater than 3.0 then there shall be a further NDA reduction of 15% x IPF for the subsequent irrigation season and rising to 20% compounding reductions for any further irrigation season.

    (b) continues to be greater than 2.75 but does not exceed 3.0 then there shall be a further NDA reduction of 5% x IPF for the subsequent irrigation season.

    (c) is less than 2.75, then for the subsequent season the full NDA for the property, as specified in Condition 32 shall be restored.

69. The nutrient load reductions and investigation referred to in Conditions 65 to 68 inclusive shall not be required if a two person expert scientist panel (with one expert nominated by the Canterbury Regional Council) both conclude after considering all the relevant available information (including catchment resource consent compliance, FEMP compliance monitoring pertaining to this consent and audit reports made available by the Canterbury Regional Council) that the cause of the breach of the early warning trigger or environmental standard (as applicable) was unlikely to have been caused in whole or in part by nutrient loss associated with the irrigation authorised by this consent.

Review of conditions

70. 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 Quailburn Stream at which abstraction is required to be reduced or discontinued as set out in Condition 2.

Lapse

71. 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:

- *In relation to the lake monitoring required under Condition 64, it is anticipated that all consent holders subject to this condition would coordinate and cooperate together to ensure that the lake water quality monitoring is undertaken and the costs of that monitoring is shared between those consent holders. The Canterbury Regional Council may provide resources to facilitate that coordination and recover the costs of that facilitation from the relevant resource consent holders as a cost of supervising and administering the resource consents. Any non-compliance with water quality monitoring requirements would be a matter for all relevant consent holders and may be the subject of enforcement proceedings.*

- *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.*

APPENDIX B: CONDITIONS OF CONSENT (CRC012733 – DISCHARGE)

1.
   a. Water shall only be discharged from the irrigation and stock water race into Quailburn & Cookes Pond at or about map reference NZMS 260 H39:648-362 and H39:650-347 as shown on Plan CRC011987/CRC012733
   b. The water shall be unused irrigation and stock water and shall contain no contaminants.
   c. Water shall only be discharged at a rate not exceeding 140 litres per second.

2.
   a. All practicable measures shall be undertaken to avoid erosion of the bed or banks of Quailburn and Cookes Pond occurring as a result of the discharge.
   b. In the event of any erosion occurring to the bed or banks of the unnamed water channel, as a result of the discharge, the consent holder shall be responsible for rectifying the situation as soon as practicable.

3. The discharge shall not occur in a manner likely to cause erosion of, or instability to, the banks or bed of Quailburn and Cookes Pond; or reduce the flood-carrying capacity of the waterway

4. The discharge, after reasonable mixing, shall not cause a change in the colour or a reduction of the clarity of the receiving water body.

5. 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.

6. The lapsing date for the purposes of section 125 shall be 5 years.

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IRRIGATION LOCATION MAP

Existing Irrigation area

Existing intake location

Existing discharge locations