

BEFORE THE CANTERBURY REGIONAL COUNCIL

IN THE MATTER OF

The Resource Management Act 1991

AND

IN THE MATTER OF

an application by **Irishman Creek Station Limited** filed under **CRC011845** for a water permit to take and use surface water from Irishman Creek for border dyke irrigation of 48 hectares of crop and pasture at Irishman Creek Station, State Highway 8, Lake Tekapo.

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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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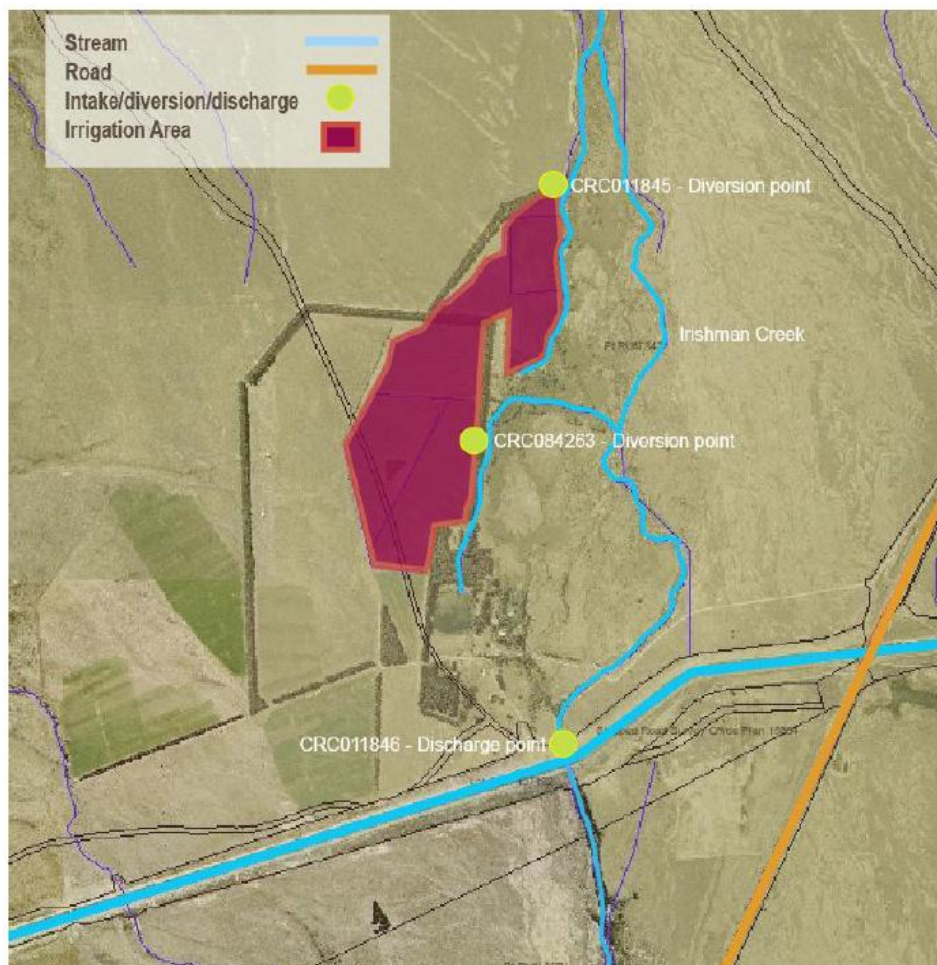
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## 1 INTRODUCTION

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

## 2 THE PROPOSAL

- 2.1 The applicant proposes to take and use water from Irishman Creek (at map reference NZMS 260 I38:974-802) at a rate of 140 L/s with an annual volume not exceeding 720,000m<sup>3</sup>. If granted, the applicant proposes to carry out upgrades to the scheme within five years that would reduce the annual volume to 672,620m<sup>3</sup>. The applicant has proposed a minimum flow of 300 L/s for Irishman Creek, below which the diversion must cease.
- 2.2 The water will be conveyed via an open race system and used for border-dyke irrigation of 48 hectares of crop and pasture for grazing stock (excluding milking dairy cows), at Irishman Creek Station, State Highway 8, Lake Tekapo. All water abstracted from the Creek is used within the scheme - there is no discharge of water.
- 2.3 The consent sought is to replace an existing consent to take water from the Irishman Creek for irrigating 48 ha of pasture using border dykes. The system has been in operation since 1969. The applicant advised us that the irrigation system was designed in the 1960's to provide irrigation of a 48 hectare area with an 11 day return period. Further detail on the existing consents is provided below.



**Figure 1:** Indicative Location Plan (also shows location of diversion and discharge points for associated hydro scheme proposed under separate consents – CRC084263 & CRC011846)

## **The application**

- 2.4 The application is for a water permit to divert take and use surface water pursuant to section 14 of the RMA. Consent is required under the Waitaki Catchment Water Allocation Regional Plan (WCWARP), as discussed below.
- 2.5 The application (CRC011845) was lodged with the Canterbury Regional Council (the Council) on 19 March 2001 prior to the WCWARP becoming operative in July 2006. This application was publicly notified and there were a number of submissions that are referred to later in this decision. The application requested a term of 35 years.

## **Modifications after notification**

- 2.6 Since notification, the total annual volume for irrigation now being sought has been reduced from 993,600 cubic metres to the currently proposed 720,000 cubic metres. The proposed minimum flow has also been amended from the originally proposed 700 litres per second at the time of notification, to 300 litres per second currently.
- 2.7 In addition, since public notification, CRC011845 has been separated into two consents, CRC011845 dealing with the use of water for irrigation, and CRC084263 dealing with the use of water for electricity generation, as discussed further below.
- 2.8 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 change does not significant alter the intensity or effects of the proposal and that no party would be adversely affected by allowing the change.

## **Related consents and applications**

- 2.9 The applicant currently holds consents WTK690931A to divert and take up to 14,000 cubic metres of water per week, and 82,800 cubic metres per month, at a rate of 230 litres per second for border-dyke irrigation of 48 hectares and power generation purposes. These consents expired on 1 October 2001. As this application was lodged 6 months prior to the expiry of the above consents, the applicant is currently operating under s124 of the RMA.
- 2.10 Irishman Creek Station also holds consent CRC991667 to take water from the Tekapo Canal to irrigate an additional 140 hectares of land via spray irrigation. There is no overlap between the two areas.
- 2.11 In addition, the applicant has lodged further diversion and discharge permits (CRC084263 and CRC011846), as replacements, for micro-hydroelectricity generation. The plan attached at Figure 1 above identifies the respective diversion and discharge points for all applications.

## **3 DESCRIPTION OF THE ENVIRONMENT**

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- 3.1 Irishman Creek Station Homestead and its surrounding area is situated just far enough east to receive sparse NW rains, and too far west to receive any easterly precipitation. The most rain occurs when a slow moving low pressure system stalls over the Mackenzie Basin. The nominal rainfall is 600 mm per annum, but this can vary by 30% in any given year. The difference between a drought and a good year can be two critical rains.
- 3.2 The Homestead is at 2,300 feet above sea level and this factor combined with the very clear air results in frosts occurring throughout the year (only one month in the last 6 years has been frost free). Temperatures in winter can drop to -30°C, and regularly do fall to -20°C.
- 3.3 To ensure the availability of supplementary winter feed in this climate, Bill Hamilton designed and built the existing border dyke system in 1969.
- 3.4 The Irishman Creek rises on the south eastern flank of Mt. Stevenson, being the eastern most outcrop of the Gammack Range. It receives less precipitation than the headwaters of the streams that feed Lake Tekapo and Lake Pukaki, and is narrower and steeper. Spring fed, it runs throughout the year, supplemented in spring by melting snow which guarantees reasonable flows (> 1000 L/sec) until December. Thereafter the flow rate is highly dependent on rainfall in the catchment area. Thus the summer and autumn creek levels are extremely volatile with flow rates capable of rising extremely quickly and then subsiding over 7-10 days.

- 3.5 Further description of the environment is provided in our Part A decision and our summary of the evidence received from the applicants and submitters below.
- 3.6 We detailed our site visits in Part A and we do not repeat this information here. Although we did not carry out a site visit on the ground we did view the site from the air.

#### **4 PLANNING INSTRUMENTS**

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

##### **Status of the activity**

- 4.3 In our Part A decision we provide a detailed discussion of our approach to determining the status of activities. We now apply that approach to the current application.
- 4.4 This application is listed in Schedule 2 of the Resource Management (Waitaki Catchment) Amendment Act 2004. Section 88A therefore does not apply and the relevant plan for this activity is the operative WCWARP.
- 4.5 The following rules from the WCWARP are applicable to this application:
- (a) Rule 2, clause (1) – the applicant proposes a minimum flow of 300 litres per second in Irishman Creek at State Highway 8, which is consistent with Table 3, row (iv). The total rate of take of 140 litres per second falls within the allocation limits for Irishman Creek of 300 litres per second. The activity therefore 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.
  - (c) Rule 15 – classifying rule, discretionary activity.
- 4.6 Overall, the proposal is a **discretionary activity** under Rule 15 WCWARP and resource consent is required in accordance with section 14 RMA.

#### **5 NOTIFICATION AND SUBMISSIONS**

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- 5.1 The application underwent two separate public notifications. The first was 6 December 2003 as part of the MfE call-in of all Waitaki consents. The application was notified again on 4 August 2007.
- 5.2 In the 2007 notification, 20 submissions in total were received, including:
- (a) 3 in support;
  - (b) 15 in opposition; and
  - (c) 2 neither in support nor opposition.

- 5.3 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. Summary of submissions on application CRC011845*

Submitter	Reasons	Position
Canterbury Aoraki Conservation Board	Consent duration, runoff control in terms of water quality, potential effects on instream ecosystems, natural character of water bodies, and landscape.	Oppose
Fish & Game NZ	Important fish spawning tributary and abstraction may be inefficient	Oppose
Meridian Energy Ltd	Concerned about water quality, metering and reasonable use	Oppose
B Hutton	Need to protect smaller streams from irrigation extraction, should be from canals and larger water bodies	Support
Mackenzie Branch – Federated Farmers	Water is important for economic sustainability and farm viability/productivity	Support
Mackenzie District Council	Water for irrigation is vital to South Canterbury community's growth and development. The Government's intention in late 1960's to provide water for irrigation and hydro-electricity should be honoured. Resource productivity gains from irrigation. No realistic alternative if do not get water granted.	Support

- 5.4 Overall the key issues of concern to the submitters were possible adverse effects on ecosystems, water quality, landscape, and impact on fish spawning and recreational fishing.

## **6 THE SECTION 42A REPORTS**

- 6.1 A section 42A report on the application and submissions was prepared by the Council's Consent Investigating Officer, Ms Penman.
- 6.2 The primary report was supported by a number of specialist s42A reports prepared by Messrs Heller, Hanson, Glasson, McNae and Stewart, and Drs Clothier, Schallenberg, Meredith and Freeman. The key issues addressed by these reports were cumulative water quality effects, landscape effects, and environmental flow and level regimes.
- 6.3 All reports were pre-circulated in advance of the hearing. We have read and considered the content of the reports and refer to them as relevant throughout this decision. Specific points noted from the s42A report are summarised below.

### **Ms Penman**

- 6.4 At the time the primary report was prepared, there was insufficient information for Ms Penman to reach firm conclusions on the effects of the proposal. Matters that were identified as outstanding at that time were:
- (a) Water quality - No impact assessment or measures had been proposed to address the water quality impacts that could arise from irrigation at this site.
  - (b) Efficient and reasonable use – There was a lack of conclusive information to support the annual volume requested in accordance with the direction provided by Policies 15-20 of the WCWARP;

- (c) Ecosystems – The applicant had proposed a fish screen but had not included any details of what this would entail;
- (d) Cultural values – The applicant has not provided any assessment on cultural values and there are outstanding submissions from runanga in opposition to this proposal.

6.5 We discuss these issues further below after summarising the applicant's case.

#### **Mr Chris Glasson - landscape**

- 6.6 Mr Glasson prepared Report (5), which is his landscape effects report. In terms of Mr Glasson's approach, he assessed all applications in terms of cumulative effects and he also assessed each application in the context of what he determined was an appropriate landscape unit.
- 6.7 For this application, he placed Irishman Creek Station in his Landscape Unit 2, which he titled "Grays-Mary Burn".
- 6.8 He told us that this Landscape Unit was very open and vast, with a well-defined backdrop to the east and south with the Rolleston, Dalgety and Grampian Ranges. To the north and west the limits of vision are the Southern Alps and Ben Ohau Range although lower hills in between act as a boundary to this Landscape Unit.
- 6.9 He noted the landscape is an extensive and semi-arid outwash basin and because of its high natural character, openness, high visibility and landscape consistency, he suggested it could be sensitive to change.
- 6.10 He told us within this area one can appreciate the grandeur of the mountain landscape with its panoramic views to the high peaks. He told us the importance of this location is that it acts as a foreground to those high peaks. He noted when travelling from Fairlie, it is through this Landscape Unit that the primary entrance to the upper Waitaki catchment is gained.
- 6.11 He noted that there were scenic viewing areas located at points along State Highway 8 between Tekapo and Simons Pass, and along the Haldon Road. Shelter belts and a large area of pastoral farmland are modifications to this Landscape Unit.
- 6.12 He noted other important components of the landscape, such as the hydro scheme, the New Zealand Army camp, and numerous isolated farm dwellings.
- 6.13 In terms of the applications in this particular Landscape Unit he did note that applications proposed adjacent to the roads would be most visible although the Irishman Creek application was not among them.
- 6.14 He noted that overall the Landscape Unit's ability to absorb change rests with the location of the proposed sites. There was, in his view, greater ability for an irrigation site to be absorbed into the landscape if it is where the hill and flatland intersect and where the proposed sites are adjacent to already existing modifications such as homesteads, buildings and shelterbelts or, alternatively, within landform indentations.
- 6.15 His main issue with this particular Landscape Unit was, as we understood it, primarily to do with the point that this area provided the first view of the high country and Southern Alps as seen by travellers on State Highway 8 journeying to the lakes and mountains from Fairlie.
- 6.16 Taking into account these factors, he told us that due to the location of this site in a modified landscape and its discreet location with existing shelterbelts, the adverse effects of this site, in his opinion, would be no more than minor.

## **7 THE APPLICANT'S CASE**

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- 7.1 Legal counsel for the applicant, Mr Ewan Chapman, presented opening submissions and called evidence from a number of witnesses, some of whom we refer to below.

#### **Opening legal submissions**

- 7.2 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.

- 7.3 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.
- 7.4 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.
- 7.5 Mr Chapman emphasised that despite the collective approach adopted for these hearings, each application needs to be considered in isolation from others (allowing for priorities). However Mr Chapman noted that UWAG is not producing any other evidence to support its own assessments of cumulative effects and adopts the MWRL evidence to the extent that it defines nodal thresholds.
- 7.6 While raising some challenge to the outcomes of the mitigation measures proposed by MWRL resulting from the WQS study, Mr Chapman told us that the UWAG members were not presenting their case to say that they cannot or will not meet an area-based NDA threshold. To the contrary, he said that we would be shown that they have taken the model and applied it to all properties and will, with mitigation, meet the thresholds.
- 7.7 Mr Chapman then addressed us on the issue of allocation of assimilative capacity. He contended the approach taken by MWRL that essentially resulted in some farming units mitigating for the nutrient loss of other farming units, was inappropriate. He submitted a more appropriate method of allocation is on the basis of productive use of land. The productive use of the land he said represents the level of nutrient discharge of each farming unit and that should be used; and that the method of allocation based on dividing allocation on a per hectare basis should not be utilised.
- 7.8 He submitted that by assessing allocation of assimilative capacity on the basis of productive land use to reflect the NDA for each unit, these methods would be more representative and realistic of the nutrient discharge of each farming unit.
- 7.9 In terms of conditions concerning the nodal approach, he told us the essential issue lies with pinpointing who is exceeding their NDA if exceedances are detected at the nodal point. He told us the UWAG applicants' preference is for on-farm management of total nutrient discharge and annual auditing of individual FEMPs. He then referred us to a draft condition from the Rakaia Selwyn groundwater zone hearing, noting it was a very much site-specific condition.
- 7.10 He submitted that on-farm monitoring should be favoured over monitoring at nodal points. He said this did bring in the practicalities of the purpose of employing the FEMP with the result that if a breach of the FEMP occurs, the consent authority would have control to enforce the conditions of the consent against the individual applicant. It also reflects the reality that each farm will be different depending on the type of activity that is undertaken on that farm with their own tailored farming management practices.
- 7.11 Mr Chapman also said that UWAG had not tabled a final set of conditions or final farm management plans. 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 Justin Wills – Applicant**

- 7.12 Mr Justin Wills the owner of Irishman Creek Station said that the land is held under a Crown Pastoral Lease. The farm operates on traditional lines, utilising low intensity grazing to produce fine merino wool, and 190 beef cows spread over 10,000 hectares.
- 7.13 He said that the consent sought was exclusively a renewal using water from the Irishman Creek for irrigating 48 ha of pasture using border dykes which had been in operation since 1969.



- 7.14 Mr Wills explained that water for irrigation is abstracted at a maximum rate of 140 L/s from Irishman Creek at map reference NZMS 260 I38:974-802 and conveyed via an open race system to a border dyke scheme covering 48 hectares of pasture. All water abstracted from the Creek is used within the scheme, there is no discharge of water.
- 7.15 He said the system represents a substantial investment using technology that was the best available at the time of its construction. It has worked well since 1969, providing essential winter feed supplements.

#### Efficiency

- 7.16 The system was designed to make the best use of the available but variable resource, taking climate into account. The original take rate of 230 L/sec was reduced to 140 L/sec to preserve the residual flow levels and lengthen the period during which irrigation could be undertaken. It was recognised that this would decrease efficiency, but it was felt to be the optimum use of the resource.
- 7.17 The system can be activated quickly when water becomes available to replenish large soil moisture deficits that may have occurred, and the system is also impervious to frost.
- 7.18 Mr Wills further explained that because of climate and the variation in water availability, the system is operated from mid October to mid April, i.e. 182 days. He believed autumn irrigation is particularly useful in providing late feed going into winter, application of relatively warmer water late in the season can prolong the growing season.
- 7.19 The volume applied for represents 59 days watering during the whole season i.e. average return period of 30 days.
- 7.20 Mr Wills said their experience of water requirements to maintain pasture growth is that 6 mm per day was insufficient, and leads to pastures browning off. In their environment he said 7 mm per day was required as follows:
- (a) 7 mm per day over 182 days = 611,520 cu.m p.a.
  - (b) Allowing 10% race losses = 672,670 cu.m p.a.
- 7.21 He added that if the consent is granted he can plan for system improvements to reduce the volume used from 720,000 cum p.a. to 672,670 cum p.a.
- 7.22 These improvements will be achieved by a combination of:
- (a) Better sills
  - (b) Improved gate seals
  - (c) More advanced timers
  - (d) Re-contouring some border dykes
  - (e) Identifying areas of particular race losses
- 7.23 Mr Wills indicated that they would be able to complete these efficiencies within four years of the consent being granted.

#### Minimum flow

- 7.24 Mr Wills pointed out there were no other significant users of Irishman Creek water. Therefore no flow sharing regime was required. The minimum flow gauging site was below the proposed activity. Therefore in his opinion the only necessary restriction on the taking of water in terms of this application for irrigation purposes was that it should cease when the creek falls below 350 L/s at the gauging site. The applicant subsequently accepted that this should be reduced to 300 L/s in accordance with the minimum flow specified in the Table 3, row iv of the WCWARP.

- 7.25 Mr Wills also said that the proposed flow sharing retains more water at the minimum flow site than is required under the WCWARP and he made the point that Table 3, row iv of the WCWARP specifies that "for all reaches, no flow sharing regime".
- 7.26 He requested that the minimum flow condition should be amended to simply state that "Whenever the flow in Irishmans Creek as estimated by the Canterbury Regional Council, at map reference NZMS 260 I38:978-766 falls below 300 litres per second, the taking of water in terms of this permit shall cease".

#### Economics

- 7.27 Finally, Mr Wills emphasised that the system already exists, utilises no power inputs (and therefore has a negligible carbon footprint) it is well designed for the variable water availability and climatic conditions and provides an essential resource from which winter supplementary feed is grown. He said the Station has no economic alternative. The installation of a spray system would be very costly both in term of capital and running expenses, uneconomic given the insecurity of the water supply, subject to frost damage, and unable to make up moisture deficiencies following periods of non-use.

#### Supplementary evidence

- 7.28 In addition to the above, Mr Wills provided a supplementary brief of evidence in which he provided a number of changes to conditions, including the following:
- (a) A maximum mesh size of 5 mm for the fish screen and removal of the requirements set out in the NIWA Guidelines.
  - (b) Removal of the backflow preventer, as it is not possible to install such a device on an open race system
  - (c) No requirement for flow sharing.
  - (d) Removal of the requirement for telemetry to be installed on the intake meter and instream flow recorder.
  - (e) Deletion of the requirement for an electromagnetic or ultrasonic meter, as it was not practicable for an open race system.

#### **Mr Andrew Craig**

- 7.29 Mr Craig produced a landscape assessment on behalf of the UWAG applicants. His evidence was broken into two parts, Part A and Part B.
- 7.30 Part A focused on general landscape matters concerning the effects of irrigation as they would apply universally to all of the UWAG properties. He considered within Part A general landscape character and amenity of the wider application settings. We have already commented on his Part A evidence within Part A of our decision and do not repeat that comment here.
- 7.31 The second part of his evidence in his Part B concerned the individual applications. He concentrated on those applications where the proposed application activity was located on a visually sensitive site. He noted visual sensitivity is determined by the location of publicly accessible vantage points and the views that can be had from them in relation to the applied for irrigation areas.
- 7.32 In terms of this application, Mr Craig did not comment upon it in his Part B evidence.

#### **Mr Robert Batty, planner**

- 7.33 Mr Batty addressed us in relation to planning issues. He set out his broad view as being:
- (a) whether or not granting any of the applications before us, including this application, would undermine the operational integrity of the WCWARP, regional plans and district plans;
  - (b) whether cumulative effects would arise from a grant;

- (c) whether grants would promote reasonable efficiencies and sustainable management of the natural and physical resources concerned; and
  - (d) whether the grant of consent would derogate from any other consent.
- 7.34 He was critical of the section 42A officers' collective approach and suggested each application needs to be considered on its own merits. A move away from the generic approach of the reporting officers was required, he said, to enable a proper analysis of each application to occur.
- 7.35 He supported Mr Kyle's planning analysis on behalf of MWRL and he set out for us relevant policies and objectives in the district and regional plans. In conclusion, he was of the view that granting this consent and all other UWAG consents was appropriate.

#### **Mr Andrew Macfarlane, farm management consultant**

- 7.36 Mr Macfarlane is a farm management consultant with 29 years experience. He provided us evidence on behalf of all of the UWAG applicants.
- 7.37 He assessed the viability of the farm management plans and practicality and robustness of the mitigation measures and the ability to monitor progress.
- 7.38 He discussed a range of mitigation measures that had been examined and/or adopted by the UWAG farmers to deal with discharges from their properties consequent upon irrigation.
- 7.39 Mr Macfarlane also discussed with us the costing of various typical irrigation developments.
- 7.40 He considered on-farm monitoring, noting that on-farm monitoring had lifted in its intensity and in detail over the last 10 years, being driven by economic returns and a need to prove environmentally sustainable methods were being utilised. Overall, he held a high degree of confidence in progress concerning the ability to monitor and interpret interfaces between environmental science and management.
- 7.41 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.

#### **The FEMP**

- 7.42 The FEMP for Irishman Creek Station was prepared in August 2009. The FEMP described the Station and noted that 96% the land area is flat to moderately sloping, presenting few limitations to agricultural development. It also noted expert opinion that the majority of the soils on Irishman Creek are "... well suited to irrigation and offer only minor obstacles to irrigation". There was no change to the current extensive sheep and cattle farming proposed.
- 7.43 The OVERSEER®-estimated N and P losses from the whole property were considerably less than the proposed by the Nitrogen Discharge Allowance (NDA) (as per Table 2 below) and therefore the applicant reasoned no further mitigation was required.

**Table 2** Comparison of MWRL NDA with Overseer outputs for Irishman Creek Station (adapted from FEMP)

	Nitrogen (kg/y)	Phosphorus (kg/y)
MWRL property thresholds	29286	2026
Overseer outputs	24061	476

- 7.44 Appendix E of the FEMP tabled water quality information collected at a number of sites on Irishman Creek Station. Nutrient concentrations (nitrate-N and dissolved reactive phosphorus) were almost all at or below detection limits (0.002 mg/L).

- 7.45 Appendix F of the FEMP tabled some fish and macroinvertebrate data collected in Irishman Creek during 2002. While the data is only qualitative (densities not presented) the high relative numbers of Ephemeroptera suggest excellent water quality. As land use has not changed since 2002, they have no reason to suspect that water quality may have changed.
- 7.46 No specific risks were identified during the Farm Environmental Risk Assessment (FERA) relating to water quality, nor were any specific mitigation measures tabled.

## **8 SUBMITTERS**

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

### **Fish and Game South Island**

- 8.2 Mr Mark Webb for Fish and Game South Island Council (F & GSIC) said that the creek supports self sustaining populations of brown and rainbow trout that are independent of Mary Burn and Tekapo River populations. There is no connection between Irishman Creek and these rivers that would allow fish to migrate other than during floods at which time the movement would be downstream to the Mary Burn and Tekapo.
- 8.3 Trout fishing was sustained around the gorge in the upper reaches of Irishman Creek about 3 km upstream of the proposed intake. Anglers required permission to access the creek from Irishman Creek Station. Mr Webb said Fish & Game do not have any records of requests for angler access being unreasonably denied by Station management and accordingly believe the value of Irishman Creek to other users was recognised by the applicant.
- 8.4 Mr Webb also said that angler use of Irishman Creek is not large. Anglers making the effort to fish the stream recognise its small extent and low productivity and few fish are removed during the season, which ensures that anglers coming after enjoy the untouched wilderness experience.
- 8.5 Mr Webb sought the following conditions:
- (a) A minimum flow of 350 L/s in Irishman Creek at SH 8 with pro rata restriction of irrigation take to begin at 490 L/s.
  - (b) Irishman Creek Station to implement an alder removal programme, with Fish and Game assistance, as mitigation for adverse effects of the takes on trout habitat.
- 8.6 Mr Frank Scarf (Hydrologist F & GSIC) said that Irishman Creek Station Ltd (CRC084263) had applied for consent to take up to 140 L/s and 993,600 m<sup>3</sup>/yr from Irishman Creek for irrigation of 48 ha. But he noted that the annual volume had been amended. This is an application to replace an existing consent. Additionally Irishman Creek Station Ltd is looking to divert up to 500 L/s for micro hydro generation.
- 8.7 Mr Scarf noted that an annual volume of 720,000 m<sup>3</sup>/yr is allocated to this application as opposed to the 993,600 m<sup>3</sup>/yr applied for. The applicant has since indicated acceptance of the lesser volume.
- 8.8 Mr Scarf said that setting aside the micro hydro generation consent, the application is complying and he would recommend granting the application subject to inclusion of the following conditions:
- (a) A minimum flow condition requiring not less than 300 L/s to be retained instream below the intake site. (Windy Ridge is acceptable in this instance).
  - (b) That divert /take is restricted to 140 L/s and 720,000 m<sup>3</sup>/yr.

### **Ngāi Tahu**

- 8.9 Te Runanga o Ngāi Tahu lodged a generic submission on all applications in September 2007, citing a range of issues including cultural associations, potential for individual and collective adverse effects on cultural beliefs and values, insufficient information and inconsistency with the RMA and WCWARP.

- 8.10 Ngāi Tahu advised at the hearing that as a result of assessing the applications in this hearing the emphasis of their concern was with the new and large scale consent applications. Mr Horgan advised that Ngāi Tahu did not oppose small and replacement applications provided they carry out riparian planting, fencing, and undertake not to significantly increase the intensity of their farming operations.
- 8.11 In the evidence presented by Te Runanga o Ngāi Tahu and Papatipu Runanga there was no specific reference to the Irishman's Creek Station application.

#### **Meridian Energy Limited**

- 8.12 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.
- 8.13 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.
- 8.14 The current applications were included in the Meridian Energy Ltd list of consent applications of concern. The principle 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.
- 8.15 In addition to the above, Mr Robert Potts (National Environmental Science Leader – CPG) also provided a brief of evidence on behalf of Meridian on water allocation matters. In that brief he noted that for the purpose of calculating annual volumes, appropriate application rates were 600mm/yr for spray and 1,300mm/yr for border dyke. Although this comment did not specifically relate to this proposal, Ms Bartlett subsequently referred to this in her addendum report, as discussed further below.

#### **Mackenzie Guardians – Ms Di Lucas**

- 8.16 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.
- 8.17 In terms of this particular "take" application, she identified it as being within her Tekapo System. Within her written evidence the application did not receive any attention. In her graphic materials she identified the site as Site #4.
- 8.18 She told us that the site had been entirely converted and already irrigated. It was her opinion that the site had the least ecological value and it was rated as a "4" in terms of naturalness, being the near the lower end of the scale, with "5" being the lowest ranking of that scale.
- 8.19 She agreed with Mr Glasson in that she did not identify any adverse landscape effects from consenting of this proposal.

#### **Mackenzie Guardians – Dr Susan Walker (ecologist)**

- 8.20 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.
- 8.21 In terms of her assessment as per Attachment 15, Dr Walker assessed Irishman Creek as a whole as being approximately 100% converted. She considered that the potential effects of

irrigation on terrestrial biodiversity were minimal. She noted that the site does not appear to overlap significant inherent values identified in the tenure review for Irishman Creek.

## **9 UPDATES TO THE SECTION 42A REPORTS**

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- 9.1 Ms Penman provided an addendum report where she commented on additional matters identified throughout the hearing and changes proposed by the applicant. A summary of her comments is provided below.

### **Efficient use**

- 9.2 Ms Penman referred to the evidence of Mr Wills that a daily application depth of 7 mm would be appropriate for the soils and climate, which equates to 672,670m<sup>3</sup> per year (including 10% race losses). Ms Penman said that this gave a total depth of 1400 mm per year.
- 9.3 Ms Penman also said that under Policy 28, the investment in the system must be considered. The applicant had proposed some improvements. However, it would still appear to be a poor system in terms of irrigation efficiency. Using Mr Potts method of 1300 mm application depth (paragraph 27.3 of his brief of evidence on water allocation matters), would give a total volume of 624,000m<sup>3</sup> per year. This may be more appropriate for this border-dyke system. However, she also recommended a condition be included that a report be prepared looking into the system efficiencies. This should be completed within 12 months of grant of consent to ensure that the system was being operated efficiently, with the intent of achieving a higher application efficiency than at present.
- 9.4 In summary, was not satisfied that the volume proposed was a suitable volume for irrigation of this property and recommend a reduced annual volume and review condition as above.

### **Water quality**

- 9.5 Ms Penman said that the draft FEMP and water quality assessment provided by Mr Wills, and MWRL, had been audited by Environment Canterbury's technical experts who considered that there were some uncertainties about the potential adverse effects and suggested that either more information was needed or strict monitoring and response conditions would be needed to address cumulative water quality effects

### **Flows and metering**

- 9.6 In response to Mr Will's recommended changes to conditions, Ms Penman agreed that there was no need for a backflow prevented or electromagnetic / ultrasonic meter as these were not practicable for an open race system. She also agreed that there should be no requirement for a flow sharing condition and that a minimum flow condition will suffice.
- 9.7 However she did not agree with Mr Will's proposed deletion of the condition requiring that telemetry to be installed on the intake meter and instream flow recorder. She sought that this condition be retained.

### **Dr Freeman**

- 9.8 Dr Freeman in his addendum report in terms of water quality suggested that it was critical to apply concerns about cumulative water quality effects to the specific water permit and discharge permit applications. He suggested the approach used to do this should be to consider each application in the context of each issue and then make conclusions about potential adverse effects and what decision the current evidence supports.
- 9.9 He provided a critical categorisation of issues in his Table 4.
- 9.10 In that categorisation, this application was located in what Dr Freeman described as the Tekapo or Pukaki River Catchments. In this area, he noted there were concerns associated with hydro-geological modelling; specifically, there was limited evidence to support the theory that the drainage water largely bypasses the Tekapo and Pukaki Rivers. He also noted that an implication arising is that a significant portion of the proposed additional nutrient loading in the catchment could enter the Tekapo or Pukaki Rivers and result in significant cumulative adverse effects.
- 9.11 We note here we are dealing with a replacement consent, but in any event Dr Freeman considered that any replacement application needs to consider the extent to which effects may

not have yet appeared in the river in the receiving environment, that is, he suggested short lag time indicates grounds for granting while long lag time indicates a need for response trigger conditions.

- 9.12 Dr Freeman's addendum report then 'picked up' those views and expressed them in the context of specific resource consent applications and he developed three categories, red, amber and green for categorising water permit applications to use water. Red was a category he contended should not be granted. Amber was a category where significant uncertainties remained and green was the category that could be granted.
- 9.13 According to Dr Freeman's approach, this application was in the amber category. He noted it was a replacement consent and that the reason for it being grouped in the amber category was because of a concern that the nutrient threshold proposed and the possibility of adverse effects on the Tekapo/Pukaki Rivers and/or tributaries.

#### **Mr Chris Glasson**

- 9.14 Because of Mr Glasson's earlier assessment, there was no further mention of this Irishman Creek application in his addendum materials.

### **10 APPLICANT'S RIGHT OF REPLY**

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#### **Mr Chapman**

- 10.1 As for his opening, Mr Chapman's right of reply was presented on behalf of all UWAG members. He also provided some specific comment on individual proposals, but none on this particular proposal.
- 10.2 By way of 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.
- 10.3 He noted there had been much emphasis on nutrient management but he contended we should also be considering sustainability of the erosion-prone fragile soils within the catchment. He also submitted we should take note that district plans encourage farming, including irrigation, within these environments; and the tenure review undertaken by the Crown encourages intensification of land use retained in freeholding ownership in order to release more vulnerable pastures to be set aside under Crown ownership.
- 10.4 He also contended we should consider economic implications on the survival of these farms given their investment in infrastructure as a factor. He also noted we should take into account managing the land in light of weed and pest problems and how irrigation assists in that regard.
- 10.5 We did subsequently receive from Mr Chapman generic conditions and revised FEMPs applicable to all the UWAG applicants.

#### **Mr Wills**

- 10.6 Mr Wills provided a right of reply in which he made further comments on the proposed consent conditions and outstanding issues in relation to this application.
- 10.7 On the issue of annual volumes, he noted that an annual volume of 720,000 m<sup>3</sup>/r was proposed, reducing to 672,670 m<sup>3</sup>/r after improved efficiencies. He noted that this latter figure includes 10% races losses associated with the open canal system, resulting in a volume of water applied of 611,520 m<sup>3</sup>/r (providing an application depth of approximately 1,274mm). He noted that this is less than the figure of 624,000 m<sup>3</sup>/r recommended by Ms Bartlett.
- 10.8 He also noted emphasised that it would take five years to implement the various system improvements, as they have to be installed progressively and measurements taken to gage increase in efficiency. He considered that such an allowance was consistent with the approach requested by other UWAG members for a 5 year conversion period. He also considered that the recommendation that the system be inspected within 12 months of the grant of consent to check efficiency is not practicable.

- 10.9 In addition to the above, Mr Wills provides some further comments on metering. In a change from his earlier evidence, he accepted that telemetry may be feasible and so accepted this as a condition of consent. He also noted that he was examining ways of piping the race at the upper point to allow accurate instantaneous measuring of water and requested that this possibility be included in the metering conditions.

## **11 STATUTORY CONTEXT**

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- 11.1 The relevant statutory context for a **discretionary** activity is set out in detail in our Part A decision. In accordance with those requirements, we have structured this evaluation section of our report as follows:
- (a) Evaluation of effects
  - (b) Evaluation of relevant planning instruments
  - (c) Evaluation of other relevant s104 matters
  - (d) Part 2 RMA
  - (e) Overall evaluation

## **12 EVALUATION OF EFFECTS**

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- 12.1 Drawing on our review of the application documents, the submissions, the Officers' Reports, the evidence presented at the hearing and our site inspection, we have concluded that the effects we should have regard to are :
- (a) Water quality
  - (b) Inefficient take and use
  - (c) Cultural effects
  - (d) Flows and ecosystems
  - (e) Landscape and amenity effects
  - (f) Positive effects

### **Effects on water quality**

- 12.2 In terms of effects at the local scale, as this is a replacement application, the applicant considered that effects on water quality would continue to be minor. The applicant said that there will be no change in land use or intensification of land use. In addition, the property is operated on a low nutrient input system. Nitrogen fertiliser was not applied, and only limited quantities of phosphorus are applied. The property is sheep and beef grazing with low stocking rates. Therefore, the applicant concluded that there would be no more than minor effects on water quality.
- 12.3 Whilst 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 we do note that the limited amount of water quality and aquatic ecology data presented in Appendix E of the FEMP support the applicants claim that there are, currently, no more than minor effects on water quality.
- 12.4 An assessment of cumulative effects on water quality was requested to address the above concerns and in reference to Policy 13 of the WCWARP. The applicant has been involved with the study by Mackenzie Water Research Ltd (MWRL) on cumulative effects within the catchment.
- 12.5 There are a number of submissions which identify water quality as a result of land use intensification as a concern, including a submission from Meridian Energy Ltd who effectively hold consent to use all the water in the Upper Waitaki catchment.
- 12.6 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 Haldon Arm of Lake Benmore;
  - (b) Groundwater chemistry and in particular the proposed threshold of 1 mg/L NO<sub>3</sub>-N; and
  - (c) Periphyton and other ecological effects in Irishman Creek and the Mary Burn.
- 12.7 In Part A of this decision we concluded that the Haldon Arm of Lake Benmore would remain oligotrophic or better even if all applications within the Haldon Arm catchment were granted. We confirm that this is not an issue of concern for this proposal.
- 12.8 The depth to groundwater is unknown, however we accept Dr Bright's evidence (Part A) that any environmental effects due to elevated nitrate levels in groundwater would only be manifest by the interaction of groundwater with surface water. In this case, whilst the depth to groundwater is unknown, there are no other surface waterways other than the irrigation race likely to be affected.
- 12.9 Whilst no periphyton data was presented the water quality data presented in the FEMP indicate that nuisance periphyton growths in Irishman Creek is unlikely. As noted in the FEMP whilst Irishman is nominally a tributary of the Mary Burn, the connection is tenuous as the Irishman Creek disappears into the gravels of the Tekapo Basin downstream of SH8. Although potentially it could be a source of nutrient to the Mary Burn, since surface water re-emerges in Irishman Creek prior to its confluence with the Mary Burn, in our view it is most unlikely to carry sufficient nutrient to cause nuisance periphyton growths in the Mary Burn.
- 12.10 We note that the irrigation area of this applications comprises < 0.5% of the total farmed area on Irishman Creek Station. Put another way, nutrient losses arising from more than 99.55 of the farm do so from legally permitted activities. While the nutrient load from the irrigated area will be very much greater than that arising from dryland farming activities, its very small area means that the nutrient load relative to that arising from permitted activities is small. Even if we used a nitrogen leaching loss figure of 20 kg/ha (upper end of Dr Ryan's estimates for irrigated sheep and beef properties, the n load arising from the irrigated area would be < 1000 kg/y, compared with the OVERSEER estimates of 24,061 kg/y for the whole property. As there is no nitrogen fertiliser used on the irrigation area we would expect the N losses to be even smaller.
- 12.11 Whilst no mitigation measures are proposed that will significantly reduce nutrient losses (above that already being achieved), in our view further mitigation is not necessary. The biggest reductions in nutrient export will occur coincidentally with increased water efficiency (see below). We conclude that effects on water quality arising from the grant of this replacement consent will be no more than minor.

#### **Inefficient take and use**

- 12.12 We accept that the inefficient taking and use of water can cause adverse effects on other water users. For example, allocating water for a use that is inefficient could exclude potential future users from having access to that same water. This matter is discussed in many of the planning instruments relevant to this application and we will return to those planning instruments subsequently.
- 12.13 The applicant stated that the soils have an average water holding capacity of 75 millimetres and the applicant expects the evapotranspiration rates to be around 6.5 millimetres per day in the peak summer months, but does not acknowledge that over the irrigation season the evaporation rate varies significantly and the average evaporation would be considerably less. Also, no allowance has been made for rainfall.
- 12.14 The applicant has described the efficient operation of their border-dyke system in detail in the application. In summary the applicant considers that the system requires the flow rate and volume proposed in order to operate effectively and that:
- (a) The daily average application depth is greater than the daily evapotranspiration rates because the system has been designed to minimise the flow rate, while covering the area

within the necessary return period, in order to minimise reduction in flow in the creek (i.e. length of time abstraction needs to occur).

- (b) It uses no power input and has been in place for nearly 40 years.
  - (c) Evaporation is minimal given the presence of shelter belt trees.
  - (d) Installing an alternative spray system would be very costly and would require power input to pump water and removal of shelter belt trees which would increase evaporation rates.
- 12.15 Ms Penman undertook a comparative annual volume calculation assuming an application depth across the irrigation season of 6.5 mm/day which is equivalent to expected peak evapotranspiration. To obtain an average of 6.5 mm/day across the 155 day border-dyke season, it would equate to an annual volume of 483,600 cubic metres.
- 12.16 In addition, Ms Penman used CRC's GIS system and the method outlined in Report U05/15 to determine an appropriate annual volume for spray irrigation of the proposed area in accordance with Policy 16(c). She based this calculation on intensive land use with 5% light soil (PAW <75mm), 35% medium soil (PAW 75-110mm), 60% heavy soil (PAW >110mm) and Effective Summer Rainfall of 200mm.
- 12.17 Using the above figures, a recommended annual volume of 242,520 cubic metres would be an appropriate and efficient volume of water for spray irrigation of this area using one of the methods outlined in Policy 16(c).
- 12.18 This methodology (Report U05/15) assumes an irrigation efficiency of 80% which is largely unachievable for border-dyke systems (Policy 16(b)), and for this system it is estimated to be closer to 70% efficient, or less. There appears to be inherent tension in the WCWARP between achieving application efficiencies of 80%, typically associated with more modern spray systems, and recognising the investment in existing systems by providing water for replacement applications which remain under border-dyke irrigation. Policy 16(b) only requires consideration of an irrigation application efficiency of 80%.
- 12.19 The annual volume determinations made by the applicant did not take into account all the matters outlined in Policy 16(c)(i) of the WCWARP, consideration must also be given to Policy 16(a) in terms of irrigation system operation and management. The age of the system (approximately 40 years) and although the applicant said that the best technology of the time was used for its construction he did not suggest that the scheme had been upgraded since construction.
- 12.20 In relation to conveyance and distribution efficiency, we consider that a race loss of 10% for a system such as this is not unreasonable.
- 12.21 We remain concerned that adverse effects may arise as a consequence of the inefficient take and use of the water on other water users. The point is put into context when we reflect that the applicant originally applied for an annual volume of 720,000 cubic metres. A spray system to irrigate the proposed irrigation area would require, according to Ms Penman, 242,520 cubic metres. Mr Potts material (received during the course of the hearing) intimates that 624,000 cubic metres would be required for an efficiently operated border-dyke scheme. The applicant proposes, after improvements, to reduce the annual volume to 672,670 cubic metres of water.
- 12.22 Also, critically, we were not given direct evidence that there could be future users for the water if the grant to the applicant was seen to be an inefficient take. Nevertheless, we do see that possibility and do see and recognise the environmental benefits of retaining the water in Irishman Creek itself. However, we do note that the minimum flow proposed by the applicant would ensure that instream values would be protected.
- 12.23 Overall, we think we are best to continue our evaluation of this issue of an inefficient take in the context of the planning instruments. That will help us reach a final view.

#### **Cultural effects**

- 12.24 Te Runanga o Ngāi Tahu lodged a general submission (2007) opposing all applications in the catchment. The concerns related to mixing of waters between catchments, deterioration of water

quality, dewatering and residual flows, changes to sediment flow and deposition and impacts on sites of cultural significance.

- 12.25 A joint response was made by the applicants as part of the MWRL research process to commission a cultural impact assessment (CIA). MWRL engaged a cultural expert to assist applicants to address the cultural issues that were identified through the CIA process.
- 12.26 Consultation with Ngāi Tahu/Runanga representatives then followed. This was generally focused on the large scale irrigation proposals and properties that had proximity to or the potential to impact on cultural values, including mahinga kai sites and resources.
- 12.27 We were not made aware through the evidence of Ngāi Tahu that Irishman Creek Station held specific cultural values or values that may be subject to adverse effects by the property's irrigation proposal. Nor was it apparent that consultation between the applicant and Ngāi Tahu representatives had occurred.
- 12.28 Given the foregoing facts and the small scale of the activity that has been occurring since 1969, we believe that the on-site effects are likely to be minor. Having arrived at that finding we then turned to the potential cumulative effects of the activity and any adverse effects on cultural values downstream of the property.
- 12.29 We are influenced in this aspect by the water quality and ecosystem findings of this decision, which indicates that the effects are no more than minor.

### **Effects on flows and ecosystems**

- 12.30 The applicant has proposed a minimum flow higher than that set out in Table 3 of the WCWARP so instream values would be protected. A fish screen in accordance with proposed conditions would ensure the effects are minor. It is not our intention to remove the requirement to install telemetry or the flow recorders but we do agree that flow sharing above the minimum flow is not required.

### **Landscape and amenity**

- 12.31 All landscape experts agreed that due to the location of this site, its highly modified landscape due to farming that adverse effects of irrigation on this site, from a landscape perspective, would be no more than minor. In addition, an appropriate minimum flow has been proposed to protect the recreational use and the aesthetic amenity of waterway.

### **Positive Effects**

- 12.32 There would be positive effects on the local community, the regional and national economic benefits as a result of the proposed activity will also occur. These benefits however will not be significant and will largely impact on the applicant. There are no related benefits arising from conversion expenditure.

### **Key conclusions on effects**

- 12.33 In relation to the actual and potential effects of the proposal, our key conclusions are as follows.
- 12.34 It will be evident given our discussion and evaluation of effects that many of the effects that arise for consideration have been addressed as a result of suggestions and proposals put forward by the applicant. One key issue is to do with water quality. For the reasons set out earlier in this decision under the heading "Effects on water quality", we are satisfied that the grant of consent would not cause unacceptable effects in terms of water quality.
- 12.35 Also, having regard to the fact that this is a replacement consent and noting what we have said about our approach to replacement consents in Part A, this further strengthens or supports our findings on the effects on water quality of granting this consent.
- 12.36 The single remaining issue is to do with water efficiency. The effect is one of wastage of the water resource. But for the application system used by this applicant, there could be a much more efficient use of water.

## **13 EVALUATION OF RELEVANT PLANNING INSTRUMENTS**

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- 13.1 Under s 104(1)(b) of the Act, we are required to have regard to the relevant provisions of a range of different planning instruments. Our Part A decision provides a broad assessment of those planning instruments and sets out the approach we have applied to identification and consideration of the relevant provisions. The following part of our decision should be read in combination with that Part A discussion.
- 13.2 In relation to the current application, 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**

- 13.3 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

- 13.4 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.
- 13.5 We have determined that granting these consents with conditions (incorporating mitigations set out in the FEMP) will help to minimise nutrient loss from the irrigated area. The load arising from this activity will not cause (in combination with other consents we grant in the Haldon Arm catchment) more than minor effects of the trophic status of the Haldon Arm of Lake Benmore.
- 13.6 We are also satisfied that the activity will not result in nuisance growths of periphyton in Irishman Creek or the Mary Burn.
- 13.7 Overall, we conclude that a grant of consent, with conditions, would be consistent with Objective 1(b) and 1(d) WCWARP.
- 13.8 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, our view is that granting consent would be consistent with Objective 1(c).
- 13.9 We note that Objectives 2, 3, 4, and 5 are “in the round” deal with and provide for the allocation of water. The critical qualification is that water can be allocated provided that to do so is consistent with Objective 1. Given the findings we have made about Objective 1 we conclude that allocating water in terms of the balance objectives would be consistent with the overall scheme of the WCWARP. We reach this view taking into account the national and local costs and benefits (environmental, social, cultural and economic) of the proposal, as required by Objective 3.
- 13.10 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 NRRP provisions on the basis that they represent the current approach for achieving the common goal of protecting water quality.

### NRRP

- 13.11 Under the NRRP, Lake Benmore (including the Haldon 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.

- 13.12 Both the Irishman Creek and Mary Burn are classified 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 chlorophyll-a in spring-fed upland streams should be less than 50 mg /m<sup>2</sup> . 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.
- 13.13 We understand that the applicant and reporting officer agreed on periphyton water quality conditions that included a 120 mg/m<sup>2</sup> Chlorophyll *a* standard (and an early warning trigger of 90 mg/m<sup>2</sup> Chlorophyll *a*) for the Irishman Creek. We appreciate that when those parties reached that agreement the NRRP was not operative, and issues relating to water quality objectives and standards had not reached the status that we have today.
- 13.14 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 Irishman Creek. We note the following:
- (a) The applicants own data (FEMP) which showed DRP and DIN concentrations to be very low.
  - (b) The absence of other irrigation development in Irishman Creek.
  - (c) The applicant's evidence that the Irishman Creek macro invertebrate communities were indicative of very good to excellent water quality.
  - (d) The New Zealand Periphyton Guidelines, that we were provided with at the hearing and heard were a critical source for the NRRP specified outcome, provide for 50 mg/m<sup>2</sup> chlorophyll *a* as a guideline for oligotrophic streams with diverse "clean-water" benthic invertebrate communities. This appears to describe the Irishman Creek.
- 13.15 After considering all the above factors we consider that the standard trigger for Irishman Creek should be 50 mg/m<sup>2</sup> chlorophyll *a* together with water quality standards for DRP and DIN of 0.007 and 0.10 mg/l respectively, Because 50 mg/m<sup>2</sup> chlorophyll *a* is indicative of oligotrophic water quality, and also because the methodology for periphyton biomass estimation below this threshold is subject to significant error our view is that there is no case for having an early warning trigger. Thus we have modified the condition set to reflect this standard trigger and the provisions for reducing irrigated area in the event these conditions are breached

#### Conclusion on water quality provisions

- 13.16 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, subject to conditions, is consistent with the key objectives and policies of both of these plans relating to water quality.

#### **Inefficient use**

- 13.17 As we read the provisions of the WCWARP, there is a strong and clear focus on the efficient use of water.
- 13.18 Objective 4 of the WCWARP requires us to promote the achievement of a high level of technical efficiency in the use of allocated water. This is complemented by Policies 15 – 20, which seek to achieve 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.
- 13.19 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.
- 13.20 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. The explanation to Policy 28 WCWARP provides:

*"The consideration of the efficiency of use of water being used under an existing consent is critical to ensure that the efficiency expectations of this plan are implemented."*

- 13.21 Moving on then to assess the applicant's attempts to meet the efficiency expectations, they are centred around trying to improve the efficiency of the border-dyke system over time. These improvements will enable the annual volume to be reduced to 672,670 cubic metres per annum within a four year timeframe. In addition, gauging and metering is to be provided. However, our opinion is that all of these matters are best practice for the normal maintenance of a border dyke scheme and do not represent irrigation efficiency.
- 13.22 Mr Wills told us that the return period for irrigation was 30 days. Based on his 7 mm per day, the application rate would have to be 210 mm, which is almost three times the water holding capacity of the soils to be irrigated. We also received evidence from the reporting officer that if an efficient spray system were utilised, then the annual volume required would be much less than that proposed by the applicant.
- 13.23 We also need to recognise the value of the investment of the existing consent holder. In that regard, we take into account that the border-dyke system has been operating satisfactorily since 1969. It has been well-maintained over time we were told. We would think that given this time period there has been a reasonable return on the value of the investment to date.
- 13.24 Another factor we think we need to take into account is that the area of irrigation is small, only some 48 hectares. Mr Wills provided us with evidence that in his view it would not be economically viable to convert from border-dyke to a spray system for such a limited area. However in other applications we observe we did receive information about the costs of conversion from border-dyke to spray and while this is not inexpensive this cost needs to be set against the cost of continuing to allow use of water where that use is not efficient.
- 13.25 Also, we note that the policies we are here considering require us to have regard for reasonably foreseeable other end-catchment needs in the future. We were not told of others competing with this applicant for use of the water in Irishman Creek. This does not mean to say that in the future there may be others who wish to make use of water from this source.
- 13.26 As we read the policy base of the WCWARP it seeks to ensure that the rate of abstraction and the annual volume for a take is reasonable for the intended use thereby avoiding significant wastage of water. The issue here is that a significant amount of water is required to irrigate the 48 hectares but that irrigation system causes water losses compared to other systems such as spray systems. Refining and improving the existing border-dyke system does not in our view avoid significant wastage of water. The border-dyke system given its age had undoubtedly returned value to the applicant over time. It is not capable of being improved to the point where it would avoid significant wastage of water compared to a spray system.
- 13.27 Also policy 16 requires applications to meet a reasonable use test having regard to irrigation application efficiency. Even with improvements the border-dyke system here utilised is incapable of reaching the irrigation application efficiency as sought by the plan of at least 80%.
- 13.28 Also in terms of annual volumes when the WQN9 version 2 assessment approach is taken the annual volume of water required to irrigate is much significantly less than what the application proposed to utilise.
- 13.29 Also we are mindful that policy 18 seeks to ensure that the water allocated specified on existing resource consents reflects the actual quantity needed to undertake the activity. Here the amount of water that the applicant seeks is greater than required to undertake the activity particularly where spray is used as an application method.
- 13.30 There is also policy 19 which encourages typing or sealing water distributions to minimise losses. While we acknowledge that the applicant has and will undertake further improvements the gain that those improvements can provide in terms of water losses through inefficient distribution systems is not as significant as that that could be gained from conversion to spray.
- 13.31 Objective 4 seeks to promote the achievement at a high level of technical efficiency in the use of allocated water. Granting consent for a continuation of the border-dyke scheme for a significant period of time we think does not achieve that objective.

- 13.32 The applicant also proposed to reducing the volumes over a 5 year period. Given what we have said about the inefficiencies of the border dyke system, we think that the only way we can justify a continuation even for a limited duration, is if we grant consent at a reduced volume from commencement...
- 13.33 We are sure that applicants like this applicant would have been well aware of changes evident in the WCWARP in terms of its approach to allocation of water particularly as they relate to efficiency issues. So we do think that the measures proposed by this particular applicant have not taken account of the changes in terms of efficiency of water well signalled within the WCWARP.
- 13.34 Overall then we think that granting this consent through until a period of 20 – 25 years perhaps coupled with efficiencies that the applicant promotes, even including the recommendation made by the investigating officer that a report be prepared about the efficiencies of the overall distribution scheme, is not consistent nor is it supportive of the objective and policy base of the WCWARP. We see it as simply keeping the status quo with some level of efficiency gain but not the level of efficiency gain that the WCWARP expects.
- 13.35 Many of the applicants before us have volunteered that they would surrender their existing border-dyke systems or in the course of seeking a renewal they would convert from border-dyke spray. This applicant has chosen not to follow that line. That cuts down alternative options for us.
- 13.36 It seems to us we only have two options. One is to decline consent on the basis of the effects of inefficient use of water. Those effects are best crystallised when considering the quantity of water required to irrigate this area by way of spray irrigation compared to border-dyke. The second reason for a decline to grant consent would be clearly inconsistent with the objective and policy base of the WCWARP particularly as it relates to efficient use of water.
- 13.37 An alternative course we think that is available to us is to grant consent but for a limited period of time so that the continued inefficient use of water would only occur for that limited period of time, subject to the applicant's rights under s124.
- 13.38 Overall we think the course of granting consent for a further 5 years but at a reduced volume strikes the right balance between the applicant's interest and circumstances and the effects of allowing continued inefficient use of water and whilst paying proper regard to the objective and policy base of the WCWARP.

### **Environmental flows and levels**

- 13.39 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. As the applicant is proposing to adopt the minimum flow required by the WCWARP, we are satisfied that the proposal is consistent with these policies.

### **Tangata Whenua**

- 13.40 Objective 1(a) of the WCWARP relates to the integrity of mauri and is closely linked to Objective 1(b). Mr Mikaere (for MWRL) submitted that there are two aspects of mauri; the tangible and the intangible and that we could only properly deal with tangible. His view was that the tangibles are able to be addressed if mauri is considered as representing the health of the particular water body in question. Given that we consider that by granting these consents with conditions and with the mitigation measures proposed by the applicant that sustainable water quality outcomes can be achieved, it follows that the integrity of the mauri will be attained.
- 13.41 Objective WQN1 from Chapter 5 NRRP seeks to enable present and future generations to access the region's surface-water and groundwater resources to gain cultural, social, recreational, economic, and other benefits while (c) safe-guarding their value for providing mahinga kai for Ngāi Tahu and (d) protecting wāhi tapu and other wāhi taonga of value to Ngāi Tahu. This Objective aligns with one of the principal aspirations expressed by Ngāi Tahu during the hearing of enhancing mahinga kai resources and supporting ecosystems. Our finding is that there is unlikely to be deterioration in water quality of the Haldon Arm as a consequence of this proposal and that this application is consistent with this Objective.

- 13.42 Objective WTL1(d) from Chapter 7 NRRP seeks to achieve no overall reduction in the contribution wetlands make to the relationship of Ngāi Tahu and their culture and traditions with their ancestral lands, water, mahinga kai sites, wāhi tapu, and wāhi taonga. We find that this proposal is within the acceptable thresholds for water quality and would be consistent with this Objective.

## Landscape

- 13.43 We discussed the relevant objectives and policies for landscape in Part A decision. In summary, these are primarily found in the proposed and operative CRPS and the NRRP.
- 13.44 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. In considering these provisions we are informed by the objectives and policies of the Mackenzie District Plan.
- 13.45 The objectives and policies contained within the Mackenzie District Plan broadly mimic those that are contained in the higher order policy documents. Objective 3A seeks to protect and sustain the distinctive and outstanding natural landscapes and features of the district from subdivision and development that would detract from those landscapes. Reference is made to Section 6(b) RMA in the explanation and reasons.
- 13.46 Landscape value protection as we read the District Plan appears to focus on the wider visual landscape considerations. This is supported through policies such as Rural Policy 3M, which deals with Scenic Viewing Areas (SVAs). That Policy seeks to limit structures and tall vegetation within SVAs to enable views of the landscape to be obtained within and from those areas.
- 13.47 The explanation and reasons to Objective 3 notes that SVAs have been identified by the Council as being significant because of the landscapes contained in these areas and the views obtained from these areas, and because of the high degree to which these areas are visited for the purpose of experiencing the Mackenzie Basin and the high country landscapes. The Policy seeks to protect both the viewing sites and the views from them. The environmental results anticipated are retention of view within and from SVAs.
- 13.48 The SVA relevant to this application is SVA11. Scenic Viewing Area #11 runs alongside the eastern side of State Highway 8, some distance from the application site. Appendix J to the Mackenzie District Plan sets out some limited descriptor of the purpose of SVA11. It is entitled "Irishmans Creek". We are told in terms of Appendix J that it provides views to the north-west to Irishmans Creek Station. None of the landscape experts before us or consent investigation officers drew our attention to any adverse impact on SVA11. This is perhaps not surprising given that we are here dealing with an existing activity, namely border dyke as distinct from pivot irrigators, where border dykes have been in existence for some considerable period of time.
- 13.49 In the course of our deliberations we had occasion to read and consider the recent Environment Court decision by Judge Jackson (*High Country Rosehip Orchards Ltd and Others v Mackenzie District Council* 2011-NZ EnvC-387), in which the Court considered the objectives and policies in the Mackenzie District Plan as they related to landscape. We note that the decision is an interim decision in all respects with the exception that it is a final decision in respect of the finding that the Mackenzie Basin as a whole (excluding Twizel and Tekapo townships, Mr Densem's Landscape Unit 54 west of Twizel, and the Dobson River Catchment) is an Outstanding Natural Landscape. All other determinations or judgments are interim.
- 13.50 In our approach we have accepted that the Mackenzie Basin is an Outstanding Natural Landscape (ONL) and from that point our focus has turned to the provisions of the Mackenzie District Plan. We have also, of course, closely considered Section 6(b) RMA. In terms of the policy base to the District Plan, the Environment Court has promoted suggestions for change.
- 13.51 Policy 3B(1) as per the Court's decision seeks to recognise within the Mackenzie Basin's ONL, which is all of the Basin, that there are some areas where different types of development and use (such as irrigated pastoral farming and other activities) are appropriate and to identify these areas. Equally, there are many areas according to Policy 3B(1) as amended where such use and development is inappropriate. We have been called upon to make a decision where development of the sort we are here interested in has been identified as appropriate.



- 13.52 As we have earlier found, there are no landscape or visual effects of concern arising from this particular activity. It is of limited scale and size. It does not appear to detract in any way from the outstanding natural landscape of the Mackenzie Basin. It does not detract from any of the characteristics or values that were listed by the Environment Court in its revised Policy 3B(1).
- 13.53 As we saw it, the balance of the Environment Court's discussion around the policies focused primarily on views from state highways and tourist roads. Turning in detail to Policy 3B(8) as per the Environment Court's interim decision, the Court there reached an interim conclusion that location of structures such as large irrigators were to be avoided close to state highways or in such positions where they limited the screening of views of the ONL of the Mackenzie Basin. Also, outcomes sought were to minimise the adverse effects of irrigation on pasture adjacent to the state highways or tourist roads.
- 13.54 The site here is some considerable distance away from both the state highway and also SVA11; thus we do not think that a grant of consent offends Policy 3B(8).
- 13.55 Finally, we observe that the Court did consider the Irishmans Creek Station albeit in a different context within its decision at paragraphs 364 and 367. Importantly, the Court had this to say at paragraph 366:

*"We understand from Mr Densem's map this property's proposed irrigation is located in a Scenic Viewing Area on the Irishman Creek floodplain adjacent to State Highway 8. In fact, we consider that is not inappropriate (on landscape grounds) given that in this vicinity the state highway is raised above the surrounding land in order to cross the Tekapo Canal. That will have the effect that when travelling north the irrigated area will be below vehicles and thus not intrusive in views. From the north the vivid exotic green of an irrigated area will be seen against a backdrop of willows and pines and again not intrusive."*

- 13.56 We carefully reviewed the Mackenzie District Plan and we did not find that the irrigation command area is located in a Scenic Viewing Area, rather as we set out earlier, it is set out a short distance from SVA11. However, the photographic evidence we received from the range of landscape experts confirmed the Environment Court's finding that the state highway is raised above the surrounding land resulting in the outcome that the irrigated outcome will not be intrusive in views.
- 13.57 For all of the above reasons, we conclude that a grant of consent would be consistent with the relevant objectives and policies of the Mackenzie District Plan relating to landscape.

#### **Key conclusions on planning instruments**

- 13.58 For all of the above reasons we consider that, the grant of consent for a limited period of 5 years at a reduced annual volume of 672, 670 cubic metres per annum from the commencement of this consent best addresses the impact of adverse effects of inefficient use of water and also best reflects the outcome sought by the objective and policy base of the WCWARP. We have reached this conclusion taking into account the relevant planning provisions in respect of water quality, efficiency, environmental flows, landscape, and tangata whenua values.

## **14 EVALUATION OF OTHER RELEVANT S104 MATTERS**

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- 14.1 Under s104(1)(c) RMA, we are required to have regard to any other matter that we consider to be relevant and reasonably necessary to determine the application. In this regard, we do note s104(2)(a) RMA requires us when considering an application affected by s124 that we must have regard to the value of the investment of the existing consent holder. We believe we have done so.

## **15 PART 2 RMA**

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

### **Section 6 – Matters of National Importance**

- 15.2 Section 6 identifies matters of national importance that we must "recognise and provide for" when making our decision, relevantly for this application, include in particular preserving the

natural character of lakes and rivers (s6(a)); protection of outstanding natural landscapes from inappropriate use and development (s6(b)); and the relationship of Māori with the environment (s6(e)).

- 15.3 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, the grant of consent at a reduced volume and for a reduced duration recognises and provides for the preservation of the natural character of lakes and rivers.
- 15.4 In terms of s6(b), we reach the conclusion that granting consent to this proposal is appropriate in s6(b) terms. We say this primarily because the activity and its effects have been part of the environment for a considerable period of time. This proposal does not involve any extension or expansion of those existing activities. Keeping the irrigation activity located in this area provides, in a de facto way, protection of other areas of this outstanding natural landscape from inappropriate use and development. Also, the irrigation command area is not available for direct views from State Highway 8.
- 15.5 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.
- 15.6 In relation to section 6(e) we are cognisant of the relationship that Ngāi Tahu hold with the natural resources of this area, and while no specific values were specified by Ngāi Tahu in relation to this application, we believe that the mitigation measures and conditions provide for the cultural relationship to this catchment that is of importance to Ngāi Tahu.
- 15.7 For the above reasons, we consider that granting consent for the reduced volume and for a reduced duration would recognise and provide for s6 matters, as we are required to do under the RMA.

## Section 7 – Other Matters

- 15.8 Section 7 lists “*other*” matters that we shall “*have particular regard to*”. We make the following observations in relation to each of those matters as they are relevant to this application, referring to the sub paragraph numbers of s7:
- 15.9 Sub-section (a) refers to kaitiakitangā. We consider that the proposed activity with mitigation measures and conditions sits within the acceptable environmental parameters outlined by Ngāi Tahu such that that it will not cause distress to the function of kaitiakitangā.
- 15.10 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 reduced volume- of water we are prepared to grant along with reduced duration and taking into account the mitigation measures proposed by the applicant would result in the efficient use and development of the water resource.
- 15.11 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 along with the reduced annual volume and reduced duration will ensure the maintenance and enhancement of amenity values.
- 15.12 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.
- 15.13 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. Also the reduced annual volume and the reduced duration will ensure that the objective of s7(f) is met.
- 15.14 Having particular regard to the above matters in the context of section 7, we conclude that the grant of consent with the mitigation measures included by the applicant along with a reduced volume and reduced duration can be supported.

## Section 8 – Treaty of Waitangi

- 15.15 Finally, section 8 requires that we shall take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi).
- 15.16 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 Runangā and tribal authority has been followed and that the applicant was a contributor to the general assessment of the impact of irrigation activities on cultural values.
- 15.17 We are satisfied that the consultation procedures provided Ngāi Tahu with the opportunity to understand and respond to the proposed activity, albeit in conjunction with a large number of applications in the Mackenzie Basin.

## Section 5 – Purpose of the RMA

- 15.18 Turning now to the overall purpose of the RMA, that is, “*to promote the sustainable management of natural and physical resources*”.
- 15.19 We do think that the grant of consent with appropriate conditions will meet the purpose of the RMA. We say this because the water resource at issue will be able to be managed, developed, and protected in a way and at a rate that enables the applicant and the relevant community to provide for their social, economic, cultural well-being and for their health and safety. This can occur and be achieved while the natural and physical resource is sustained to meet the reasonably foreseeable needs of future generations and the water resource is safe-guarded and there are in place steps to avoid, remedy or mitigate any adverse effects of the activity on the environment.

## 16 OVERALL EVALUATION

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- 16.1 Under s104B RMA, we have a discretion as to whether or not to grant consent. This requires an overall judgment to achieve the purpose of the Act and is arrived at by:
- (a) Taking into account all the relevant matters identified under s 104;
  - (b) Avoiding consideration of any irrelevant matters;
  - (c) Giving different weight to the matters identified under s 104 — depending on our opinion as to how they are affected by the application of s 5(2)(a), (b), and (c) and ss 6-8 — to the particular facts of the case; and then in light of the above; and
  - (d) Allowing for comparison of conflicting considerations, the scale or degree of conflict, and their relative significance or proportion in the final outcome.
- 16.2 As we have already identified, the key issue for us here is how the applicant’s proposal satisfies the efficiency expectations of the WCWARP. We do not think that granting consent through to 2025 on the terms proposed by the applicant address inefficient water effects nor are they consistent with the objective and policy base of the WCWARP particularly in relation to efficient use of water. However, we do think that a grant for a reduced duration of 5 years coupled with reduced annual volume is consistent with the objective and policy base of the WCWARP and pays proper regard to the environmental effects of inefficient use of water by allowing that circumstance to continue but only for a limited period of time.
- 16.3 We also think that our findings in terms of water quality are also critical in terms of their significance or proportion in the final outcome. As the grant of consent is consistent with achieving the water quality objectives and policies of the WCWARP and the NRRP, then that is a matter which we think on balance supports a continuation resulting in a grant of consent to this application.
- 16.4 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 for a reduced annual volume compared to that sought in the proposal and for a reduced duration again compared to that sought within the application.

## 17 CONDITIONS

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

### Nutrients and thresholds

- 17.5 In Part A we rejected the MWRL proposition that we could grant all the applications before us with conditions.
- 17.6 Much of the evidence on conditions presented by all parties to this hearing centred on the issue of determining whether grantees in a particular subcatchment had breached the nutrient allowance at a particular node, and if they had, how ECan could determine either which consent holder had caused the breach and whether one or all consent holders needed to take corrective action.
- 17.7 In rejecting the MWRL case, which relied upon existing irrigators lessening their nutrient load so that there would be assimilative capacity for new irrigators, we need to record our approach to ensuring that consents we grant do not cumulatively result in the trophic level index (TLI) of Lake Benmore exceeding 2.75. As we recorded in Part A our view is that in the case of applications before us draining to the Haldon Arm we are confident that the TLI threshold will not be breached even if all applications for consent before us are granted.
- 17.8 In light of this conclusion, we considered whether or not any useful resource management purpose would be served by requiring those applicants draining into the Haldon Arm to monitor lake TLI. For small replacement consents in locations far removed from critical lentic waterbodies, we consider that such a monitoring requirement would be excessive. We consider that the current application falls into this category and agree with the applicant that imposing lake monitoring conditions in this case would serve no resource management purpose.
- 17.9 In relation to streams and rivers, we recognise that streams and rivers in the catchment are nutrient limited by nitrogen and/or phosphorus. We consider that the NZ (MfE) Periphyton Guidelines provide appropriate thresholds for managing nuisance periphyton growths and provides 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.
- 17.10 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. 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. We therefore support the proposed monitoring of Irishman Creek and have imposed conditions to this effect.

## 18 DURATION

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- 18.1 Efficient use of water is the key issue for determination in this decision. We do not think that a grant of consent through until say 2025 particularly taking into account in particular the inefficient use of water that would arise from that outcome is consistent with sustainable management. We have considered the evidence in terms of the quantity of water that would be required to irrigate this area using a more efficient application system. The difference between the volume of water applied for and the volume that could be utilised using a spray irrigation system is very significant. We do not think that it is sustainable to allow continued use of this high volume of water while there exists options to utilise the water resource in a much more efficient manner.
- 18.2 In arriving at this conclusion we have considered the applicant's approach to avoiding, remedying or mitigating adverse effect of the consented activity. We have also considered the costs and benefits of the activity to the community as best we are able and we have had regard to the consent holders' capital investment in the pre-existing activity.
- 18.3 Unlike many other proposals before us, the applicant did not offer to convert to spray within five years or provide any details of a spray system that could replace the existing border dykes. We therefore did not have the option of granting a longer term consent with a requirement for conversion after five years and a corresponding reduction in annual volume.
- 18.4 However for the reasons already advanced we think that a limited duration of 5 years in this instance best meets the purpose of the Act.

## 19 DECISION

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- 19.1 Pursuant to the powers delegated to us by the Canterbury Regional Council:
- 19.2 For all of the above reasons and pursuant to sections 104 and 104B of the Resource Management Act 1991, we **GRANT** application CRC011845 by Irishman Creek Station Limited for the following activity:
- to take and use water from Irishman Creek at a maximum rate of 140 litres per second and a volume not exceeding 672,670 cubic metres per year, for the border dyke irrigation of 48 hectares of crop and pasture at or about map reference NZMS 260 I38:974-802, being Irishman Creek Station, State Highway 8, Lake Tekapo.
- 19.3 Pursuant to section 108 RMA, the grant of consent is subject to the conditions specified at **Appendix A**, which conditions form part of this decision and consent.
- 19.4 The duration of CRC011845 shall five years from the commencement of this consent.

DECISION DATED AT CHRISTCHURCH THIS 23<sup>RD</sup> DAY OF MARCH 2012

Signed by:

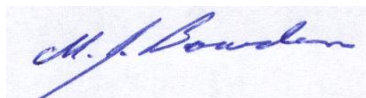
Paul Rogers



Dr James Cooke



Michael Bowden



Edward Ellison



### **Diversion / take of water**

1. Water shall only be diverted /taken from Irishman Creek, at or about map reference NZMS 260 139:974-802 at a maximum rate not exceeding 140 litres per second, with a volume not exceeding 672,670 cubic metres per year between 1 July and the following 30 June.
2. The diversion / taking of water for irrigation purposes in terms of this consent shall cease whenever the rate of flow, as estimated by the Canterbury Regional Council, in Irishman Creek, at or about map reference NZMS 260 139:978-766 is less than 300 litres per second.

### **Use of water**

3. Water shall only be used for the irrigation of 48 hectares of pasture and fodder crops for grazing stock excluding milking dairy cows within the land shown on attached **Plan CRC011845-A**, which forms part of this consent.
4. There shall be a minimum 5 metre setback, where there is no irrigation from any permanently flowing waterway within the irrigation area marked on **Plan CRC011845-A**.
5. 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.

### **Water metering – Minimum flows**

6. The consent holder shall, before the start of the next irrigation season following the commencement of this consent, install:
  - (a) a water level measuring device in a stable reach of Irishman Creek at map reference NZMS 260 139:978-766 that will enable the determination of the continuous rate of flow in Irishman Creek during each irrigation season to within accuracy of ten percent.
  - (b) a tamper-proof electronic recording device such as a data logger(s) that shall time stamp a pulse from the flow meter at least once every 15 minutes.
7. The measuring device shall be installed at a site that will retain a stable relationship between flow and water level. The measuring device shall be installed in accordance with the manufacturer's instructions.
8. The recording device(s) shall:
  - (a) be set to wrap the data from the measuring device such that the oldest data will be automatically overwritten by the newest data (i.e. cyclic recording); and
  - (b) store the entire season's data in each 12-month period from 1 July to 30 June in the following year, which the consent holder shall then download and store and provide to the Canterbury Regional Council in a format and standard specified in the Canterbury Regional Council's form for Water Metering Data Collection; and be readily accessible to be downloaded by the Canterbury Regional Council or by a person authorised by the Canterbury Regional Council: RMA Compliance and Enforcement Manager; and
  - (c) shall be connected to a telemetry system that collects and stores all of the data continuously with an independent network provider who will make that data available in a

commonly used format at all times to the Canterbury Regional Council and the consent holder.

9. The measuring and recording devices described in Condition 6 shall be available for inspection at all times by the Canterbury Regional Council.
10. Data from the recording device and the corresponding relationship between the water level and flow, and any changes in that relationship shall be provided to the Canterbury Regional Council annually in the month of June, and shall be accessible and available for downloading at all times by the Canterbury Regional Council.

#### **Water metering – Take of water**

11. The consent holder shall, before the start of the next irrigation season following the commencement of this consent, install:
  - (a) a water level measuring device in a location that will enable the determination of the continuous rate of flow and volume of water being taken for irrigation to within an accuracy of ten percent; and
  - (b) a tamper-proof electronic recording device such as a data logger(s) that shall time stamp a pulse from the flow meter at least once every 15 minutes.
12. The measuring device shall, as far as is practicable, be installed at a site likely to retain a stable relationship between flow and water level. The measuring device shall be installed in accordance with the manufacturer's instructions.
13. All data from the recording device and the corresponding relationship between the water level and flow, shall be provided to the Canterbury Regional Council annually in the month of June, and shall be accessible and available for downloading at all times by the Canterbury Regional Council.
14. The measuring and recording device(s) specified in Condition 11 shall:
  - (a) be set to wrap the data from the measuring device(s) such that the oldest data will be automatically overwritten by the newest data (i.e. cyclic recording);
  - (b) store the entire season's data in each 12-month period from 1 July to 30 June in the following year, which shall be downloaded and stored in a commonly used format and provided to the Canterbury Regional Council upon request in a form and to a standard specified in writing by the Canterbury Regional Council;
  - (c) 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;
  - (d) be installed by a suitably qualified person in accordance with ISO 1100/1-1981 (or equivalent) and the manufacturer's instructions;
  - (a) be maintained throughout the duration of the consent in accordance with the manufacturer's instructions; and
  - (b) be accessible to the Canterbury Regional Council at all times for inspection and/or data retrieval.
15. All practicable measures shall be taken to ensure that the water meter and recording device(s) specified in Condition 11 are at all times fully functional and meet the accuracy standard stated in that condition.

#### **Water metering – Compliance Checks**

16. Within one month of the installation of the measuring or recording device(s) specified in Conditions 6 and 11 (or any subsequent replacement devices), the consent holder shall provide a certificate to the Canterbury Regional Council, attention: RMA Compliance and Enforcement

Manager, signed by a suitably qualified person certifying, and demonstrating by means of a clear diagram, that:

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

### **Fish Screen**

18. The consent holder shall, before the start of the next irrigation season following the commencement of this consent, install a fish screen with a maximum mesh width and height size of 3 millimetres or slot width and height of 2 millimetres across the intake to ensure that fish and fish fry are prevented from passing through the intake screen.
19. 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.
20. 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.
21. The fish screen shall be designed or supplied by a suitably qualified person who shall ensure that the design criteria specified in Conditions 18 to 20 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.
22. 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 18 to 20 inclusive of this consent.
23. 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**

24. For the purposes of interpretation of the conditions of this consent Irishman Creek Station shall be defined as the areas in certificates of title and Pastoral Lease number CB529/19, which total 10,832 hectares.



25. The consent holder shall prepare once per year and not less than one month prior to the commencement of the irrigation season:
  - (a) an Overseer<sup>®</sup> 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 Irishman Creek Station using the model Overseer<sup>®</sup> (AgResearch model version number 5.4.3 or later).
26. When undertaking the modelling outlined in Condition 25, the consent holder shall use either weather records collected on-farm or from constructed data from the nearest weather station.
27. A copy of the reports prepared in accordance with Condition 25 shall be given to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager within one month of their completion.
28. 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 25 from Irishman Creek Station does not exceed 29,286 kg of Nitrogen and 2,026 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.
29. The NDAs, incorporating any reductions required by receiving water quality nutrient trigger conditions, shall be complied with from the commencement of consent.
30. 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
31. The consent holder shall at all times comply with the Farm Environmental Management Plan (FEMP) in particular, the mitigation measures and monitoring set out in section 5 of the FEMP for Irishman Creek Station as provided to Environment Canterbury in 30 September 2009, a copy of which is **attached** and marked **CRC011845-B** and forms part of this condition set.
32. Subject to Condition 31, the consent holder shall implement, and update annually the FEMP for Irishman Creek 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 Irishman Creek 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.
33. 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.
34. 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 30 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.

35. Changes may be made to the Irishman Creek 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**

36. 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 10,832 hectares. The recalculated NDAs shall be undertaken to accurately redistribute the NDA between the resultant properties and shall replace the NDAs specified in Condition 28. 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 28. 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**

37. 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.
38. 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.
39. 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.
40. Nitrogen fertiliser shall not be applied to land between 31<sup>st</sup> May and 1<sup>st</sup> September.
41. 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.
42. Applications of nitrogen fertiliser shall not exceed 50 kg nitrogen / hectare per application.
43. 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.
44. Fertiliser filling areas shall not occur within 50 metres from a water course, spring or bore.
45. For land based spreading, fertiliser should not be applied within 20 metres of a watercourse.
46. 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.

#### **River water quality monitoring and response**

- 47. The water quality of Irishman Creek shall be monitored within six months of the first exercise of consent as follows:
  - (a) The location for monitoring of Irishman Creek shall be as follows unless minor changes are required to ensure that monitoring occurs upstream of all intakes and downstream of the irrigation area to appropriately monitor the localised river effects arising from the exercise of this consent:
    - i. Map reference: NZMS 260 137:9745-8056 immediately upstream of all irrigation takes on the Irishman Creek; and
    - ii. Map reference: NZMS 260 137:9743-7823, immediately upstream of the culvert beneath the Tekapo-Pukaki canal
  - (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.

48. If the monitoring undertaken in accordance with Condition 47 shows that the average sample result for the downstream monitoring site specified in Condition 47 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<sup>2</sup> (environmental standard trigger), then the consent holder shall commission a report into the cause of the breach of the environmental standard trigger.
49. The reports referred to in Condition 48 shall:
- (a) be prepared by an expert review panel consisting of two qualified and experienced independent scientists. One of the scientists shall be nominated by the Canterbury Regional Council, and the other shall be appointed by the consent holder; and
  - (b) include the experts' conclusion on whether the exceedance(s) were as a result of natural influences, one off events, or in whole or part by nutrient loss associated with the irrigation authorised by this consent; and
  - (c) include an assessment as to whether the exceedance measured by the monitoring is likely to continue; and
  - (d) be completed by 30 July following the sampling; and
  - (e) be provided to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, by 30 August following the sampling.
50. If both the authors of the report prepared in accordance with Condition 48 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.
51. If the report prepared in accordance with Condition 48 concludes that the environmental standard trigger has been exceeded because of farm land use practices, then:
- (a) the NDA, as specified in Condition 28, shall be reduced by 5% x Irrigation Proportion Factor (IPF) for the irrigation season subsequent to the monitoring period. The IPF shall be the proportion of the area under irrigation (at the time of the exceedance) under this resource consent divided by the total farm area (i.e. 48 irrigated hectares divided by the total farm area of 10,832 hectares); and
  - (b) the consent holder shall prepare and implement a Remedial Action Plan in accordance with Condition 53(b).
52. If a required reduction in nutrient load is in effect under 51(a) and monitoring for that period shows that the average sample results for the downstream monitoring site over the period December to April is:
- (a) greater than 0.10 mg/L of DIN; or 0.007 mg/L DRP; or 50 mg chl *a*/ m<sup>2</sup> (environmental standard trigger), then there shall be a further NDA reduction of 10% x IPF for the subsequent irrigation season.
  - (b) less than or equal to 0.10 mg/L of DIN; or 0.007 mg/L of DRP; or 50 mg chl *a*/ m<sup>2</sup> (environmental standard trigger), then for the subsequent season no NDA reduction shall be required under this condition, and the full NDA for the property, as specified in Condition 28 shall be restored.
53. In relation to the Remedial Action Plan referred to in Condition 51(b):
- (a) It shall set out the methods and timeframes for altering and/or adapting farm land use practices to ensure that the exceedance in the environmental standard trigger, is returned as soon as practicable to and maintained below the average sample results of 0.10 mg/L of DIN; or 0.007 mg/L of DRP; or 50 mg chl *a*/ m<sup>2</sup> (environmental standard trigger) for the downstream monitoring site, over the period December to April.

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

#### **Review of conditions**

- 54. 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 Irishman Creek at which abstraction is required to be discontinued as set out in Condition 2 and the efficiency of the irrigation system.

#### **Lapse**

- 55. 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:***

- *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.*

