

BEFORE THE CANTERBURY REGIONAL COUNCIL

IN THE MATTER OF

The Resource Management Act 1991

AND

IN THE MATTER OF

applications by **Upper Waitaki Community Irrigation Company** as follows:

CRC001128 to take and use water from Lake Waitaki at a maximum rate not exceeding 1,450 litres per second to irrigate 1,925ha of land on the south side of the Waitaki River

CRC092847, CRC092849, CRC092850, CRC092851 and CRC092852 to discharge surplus water from the irrigation canals into various water bodies

REPORT AND DECISION OF HEARING COMMISSIONERS

PAUL ROGERS, MICHAEL BOWDEN, DR JAMES COOKE AND EDWARD ELLISON

TABLE OF CONTENTS

1	APPOINTMENT	3
2	THE PROPOSAL	3
3	DESCRIPTION OF THE ENVIRONMENT	6
4	PLANNING INSTRUMENTS.....	7
5	PRIORITY AND DEROGATION	9
6	NOTIFICATION AND SUBMISSIONS	9
7	THE PLANNING OFFICER'S REPORT.....	11
8	THE APPLICANT'S CASE.....	12
9	SUBMITTERS	22
10	APPLICANT'S RIGHT OF REPLY	27
11	STATUTORY CONTEXT.....	31
12	EVALUATION OF EFFECTS.....	32
13	EVALUATION OF RELEVANT PLANNING INSTRUMENTS	37
14	OTHER RELEVANT AND S104 RMA MATTERS	42
15	PART 2 RMA.....	42
16	OVERALL EVALUATION.....	45
17	DECISIONS AND REASONS.....	47
	CONDITIONS	48

1 APPOINTMENT

- 1.1 Paul Rogers (Chair), Michael Bowden, Jim Cooke and Edward Ellison were appointed as independent hearings Commissioners by the Canterbury Regional Council under section 34A(1) of the Resource Management Act 1991 (the RMA) to decide on applications by Upper Waitaki Community Irrigation Company (the applicant) to take water from Lake Waitaki and discharge surplus water from races into water.
- 1.2 The applications were heard at Christchurch on the 3rd of May, 2010. In addition to the evidence and submissions provided by the applicant and submitters at the hearing we record that we have all read and taken full account of the application documents, including the assessment of effects on the environment (AEE) and all of the written submissions.

2 THE PROPOSAL

- 2.1 The proposal involves two key components:
 - (a) Abstracting water from Lake Waitaki to use for irrigation; and
 - (b) Discharging surplus water into several water bodies.
- 2.2 The proposed extraction and discharge points are illustrated on Figure 1 below.

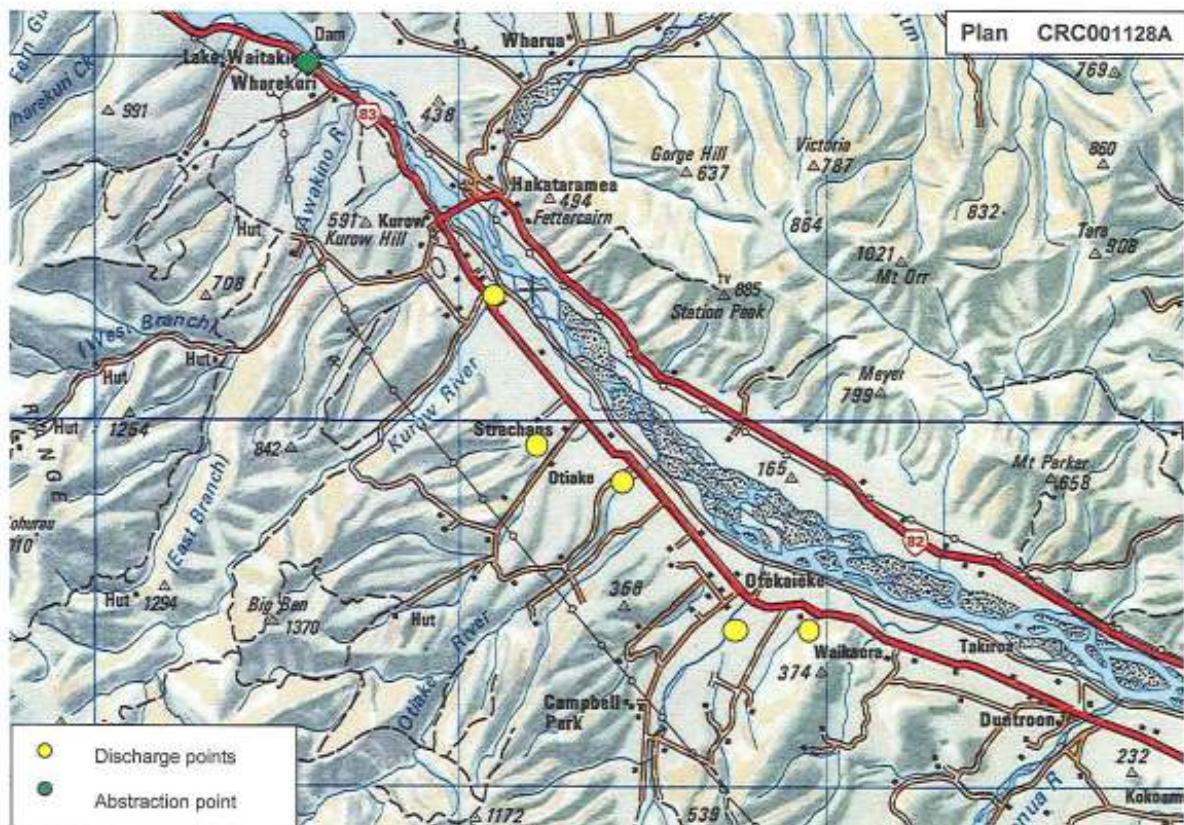


Figure 1 – scheme area with abstraction and discharge points

Abstraction

- 2.3 The applicant proposes to take and use water at a rate of 1,450 litres per second from Lake Waitaki to irrigate an area of 1925 hectares on the south side of the Waitaki River, below the Waitaki Dam. The water will be taken via a siphon located in the structure of the Waitaki dam and conveyed by a 30km race and then piped 9km, to the proposed irrigation areas.
- 2.4 The water is used for irrigation using predominantly border-dyke irrigation and some spray irrigation systems.

- 2.5 In order to get water along the entire length of the race system, an additional head is required. Some of this water will be lost along the race due to evaporation and leakage, while approximately 500,000 cubic metres will end up as by-wash from the system and be discharged at five separate points from the race.
- 2.6 The applicant company has 62 shareholders, and a total of 1917 shares available. Of these, two (Rutherford/Keeling and Slee) hold 301 and 333 shares respectively and are the two biggest shareholders. Both operate dairy farms. The next biggest shareholding is Meridian Energy Ltd (Meridian) with 270 shares, of which 103 are used for a dairy farm and the rest for dairy support. The remaining 59 shareholders are smaller properties and their land use is "lifestyle" farming with a few sheep and beef cattle.
- 2.7 The proposed annual volume does not include provision of stock water and domestic water for the properties served by the scheme. The applicant considers that the take and use of water for the provision of stock and domestic water is covered by section 14(3)(b) RMA. We did not reach a conclusion on that contention. We observe, given our findings about the inefficiencies of the scheme, that we have doubts about whether the applicant can satisfy the relevant conditions of section 14(3)(b) RMA to qualify as a permitted activity. In particular, given the method of conveyance of the stockwater is an inefficient scheme, there may be or there likely may be an adverse effect on the environment caused by and resulting from water wastage.

Discharges

- 2.8 The applicant also seeks five resource consents to discharge water from the scheme canals into several water bodies (generally dry river beds). A 35-year duration is sought for the consents.
- 2.9 Under the discharge applications, the applicant proposes to discharge surplus water from the supply race at five locations into the Kurow River, Malcolm Creek, Otiake River, Otekaieke River and Tewatapoki Creek respectively. The rate of discharge will usually be 100 litres per second and required at times when users may shut down their operation ahead of their programmed shutdown.
- 2.10 These discharge consents will not provide for any emergency discharges from the race system when there are flood flows or race blowouts.

Mitigation measures

- 2.11 The applicant proposes the following mitigation measures in relation to the proposal:
- (a) A fish screen with unknown mesh size is already installed on the intake.
 - (b) The take of water will be metered.
 - (c) Fish & Game will be notified for fish recovery 48 hours prior to the ceasing of taking of water.
 - (d) For properties with more than 20 hectares irrigated, a nutrient budget shall be prepared and implemented.
 - (e) A FEMP, including a nutrient budget, shall be prepared for all properties irrigating more than 20 hectares.
 - (f) A Scheme Management Plan shall be prepared.
 - (g) All waterways shall be fenced with 5 metre riparian margins.
 - (h) A water supply agreement shall be entered into with all scheme shareholders

The applications

- 2.12 As noted above, there are six separate applications. The first application is for a water permit to take and use surface-water pursuant to section 14 RMA. The remaining five applications are for the discharge of water pursuant to section 15 RMA.
- 2.13 Consent is required for both the abstraction and the discharges under the Waitaki Catchment

Water Allocation Regional Plan (WCWARP), as discussed below. The applicant requests a term of 35 years for all consents.

2.14 The details of the five separate discharge applications are as follows:

CRC092847 – to discharge water

To discharge surplus water from the irrigation canal into the Kurow River at a maximum rate of 100 litres per second plus flood inflows, at or about map reference NZMS 260 I40:1089-0322.

CRC092849 – to discharge water

To discharge surplus water from the irrigation canal into Malcolm Creek via Long Gully at a maximum rate of 100 litres per second plus flood inflows, at or about map reference NZMS 260 I40:1193-9928.

CRC092850 – to discharge water

To discharge surplus water from the irrigation canal into the Otiake River at a maximum rate of 100 litres per second plus flood inflows, at or about map reference NZMS 260 I40:1428-9805.

CRC092851 – to discharge water

To discharge surplus water from the irrigation canal into the Otekaieke River at a maximum rate of 100 litres per second plus flood inflows, at or about map reference NZMS 260 I40:1730-9418.

CRC092852 – to discharge water

To discharge surplus water from the irrigation canal into Tewatapoki Creek at a maximum rate of 100 litres per second plus flood inflows, at or about map reference NZMS 260 I40:1970-9436.

2.15 The discharge applications were originally receipted as one application (CRC001129), but prior to notification, these were split into individual consents, each with their own number (as they are now).

Existing consents

2.16 The applications are for replacement activities for water take (WTK800011) and five discharge consents (WTK800013 to WTK800019). The discharge consents are reduced in scale through the applicant agreeing to reduce by-wash volumes by 50% during times of drought.

The details and status of the various consents relating to the applicants scheme are provided in Table 1 below.

Table 1

Consent	Activity	Date Issued	Consent Expiry Date	Conditions	Current State
WTK800011	Take water 1450 l/s from Waitaki River	25/2/1981	31/12/2000	Nil	Continuation until new application determined
WTK800013 through to WTK800019	Discharge to Waitaki River	25/2/1981	31/12/2000	Nil	Expired
CRC952589	Disturb bed of and place protection works on Otekaieke River	23/8/1995	23/8/2030	Yes	Current
CRC952588	Disturb bed of and place protection in the bed of the	24/10/1985	23/8/2030	Yes	Current

	Otiake River				
CRC952588	Disturb bed of and place protection in the bed of the Awakino River	24/10/1995	23/8/2030	Yes	Current

3 DESCRIPTION OF THE ENVIRONMENT

3.1 The applicant has provided the following in the application about the site and locality:

- (a) The applications are to take and use surface water from Lake Waitaki for an existing irrigation scheme located on the true right banks of the Lower Waitaki River in the area downstream of the Waitaki Dam.
- (b) The irrigation area of 1925 hectares is shaped generally in an oblong shape lying parallel to the Waitaki River, the canal from Waitaki Dam downstream runs for 30 kilometres, and a piped extension continues for a further 9 kilometres to a point just upstream of Duntroon.
- (c) Lake Waitaki is a man-made lake for hydroelectricity generation purposes constructed in the 1930s.
- (d) The scheme area is located on the south bank of the Waitaki River between the Waitaki Dam and Duntroon.
- (e) The soil type is predominantly silt loam with some areas of sandy loam near Kurow. The soils are deep and respond well to irrigation and are classified as yellow-grey earths.
- (f) On the lower terraces the soils are underlain by alluvial greywacke gravels as are the high terraces, but they also have some quartz and extensive loess covering.
- (g) The land is used for a mix of dairy, cropping, vineyards, sheep and cattle farming.
- (h) Outflows and lake levels of Lake Waitaki are primarily controlled by MEL.
- (i) Other uses of the lake include fishing and boating.

3.2 The Section 42A (s42a) Report Officer conducted a search on the Canterbury Regional Council (CRC) GIS database to gather information on the ecological values of the affected environment. Ms Penman also referred to reports summarising instream and recreational values of rivers and lakes in the Canterbury Region and reference these where appropriate as follows:

- (a) Large tracts of the Waitaki River bed and banks and other water bodies within the scheme area are Department of Conservation (DOC) reserves.
- (b) Several wetlands are located within the scheme area.
- (c) Lake Waitaki, and the Waitaki River, which flows alongside the scheme area, are considered to be significant habitats for indigenous vegetation and wildlife and are considered to be a site of regional and national significance.
- (d) Sutherland-Downing and Elley (2004) lists the following recreation values for Lake Waitaki:
 - (i) Good water quality, moderate to moderately low scenic and natural appeal.
 - (ii) Sightseeing, walking, picnicking, camping and swimming.
 - (iii) Water sports including jet/power boating, water skiing, jet skiing, canoeing/kayaking and sailing.
 - (iv) Angling and hunting for trout and water fowl.
- (e) Daly (2004) summarises the values of Lake Waitaki:

- (i) Lake Waitaki has moderate to moderately low value for natural character and outstanding natural features and landscape.
 - (ii) The lake has aquatic and swamp plant types including rush and sedge swamp.
 - (iii) Feeding, roosting and breeding habitat for deep and shallow water waders, waterfowl, gulls and terns and banded dotterel.
 - (iv) Feeding and roosting habitat for open water divers, riparian species, black stilt and black-fronted terns; and feeding habitat for Southern crested grebe.
 - (v) Koaro and common bully habitat.
 - (vi) High value habitat for brown and rainbow trout, but low value for sock-eye salmon.
- (f) Keller and Pfluger (2005) states the following in regards to:
- (i) Lake Waitaki:

"Narrow man-made lake on the Waitaki River. 95% open water with steep shorelines and some wetlands on margins. Some associated rush and sedge swamp. Excellent waterfowl habitat especially for feeding and loafing. White-faced heron and grey warbler breeding. Other birds present include bellbird, banded dotterel, black-fronted tern, grey duck, NZ scaup and black shag."
 - (ii) Kurow River:

"Braided riverbed reasonably clear of weeds. River banks are edged in gorse, broom, some willow and with polar shelter belts and pastureland bordering them. Evidence of gravel extraction in the bed and gravel stopbanks to contain floodwaters. Water flow variability and quality is predominantly natural."
 - (iii) Otiake River:

"Braided riverbed where some channels have clear shingle and some covered in weeds. Riverbanks densely covered in gorse and broom with bordering pastureland. Flows and water quality is predominantly natural."
 - (iv) Otekaieke River:

"Braided riverbed where some channels have clear shingle and some covered in weeds. Riverbanks densely covered in gorse, willow and broom with bordering land in pasture. River flow and water quality are predominantly natural."
- (g) Gabites and Horrell (2005) state the following in relation to the receiving streams:
- (i) The Kurow River, Otekaieke River, and Otiake River suffer significant flow losses near the SH83 bridges and the riverbeds at these points are often dry meaning surface flows at these downstream ends of the stream catchments are often zero.

3.3 Ms Penman also advised that there are existing consented water abstractions from the Otekaieke River, Otiake River and Kurow River, upstream of the proposed discharge points.

Site visit

3.4 The panel did not as a group conduct a site visit. However, the scheme has been in existence for 40 years and, being located either side of State Highway 83 between Duntroon and Kurow, is highly visible to all who travel that road, which has included members of the panel.

4 PLANNING INSTRUMENTS

4.1 The planning instruments relevant to this application are:

- (a) Transitional Regional Plan (TRP);
- (b) Waitaki Catchment Water Allocation Plan (WCWARP) incorporating the water quality objectives of Chapter 4 of the PNRRP;
- (c) The operative Natural Resources Regional Plan (NRRP);
- (d) The Canterbury Regional Policy Statement (CRPS);
- (e) Waitaki District Plan (WDP); and
- (f) The Freshwater National Policy Statement (Freshwater NPS).

4.2 Of the above, the WCWARP and the NRRP are the key planning instruments as they contain rules that determine the status of the proposed activity and objectives and policies that are directly relevant to the proposal.

Status of the activity

4.3 This application was lodged on 13 January 2000. As such, the TRP, the PNRRP and WCWARP are all applicable when determining status of the proposed activity.

TRP

4.4 The TRP permits the abstraction (diversion or take) of surface water from any surface water body provided the volume abstracted is less than 10 cubic metres per day, and the rate of take is limited to five litres per second. Given that the proposed take exceeds these limits, consent is required for the take and use of water as a discretionary activity under the TRP.

NRRP

4.5 In relation to the NRRP, s88A of the RMA requires that the status of the activity is determined by the rules that existed at the time that the application was lodged, even if those rules have since changed. We have therefore considered the relevant provisions from the Proposed NRRP as notified to determine the status of the activity. Notwithstanding the above, we are still required to have regard to the current provisions of the now operative NRRP as part of our overall consideration under s104.

4.6 Chapter 4 of the Proposed NRRP deals with water quality standards and contains rules which are relevant for managing discharges into water. It was notified on 3 July 2004. The following rules apply to these applications to discharge water:

- (a) Rule WQL1 permits the discharge of water into a surface water body provided a number of conditions are met. It is not clear if the proposed discharges will comply with those conditions, therefore Rule WQL56 must be considered; and
- (b) Rule WQL56 classifies any discharge into a water body that does not meet the conditions of Rule WQL1, but meets the conditions of Rule WQL56 as a discretionary activity. The discharges will comply with the conditions of Rule WQL56.

4.7 The proposed discharges require resource consent as a discretionary activity under Rule WQL56 of the Proposed NRRP (as notified) in accordance with Section 15 of the RMA.

WCWARP

4.8 The WCWARP deals with the taking, diversion, damming and use of water within the Waitaki catchment and became fully operative in July 2006. The following rules apply to the application to take and use water:

- (a) Rule 2, Clause (1) and Table 3 – There is no allocation limit for the taking of water from Lake Waitaki and the applicant agrees to comply with the minimum lake level of 227 metres above sea level.
- (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

4.9 The proposed take and use of water requires resource consent as a discretionary activity is required under Rule 15 of the WCWARP in accordance with Section 14 of the RMA.

Overall status of activity

4.10 Based on the above, the entire proposal, including the water permit and discharge applications, has been assessed as a **discretionary activity** under the RMA.

5 PRIORITY AND DEROGATION

Priority

5.1 There is no instantaneous allocation limit for takes from Lake Waitaki under Rule 2 or Rule 3 WCWARP.

5.2 For Rule 6 WCWARP (annual allocation), a full list of all existing consent holders and all applicants in priority order for the Upper Waitaki was provided in Appendix Five of the S42a Report.

5.3 For application CRC001128, the allocation limits are not exceeded and there are no priority issues.

Derogation approval

5.4 Meridian has provided approval for the applicant to derogate from its consents (copy was provided as Appendix Four of the S42A Report).

6 NOTIFICATION AND SUBMISSIONS

6.1 The consent applications were first notified in December 2003 as part of the “ministerial call in”. The applications were notified again in February 2009 after the WCWARP became operative. Re-notification of these applications was required in March 2010 due to a notification error. Notice was also served on 337 affected parties considered to be directly affected by the proposed abstraction and discharge of water.

6.2 In response to the 2003 call-in notification a total of 314 submissions were received. The submitters were not identified by the S42 Report due to the number, but we were advised the issues raised by those submitters were addressed in the assessment of the actual and potential effects in the balance of the S42A Report. The details of the submissions lodged as a result of the notifications in 2009 and 2010 can be summarised as follows.

(a) In the 2009 public notification:

(i) 27 submissions were received on the water permit application, with 23 in support, three in opposition, and one neither supporting nor opposing the application.

(ii) 25 submissions were received on the discharge applications, with 23 in support, and two in opposition to the applications.

(b) In the 2010 re-notification:

(i) 12 submissions were received on the water permit application. Of these, seven were from submitters who had not previously submitted in 2009, adding five in support and two in opposition.

(ii) 10 submissions were received on each of the discharge applications. Of these, seven were from submitters who had not previously submitted in 2009 with an additional five in support and two in opposition.

6.3 The following table identifies all submissions made on these applications from 2009 and 2010.

Submitter	Issues	Support / Neutral / Oppose
GF Keeling	Important part of community and in existence for 40 years. Reliability important for farming viability and economic benefits to the area.	Support
R T Slee	Existing scheme since 1964 and farming community reliant on this irrigation.	Support
LA Irving	Integral part of community provides employment opportunities and benefits economy. Reliability of supply is important	Support
IF Willis	Reliability of supply important, and provides economic benefit to community.	Support
Combined Waitaki Irrigators*	Improved approach to water efficiency measures supported	Support
J Slee	Backbone of community. Reliability important for farming viability and economic benefits to the area.	Support
Ruataniwha Farm Ltd	Employment benefits to area	Support
TJ Appleby		Support
W R Warwick	Benefit community.	Support
AJ & AJ Chapman	Integral part of community and provides employment for local people.	Support
Waihakamea Investments Ltd	Integral part of community and essential for economy of area. Reliability of supply is important.	Support
J & PA Emslie	Integral part of community, provides employment opportunities and benefits economy. Reliability of supply is important	Support
Waitaki First Incorporated	Irrigation is essential for community and agricultural production. Ensure surface and groundwater quality is protected.	Support
M B Turner*		Support
A J Gloag*	Irrigation is the life blood of the economy and food production is essential	Support
J M Meehan*	Without irrigation area would not sustain agriculture	Support
Whitestone Contracting Ltd*	Economic benefit to community	Support
A & H Turner-Heaton	Part of community and provides number of jobs. Needed for farming viability and to increase productiveness of farmland. Reliability of supply is important.	Support
K White	Integral part of community, providing employment for locals.	Support
RC Newbury	Integral part of community, essential for vineyards.	Support
JA & JK Watt	Integral part of community, providing employment for locals. Reliability of supply is important.	Support
C Schiff	Integral part of community. Provides employment opportunities and benefits economy. Reliability of supply is important.	Support
D Savage		Support
K Lawrence	Devalue property if irrigation discontinued. Community and economy relies on this irrigation.	Support
NW Mulvena	Vital for future stock numbers and community	Support
RF James	Vital for community	Support
GE & EM Hill	Irrigation is essential for ongoing productivity. Must be 100% reliable.	Support
A Black	Need reliable water supply for farming viability. Essential for community and economy.	Support

Meridian Energy Ltd	Limit take to that which derogation approval was provided for. Install water meter.	Neutral
Mackenzie Irrigation Co Ltd	Excessive annual volume not efficient should be 19.4 million cubic metres.	Oppose
Central South Island Fish & Game	Not opposed in principle, but issues surrounding fish exclusion measures, efficiency of use, duration and prevention of stock from entering races need to be addressed.	Oppose
Southdown Holdings Ltd	Inefficient volume of water being sought	Oppose
South Canterbury Irrigation Trust*	Consistency is needed between conditions on the SCIT/Hunter Downs application and UWCIC	Oppose
Royal Forest & Bird Society*	35 yr duration is too long, 10 yr is more appropriate; Policy 19 of Waitaki Plan encourages piping not open races; water quality has not been addressed by the individual property owners within the scheme or cumulatively; instream biodiversity effects possible.	Oppose

Table 2: Summary of submissions on applications CRC001128, CRC092847, CRC092849, CRC092850, CRC092851 and CRC092852. (* = 2010 submissions)

Key issues raised

- 6.4 An analysis of the submissions in **support** (28) shows that many were from shareholders in the scheme. The key points they raised were;
- (a) The scheme has been an important part of the local community for the last 40 years.
 - (b) The reliability of supply to shareholders through an adequate annual volume is essential to the viability of farming.
 - (c) The employment that the scheme brings to the community through dairy farming, viticulture and orchards is irreplaceable.
- 6.5 Analysis of the submissions **opposed** (5) identify the following issues;
- (a) Efficiency
 - (b) Annual volume be limited to 19.4 million cubic metres
 - (c) Fish screening inadequate
 - (d) Duration of consent to long
 - (e) WCWRP Policy 19 encourages piping not open races
 - (f) Prevention of stock entering water races
 - (g) Water quality not addressed by individual owners in the scheme
 - (h) Seeking consistency in any conditions imposed with the South Canterbury Irrigation Company and Hunter Downs Scheme.
- 6.6 In addition to the above, the one neutral submission was from Meridian seeking that any conditions are consistent with derogation approval dated 7 July, 2008.

7 THE PLANNING OFFICER'S REPORT

- 7.1 A comprehensive officer report on the application and submissions was prepared by the Regional Council's planner, Ms Claire Penman. The report was pre-circulated in advance of the hearing.
- 7.2 The key issues identified by the S42A Report were;
- (a) Whether the annual volume requested by the applicant represents an efficient use of

water, and how compliant the application is with the efficiency factors outlined in Policy 16 WCWARP.

- (b) The suitability of the fish screen fitted to the siphon which is attached to the Waitaki Dam structure to prevent fish from being sucked up into the siphon and conveyed into the schemes canal and races. Assessment of this issue was made more difficult due to the absence of detail on the mesh size of the grill.

7.3 We note that Ms Penman was satisfied that there will not be adverse effects on water quality and ecosystems caused by the various discharges applied for. This was because the discharge is to dry cobbled rivers and there is a low risk of entrainment of sediments. The discharge will, she said, likely soak through the gravel bed and generally will not be into flowing surface-water.

7.4 In any event, she did note that many of the discharges will be of a short duration and the water that is being discharged is simply that water taken from Lake Waitaki with no additional contaminant included within the discharge.

8 THE APPLICANT'S CASE

8.1 Legal counsel for the applicant, Ms Pru Stevens, presented opening submissions and called three witnesses as follows:

- (a) Mr Richard Keeling, Chairman of Upper Waitaki Community Irrigation Company, the Applicant.
- (b) Ms Keri Johnston, Irricon Resource Solutions, Environmental Consultant.
- (c) Mr Chris Dennison, Chairman of Lower Waitaki Irrigation Company.

Legal Submissions

8.2 The following is a summary of the key issues discussed in the opening submissions by Ms Stevens on behalf of the applicant.

Part 2 RMA

8.3 Ms Stevens spoke of the inherent balance in Part 2 of the RMA between the restraining and enabling aspects, observing that people and the natural environment are to be treated equally. Ms Stevens submitted that the application advances sustainable management as defined in the RMA relating to the enablement of people and communities (within the scheme area) to provide for their economic and social wellbeing in terms of section 5 RMA.

8.4 Ms Stevens considered that the proposal does not raise any section 6 or 8 RMA matters.

8.5 Ms Stevens acknowledged that the proposal does raise the need to consider efficiency issues under section 7(b) RMA, but submitted that it does not state that efficient use of water is more important than the efficient use of existing infrastructure. Ms Stevens submitted that section 7(b) RMA requires the decision maker to have particular regard to efficiency in the use of the water resource and the existing infrastructure comprising the whole of the scheme, and that a balancing or integrated approach is required.

8.6 Ms Stevens told us that a relevant point for consideration was that the UWCIC scheme is predominantly gravity driven and is thus energy efficient. If the scheme were to be replaced by a spray system there would inevitably be a significant increase in energy use.

Relevant WCWARP Plan Provisions – Objectives and Policies

8.7 Ms Stevens then addressed the relevant plan provisions that relate to efficiency matters, specifically Objectives 3 & 4 and Policies 15 to 20.

8.8 Ms Stevens submitted that these policies encourage enhancement of technical efficiency authorised by existing consents, and efficient distribution systems, saying this is important given the scheme has an extensive open race system.

8.9 Ms Stevens contends that the policy reference to efficiency gains by piping to replace an open

race system and/or sealing the distribution systems, is qualified by policies that refer to where there is an environmental and/or economic benefit in doing so.

- 8.10 Accordingly, Ms Stevens concluded that an applicant for a renewal of an existing technically inefficient scheme can reasonably expect a consent authority to consider closely what efficiency gains are practicably able to be achieved.
- 8.11 Ms Stevens submitted that 'reasonableness' for the intended use must be informed by a range of factors and in the case of a renewal application;
- (a) As a starting point, by recognising the value of the investment of the consent holder of the existing scheme infrastructure; and
 - (b) Against the benchmark of optimal efficiency that the WCWARP seeks to achieve.
- 8.12 We were reminded of the competing imperatives that reflect the overall thrust of Part 2 RMA, showing that a balance has to be arrived at so the purpose of the RMA can be achieved. While there are inherent limitations in the existing scheme that militate against meeting these tests, Ms Stevens acknowledged that the evidence points to some overall gains being available over a period of time in the case of the scheme. However, Ms Stevens submitted that full conversion to spray will bring very considerable costs and that piping the system may not be justified.

Calculation of Annual Volume

- 8.13 Ms Stevens then turned to outlining the calculation of annual volume (drawing on the work of Keri Johnson, director of Irricon Resource Solutions, and environmental consultant to the applicants).
- 8.14 An allocation of 26.3 million cubic metres is sought for the scheme which equates to an application depth of 1366 millimetres per year over the 1925 hectares (noting that flow volumes decrease through the piped section). Derogation from Meridian has been approved on this basis.
- 8.15 Ms Stevens acknowledged that this exceeds the 19.4 million cubic metres attributed to the scheme in the Annex (#204) to the WCWARP, contending that this is a misconception of the Water Allocation Board (WAB) when considering allocation limits for above the Waitaki Dam, proceeding on the basis that the UWCIC would be taking and using water above the dam. Ms Stevens submitted that the above or below the Waitaki Dam scenario is important when calculating volumes given that the number of border dyke irrigation days in the Upper Waitaki Catchment was 155 days as opposed to 206 days in the Lower Waitaki Catchment.
- 8.16 Ms Steven notes that the calculations of Ms Johnston supports an ultimate goal of reducing the annual volume to 22,284,431 cubic metres per year, and her proposed conditions show this goal can be achieved in stages over a twelve year period following commencement of consents.
- 8.17 The applicant recommended conditions to incorporate stepped volume reductions that must be achieved. The staged process will enable members to monitor the performance of existing operations, identify where improvements are able to be implemented, and to embark on a process of a planned and orderly change.

Policy 16(c) WCWARP

- 8.18 Ms Stevens told us that Policy 16 (WCWARP) was a starting point as it requires annual volumes to be assessed against the 1:5 year dry season or ECAN report of Uo5/15; this being the basis for Schedule WQN9 (v2) of the proposed Natural Resources Regional Plan (PNRRP).
- 8.19 Ms Stevens referred to the limitations inherent in WQN9 (v2), which are discussed in paragraphs 53 onwards of the Hearing Commissioners decision on resource consent application CRC071029 for the Hunter Downs Irrigation scheme.
- 8.20 Ms Stevens submitted (#68) that Ms Johnston's approach is informed by the discussion in the Hunter Downs Irrigation (HDI) decision¹ to the extent that it acknowledges that;

¹ The HDI Commissioners state at #70 "That we accept that the difference between the annual allocation volume calculated by Mr Potts and the volume he derived using WQN9 V2 is not great and that future land uses within the scheme are uncertain.....".

a) WQN9 was intended to provide sufficient water in a 1:5 year dry assessment (8 years of 10);

b) WQN9 is generally applied to on-farm takes from groundwater and is thus considered to be 100% reliable;

c) It does not apply to a scheme as opposed to one farm and/or where a surface water take is proposed; and

d) WQN9 (v2) is an on-farm assessment only and off-farm requirements are excluded”.

8.21 Ms Stevens noted that WQN9 (v2) does not enable account to be taken of factors that affect schemes. Its inherent limitations include factors such as variable application efficiency and conveyance losses.

8.22 Ms Stevens pointed to the need for a less than rigid adherence to the literal wording of Policy 16(c), and that the evidence of Ms Johnston proposes such an approach. Ms Steven submits that Policy 16 must be read in the context of the WCWARP as a whole, including the suite of objectives and policies that are aimed at enabling and ensuring efficient irrigation.

8.23 We discuss the overall intent of the WCWARP and the applicant’s response in our evaluation section.

UWCIC Efficiency and Operational Factors

8.24 Ms Stevens listed a number of the inherent efficiency and operational factors that Ms Johnston considers must also be taken into account, including;

(a) The length of the scheme is such that climatic conditions and soil types will vary along its length such that water is supplied to meet the highest demand.

(b) For the same reason, the scheme requires operational by-washes of water on a continuous basis.

(c) By-washes are required to produce sufficient water pressure to get the required water through the scheme siphons.

(d) The intake is a siphon, which does not allow for a variable rate of take.

What efficiency gains are to be achieved?

8.25 Ms Stevens submitted that in theory considerable efficiency gains could be achieved from converting to spray irrigation.

8.26 Ms Stevens submitted that full conversion could only be achieved following a period of planning including fiscal elements, with further time being required for the conversion to be implemented. Ms Steven submitted that there would be considerable disruption to the farming operations and conversions would need to take place outside of the irrigation season. Shelter belts and other vegetation would need to be removed, and earthworks undertaken to re-contour land.

Mr Keeling

8.27 Mr Keeling, Chairman of UWCIC, is also a shareholder and farms in the Duntroon area. Of that farm, 325 ha is within the UWCIC scheme. Mr Keeling told us that UWCIC is governed by a board of six directors. All of the directors are users of the scheme. Shareholding is allocated on one share per irrigable hectare basis and non-tradeable. When properties are sold the shares are transferred to the new owners.

8.28 Mr Keeling told us that in the last 10 years as a result of farm amalgamation, conversions to dairying and smaller blocks undergoing further subdivision the shareholding has undergone a lot of change. The Scheme currently has 62 shareholders and a total of 1917 shares. Of these, three shareholders hold approximately 50% of the shares. The remaining 59 shareholders are smaller properties and their use is “lifestyle” farming with a few sheep and beef cattle.

- 8.29 Mr Keeling described the shareholding allocation as follows;
- (a) 864 to dairy units
 - (b) 390 in operational sheep and beef farms
 - (c) 217 in small parcels of lifestyle holdings
 - (d) 89 in viticulture and orchard businesses.
- 8.30 The viticulture sector had been making inquiries for water during the last five years, all of which the UWCIC directors had declined due to uncertainty of the volume the consent might end up with. A particular issue with viticulture and orchards is the large quantity of water that may be required for frost protection outside of the irrigation season. The demand, being unpredictable, would involve running water in the race 'in case' there is a frost, with the result of placing pressure on existing pastoral shareholders at the end of the season.
- 8.31 Mr Keeling told us that conversion to spray irrigation had occurred with scheme water on an area of approximately 330 hectares, which equates to 1.5 hectares watered for each share held.
- 8.32 Shareholders converting to spray are required to construct storage dams and take their rostered allocation and spray from these, as the company does not allow pumping directly from the race. Mr Keeling told us that the cost of on farm storage amounts to \$3.50 to \$4.00 per cubic metre of water stored (May 2010).
- 8.33 In reply to a question from the Panel as to whether the shareholders agreement has any leverage to encourage efficiency, Mr Keeling responded that there was not.
- 8.34 The Panel asked, was there anything in particular about those farms that had converted to spray irrigation compared to the rest? Mr Keeling responded that properties that had converted to spray were generally the larger farms at the lower end of the scheme where a smaller volume of water for irrigation was available. Also, these farms, on balance, were on rolling hills rather than flat country.

Applicant's Three Step Improvements

- 7.34 Mr Geoff Keeling then described a "three step" proposal with a twelve year timeline, which would implement improvements to meet efficiency tests;

Step 1

- (a) Two-year monitoring programme, regular flow gauging to identify weak points in the delivery network with remedial action. Soil moisture monitoring on a sample of farms and soil types to identify water demand and requirements. After which, a clear model of the scheme as to where and when water is required would be achieved.
- (b) The annual volume during this period would be 26.3 million cubic metres per year.

Step 2

- (c) Three-year process using data gathered from Stage 1 to develop a model that would evaluate the individual shareholders' requests for spray and allow the scheme to plan for areas that may be appropriate for the scheme to convert.
- (d) Provision for border-dyke would remain for soil types that suit that technology but this will only be continued if the latest in laser levelling technology is applied and the scheme can supply the instantaneous volume required to make them hydraulically efficient.
- (e) At the end of Step 2 the annual volume would be reduced to 24.3 million cubic metres.

Step 3

- (f) A five-year stage that will see a continuation of plans developed out of Step 2 and subsequent reviewing effects of Step 2. At the end of the five years the annual volume would be reduced to 22.3 cubic metres.
- 8.35 Mr Keeling proposed the five year timeframe at Step 3 was necessary as the development costs in this stage were likely to be more costly and involve a greater level of intervention to farming operations in order to achieve efficiency gains.
- 8.36 Mr Keeling told us the 12 year development timeframe will see an end point reached before the 2025 consent renewal for the Waitaki Dam.
- 8.37 Mr Keeling provided some (pre May 2010) cost estimates for components of the development;
- (a) K-lines around \$4000 per hectare;
 - (b) Power lines and costs of purchasing required capacity - \$400 per kilowatt demand and \$50 per metre of new line;
 - (c) Earthworks and contouring for pivot installation \$4000 - \$5000 per hectare;
 - (d) In addition to the above, there would be costs would be regrassing, fencing, replanting, and delivery infrastructure on farm and in the scheme.
- 8.38 Mr Keeling stated that the UWCIC consent process started in 1999 during which time for reasons beyond their control (through the intervention of the call-in) development of the WCWARP and greater focus on efficiency has meant the scheme has been on hold until certainty on future uses is available.
- 8.39 Mr Keeling acknowledged that they can and must do better with the water they receive, and believes the proposal the applicant has put to the Panel is fair and reasonable and recognises all sides of the argument.

Ms Keri Johnston, Environmental Consultant

- 8.40 We next heard from Keri Joy Johnston, director of Irricon Resource Solutions, a resource management and environmental engineering consultancy. Ms Johnston holds a Bachelor of Engineering in Natural Resources Engineering from the University of Canterbury, is a Professional Member of the Institute of Professional Engineers New Zealand, and a Chartered Professional Engineer (CPEng).
- 8.41 Ms Johnson advised that approximately 1100ha of the irrigation area is medium soils (PAW between 75mm and 110mm) and consists of Kaiapoi, Tai Tapu, Otiake and Wakanui silt loams. A further 825ha is light soils (PAW < 75mm) and consists of Eyre, Otiake, Grassington, Rangitata, Selwyn and Rakaia stony silt loams.
- 8.42 The Environment Canterbury GIS database indicates that the effective irrigation season rainfall ranges in the scheme area from 210mm to 190mm. Mean annual rainfall has been determined from monthly rainfall figures supplied by Mr J R Mackenzie of Settlement Road, Duntroon, and is in the order of 548mm per year. Although Ms Johnson was unable to determine the *effective* rainfall from this information. The 80th percentile from this data is an annual rainfall of 424mm.
- 8.43 Evapotranspiration for the area has been estimated from a Lincoln Environmental report and is approximately 820mm year. A copy of Mr Trevor Webb's (Landcare Research) soil type assessment was appended to Ms Johnson's evidence.

Volume Calculations

- 8.44 Ms Johnston submitted that using Schedule WQN9v2 as a guide indicates that a system capacity to meet peak demand for these soils is 0.8L/s/ha to 0.58L/s/ha at a rate of take of 1450 L/s servicing 1925 ha, the system is 0.75L/s/ha, well within this range.
- 8.45 Ms Johnston told us that Schedule WQN9v2 also suggests that for intensive pasture operations

on light and heavy soils the total demand was 815mm and 750mm respectively. There are on-farm efficiency factors where variable amounts were required if the soil types were to receive optimum amounts.

- 8.46 It was due to the logistical issues of supplying properties on the scheme with variable amounts of water that Ms Johnston took the highest demand of 815mm and an irrigation season from 15 August to 31 May.
- 8.47 Ms Johnston then submitted that she subtracted the effective irrigation season rainfall volume from the total demand, using the figure 190mm. The basis for this figure was that the scheme could not supply variable amounts of water to each shareholder; therefore the demand is based on the lowest expected rainfall (the highest demand). The effective rainfall irrigation season is taken from Schedule WQN9v2 as well, and is the expected irrigation season rainfall for every 4 in 5 years.
- 8.48 Ms Johnston submitted that conveyance losses of 10% in the peak of the season and 15% in the shoulders have then been added to the demand figures. Losses are higher in the shoulders of the season when the scheme is not running at peak demand. Ms Johnston noted that these figures are less than the peak scheme estimates of what is actually occurring, (15% at peak and 20% in the shoulders), but that the figures used above are considered to be reasonable and a target to aim for.
- 8.49 Ms Johnston told us that unlike the Sullivan et al methodology that this demand figure (taken from WQN9v2) is based on land use, soil type and ET. This gives a total demand with conveyance for the season of 25,441,931 cubic metres per year (see table below).
- 8.50 Ms Johnston submitted that with effective irrigation season rainfall subtracted, this gives a seasonal demand with conveyance of 21,784,431 cubic metres per year.
- 8.51 The scheme allows a volume to be washed, from an operational perspective, this occurs when an irrigator shuts off before the roster schedule. This occurs more often in the wetter years, and in dry years is considerably less as irrigators take every drop of water they can, a more common scenario.
- 8.52 The by wash is also necessary to ensure there is sufficient head to push water through the schemes. Many siphons are in place where the race needs to get past a hydraulic barrier, namely other waterways.
- 8.53 The agreed by-wash volume is 500,000 cubic metres per year, therefore the total required is 21,784,431 cubic metres plus 500,000 cubic metres = 22,284,431 metres per year.
- 8.54 Ms Johnston said that the method used to calculate volumes was consistent with that used by Mr Robert Potts for the Hunter Downs Irrigation decision dated 23 April 2010.
- 8.55 Ms Johnston provided the following table to show her calculations:

Table 3: Annual Volume Calculations

Crop Factor	1		Effective Irrigation	190mm
Area (ha)	1925		Season Rainfall	
Border Efficiency	0.7			
Conveyance Effi	0.9	peak		
Conveyance Effi	0.85	shoulder		

Month	Days	15 Aug to 31st May	Irrigation Requirement (mm) (Includes Eff)	Conveyance Requirements (Includes Conveyance Eff)	Volume (m ³) (Using the 15 Aug - 31 May Season)	Subtract Rainfall
Jan	31	87.73	125.32	139.25	2,680,507	
Feb	28	79.24	113.19	125.77	2,421,103	
Mar	31	87.73	125.32	139.25	2,680,507	
Apr	30	84.90	121.28	142.68	2,746,630	
May	31	87.73	125.32	147.44	2,838,184	
Jun		0.00	0.00	0.00	-	
Jul		0.00	0.00	0.00	-	
Aug	15	42.45	60.64	71.34	1,373,315	
Sep	30	84.90	121.28	142.68	2,746,630	
Oct	31	87.73	125.32	139.25	2,680,507	
Nov	30	84.90	121.28	134.76	2,594,039	
Dec	31	87.73	125.32	139.25	2,680,507	
Totals	288	815.0	1164.3	1321.7	25,441,931	3,657,500

By-Wash Requirements	500,000	21,784,431
Total Annual Volume Requirement	25,941,931	22,284,431

Different Volumes & Efficiency

- 8.56 Ms Johnston submitted that while the calculated volume is less than the annual volume currently being sought of 26,300,000 cubic metres per year, there are other factors that need to be considered.
- 8.57 Ms Johnston submitted that she used 70% efficiency for the entire season, while noting that Policy 16 WCWARP promotes an application efficiency of 80%, but the scheme was a border dyke scheme and consideration must be given to the value of investment of the scheme shareholders (Policy 28 WCWARP). Ms Johnston submitted that border dyke efficiency is generally accepted as being 40% to 50% and therefore the use of a 70% figure is a target to work toward. We note that Policy 28(a) also requires consideration of whether all reasonable

attempts to meet efficiency expectations of the WCWARP have been undertaken. ²

- 8.58 She submitted that emphasis must also be placed not only on the cost of upgrade to the scheme, but the roll on effect to the community. The submissions received show strong community support for the scheme, the jobs it creates and value it brings to properties.
- 8.59 Ms Johnston noted that the points where significant improvements (and thus volume reduction) are available is with on farm infrastructure and conveyance losses reducing to 10% at peak and 15% at the shoulders, this is reflected in the final annual volume. By-wash improvements are limited because of the sheer cost of upgrading the under stream siphons and practicalities of undertaking this task.
- 8.60 Ms Johnston submitted that the applicants "three step" monitoring programme will identify where significant changes can be made at a realistic and acceptable cost to the community (evidence of Mr Keeling #13.9). Once the "plan of attack" has been decided and approved there will still be a time factor in obtaining funds and implementing changes during the off season. The limited window available each year to undertake the work and funding requirements is why the timeframe of 12 years for the improvement process has been proposed.
- 8.61 Ms Johnston acknowledged that the methodology in Sullivan et al does not take account of all the factors identified in Policy 16(c) - soil type is not factored in, however it was considered a good place to start and a reasonable benchmark.
- 8.62 Ms Johnston submitted that the scheme owners realise that improvements need to be made and are committed to doing so, but given that it is a scheme, needs time to do so as per the "three step" improvement programme.
- 8.63 Reasonable Use Test: Policy 16 of the WCWARP establishes a "reasonable use test" for applications for resource consents for irrigation and an important consideration in this case to ensure that net benefits of water use are maximised and waste minimized. The methodology used by the applicant to calculate the annual volume is not, in their own words, entirely consistent with Policy 16 WCWARP, and is a matter we discuss further on in the evaluation section.

Effects on Water Quality

- 8.64 Based on the evidence Ms Lynn Torgerson presented at the Lower Waitaki hearing on behalf of the applicant group, Mid Rivers New Applicants Group (MRNAG), Ms Johnston concluded that effects on water quality are minor. Ms Torgerson's evidence, we were told, illustrated that water quality in the catchment below the Waitaki Dam is not significantly adversely affected by existing land use, and median nitrate-nitrogen concentrations are in the range of 1 to 3 mg/L. The applicant does not consider that there will be any increase over the duration of this consent.
- 8.65 The applicant proposes that Farm Environmental Management Plans (FEMPs) will be developed for all properties irrigating more than 20 hectares, in addition a Scheme Management Plan shall be prepared and all waterways shall be fenced with 5 metre riparian margins.

Effects on other water users

Water Permit

- 8.66 Ms Johnston submitted that the application is for renewal of an existing water right, no increase in rate or weekly volume (as currently authorised) is being sought, and is within the limits set by Table 3 of the WCWARP.
- 8.67 Meridian is the main water user of Lake Waitaki for electricity generation. Lake Waitaki is artificially managed and controlled by Meridian. Derogation approval has been sought and obtained from Meridian.

² The HDI decision at #59 states that "even with very efficient irrigation systems, it is not possible for 80% of the applied water, in combination with rainfall, to be effectively used in the shoulder season".

- 8.68 There are two other consented users who take and use water from the lake, but are not restricted by a minimum lake level. Two other applicants seek to take and use water from the lake, but these have lower priority than the scheme.
- 8.69 Table 3 of the WCWARP sets no allocation for the lake, but does specify a minimum lake level, to which the applicant has agreed. Mitigation is proposed restricting the rate of take and volume per week. Ms Johnston told us that the applicant accepts the minimum lake level as specified in Table 3 of the WCWARP.

Discharge Permit

- 8.70 Ms Johnston submitted that when water is discharged there is the potential to cause adverse effects on other users of streams and rivers due to the contamination of the water, or to cause an unsightly plume that may have a visual effect.
- 8.71 However, Ms Johnston told us that there are no users on any of the water bodies downstream of the discharge points. The water being discharged is unaltered from that being diverted and therefore will not contain any additional contaminants; thus there is no effect on other users or amenity values.
- 8.72 The by-wash volume is for a volume of 500,000 Mcm per year, reduced by 50% during times of drought.

Effects on ecosystems

- 8.73 Ms Johnston told us that a fish screen exists on the intake siphon as a grill at the base and it was uncertain whether this would meet current standards. However, the logistics of upgrading the fish screen in the siphon (itself being part of the dam structure and located immediately beside the intake to the power station penstocks) would be dangerous and logistically impossible.
- 8.74 Ms Johnston submitted that there is no other location that a fish screen could be constructed. The applicant has discussed this, being aware of the submission by Fish and Game, and assessed the possibility of placing one in the race system. However, in order for this to be effective, a fish return channel would need to be constructed from the race to the Lower Waitaki River, and the race is some distance from the Lower Waitaki River. The fish return channel would also need a continuous flow of water whilst the scheme was operating, and this is additional volume for which the scheme has not allowed. Therefore, it was contended this option is not possible.
- 8.75 The race system historically supports a good fishery. Currently, if the races need to be dewatered, Fish and Game at Kurow are notified and stranded fish were salvaged and released into the Waitaki River. The applicant has proposed that this continue and, given that this is a replacement application for a scheme that has existed for over 40 years, considers that this is appropriate.
- 8.76 The applicant proposes a condition requiring Fish & Game be given 48 hours notice prior to the dewatering of the race to allow fish salvage.

By-wash

- 8.77 Ms Johnstone told us the water that is discharged is excess water that has been diverted. It is un-used (i.e. it has not been used for irrigation prior to the discharge occurring) and therefore it is of the same quality as that being diverted. Any discharge will be of a short duration and the water is simply that which was taken from Lake Waitaki so there will be no additional contaminants within the discharge.
- 8.78 The applicant proposes to fence all Scheme races to exclude stock, thereby preventing any increase in faecal coliforms or sedimentation.

Effects of inefficient water use

- 8.79 Ms Johnston submitted that an annual volume of 19.4 million cubic metres per year has been proposed in submissions, a figure attributed to the scheme in the Annex of the WCWARP. However Ms Johnston told us this figure assumes that the water is used in the Upper Waitaki

Catchment. The methodology to determine this figure is outlined in the Sullivan et al report³, where it was assumed that the number of border dyke irrigation days in the Upper Waitaki Catchment was 155 days (as opposed to 206 days in the Lower Waitaki Catchment). Therefore arriving at the peak rate x 155 days = 19.4 million cubic metres per year.

- 8.80 Ms Johnston submitted that the derogation approval process, in effect, corrected this error and recognised that the use is clearly in the Lower Waitaki.
- 8.81 Ms Johnston submitted that there were a number of operational aspects that need to be taken into account: the intake is a siphon, which does not allow variable takes; it is open, half open or closed. Further, the physical restraints such as the length of the scheme, climatic conditions and soil types (and therefore demand) can vary from the upper end of the scheme to the lower end of the scheme. Rainfall will vary from the upper end (dam) to one that borders the Waitaki, as well as soil depths.
- 8.82 Ms Johnston made the observation that there were inconsistencies between how surface water takes are being managed and consented between Waitaki Catchment and the rest of Canterbury. This inconsistency provided the basis for deterring from Schedule WQN9v2 when proposing annual volumes for this application, as it does not take into account other factors that affect schemes such as variable application efficiency and conveyance losses.

Effects on flood carrying capacity and erosion

- 8.83 The discharge of by-wash water will generally be into dry river beds in the summer months and the applicant notes that it will soak through gravels before reaching any flowing surface water.
- 8.84 The applicant also considers that the gravel and cobble nature of the bed of the rivers at the discharge points will ensure there is no erosion of the river bed (photos of the discharge points were provided in the application and AEE).
- 8.85 The race does not operate in winter when receiving water bodies would have the highest flows and therefore, even if there was flow in the water body, the discharge of water as proposed will not likely result in an over-topping of the stream banks or a decrease in flood carrying capacity of the water bodies.

Effects on Tangata Whenua Values

- 8.86 Ms Johnston advised that neither Te Runanga o Ngai Tahu nor Te Runanga o Moeraki made a submission on the application.
- 8.87 Ms Johnston noted that under these applications water is taken from Lake Waitaki and discharged into the tributaries of the Lower Waitaki River, that Policy WQL1(1)(b) of the PNRRP concerns mixing of waters, which is an area of concern for Ngai Tahu. We note that Policy 9 of the WCWARP specifically addresses mixing of waters also.
- 8.88 Ms Johnstone submitted that the quality of water being discharged is not degraded and is an activity that has occurred over the last 40 years. Given this, the potential effects on the environment, including tangata whenua values, are considered to be minor.

Discharge Activities

- 8.89 Ms Johnstone, the Applicant's environmental consultant, submitted that the effect of the discharge activities is minor.

Mr Dennison

- 8.90 Mr Chris Dennison, chairman of the Lower Waitaki Irrigation Company and an arable and dairy farmer from Hilderthorpe (near Oamaru), gave evidence in support of the Applicant. He stressed the importance of the contribution irrigation water brings to the local community in an area that is renowned for its unreliable rainfall and succumbing to droughts on a regular basis. He said the soils of the valley are highly productive and combined with warm summers and high sunshine hours lend themselves to different land uses.

³ Sullivan et al "Implementation of Waitaki Catchment Water Allocation Regional Plan: Current Annual Allocation" (16 March 2007).

- 8.91 Mr Dennison told us that diversification into intensive agriculture has increased employment opportunities in this rural economy and the increase in population has helped maintain a viable education base at Kurow for local children.
- 8.92 Landowners invested heavily in irrigation infrastructure, which has very high capital costs to establish but, once built, the running costs are very low and there are no energy inputs. By its very nature spray irrigation equipment is expensive and has a relatively short life hence it is constantly requiring maintenance, alternatively it becomes a depreciating asset.
- 8.93 Mr Dennison submitted that changing from one method of irrigation to another is very capital intensive and this would be beyond the financial capability of many in the scheme. He did not dispute that there are more efficient ways of applying water than by border dyke but believed that when weighed against the substantial investment that will need to be made by the local community the current scheme offers a sound method of irrigation.

9 SUBMITTERS

- 9.1 The summary that follows is in the order that the submitters appeared;
- (a) Mackenzie Irrigation Company (MIC), represented by:
- (i) Ms Limmer, Legal Counsel, of Goodman Tavendale Reid; and
 - (ii) Mr Mitchell, Hydrologist with Ryder Consulting
- (b) Meridian Energy Limited, represented by:
- (i) Mr Ben Williams, Legal Counsel, Chapman Tripp; and
 - (ii) Mr Ellwood, Water Infrastructure Project Manager, Meridian Electricity Limited.

Mackenzie Irrigation Company (MIC)

- 9.2 Ms Limmer, legal counsel representing MIC, presented evidence to demonstrate that the purpose of the WCWARP is better met by granting consent for an annual volume no greater than 19.4 Mcm per year. She told us that this position takes into account the value of the applicant's investment.
- 9.3 Ms Limmer submitted the principal concern of MIC was that less people and fewer economic enterprises will be able to access the allocated water despite the Waitaki Water Allocation Board providing for an additional 25,000 hectares of irrigation. She told us that the water taken by the Applicant will produce less economic benefit because it involves significant waste.
- 9.4 Ms Limmer submitted that the WCWARP expects users to invest in upgrading their systems over time and where the costs of doing so do not outweigh the environmental or economic benefits. She referred to the WCWARP and Anticipated Environmental Outcome 19;
- "Water users have a responsible attitude to their use of the water, and seek to continually improve the technical efficiency of their use of the water".*
- 9.5 Ms Limmer submitted that the applicant has not described what improvements have been made over time and not determined where efficiency gains could be made or the relative costs of any works required compared to the benefits that could be derived. She considered this was remarkable in the context of an application that had been in the system for a decade and subject to the Plan provisions for almost five years. That technical efficiency is a crucial consideration for this application cannot come as a surprise.
- 9.6 Ms Limmer made reference to Policy 18 and through to Policy 28 of the WCWARP that points to the Plan's requirement that all consents (new and replacement) be considered against an expectation of highly efficient water use.
- 9.7 Ms Limmer told us that the application posed a 'very real threat' to the integrity of the WCWARP, potentially undermining the Plan's expectations in terms of effective and efficient use as well as frustrating the plan's ability to achieve the additional irrigation opportunities it set out to provide for.

- 9.8 Ms Limmer, in response to questioning from the Panel on the appropriateness of the applicants' proposed 12 year staged efficiency improvements, said she thought the timeframe was far too long. Her view that a more realistic time frame would be to allow one year for monitoring, four years thereafter to bring the scheme up to what is a reasonable standard, a total of five years.
- 9.9 We next heard from Mr Paul Mitchell, Associate Director (Hydrology) with Ryder Consulting Limited, a member of the Institution of professional Engineers, NZ (IPENZ) and a Chartered Professional Engineer (CPEng), appearing for MIC.
- 9.10 Mr Mitchell provided evidence on the relevant provisions of the WCWARP and a review of the applicant's evidence relating to volume and efficiency of the application. In this approach he drew on Mr McIndoe's evidence presented to the Upper Waitaki hearings in September / October of 2009, which provides a background to the 275 million cubic metres annual allocation limit to irrigate land in the Upper Waitaki, which included the figure of 19.4 m cubic metres of UWCIC.
- 9.11 Mr Mitchell concluded from Mr McIndoe's evidence that;
- (a) Proposed takes above the total annual allocation of 275Mcm would be "*non-complying with the WCWARP*".
 - (b) "*Both new and renewal takes are subject to the efficiency tests of Policies 15, 16, 17 and 28 in the WCWARP*".
 - (c) One of the primary challenges in arriving at the 275m cubic metres annual allocation volumes was determining what volume to assign to the existing consented takes as very few of the existing takes include an annual allocation volume.
 - (d) Very little measured water use data is available from the Upper Waitaki Basin to determine reasonable use (and from that, estimate annual allocations) because water metering has not been universally required.
- 9.12 Mr Mitchell also noted that of the three methods (WQN9 (v2), MIC 2004, Sullivan 2007) applied by McIndoe / Potts to determine the annual volume, the Sullivan (2007) method provides the highest estimate of existing allocation for border dyke irrigation, i.e.; the consented flow rate for a maximum 155 days per year or up to 1500mm / year depth for surface (border dyke) irrigation.
- 9.13 Mr Mitchell submitted that the UWCIC application (assuming all border dyke irrigation) and applying the "most conservative" Sullivan method equated to an annual allocation volume, i.e.; $1.45 \text{ cubic metres} \times 86400 \text{ (seconds per day)} \times 155 \text{ days} = 19.4 \text{M cubic metres}$.
- 9.14 Mr Mitchell supports the view that the WQN9 method could not be reliably used in the Upper Waitaki Basin and that the Sullivan method is the most conservative and provides the highest estimate of existing allocation.
- 9.15 Mr Mitchell submitted that the existing and replacement allocations using the MIC (2004) method as applied over an irrigated area of 10600ha in the Upper Waitaki Basin were based on information provided by ECAN consents database and Upper Waitaki landowners, which confirm that;
- (a) 600mm/yr or 6000cubic metres/yr is appropriate for spray irrigation;
 - (b) 900mm/y or 9000cubic metres/y for border dyke irrigation is;
 - (i) "*a fair and reasonable use*";
 - (ii) "*50 percent greater than the figure for spray irrigation*".
 - (c) The figure of 77Mm³ in table 1 of Mitchells evidence "*represents an estimate of reasonable and efficient use of existing consents over 10,600ha of the Upper Waitaki Basin*" and "*it does not represent the sum of theoretical paper allocations in individual consents*".
- 9.16 The above approach (8.15) for estimating existing allocation was accepted by the Waitaki

Allocation Board (WAB) and included in Table 5 WCWARP.

9.17 Mr Mitchell submitted that the applicant has applied for an annual allocation volume of 26.3Mcm which equates to an application depth of 1367mm per year, i.e.;

- a) Almost 2.3 times that applied to the 25,000ha (150Mcm/y) of new development (MIC) allowed under the WCWARP and that accepted by the WAB as "*reasonable and efficient use*" for spray irrigation systems;
- b) Some 7Mcm greater than and 1.5 times that accepted by the WAB as "*reasonable and efficient use*" for "*well designed*" existing border dyke irrigation systems, including the conveyance, operational and maintenance aspects of the scheme.

9.18 Appended to Mr Mitchell's evidence was the evidence Mr McIndoe (Aqualinc Research Ltd) presented to the Upper Waitaki Hearing on behalf of MWRL. Of particular note, para 47 of that evidence where Mr McIndoe states in reference to the UWCIC the following;

"In my view, the allocation of 26.3Mcm would fail to meet the reasonable use and efficiency tests of policies 15, 16, 17 and 28 in the WWAP and would not meet the intent of the WWAB. Under those policies, regardless of whether Schedule WQN9v2 or water balance modelling was used, the allocation would be substantially less than 26.3Mcm / year".

9.19 Further, in Mr McIndoe's evidence at para 48 he states

"It would be prudent to assume that over time, subject to those policies being implemented, that the allocation required for the scheme, rather than the 26.3Mcm currently assumed, should be closer to 18 or 19 Mcm / year, which would be consistent with the volume needed for efficient border dyke plus an amount for scheme operational purposes".

9.20 Mr Mitchell submitted that the derogation agreement for 26.3m cubic metres per year between Meridian (Potts) and the applicant (Johnston) which applies an application depth of 1367mm per year for the predominantly border dyke irrigation scheme is, in his opinion;

"Based on estimates of "existing use" for border dyke irrigation systems (1367mm per year) rather than what is considered a "reasonable and efficient use" of the resource for border dyke systems (900mm per year) as intended by the WAB and documented in Tables 5 and 20 of the WCWARP".

Race Conveyance

9.21 On race conveyance issues Mr Mitchell was critical of the lack of information that would indicate that the applicant has attempted to monitor or improve the efficiency of the irrigation scheme. In his view, such information should have been provided and include multiple rated flow sites along the race at key locations relative to the major off-takes. Spot gauging or metering of the off-takes could also be applied to check the overall water balances. Best practice today, he told us, requires that consent holders must prove through detailed monitoring that they are:

- (a) Complying with the minimum requirements of the consent; and
- (b) Operating the scheme as efficiently as possible given competing demands for the resource.

Operating Efficiency

9.22 Mr Mitchell commented that the applicants' statement that the overall efficiency of the border dyke scheme is approximately 70% efficient (i.e., 20% losses for the irrigation system and 10% losses for the race) cannot be substantiated. He contends there has been no historical monitoring of flows within the race / border dyke system and hence no evidence to support these "rounded" figures.

9.23 Mr Mitchell submitted that in the application was a water balance spreadsheet, which detailed the 1998 annual allocation volume calculations for the UWCIC that were used in the derogation negotiations with Meridian (Mr Robert Potts).

- 9.24 Mr Mitchell contends that the general approach of the applicant has been to try and justify the existing UWCIC operation as efficient through various calculations and assumptions, rather than physically measuring the flows in and out of the scheme thus proving efficiency.
- 9.25 Mr Mitchell contended that the actual efficiency of the overall scheme may in fact be closer to 35 percent than the 70 percent purported by the applicant. He submitted that if a border efficiency of 70 percent is applied in the UWCIC spreadsheet, the required annual allocation volume is only in the order of 15.7m cubic metres.

Options to Improve Efficiency

- 9.26 Mr Mitchell provided some options that could be explored to improve overall scheme efficiency;
- (a) Undertake longitudinal race gauging at multiple sites along the race with the intake open and border dyke off take closed. This would quantify the magnitude of any conveyance losses and pinpoint specific locations where the greatest losses were occurring;
 - (b) Assess channel lining or piped options where the greatest losses are occurring;
 - (c) Monitoring of race flows and individual takes: specifically, a flow monitoring network would include multiple rated flow sites along the race at key locations relative to the major off takes. Spot gauging or metering of the off-takes could also be applied to check the overall water balance;
 - (d) Outputs from the flow monitoring could then be applied in water balance modelling of the irrigation system to assess timing effects, to refine management practices and to further optimise the scheme;
 - (e) Conversion from border dyke to spray irrigation systems.

Comment on the S42a Officer Report

- 9.27 Mr Mitchell submitted that he is in broad agreement with the conclusions of the S42a Report Officer report, particularly in regard the Officer's assessment of the scheme efficiency and the statement:

"there is a lack of conclusive information to support the annual volume requested in accordance with the direction provided by policies 15-20 of the WCWARP"

- 9.28 In response to questioning from the panel regarding the ability of the soils in the UWCIC border dyke schemes to retain water during a 14-21 day return cycle under border dyke irrigation, Mr Mitchell replied that the lighter soils will be less likely to hold water, evaporation and plant available water will drop accordingly.
- 9.29 In reply to a question regarding the time needed to obtain the monitoring information referred to in his evidence, Mr Mitchell responded that longitudinal checks with irrigation shutdown would take a couple of days to find losses. The exercise would include the installation of four recorders (during winter) at a cost each of \$6.5k and spending approximately \$10-15k on doing audits at different flows.
- 9.30 In response to questioning on his view of the applicant's proposal to get greater efficiency, Mr Mitchell stated that it could be approached in stages. A lot could be learnt about the scheme in the first 12 months, and they should understand their own scheme as a first step. If race losses are found to be occurring, then piping is the most expensive remedy. But the lining of the open races with membrane or soil is also an option. The initial approach would be to start on the obvious and simpler tasks that will bring about immediate improvements and progress on to the increasingly difficult tasks.

Meridian Energy Limited Meridian

- 9.31 Mr Ben Williams presented legal submissions on behalf of Meridian and South Canterbury Irrigation Company and the Hunter Downs Irrigation Scheme (as joint applicants), and also Meridian as the applicant for all of the consents for the North Bank Tunnel Project.

- 9.32 Mr Williams gave background information on the derogation agreement between Meridian and Upper Waitaki applicants and in respect of the UWCIC scheme, that the annual volume should not exceed 26,300,000 cubic metres per annum. The take is limited to an irrigation season between 15th August and 30th May.
- 9.33 Mr Williams also submitted that the Environment Court (in hearing the appeal by the Lower Waitaki River Management Society on the NBTC) found that existing agricultural land use was already having adverse effects on water quality in the Lower Waitaki.
- 9.34 Mr Williams submitted that it was Meridian's position in regard the fish screen that;
- (a) Meridian would be very reluctant to agree to any proposal that required modifications to be made to the Waitaki Dam; and
 - (b) That the existing requirements for fish screening is not logical given the existing rights afforded to Meridian for Waitaki Dam to take vastly larger quantities from within the vicinity of the UWCIC intake with no screening whatsoever.
- 9.35 Mr Williams emphasised to the Panel that the significant weight should be placed on what is already occurring under the existing environment.
- 9.36 In response to a question from the Panel regarding advice Meridian has received from its own experts on what is "reasonable" and "water quality" issues, Mr Williams replied that he has only looked at the literal aspects of what is actual and reasonable.
- 9.37 We then heard from Mr Brian Ellwood, Water Infrastructure Project Manager and irrigation specialist at Meridian, who has worked in irrigation and water infrastructure since 1998 in both consultancy and regional council roles.

Derogation Process

- 9.38 Mr Ellwood's evidence included an outline of the derogation process for new and replacement consent applications. For replacement consents this has involved ensuring that the annual volume sought by the applicant is 'actual and reasonable'.
- 9.39 We were advised that Mr Rob Potts undertook the technical assessment for Meridian by reviewing the consent, type of irrigation occurring (border dyke or spray) and other uses that may be occurring (i.e.; stockwater) that may impact on the possible volume. Discussion occurred with applicants and, in some cases, involved a review of data from different monitoring stations due to climatic conditions that may apply at an applicant property. In respect of replacement consents, derogation approvals set conditions on take rates, annual volumes and requirements to cease take at certain times (mainly in relation to water takes from hydro lakes and canals).
- 9.40 In the case of UWCIC there is a rare exception in that the agreed annual volume specified on the derogation is actually higher than what had been included in the allocation figures presented to the Waitaki Allocation Board (WAB). This is the result of the actual and reasonable analysis undertaken by Mr Potts. The WAB allocation allowed UWCIC an allocation of 19.4 million cubic metres. However, the derogation approval allows for 26.3 million cubic metres.
- 9.41 Mr Ellwood told us that it was his understanding that the 26.3 million cubic metres was estimated using a border dyke irrigation season of 206 days and taking into account a number of efficiency and operational factors. Providing the following example and accepted facts;
- (a) The UWCIC scheme has an unusually long canal and as such the conveyance efficiencies are lower than usual; and
 - (b) The scheme operational by-washes are required to produce sufficient water pressure to get the required water through the scheme siphons.
- 9.42 For derogation purposes, it was agreed that the operational by-washes would only be required 50% of the time in times of drought.
- 9.43 Mr Ellwood submitted that the 19.4 million cubic metres originally provided by the WAB, would therefore be for the on-farm requirement only and not cover the conveyance and operational

requirements based on the existing operation of the scheme.

Water Quality

- 9.44 Mr Ellwood noted that Meridian have had extensive involvement in the water quality issues in the lower Waitaki catchment through involvement with the applications for the North Bank Tunnel Concept (NBTC), Hunter Downs Irrigation (HDI) and as a submitter on the Mid River New Applicants Group (MRNAG).
- 9.45 This involvement includes an extensive assessment of the effects of the NBTC and HDI proposals on water quality in the lower Waitaki River. That work shows that;
- (a) Water quality currently meets Suitability for Recreation Grade (SfRG) of 'fair-poor' at Stonewall and 'poor-very poor' at SH1. Further abstractions (whether above or below Waitaki Dam) will reduce dilution and thus slightly increase *E.coli* concentrations at SH1, but the SfRG will remain the same; and
 - (b) Water quality currently meets the NfE (2000) nutrient (DIN and DRP) guidelines for periphyton growths at Stonewall, but exceeds dilution and thus slightly increases the risk of nuisance growths at SH1.
- 9.46 Mr Ellwood submitted the main reason for discussing nutrients in the lower Waitaki River is to emphasise that existing concerns around water quality is not abstraction per se, but rather, the effects of existing land use in the lower Waitaki catchment.
- 9.47 Mr Ellwood told us that a requirement for best management practices (BMPs) are unlikely to fully offset increases in nutrient loads predicted from intensified land use by 100%. However, BMPs could significantly reduce these increases. Mr Ellwood submitted that as part of the HDI process, the applicant proposed a comprehensive suite of conditions and management plans that incorporate a number of BMPs and which assist in managing water quality in the lower Waitaki River. Meridian seek similar conditions be imposed on UWCIC to help reduce ongoing water quality issues in the lower catchment.
- 9.48 In response to a question from the Panel to clarify what was the actual and reasonable volume calculated by Potts, Mr Ellwood confirmed that figure was 26.3Mcm using the Sullivan method for use in the Upper Waitaki. In response to Panel questioning, he stated that the irrigation season in the lower Waitaki was longer due to a shorter frost season, and the volume calculation methodology was developed prior to the advent of the WAB.
- 9.49 We should record here that we see the derogation approval simply as an approval from Meridian as the "key consent holder". We do not place any other weight on the provision of the derogation approval by Meridian in respect of our consideration of this application. In other words, we do not see that the granting of derogation approval by Meridian provides any assurance relating to effects on the environment of granting the activity or any assurance that the granting of consent will support the policies and objectives of the relevant planning instrument.

10 APPLICANT'S RIGHT OF REPLY

- 10.1 The applicant's right of reply principally focused on the Evidence in Chief of Mr Mitchell for the Mackenzie Irrigation Company Ltd (MIC).

Ms Stevens – Legal counsel

- 10.2 Ms Pru Stevens, Counsel for the applicants addressed in her right of reply the following matters;
- (a) How should Commissioners approach the exercise of discretion?
 - (b) Section 104(1)(b) – Plan provisions;
 - (c) Responses to MIC's Case regarding:
 - (i) Derogation Approval;
 - (ii) Effective allocation;

- (iii) UWCIC volume calculations; and
- (iv) Integrity of the Plan.

Discretion

- 10.3 Ms Stevens resubmitted her reference to the *Baker Boys* decision as a guide to the exercise of the Panel overall discretion, while acknowledging the application in that reference was for a non-complying activity consent. However, the passage quoted explained the Court's approach to section 104 and Part 2 matters where a discretion was found to exist, i.e., on the basis that one of the threshold tests was able to be met.
- 10.4 In other words, once discretion is available for a non-complying activity, the consent authority approach is the same as for a purely discretionary activity, such as we are considering here. Ms Steven's submitted that the Court's guidance on discretion in *Baker Boys* case continues to be relevant.

Section 104(1)(b) – Plan provisions

- 10.5 Ms Stevens replied that Policy 16 gives guidance on how annual volume (that entails efficient use) is to be determined. Although the strict formula contemplated by this policy has not been used, she submitted that Ms Johnston's calculations result in a volume that is efficient, and thus gives effect to Policy 16, if not abiding by the strict letter of its words. Unlike a rule, a policy does not have regulatory effect.
- 10.6 Ms Stevens submitted that Policy 28 is relevant in that the consenting authority will consider efficiency gains that *have been* given effect to by the application for renewal. This means we are to consider the extent to which efficiency gains have been implemented, although that is not to say that the renewal should be declined if we came to the view that sufficient measures have not been implemented.

Derogation Approval – Meridian Energy Limited

- 10.7 Ms Stevens submitted that the negotiation process that led to the derogation approval did take account of efficiency issues, Ms Stevens referred to Mr Richard Turner's (Upper Waitaki) evidence for Meridian which states;

"One of my tasks for Meridian has been to give effect to the Boards position on both replacement and new resource consent applications for agricultural and horticultural activities. For replacement resource consent applications this role has involved reviewing the annual volume being sought by applicants to ensure that what is being applied for is actual and reasonable".

- 10.8 Ms Stevens goes on to explain that Richard Turner's evidence provided further detail that shows the technical assessment undertaken by Mr Potts for Meridian very much took into account what would be an actual and reasonable volume for the replacement consents and was informed by the need for efficient use.

Effective Allocation

- 10.9 Ms Stevens was critical of Mr Mitchell's (MIC) reference to the Sullivan method as the basis for the highest estimate of existing allocation for border dyke irrigation, which applies a consented flow rate for a maximum of 155 days per year or up to 1500 mm/year depth for surface (borderdyke) irrigation. Ms Stevens contends that this interpretation is an incomplete representation of the Sullivan method, as outlined in the "Implementation of Waitaki Catchment Water Allocation Regional Plan; Current Annual Allocation" Report to Commissioner, 16 March 2007. Ms Stevens highlighted the following points, among others:
- (a) The report sets out the methodology used to estimate actual take, use, divert or dam of water for agricultural or horticultural activities for the purpose of determining an effective annual allocation for existing consents;
 - (b) In estimating the effective annual allocation, Dr Paul Sullivan reviewed the estimations of current effective annual allocation made by Mr Potts, in order to satisfy himself as to the suitability of relying on his work as an estimate approach;

- (c) The work of Mr Potts in turn reflected the approach he had taken in his evidence to the Waitaki Water Allocation Board; and
 - (d) Dr Sullivan's report confirmed the suitability of using Mr Potts' estimates as a basis for determining effective allocation.
- 10.10 Further, in the "Report to the Commissioner", the key variables to estimates were set out on pages 6-7 which included;
- (a) **Borderdyke irrigation is assumed over 155 days/year at consented rate above Waitaki Dam if the rate is consistent with the area irrigated, otherwise the allocation was taken as area x 1.5 mm water depth (i.e. 15 applications of 100 mm's); and**
 - (b) Borderdyke irrigation is assumed over 206 days/year at a consented rate below the Waitaki Dam if the rate is consistent with the area irrigated, otherwise the allocation was taken as an area x 1.5 mm water depth (i.e. 15 applications of 100 mm's); and
 - (c) Borderdyke profile is based on measured values for the Morven, Glenavy and Lower Waitaki Irrigation Schemes.
- 10.11 Ms Stevens submitted that MIC bases its case on the proposition that UWCIC allocation should reflect the assumption above (**bolded**) from page 6-7 of the Report to the Commissioner. She submits that this approach is incorrect as it is now apparent that Mr Potts' evidence presented to the WAB contained an error in relation to the placement of the UWCIC effective allocation in the Upper Waitaki catchment. An error that Mr Potts subsequently acknowledged.
- 10.12 Ms Stevens referred the Panel to the hearings regarding applications to take water in the Upper Waitaki and the various exchanges on these matters between Messrs McIndoe and Potts, statements of which were attached to Mr Mitchell's evidence to this hearing. Ms Stevens pointed to Mr Potts' paragraphs 41-44, Page 10, where he explains the error that he made in calculating the effective allocation to the UWCIC consents. In particular, Mr Potts explains how the error was identified and addressed in the context of negotiations with Meridian and UWCIC in the process of obtaining derogation. Ms Stevens told us that Paragraph 44 was particularly relevant. The following is an excerpt from her evidence (*italicised*);

"I would like to note a few points with respect to the calculation of the 26.3 million cubic metres. This figure was estimated using a borderdyke irrigation season of 206 days as detailed in Sullivan (2007) and taking into account a number of efficiency and

- (i) *The UWCIC scheme has an unusually long canal and as such the conveyance efficiencies are lower than usual; and*
- (ii) *The scheme requires operational by-washes of water on a continuous basis. The operational by-washes are required to produce sufficient water pressure to get the required water through the scheme siphon. However, for derogation purposes it was agreed that the operational by-washes would only be required 50% of the time in times of drought. The 18-19 million cubic metres stated in Mr McIndoe's evidence would be for the on-farm requirement only and not cover the conveyance and operational requirements".*

Integrity of the Plan

- 10.13 Ms Stevens concluded her right of reply by reference to what the Environment Court has said in respect that the grant of consent must be considered on its own merits rather than endorsing a general approach based on precedent and plan integrity as grounds for declining an application.⁴

Ms Johnston – Environmental Consultant

- 10.14 Ms Johnston, Environmental Consultant agreed with the evidence of Mr Mitchell (MIC) that the Sullivan method provides the highest estimate of existing allocation for border dyke irrigation, which applies the consented flow rate for a maximum of 155 irrigation days. However, that this

⁴ Berry v Gisborne District Council, 23/4/10, Judge Thompson, ENC Wellington ENV-2009-WLG-3.

is correct in respect of water being used in the Upper Waitaki, but an historical error based on an assumption that the water was used in the Upper Waitaki when in fact it is used in the Lower Waitaki, where calculations should be based on 206 irrigation days.

- 10.15 Ms Johnston submitted that Mr Mitchell's statement that the WAB intended the use of 900mm/ha/year for border dyke systems to reflect reasonable use and efficient use is not reflected in the relevant WCWARP policies relating to efficiency or annual volume, (Policies 16 and 28). Ms Johnston exemplified two applications for water (current) in the Upper Waitaki (Hope and Classic Properties) where the use of the MIC method for estimating annual volume is nothing more than estimates, i.e., when compared to Policy 16(c), the MIC figures of "fair and reasonable" cannot be justified using either of the methods listed.
- 10.16 Ms Johnston provided clarification why the Duntroon mean monthly rainfall values were unable to be used as she was unable to determine effective rainfall from these. It was explained that effective rainfall is that which is greater than 5mm and conversely, greater than 50mm consecutively. These are the parameters used to determine effective rainfall in the ECAN report U05/15 (which is schedule WQN9v2). Hence, the effective rainfall determined by using ECAN's GIS was considered to be more appropriate for this exercise.
- 10.17 Ms Johnston submitted that Mr Mitchell's (MIC) use of the Morven Glenavy Ikawai Irrigation Company (MGI), in the Lower Waitaki as a recent example of border dyke optimisation is not accurate. The MGI have recently gone through a process to extend their scheme by enabling a larger area to be irrigated with existing consents (border dyke) and the addition of a new spray extension. The thrust of the MGI case was that additional area could be irrigated with the water "gained" from making the efficiency gains. The decision for MGI refers to the "gains" being made from on farm conversion to spray irrigation or improved border dyke systems rather than improvements to the scheme itself. Ms Johnston submits that this is in contrast to the evidence given by Mr Mitchell (Para 4.28) that all the "gains" have come from the MGI scheme infrastructure (races, gates etc).
- 10.18 Ms Johnston suggests that with the "gains", MGI will take 20,300L/s for the irrigation of 26,700 hectares (or 0,76L/s/ha), that this is what the UWCIC is at now before any improvements have been made.

Response to questions from the Panel

- 10.19 Ms Johnston provided a reply to an earlier question from Commissioner Bowden regarding her method for calculating the target annual allocation. In particular, the use of an "average flat line" approach (showing an even demand over the season), rather than a "bell curve" approach (using less in the shoulders of the season and more in the peak).
- 10.20 A graph provided by Ms Johnson to the Panel indicated that the net result between the two methods was virtually unchanged. Ms Johnston noted that Mr Bowden's concern was that the "flat line" approach meant that in the shoulders of the season, when conveyance losses are higher, the losses were being calculated off a higher volume.
- 10.21 Ms Johnston submitted she had re-done the calculations using the "bell-curve" approach for comparison. The final demand figure using the "bell curve" approach is 22,008,954 cubic metres per year compared with 22,284,431 cubic metres per year, a difference of "only" 275,477 cubic metres (or 2.2 days). Ms Johnston concluded that her original response to Commissioner Bowden of the "net result being unchanged" is correct.

Mr Keeling - Chairman UWCIC

- 10.22 Mr Keeling, Chairman of UWCIC Ltd in his rebuttal considered Mr Mitchell's (MIC) statement that the UWCIC scheme was "poorly maintained" and "obviously lacking ongoing maintenance" was derogatory and based on poor research. Mr Keeling provided from the schemes audited accounts the amounts spent on repairs and maintenance;

- (a) 2001 \$30,963
- (b) 2002 \$11,233
- (c) 2004 \$11,611
- (d) 2005 \$13,768

- (e) 2006 \$ 6,329
 - (f) 2007 \$ 7,607
 - (g) 2008 \$24,803
 - (h) 2009 \$14,657
- 10.23 A total of \$120,971 was spent on repairs and maintenance over a nine year period; in addition a fulltime raceman undertakes day to day maintenance throughout the season on contract.
- 10.24 Mr Keeling addressed the comparisons made by Mr Mitchell between the UWCIC and the Morven Glenavy Ikawai Irrigation (MGI) as being an optimal borderdyke system.
- 10.25 The MGI scheme until recently was consented to take 20300 litres per second for the irrigation of 18500 hectares. This is an equivalent of 1.1 litres per second per hectare, some 45% greater than currently sought by UWCIC.
- 10.26 Recently MGI were granted consent to irrigate a further 8200 hectares (CRC091997) with the same volume of water - 4000 hectares of this area is already being irrigated but was not consented. If the same calculations are applied to the current area of 22500, the application rate is 0.9 l/s/ha/day, still 20% higher than UWCIC.
- 10.27 The ultimate goal of 18500 hectares plus the further 8200 hectares reduces this rate to 0.76 l/s/ha/day over the entire scheme, virtually the same as UWCIC is applying for in its initial stage 1 and 2.
- 10.28 As part of the consenting process MGI was given an annual volume for their new area, 58 Mcm/yr over 8200 hectares and within a maximum annual volume over the entire season of 330 Mcm per year.
- 10.29 This equates to a seasonal application depth on the spray area of 700mls/yr and gives the original borderdyked area the ability to apply 1470mls/yr for the remainder of the duration of the season.
- 10.30 UWCIC has applied for 1367 mls / year (7.0% less) with the ultimate goal being 1157 mls / year (21% less).

11 STATUTORY CONTEXT

- 11.1 As already noted, the proposed activity requires consent as a **discretionary** activity. Section 104(1) RMA sets out the matters we must have regard to in our consideration of the applications. The relevant matters are as follows:
- "(a) any actual and potential effects on the environment of allowing the activity; and*
 - (b) any relevant provisions of –*
 - (i) a national environmental standard:*
 - (ii) other regulations:*
 - (iii) a national policy statement:*
 - (ii) a New Zealand coastal policy statement:*
 - (iii) a regional policy statement or proposed regional policy statement:*
 - (iv) a plan or proposed plan; and*
 - (c) any other matter the consent authority considers relevant and reasonably necessary to determine the application.*
- 11.2 We note section 104(1) RMA provides that the matters therein listed are subject to Part 2 RMA, which includes sections 5 through to 8 inclusive. We consider Part 2 RMA matters

subsequently.

- 11.3 In accordance with s104B RMA, after considering an application for resource consent for a discretionary activity, we may grant or refuse the application. We will exercise that discretion having proper regard to the purpose of the RMA, which requires a balancing exercise of the various elements identified in the course of the hearing – particularly under section 104 and Part 2 RMA. If we grant the application, we may impose conditions under section 108 RMA.
- 11.4 Based on the above requirements of the RMA, we have structured this evaluation section of our report as follows:
- (a) Evaluation of effects
 - (b) Evaluation of relevant planning instruments
 - (c) Evaluation of other relevant s104 matters
 - (d) Part 2 RMA
 - (e) Overall evaluation

12 EVALUATION OF EFFECTS

- 12.1 Drawing on our review of the application documents, the submissions, the Officers' Reports and the evidence presented at the hearing, we have concluded that the effects we should have regard to are:
- (a) Annual/Volume calculations
 - (b) Effects on other water users
 - (c) Inefficient use
 - (d) Ecological effects
 - (e) Effects on water quality
 - (f) Landscape effects
 - (g) Recreational effect
 - (h) Cultural effects
 - (i) Positive effects

Annual/Volume Calculations

- 12.2 The applicant has applied for an annual allocation of 26.3Mcm, not exceeding 125,280cm per day at an instantaneous rate not exceeding 1450L/s, to irrigate 1925ha of land predominantly by border dyke irrigation. The allocation is effectively based on taking the maximum instantaneous take of 1450L/s over a 206 day irrigation season, 26.3Mcm which equates to an application depth of 1367mm per year. Ms Johnson told us that the demand figure was based on land use, soil type and ET and WQN9v2 was used as a guide. The applicant was seeking a less than rigid approach to Policy 16(c) WCWARP in recognition of inherent and operational factors.
- 12.3 The S42A Reporting Officer Ms Penman told us that the applicant's method to calculate the proposed annual volume is not based on one of the methods outlined in Policy 16 WCWARP. Ms Penman submitted that she had advised Ms Johnson that she did not think that the applicant's approach adequately justified the proposed volume was reasonable and efficient. In response, Ms Johnson (for the applicant) proposed an alternate method provided for in Policy 16(c)(i) WCWARP but this method lacked soil moisture measurements across the scheme area.
- 12.4 Regarding the instantaneous rate, Ms Penman told us the applicant advised that the soils in the area are likely to have a medium water holding capacity (75-110mm). A return period for

- irrigation of 14 days and the amount of water applied for equates to 6.5 mm per day over the 1925 hectares. The applicant considers that there will be losses in the system and irrigation method inefficiencies (20% for irrigation system and 10% race losses), which reduce this to give a net application depth of 4.6mm/ha/day on-farm. This works out to approximately 65mm per return period.
- 12.5 We note that the expired (2000) consent (WTK800011) refers only to the maximum instantaneous rate of (1450L/s), the irrigable area 1920 hectares, and the duration of the season 15 August to 30 May; it contains no limit on the annual allocation volume.
- 12.6 Our view is that the applicant has done little to investigate the scheme and on farm factors to determine applicability to Policy 16 WCWARP. Nor has it provided evidence that it is taking a responsible attitude to its use of water and is seeking to continually improve the technical efficiency of their use of water. The applicant has based estimates on existing use of border dyke irrigation systems (1366mm per year) rather than what is considered a reasonable and efficient use of the resource for border dyke systems of 900mm per year. The annual volume calculations reflect a 'desk top' approach rather than a scheme area and on farm integrated assessment that seeks to be consistent with the options available to applicants in Policy 16 WCWARP. We believe that the 26.3Mcm annual volume sought by the applicant does not satisfy the reasonable and efficient use test.
- 12.7 We had some difficulty with the methodology that the applicant used to calculate the annual volume of 26.3Mcm compared with the 19.4Mcm allocation to the UWCIC in the WCWARP. The lack of accurate data to enable either of the options in Policy 16(c) WCWARP to be applied is a contributing factor but, given it is an existing scheme, the issue of data deficiency was surprising.
- 12.8 We are inclined to accept Mr Mitchell's view that the annual volume calculations of Ms Johnston's are based on estimates of existing use for border dyke irrigation systems (1367mm per year) rather than what is considered "reasonable and efficient" for border dyke systems.
- 12.9 The S42A reporter provided an example of calculating the annual volume for UWCIC using the ECAN GIS system and the 16(c)(ii) compliant methodology, PAW of 75-110mm and effective rainfall of 230mm, and allowing for 10% conveyance losses and by-wash of 500,000cm, arriving at a figure of 11,546,259cm for "spray irrigation". By adding 50% more flow volume for border dyke irrigation this would equate to an annual volume of 17.3Mcm.
- 12.10 Mr Mitchell told us that using the MIC (2004) method for calculating border dyke irrigation (900mm/year) would give an annual allocation volume of 17.3Mcm/year for the UWCIC. Annual allocation estimates for "well designed" border dyke irrigation systems derived in developing the framework for the WCWARP indicate volumes from 17.3Mcm/year to 19.4Mcm/year would apply to the UWCIC application.
- 12.11 Mr Mitchell told us that that the UWCIC application when using the "most conservative" Sullivan method to calculate annual volume equates to 1.45cm x 86400 (seconds per day) x 155 days = 19.4Mcm.
- 12.12 The UWCIC water is taken from the Upper Waitaki and therefore subject to Table 5 limits of the WCWARP (i.e., 900mm for border dyke irrigation and 600mm for spray irrigation over a 155 day irrigation season). Even though Upper Waitaki water is used in the Lower Waitaki, the allocation is on the same basis as if it were used in the Upper Waitaki.
- 12.13 The approach adopted by the WCWARP in setting the Upper Waitaki allocation limit intended that replacement consents would be based on reasonable and efficient use, consistent with the overall allocation within the Upper Waitaki Basin and that would release water for new activities.
- 12.14 We accept the argument put forward by Mr Mitchell that the 26.3Mcm would fail to meet the reasonable use and efficiency tests of Policies 15, 16, 17 and 28 in the WCWARP, and that regardless whether WQN9 v2 or balance modelling was used, the allocation would be substantially less than 26.3Mcm/year.
- 12.15 For the above reasons we believe that a reduced grant of water (22Mcm) to that requested by the applicant UWCIC is necessary, but note that volume is still above the 19.4Mcm allocated to that scheme in the WCWARP. We also apply conditions that require the applicant to implement scheme efficiencies and volume reductions to comply with the policy intent of the WCWARP.

Effects on other water users

- 12.16 Meridian Energy Limited (Meridian) are the main water user of Lake Waitaki for electricity generation, derogation has been provided by Meridian. There are no other priority issues affecting the water take. There are no users on any of the water bodies downstream of the five discharge points.
- 12.17 The annual volume applied for is inconsistent with the volumetric allocations of the WCWRP and would be contrary to the intent of the plan that replacement consents would implement efficiency improvements and release water for new activities. The UWCIC take is from the Upper Waitaki 275Mcm annual allocation limit, takes above that level would be non-complying with the WCWARP.

Inefficient Use Effects

- 12.18 The applicant has highlighted to us the inherent inefficiencies of the scheme due to the length of the open canal system and supplying many properties, but recognises that there are efficiency gains to be made, particularly with metering and overall management of the scheme.
- 12.19 We believe that with 83% of irrigation being border dyke that there is considerable potential for on-farm efficiency gains to be made through improvements to existing irrigation systems or conversion to spray.
- 12.20 The S42A Reporting Officer advised us that despite the 40 year life of the UWCIC Scheme there had been no formal metering or recording of the volume of water taken each season. The applicant has proposed a "3 Step improvement programme" the efficacy of which is not immediately clear to us, an issue which is not assisted by the suggested 12 year duration of the "programme". It is difficult to see why more detailed monitoring and research into the options to achieve efficiency gains had not been undertaken by the applicant in the period prior to the hearing.
- 12.21 The overall intent of WCWARP (Policies 15 to 20) has a clear thrust around efficiency of water use so that the net benefits derived from its use are maximised and waste minimised. The plan is also clear that the opportunity to review water use will not formally be able to be subjected to the reasonable use test of Policies 16 and 17 until consents expire and are subject of applications for replacement consents.
- 12.22 Policy 28 WCWARP requires us to consider whether all reasonable attempts to meet the efficiency expectation of the plan have been undertaken. The applicant identified uncertainty around the progression of their application and the impact the call-in had on its ability to commit to scheme and on farm monitoring and efficiency improvements. Despite this, on the evidence we received the applicant has made, we think, minimal rather than reasonable attempt to ensure the efficiency expectations of the plan are implemented. The applicant has highlighted that aspect of Policy 28 WCWARP that requires us to recognise the value of the investment of the existing consent holder and the 40 year life of the scheme. We believe that the effects of the proposed activity will be more than minor if granted in terms of the volume the applicant seeks.
- 12.23 Consequently, we think it necessary that in addition to considering the annual volume, we need to consider a mechanism by which efficiency improvements to the irrigation scheme can be secured. We think this is achievable, particularly having regard to the evidence of the applicant and the evidence from Mr Mitchell. We have endeavoured to capture the thrust of this evidence in conditions that require the applicant to investigate and undertake works to obtain efficiency gains from the existing scheme.
- 12.24 Relating to the efficiency issue, in large part we accept the submissions of Ms Limmer when she referred to the section 32 report prepared by the Board in its consideration of the WCWARP. We accept that in that analysis the Board expressly acknowledged that inefficient use of water can lead to adverse effects on the environment, and that local and national benefits accrue from technical efficiency in the use of water when water is a scarce resource. Further, technical efficiency allows an increased number of economic enterprises to access the allocated water, potentially achieving higher overall economic gains and, in turn, social economic wellbeing is enhanced from increased economic activity.
- 12.25 We also accept her analysis of the regional policy statement in respect of water quantity issues and we accept her analysis of the WCWARP as it relates to efficiency and reasonable use of

water.

- 12.26 We did also find that we were in agreement with her view that the applicant has not provided us with evidence to satisfy us as to how the application figure of 26.3 million cubic metres represents reasonable use.
- 12.27 Also, we agree with her that the applicant had not provided real evidence about improvements that had been made over time. Rather, the applicant's case was founded on a proposition that improvements would be undertaken in the future. We agree with Ms Limmer that this is a remarkable approach, particularly having regard to the point that the application has been in the system for a decade and subject to the WCWARP plan provisions of which technical efficiency is a critical consideration.
- 12.28 We also agree with Ms Limmer's submission in relation to replacement of existing consents and her submissions in relation to Policy 28 WCWARP. We agree with her that the provisions of the plan in relation to efficiency can only be implemented when consents expire and a new replacement application is lodged or, alternatively, if the current consent conditions include a provision to deal with those matters.
- 12.29 Thus, we agree with her submission that there is no distinction between a replacement consent and a new consent under the allocation plan except to the extent a decision-maker must recognise the value of the investment of the existing consent holder. On application for a replacement consent we do think it critical that the consent holder come forward and demonstrate steps that have and will be undertaken to meet the efficiency benchmarks of the allocation plan.

Ecological Effects

- 12.30 Concerns were raised by Fish & Game and supported by the S42a Reporter Ms Penman about the inadequacy of the existing grill attached to the foot of the siphon located in the face of the Waitaki Dam to prevent fish entering the system. Details about the mesh size of the grill are unknown while the applicant considers that fish are not being sucked up by the siphon. The applicant acknowledges that fish are known to inhabit and breed in the canal system and have proposed a condition requiring Fish & Game be informed at least 48 hours prior to the canal being shutdown each winter to allow for fish recovery.
- 12.31 Meridian Energy Limited (Meridian) is reluctant to see any modification made to the structure of the Waitaki Dam to which the grill and siphon are attached due to concern that any modifications may impact on the integrity of the dam structure. Meridian also consider that any screening requirement for the scheme intake needs to be balanced against the fact that a much more significant volume of "unscreened" water passes through the Waitaki Dam hydro system. The applicant proposes a condition requiring 48 hour notice be provided to Fish & Game prior to dewatering of the canal in order that fish salvage can occur.
- 12.32 While noting the position of Meridian, we are limited in our ability to make a clear determination on the fish screen due to the lack of detail about the size and nature of the grill/fish screen attached to the siphon. We are also limited because we understood the Meridian evidence to be to the effect that they would not give consent to enable a new fish screen to be attached to the siphon. We do not think we can compel Meridian to allow this to occur. Moreover, as we understood the Fish & Game position on this point, they did not appear to us to be concerned about the issue of fish screen, particularly where the process of providing notification to them to allow them to retrieve and repatriate fish was available and was working well. We were also mindful that this circumstance has been in place for a considerable period of time and have concluded that we should allow the status quo in terms of the fish screen issue to continue.

Water Quality Effects

- 12.33 The by-pass discharges are of water that is taken from Lake Waitaki, any discharges are for short durations and any contamination would come from the canal. A condition requiring the fencing of the canal to exclude stock (and thereby preventing any increase in faecal coliforms or sedimentation) will maintain the quality of discharge similar to that of its source.
- 12.34 The applicant provided no assessment of the cumulative impact of irrigation activities by scheme users on groundwater or downstream effects on the Waitaki River. Mr Ellwood for Meridian emphasised that the main reason for Meridian concerns around water quality is not abstraction per se, but rather, the effects of existing land uses on water quality in the Lower

Waitaki catchment. Mr Ellwood told us that there were measurable effects occurring in the Lower Waitaki and that the UWCIC were relevant to this issue.

- 12.35 We believe that best management practices are unlikely to fully offset increases in nutrient loads predicted from intensified land use by 100%, but FEMPs and appropriate management can reduce nitrate increases significantly. The proposed comprehensive suite of conditions and management plans that incorporate BMP will assist in mitigating effects on water quality in the lower Waitaki River.

Landscape Effects

- 12.36 The UWCIC scheme has been an existing activity for 40 years. There was no assessment of landscape values or submissions raising landscape issues. The irrigated area is very visible to the public travelling on SH83 between Duntroon and Kurow and exhibits landscape values that are consistent with farmland subjected to irrigation for up to 40 years. As such, it is a highly modified landscape. Against this finding, we believe the effects of granting consent will be no more than minor on the landscape.

Recreational Effects

- 12.37 The activity has been occurring for 40 years. The location of the siphon (built into the dam) is unlikely to affect recreational activity on Lake Waitaki. An appropriate minimum lake level has been proposed by the applicant consistent with the provisions of the WCWARP.
- 12.38 The applicant has not assessed the effect of the activity on downstream water users or amenity values. The S42a reporter advised that there were no downstream users on the receiving waterways. Given the water discharged by the by-washes will not contain additional contaminants the impact on amenity values will be minor.

Cultural Effects

- 12.39 The applicant has not provided an assessment of the effects of the proposed activity on cultural values. The sites of the proposed activities are located within the takiwa of Te Runanga O Moeraki. Neither Moeraki nor Te Runanga O Ngai Tahu, the iwi authority, made a submission. The S42a reporter identified a possible cultural issue with the cross mixing or waters between catchments, an effect that is addressed in Policy WQL1(1)(b) PNRRP and Policies 9(1) & (2) WCWARP. The mixing of waters is an area of concern for Ngai Tahu. Under these applications water is taken from Lake Waitaki and discharged to five smaller streams downstream of the Waitaki Dam, but upstream from the Waitaki River. If this abstraction did not occur the water would continue down the Waitaki River. In this instance, water will be discharged a short distance upstream from the Waitaki River. We conclude that the effects will be no more than minor.
- 12.40 The quality of the water being discharged will not be degraded, it is only a short distance upstream of where the water would naturally flow, and is an existing activity that has been occurring for the last 40 years. The explanation to Policy 9 WCWARP recognises that the potential effect is likely to be greater when water of one catchment mixes with water of another catchment rather than when water of sub-catchments of the same catchment mixes. Therefore we consider the effects of the mixing of waters to be no more than minor.

Positive Effects

- 12.41 The economic activity supported by the reliability of the scheme's water is a significant factor for the local farming community: supporting the development of land, infrastructure and increased farm productivity and land values. For an area that is prone to hot dry summers the availability of a reliable source of irrigation water provides a significant level of certainty to farming operations within the scheme area. The irrigation water provides certainty to finishing stock and growing winter feed. The scheme and enhanced land use also generates social benefits to the local community, including the creation of jobs, and supports local businesses and schools.

Key conclusions on effects

- 12.42 Annual Volume: In our consideration of effects we accept the evidence of Mr Mitchell (MIC) that the annual volume calculations the applicant has used result in a figure that (26.3Mcm) exceeds the actual quantity needed to undertake the activity in an efficient and effective

manner. On the evidence we have seen the applicant has applied minimal effort to investigate and identify accurately annual volume requirements. We conclude that the annual volume and instantaneous rate applied for would fail to meet the reasonable use test of the WCWARP provided for by Policy 16.

- 12.43 Efficient Use – On-farm: We were provided with little information about efficiency improvements made to on-farm use of water other than the point that 17% of the 1925ha irrigable area had been converted from border dyke to spray irrigation. The applicant highlighted the value of investment and difficulties associated with the costs of improving on-farm water use efficiencies. Taking into account the uncertainties created by the call-in, production of the Plan and re-notification process, we were still not convinced on the evidence provided by the applicant that all reasonable attempts had been made to meet the on-farm efficiency expectations of the Plan.
- 12.44 Scheme Efficiencies: We were made aware of the particular conveyance difficulties and by-wash requirements of the scheme that result in higher water losses than normal. The applicant had spent money on maintenance of the scheme but did not provide evidence to show that all reasonable attempts had been made to identify and make efficiency improvements to the scheme conveyance systems. We have sought to address this issue through conditions requiring investigation and improvement works to be completed within a reasonable time period.
- 12.45 Fish Screen: Determining the adequacy of the fish screen/grill has been difficult to assess given there was no detail provided that describes mesh size, how it is attached to the siphon or indeed, whether it was in fact a fish screen or merely a mesh to prevent debris entering the siphon. In the end, we were satisfied that a continuation of the status quo (which involves providing sufficient advance notice to Fish & Game of the watering proposals to allow fish salvage and repatriation operations to occur) should continue.
- 12.46 In conclusion, the panel are of the view that the issues associated with this application, as discussed above, can be satisfied by granting an annual volume of 22Mcm and by conditions that require the applicant to implement improvements to the scheme to achieve efficiency gains, annual volume reductions and on farm best management practice, including individual farm and scheme environmental management plans. In reaching this conclusion we are minded to take into account the positive productive and economic effects the scheme generates for the properties receiving irrigation water.

13 EVALUATION OF RELEVANT PLANNING INSTRUMENTS

- 13.1 Section 104(1)(b) RMA states that we should have regard to the relevant provisions of a range of different planning instruments, many of which have similar provisions that are intended to achieve the same or similar environmental outcomes.
- 13.2 In relation to the current applications, we consider that the most relevant and helpful provisions are found in the regional plans, including the WCWARP, the PNRRP and the NRRP. We have therefore focused our discussion on these provisions.
- 13.3 Before considering the detailed plan provisions themselves, we provide some general comments on the relevant “higher level” planning instruments and the approach we have applied to consideration of these documents. We also outline the approach we have applied to consideration of the relevant objectives and policies in the WCWARP and the NRRP.

National Policy

- 13.4 At a national level, the key relevant document is the National Policy Statement on Freshwater Management 2011 (“the Freshwater NPS”). We confirm that we do not consider that the New Zealand Coastal Policy Statement (1994) to be relevant, as the Waitaki Catchment does not comprise part of the coastal environment.
- 13.5 The Freshwater NPS took effect on 1 July 2011. Even though this document was not in effect at the time when the applications were made or the hearing was held, we are nonetheless required to have regard to it as part of our consideration of the application.
- 13.6 The Freshwater NPS is a high level document that sets broad goals for the management of freshwater in New Zealand. The objectives within the Freshwater NPS reflect this high level nature and can be summarised as follows:

- (a) Safeguard the life-supporting capacity of freshwater ecosystems;
- (b) Maintain or improve water quality;
- (c) Avoid over allocation of freshwater;
- (d) Maximise the efficient allocation and use of water;
- (e) Protect outstanding freshwater bodies and significant values of wetlands;
- (f) Improve integrated management of freshwater and land use; and
- (g) Ensure tangata whenua interests and values are reflected in the management of fresh water.

13.7 The policies in the Freshwater NPS direct that regional councils take specific actions to give effect to the objectives. This includes the requirement to set minimum flow levels and quality limits through regional plans.

13.8 The objectives of the Freshwater NPS are consistent with the relevant objectives and policies of the WCWARP and the PNRRP, both of which we discuss below.

Regional Policy

13.9 There are two regional policy statements that we are required to consider, being the operative Canterbury Regional Policy Statement 1998 (CRPS) and the Proposed Canterbury Regional Policy Statement 2011 (PCRPS). These documents provide an overview of the resource management issues for the region and set out how natural and physical resources are to be managed.

13.10 As for the national policy, we consider that the provisions of the CRPS and PCRPS are consistent with and support the more detailed provisions of the WCWARP and the NRRP, which we discuss below. To avoid repetition, we do not intend to discuss the regional policy provisions in detail and simply make the following general comments.

13.11 Provisions of particular relevance to this application are chapters on tangata whenua, soils and land use, landscape, ecology and heritage, water, beds and margins of waterways. For the reasons discussed below, in the context of the relevant regional plans we consider that the proposal is consistent with these provisions.

Evaluation of the relevant plans

WCWARP Objectives

13.12 Objective 1 of the WCWARP is:

"To sustain the qualities of the environment of the Waitaki river and associated beds, banks, tributaries, islands, lakes, wetlands and aquifers by:

- (a) recognising the importance of maintaining the integrity of the mauri in meeting the specific spiritual and cultural needs of the tangata whenua, and by recognising the interconnected nature of the river*
- (b) safeguarding the life supporting capacity of the river and its ecosystems*
- (c) managing the water bodies in a way that maintains natural landscape and amenity characteristics and qualities that people appreciate and enjoy*
- (d) safeguarding the integrity, form functioning and resilience of the braided river system*
- (e) providing for individuals' reasonable domestic water needs*
- (f) providing for individuals' reasonable needs for their animals' drinking-water*

(g) *providing for fire-fighting water needs.*"

- 13.13 We are satisfied that the applicant's proposal is consistent with Objective 1 subsections (c) to (g) inclusive.
- 13.14 Objective (a) recognises the spiritual and cultural needs of tangata whenua and the interconnected nature of the river. Potential impact arises where cross mixing of different quality waters occurs through artificial conveyance of water from one catchment to another. The application involves the transfer of water within a sub-catchment and discharge of that water in an unaltered condition to several tributaries of the Waitaki River at points up to 40 km downstream from the abstraction point. The by-wash discharge points are between 1 and 2 km from the Waitaki River and generally to dry river beds. We consider the impact on cultural values from the cross mixing to be less than minor.
- 13.15 Objective (b) requires us to safeguard the life supporting capacity of the river and its ecosystems. In our key conclusion on effects we determined that the annual volume the applicant is seeking exceeds what would be considered a reasonable and efficient use of water taken from Lake Waitaki. Objective (b) places importance on retaining water in the river systems, the application is counter to that objective. Reducing the annual volume to a level required to effectively and efficiently irrigate the scheme area would allow reallocation of water to other users in the Upper Waitaki and thereby extend the effectiveness of the 27Mcm allocation to MIC shareholders. Achieving effective and efficient use of water taken from Lake Waitaki and minimising the discharge of contaminants to ground or surface water complies with the provision to safeguard the life supporting capacity of the river and ecosystems.
- 13.16 A continuation of the status quo of providing advance notice to Fish & Game enabling an opportunity to undertake fish salvage operations we think supports Objective 1.
- 13.17 Objective 4 of the WCWARP is;
- "To promote the achievement of a high level of technical efficiency in the use of allocated water"*
- 13.18 The technical efficiency of the applicant's scheme is limited due to conveyance losses and on farm application methods that do not optimise the water resource. The applicant provided limited information on the scheme or on-farm technical efficiency capability. However the applicant proposed an investigation and improvement programme to reduce annual volumes and achieve efficient use of water. This is discussed further under the relevant WCWARP policies.

WCWARP Policies

- 13.19 Policies 3 and 4 outline the values that must be maintained in the water bodies and a number of matters that must be considered when setting an environmental flow and level regimes, which are particularly relevant to this application. As the applicant is proposing to adopt the minimum Waitaki Lake level required by the WCWARP, we are satisfied that the proposal is consistent with these policies.
- 13.20 Policy 13 links the WCWARP to the Proposed NRRP (as notified) by requiring us to have regard to how the exercise of the consent could result in water quality objectives in the Proposed NRRP not being achieved.
- 13.21 The by-wash discharges associated with the consent at five separate sites is mitigated by the fact that the water discharged is essentially unchanged from when it is taken from Lake Waitaki. The conveyance of the water that forms the by-wash is taken directly from the intake via the main canal to the point of discharge, for the purpose of activating siphons. Any contamination that occurs may occur at the start of the season or when the canal is recharged with water and dry material and sediment is picked up by the first flushes of water. Another possibility might occur in the instance where the canal runs immediately adjacent to a bank or hill that in a rainfall event results in run-off into the canal. The by-wash occurs during the irrigation season, and during the summer dry period the discharge is often into dry river/stream or creek beds and, as a consequence, drains into the gravels. We consider the effect on river beds and/or receiving waters to be less than minor.
- 13.22 The drainage to groundwater or surface water of irrigation water is a contributing factor to the nitrate / nutrient levels being measured in the Lower Waitaki River although the exact

correlation with the scheme has not been determined. The irrigation scheme is principally border dyke ((83% approx), which supports the notion that there is a connection with the nutrient enrichment levels in the Lower Waitaki River. The applicant did not directly address this aspect of the scheme's activity, but has proposed to investigate and improve the schemes efficiency and reduce annual volumes which, in turn, will reduce leakage of contaminated water to ground or surface water. The applicant has also proposed that FEMPs will be developed for all properties over 20 ha in size and that it will adopt best management practices (BMPs) to reduce impacts on ecosystems.

- 13.23 The application is for a replacement activity that has been occurring for 40 years. The water quality objectives of Policy 13 are achievable with the use of on farm mitigation tools, conversion to spray irrigation, scheme volume reductions, and efficient use.
- 13.24 Policies 15 – 20 deal with efficient and effective use of water and are applicable to this application. The Policies provide for an efficient use of water so that net benefits are derived from its use are maximised and waste minimised, reasonable use tests and encouragement for enhancing technical efficiencies in the use of and distribution systems are achieved.
- 13.25 We are not satisfied that the rates and annual volumes sought by the applicant reflect an efficient and effective use of water nor that the reasonable use test can be met. This issue is compounded by the inability of the applicant to comply fully with the option chosen in Policy 16(c)(i)⁵ to calculate the annual volume due to a lack of accurate data including information on local rainfall and soil moisture measurements. The applicant has not demonstrated any significant effort toward implementing the technical efficiency expectations of the Plan. However the applicant has proposed a "Three Step Improvement Programme" over a 12 year period, which will address both Scheme and on-farm efficiencies. We accept the principle but consider the implementation period should be reduced to 6 years. The effects of the proposed activity on Policies 15-20 are more than minor but can be mitigated by an improvement plan.
- 13.26 Policy 21 requires the installation and use of water-measuring and recording devices. The applicant has proposed metering conditions, consistent with Policy 21 and therefore we propose the most recent metering and monitoring standards to be included on the conditions of consent.
- 13.27 Policy 28 outlines matters that should be considered when deciding to grant or refuse applications for replacement of existing consents, which we address in the next paragraphs.
- 13.28 Efforts by the applicant to meet the efficiency expectations of the WCWARP have been limited to individual shareholders converting about 17% of the total irrigated area from border-dyke to spray irrigation. The decade long duration of the current consent process including the call-in and re-notification process may have been a factor affecting the applicants' lack of investment in scheme and on-farm improvements.
- 13.29 The applicant's expenditure on the scheme has been limited to general maintenance on the scheme distribution system.
- 13.30 There was no evidence to show that the applicant had exercised "all reasonable attempts" to meet the efficiency expectations of the Plan. However, there were some mitigating factors as discussed above. We are minded also to take into account that the scheme has been operating for 40 years and recognise the value of the investment and importance of the activity to the local economy.
- 13.31 As will be apparent, we have given considerable weighting to Policy 28 WCWARP. Given what we say later about section 124 RMA, it is clear in our view that an existing resource consent holder should have an understanding that there is no right of renewal of a resource consent. In addition, we see Policy 28 WCWARP as providing (as noted in the explanation to the policy) clear guidance on how an application to replace an existing consent should be considered by the consent authority. We note from the explanation (and we agree this is critical in this circumstance) that 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.
- 13.32 For reasons that will already be clear, it is our view that the applicant has not been able to satisfy the very clear policy direction of the WCWARP. We would be concerned that if we granted consent on the basis of the application as made by the applicant, then, so as to justify

⁵ Soil-moisture measurements, local rainfall and evapotranspiration modelling for the 1 in 5 year dry season (the year for which seasonal demand is exceeded 20 percent of years).

such a grant, we would need to significantly read down the clear and obvious thrust of Policies 15-20 and 28. We are not prepared to do that.

- 13.33 In reaching this outcome we are mindful that the applicant has in effect an existing consent for the quantity of water currently applied for. It may be argued that the effect of that take is already accounted for in terms of effects on the environment. Of course that is undoubtedly so. However, what is occurring here is the applicant is coming forward and seeking a renewal and they must seek that renewal against the policy framework of the WCWARP. That policy framework, in our view, allows us deliberately to consider or, indeed, expressly requires us to consider rigorously whether or not the efficiency expectations of the WCWARP are implemented. For the reasons advanced, we do not think that the application as made meets those critical efficiency expectations.
- 13.34 In summary, while the applicant has shown minimal commitment to achieving the efficiency expectations of the Plan we recognise there were compounding factors. In this context we do not consider that the replacement application should be declined on its failure to comply with the strict meaning of Policy 28. We propose to include in the conditions of consent a requirement that investigations be undertaken and if those investigations require work to be undertaken to meet the reasonable use and efficiency expectations of the WCWARP, then those works be undertaken within a 10-year period of the grant of this consent. Policy 42 notes the setting of a minimum lake level for the artificial lakes, including Lake Waitaki, recognises the natural and recreational values of the lake and enables appropriate access for the range of activities identified in Objectives 2 and 3.

NRRP

- 13.35 We have not considered the objectives and policies in Chapter 5 of the NRRP relating to water allocation (as defined in s5 of the WCWARP), as these issues are covered by specific provisions in the WCWARP. In accordance with s14 of the Resource Management (Waitaki Catchment) Amendment Act 2004, the WCWARP is deemed to be the Canterbury Regional Plan for the allocation of water in the Waitaki Catchment. As such, we consider that the provisions on the WCWARP effectively take the place of the equivalent provisions in the NRRP relating to water allocation.
- 13.36 We have considered all other provisions on the NRRP that do not relate to water allocation, including matters such as discharges to land, preventing hazardous contaminants entering groundwater, management of contaminated land, and other issues. This approach is expressly provided for in s5 WCWARP and is consistent with the requirements under s104(1)(b) RMA.
- 13.37 The discharge of by-wash water from the scheme has been previously addressed.
- 12.42 Potential water quality issues have been identified arising from stock entering races, the applicant has proposed to fence all waterways, and other water quality issues have been discussed.

Tangata Whenua (NRRP)

- 12.43 The references to tangata whenua values in the objectives and policies of the Water Quality Chapter 4 of the NRRP (notified July 2011) apply to;
- mixing of waters;
 - safeguarding mahinga kai;
 - protecting waahi tapu and waahi taonga;
 - avoiding damage to Ngai Tahu sites of significance, i.e.
 - wetlands and their relationship with Ngai Tahu culture and tradition
 - ancestral lands, water, mahinga kai, waahi tapu and waahi taonga.
- 13.38 The application involves the mixing of waters and has been raised as a possible issue. We have previously discussed this issue, and determine that the effects on cultural values will be less than minor. We received no evidence of potential effects on other Ngai Tahu values, including

mahinga kai, waahi tapu or waahi taonga. However, an operative fish screen that is ineffective at screening native fish would have a negative impact on the native fishery, an important aspect of the cultural values Ngai Tahu associate with the Waitaki catchment.

Waitaki District Plan

- 12.44 We have referred to the landscape objective of the Waitaki District Plan and consider that the proposal is not inconsistent with the Plan's landscape provisions. This is particularly so given the 40 year duration of the irrigation scheme, lowlands location and the intensification of land use that has removed any sense of open space vista and landforms that might characterise the "Rural Scenic Zone" class of landscape.

14 OTHER RELEVANT AND S104 RMA MATTERS

- 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.

- 14.2 Section 104(2A) RMA provides:

"When considering an application affected by section 124, the consent authority must have regard to the value of the investment of the existing consent holder"

- 14.3 Considerable emphasis was placed by the applicant and supporting submissions on the positive role the scheme had played in supporting the viability of the participating agricultural activities. The scheme land area we were told is fertile and, with the availability of reliable water during the dry summer months, supports finishing of stock, growing winter feed and intensive farm practices. The investment made in establishing the scheme and in on farm development over the 40 year life of the scheme is predicated on the certainty that the scheme water provides to farmers. This investment and the availability of reliable water are also reflected in the value of farms linked to the scheme. The scheme is a significant asset to the local economy, creating jobs and supporting associated community infrastructure.
- 14.4 We have specifically considered section 124 RMA (s124). In summary form, we see s124 as simply setting out a process to give existing consent holders priority in having their applications determined over new applications when an existing consent holder applies for a consent to replace an existing consent. We do not see that s124 provides any right of renewal for resource consent.
- 14.5 We do find ourselves in agreement with the submissions of Ms Limmer in relation to precedent and plan integrity effects [#40-47]. We are conscious of the fact that there are a large number of existing consents before us that seek replacement. So we are well alive to the need to avoid any irreconcilable clash with the important provisions of the plan. We also are aware of the need that there should be a clear proposition in existence supporting and justifying why one application should be dealt with differently from others so as to avoid a clash with applications that are to follow.
- 14.6 We must signal a real concern about precedent and plan integrity effects. In terms of precedent we are here thinking of treating 'like with like'. For example, if we did grant consent in terms of the application as made we are concerned that subsequently later in time applicants will point to such a decision and rely upon it as a precedent in aid of their argument. We are also very concerned about plan integrity effects. This is so because, in our view, the plan has very clear objectives and policies focusing on the efficient use of water and seeking to gain greater efficiencies from established border-dyke based irrigation systems. Again, if we were to grant consent in terms that mirrored the application, we do think we would be creating an adverse plan integrity effect. We also think that we need to address the issue of scheme efficiencies to avoid creating both a precedent and plan integrity effect.

15 PART 2 RMA

- 15.1 Section 104(1) RMA states that the matters which we have discussed above are subject to Part 2 RMA, which covers sections 5 through 8 inclusive. We record that our approach is that sections 6, 7 and 8 RMA contribute to and will inform our evaluation under section 5 RMA.

Section 6 – Matters of National Importance

- 15.2 Sections 6 identifies the following matters of national importance that we must “recognise and provide for” when making our decision::
- (a) The preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use and development.*
 - (b) The protection of outstanding natural features and landscapes from inappropriate subdivision, use and development;*
 - (c) The protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna;*
- 15.3 There are no known areas of significant indigenous vegetation or significant habitats of indigenous fauna related to the proposal and scheme area.
- (d) The maintenance and enhancement of public access to and along the coastal marine area, lakes and rivers;*
- 15.4 We are satisfied that there are no impacts on recreational users of the river beds or lake margins by the proposal.
- (e) The relationship of Maori and their culture and traditions with their ancestral lands, water, sites, wahi tapu, and other taonga;*
- 15.5 There were no submissions from Te Runanga o Moeraki or the tribal authority Te Runanga o Ngai Tahu on the applications. Notice was served on Te Runanga Arowhenua, Te Runanga o Waihao and Te Runanga o Ngai Tahu. The S42A report does not indicate that notice was served on the local Runanga Te Runanga o Moeraki. We consider the 40 year existence of the scheme and related land development has modified the land area and reduced the potential for in situ values that are important to Ngai Tahu. The S42A report, in the absence of any submission from Ngai Tahu interests, identified cross mixing of waters as a possible area of cultural concern. However, as described in #11.19, we consider the diversion of Lake Waitaki water into the scheme area and ultimate discharge back to the Waitaki River downstream of Lake Waitaki does not constitute a cross mixing of water. The water remains within the Waitaki catchment, entering tributaries of the Waitaki River and eventually returning to the Waitaki River.
- 15.6 The proposal to apply conditions and implement FEMP’s to mitigate effects of the proposal will benefit the cultural interests of the tangata whenua.
- (f) The protection of historic heritage from inappropriate subdivision, use and development.*
- 15.7 We consider that the matters of national importance have been adequately addressed by the applicant. The scheme has been in existence for 40 years, mitigation of impacts on wetlands, lakes and rivers can be achieved through greater efficiencies, conditions and the implementation of Farm Environmental Management Plans (FEMP’s).

Section 7 – Other Matters

- 15.8 Section 7 list the following other matters that we shall “have particular regard to”:
- (a) Kaitiakitanga:*
 - (aa) The ethic of stewardship:*
 - (b) The efficient use and development of natural and physical resources:*
 - (ba) The efficiency of the end use of energy:*
 - (c) The maintenance and enhancement of amenity values:*

(d) Intrinsic values of ecosystems:

(e) Repealed.

(f) Maintenance and enhancement of the quality of the environment:

(g) Any finite characteristics of natural and physical resources:

(h) The protection of the habitat of trout and salmon:

(i) The effects of climate change:

(j) The benefits to be derived from the use and development of renewable energy.

- 15.9 We consider the principle issue with the proposal is concerned with improving the efficiency of water use, where any reduction in the annual volume will potentially release water for other users, including those in the Upper Waitaki catchment. Efficiency achieved through conversion to spray will also have a consequent reduction in contaminated runoff water discharging to receiving waters and ecosystems. A counter balancing factor is the cost of energy related to converting gravity driven border dyke to spray. The limitations of the present fish screen to reduce or avoid fish entering the schemes canal and races can be mitigated by appropriate conditions that allow Fish & Game to salvage fish at the annual dewatering of the schemes canals.
- 15.10 The impact on kaitiakitanga has been less apparent given there were no submissions from either the local Runanga or the iwi authority to clarify what cultural values might be at risk. This can be tempered by the fact that the scheme has been in operation for 40 years and any specific effects on cultural values would likely have been evident to Ngai Tahu interests and, if of sufficient magnitude, resulted in a submission. The provisions of the WCWARP are clear on tangata whenua (Ngai Tahu) values and the need to have regard for these where they are known to occur.

Section 8 – Treaty of Waitangi

- 15.11 Finally, section 8 RMA requires that we shall take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi).
- 15.12 The applicant gave no indication that Ngai Tahu interests were consulted during the preparation of the proposal. The S42A report indicates that several of the local Runanga and the iwi authority Te Runanga o Ngai Tahu were served with notice of the applications. The S42A report included a (non exhaustive) list of parties who were served notice of the applications. The Runanga in whose takiwa the proposal is located, Te Runanga o Moeraki, were not included in that list. It is uncertain if that demonstrated an oversight or simply the fact that it was a non exhaustive list of recipients of the notice. However, the tribal authority, Te Runanga o Ngai Tahu, and two other Runanga whose takiwa is located north of this site were served notice.
- 15.13 Close adherence to the provisions of the WCWARP and NRRP in respect of tangata whenua values and the provisions that seek improved environmental outcomes from resource consent proposals inform the proposed mitigation measures and we believe serve to protect the interests of Ngai Tahu.

Section 5 – Purpose of the RMA

- 15.14 Turning now to the overall purpose of the RMA, that is, “to promote the sustainable management of natural and physical resources”. In turn, “sustainable management” means:

“... managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety while –

(a) Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and

(b) Safeguarding the life-supporting capacity of air, water, soil and ecosystems; and

- (c) *Avoiding, remedying, or mitigating any adverse effects of activities on the environment*”.

15.15 In relation to the above and taking into account our decision to reduce the water take over time, we make the following further comments:

- (a) We consider the use of the water take by the applicant (as determined by us within this decision) is consistent with the purpose of sustainable management.
- (b) UWCIC irrigation will make a contribution to the overall regional (Canterbury) wellbeing: and
- (c) The natural and physical resources of the UWCIC site (water and land resources) will all be sustained.

15.16 This leaves section 5(2)(c) RMA and the obligation to avoid, remedy or mitigate any adverse effects of activities on the environment. Based on our evaluation regarding the effects on Lake Waitaki and the discharge points in relation to the cumulative effects of irrigation on the receiving water bodies, we find that the mitigation proposed in the FEMP and other proposed conditions regarding cumulative and local water quality effects will satisfy section 5(2)(c) RMA.

16 OVERALL EVALUATION

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

- (a) Taking into account all the relevant matters identified under s104;
- (b) Avoiding consideration of any irrelevant matters;
- (c) Giving different weight to the matters identified under s104 — depending on the Court’s opinion as to how they are affected by the application of ss 5(2)(a), (b), and (c) and ss 6-8 RMA — 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 The principle matters in contention with the proposal are:

- (a) The annual volume of 26.3Mcm applied for does not reflect the reasonable use test and effective use requirements of WCWARP. The applicant raises the point that the investment and positive effects of the existing activity should be taken into account. The scheme infrastructure with its lengthy canal conveyance system and by-wash requirements results in higher losses than usual. The canal system has the positive aspect of being gravity driven, while the piped extension is reliant on pumping. The on farm application is predominantly by border dyke while the piped “extension” supplies those properties that have converted to spray. The WCWARP allocation to the scheme of 19.4Mcm is calculated for on farm use and does not take into account the scheme conveyance and by-wash losses. The cost of converting border dyke to spray would be significant for the individual properties. Equally, achieving infrastructure efficiency improvements will require lead in time and potentially significant investment. Submitters particularly those subject to the 275Mcm allocation limit in the Upper Waitaki catchment were concerned that the reasonable use test and effective use issues with the application did not result in fewer people and fewer economic enterprises gaining access to the allocated water. We support the granting of these consents for a limited period with conditions that include an assessment of the design and operation of the scheme to enable the efficiency expectations of the WCWARP to be achieved.
- (b) As well as dealing with annual volumes, we do think that the applicant’s lack of attention and focus on the objectives and policies of the WCWARP (which seek efficiencies) requires to be addressed. We have endeavoured to do that within the condition set, which requires the applicant to undertake investigations and complete works identified by those investigations to bring about efficiency gains so that the scheme can more readily satisfy the thrust of the objectives and policies of the allocation plan. We have, we think, provided sufficient time for that to occur. We also

think we have placed sufficient weight on the value of the investment in the existing infrastructure.

- (c) Because the provisions of the WCWARP, particularly those that relate to technical efficiency, can only be implemented when consents expire and/or new replacement applications are lodged, we find ourselves in some difficulty given the applicant's approach to technical efficiency issues. As we have already said, it is disappointing the applicant has not already undertaken action steps to gain efficiencies. Also, we think the time period over which the applicant proposes to bring about efficiencies is too long. In addition, we think that there is a real lack of detail about how those efficiency gains would be obtained such that we cannot utilise that information to include conditions to achieve those efficiency gains. Given those comments, we are driven to the conclusion that a grant of consent in all of the circumstances should be for short term because the efficiency expectations of the WCWARP are not, in our view, being met. However, in recognition of the value of investment and in recognition of some of the circumstances that the applicant puts forward in explanation as to why efficiency opportunities have not been given effect to, we have concluded a short term consent of five years is appropriate. We hope that this acts as an incentive for the applicant to urgently undertake steps that will lead to the efficiency objectives of the WCWARP being met. Certainly, it would be our expectation that upon renewal the applicant will have completed assessment works and begun commencement of works in that regard.
 - (d) The effectiveness of the existing fish screen fitted to the foot of the siphon, which in turn is attached to the structure of the Waitaki Dam, has been a matter of contention. The evidence of fish being resident in the scheme's canal points to the possibility that this occurs through fish being sucked up by the siphon and discharged into the canal; although it is not clear if it is an issue for the exotic fishery or the native fishery also. Currently, the potential stranding of fish when the scheme is dewatered is mitigated by salvage operations being conducted by Fish & Game. Making physical improvements to the fish screen is complicated by the siphon being attached to the Waitaki Dam and its relative proximity to the hydro intake structures. Meridian also noted that the volume of water entering the siphon is minor compared to that which passed through the Waitaki Dam structure with no screening. The option for locating a fish pass in the canal would require a return from the canal to the Waitaki River, which would also require a continuous flow of water; effectively, an additional volume for which the scheme has not provided. We accept Meridian's argument that they do not want the integrity of the Waitaki Dam structure being modified; it is also evident that to attempt modification of the screen, which is located near the Waitaki Dam hydro intake structures, would involve significant risk to anyone attempting to undertake such a task. However, due to the paucity of information provided about the actual details and effectiveness of the fish screen/mesh we are unable to make a considered decision on this aspect of the application. Therefore we support a condition requiring reasonable notice time be given to Fish & Game to allow fish salvage at times when the scheme is dewatered.
 - (e) The discharge of by-wash to water and or dry river beds of water, which is principally of the same quality that is taken from Lake Waitaki, has a less than minor effect on the ecosystems and receiving environment.
 - (f) The positive effects of the scheme to the individual shareholders' agricultural activities and property values from the scheme that has been operating for 40 years is accepted as a significant feature. The benefit extends to the local community economy.
- 16.3 We have weighed the various matters in contention and looked at the scale or degree of conflict while noting that this is an application for replacement consents on an activity that has been occurring for 40 years. We agree with the applicant where they acknowledge the need to make improvements to the efficiency to the scheme and on the individual farms. We accept that the cost and logistics of achieving incremental efficiency improvements will potentially require significant investment and time to achieve such outcomes, and recognise this in the duration of the consent and conditions.
- 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 that best achieves the purpose of the Act is to grant consent, subject to conditions.

17 DECISIONS AND REASONS

- 17.1 Pursuant to the powers delegated to us by the Canterbury Regional Council:
- 17.2 For all of the above reasons, we **GRANT** consent, pursuant to sections 104, 104B, and 108 of the Resource Management Act 1991, to Upper Waitaki Community Irrigation Company to:
- (a) take water from Lake Waitaki at a maximum rate not exceeding 1,450 litres per second, and a volume not exceeding 125,280 cubic metres per day, and 22,000,000 cubic metres between 15 August and the following 30 May, at or about map reference NZMS 260 I40:0592-0981 at the abstraction point identified on Plan CRC001128a and to apply that water to the scheme irrigation area as identified on Plan CRC001128b and Plan CRC001128c.; and
 - (b) discharge surplus water from the irrigation canal into:
 - (i) the Kurow River at a maximum rate of 100 litres per second plus flood inflows, at or about map reference NZMS 260 I40:1089-0322 as identified on Plan CRC092847a.
 - (ii) Malcolm Creek via Long Gully at a maximum rate of 100 litres per second plus flood inflows, at or about map reference NZMS 260 I40:1193-9928 as identified on Plan CRC092849a.
 - (iii) the Otiake River at a maximum rate of 100 litres per second plus flood inflows, at or about map reference NZMS 260 I40:1428-9805 as identified on Plan CRC092850a.
 - (iv) the Otekaieke River at a maximum rate of 100 litres per second plus flood inflows, at or about map reference NZMS 260 I40:1730-9418 as identified on Plan CRC092851a.
 - (v) into Tewatapoki Creek at a maximum rate of 100 litres per second plus flood inflows, at or about map reference NZMS 260 I40:1970-9436 as identified on Plan CRC092852a.
- 17.3 The grant of consent is subject to the following **CONDITIONS**, pursuant to section 108 RMA, which conditions form part of this decision and consent.
- 17.4 The duration of this consent for water take and the five discharges, subject to all conditions being satisfied, is for a term of five years from the date of grant.

DECISION DATED AT CHRISTCHURCH THIS 20TH DAY OF SEPTEMBER 2011

Signed by:

Paul Rogers



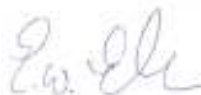
Dr James Cooke



Michael Bowden



Edward Ellison



CONDITIONS

CRC001128 – To take and Use Water

- 1) Take:
 - (a) Water shall only be taken from Lake Waitaki, at or about map reference, NZMS 260 I40: 0592-0981, at a rate not exceeding 1,450 litres per second, with a volume not exceeding 22 million cubic metres per year between 15th August and the following 30th May.
 - (b) Consent will expire five years from the date of grant.
- 2) Lake levels:
 - (a) The taking of water in terms of this permit shall cease whenever the level in Lake Waitaki falls below 227 metres above mean sea level, as assessed by Meridian Energy Limited and published on www.meridianenergy.co.nz/AboutUs/LakeLevels.
- 3) Use:
 - (a) Water shall be used only for spray and border-dyke irrigation of 1,925 hectares of crops and pasture for grazing stock as described in the application, on the area of land identified as the Scheme Area and shown in attached plans CRC001128A CRC001128B and CRC001128C, which form part of this consent.
 - (b) The irrigation system used to distribute water in terms of this consent shall not be used to distribute effluent, fertiliser or any other contaminant.
- 4) Measuring devices:
 - a) The consent holder shall before the first exercise of this consent:
 - (i) Install a water flow measuring device in a location that will enable the determination of the continuous rate of flow and volume of water being diverted within an accuracy of 10%; and
 - (ii) The measuring device shall, as far as 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; and
 - (iii) Install a tamper-proof electronic recording device such as a data logger(s) that shall time stamp a recording from the water level measuring device at least once every 15 minutes, and have the capacity to hold at least one season's data of water taken as specified in clauses 4(b)(i) and 4(b)(ii), or which is telemetered, as specified in clause (b)(iii).
 - b) The recording device(s) shall:
 - i) be set to wrap the data from the measuring device(s) such that the oldest data will be automatically overwritten by the newest data (i.e. cyclic recording); and
 - ii) 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 Councils form for Water Metering Data Collection; and be readily accessible to be downloaded by the Canterbury Regional Council or by a person authorized by the Canterbury Regional Council: RMA Compliance and Enforcement Manager; and
 - iii) 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.

- iv) flow at the measuring site shall be gauged at least every three months whilst this consent is being exercised, and at any other time when required as determined by a site inspection, to be carried out at least once every month.
 - v) gaugings and site inspections shall be carried out in accordance with the following manuals: Hydrologists Field Manual (NIWA 1991) and Procedure for Rating a Flow Station (NIWA 1993) or any equivalent publication
- c) The measuring and recording device(s) described in clauses 4(a) and (c) shall be available for inspection at all times by the Canterbury Regional Council including access to the data recorded in accordance with clause (b).
- d) All data from the recording devices described in clauses 4(a) and (b), 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.
- 5) Certificate of compliance – rate of water taken/operating as specified:
- (a) Within one month of the commencement of this consent, at two-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:
 - (i) The water measuring device is measuring the rate of water taken as specified in condition 4(a)(i) to (iii) inclusive; and
 - (ii) The tamper-proof electronic recording device is operating as specified in condition 4(b)(i) to (iv) inclusive.
- 6) Certificate of compliance – installation of device(s) and retrieval of data:
- (a) Within one month of the installation of the measuring or recording device(s), or any subsequent replacement measuring or recording device(s), and at five-yearly intervals thereafter, and 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, and demonstrating by means including a clear diagram, that:
 - (i) The measuring and recording device(s) has been installed in accordance with the manufacturer’s specifications; and
 - (ii) Data from the recording device(s) can be readily accessed and/or retrieved in accordance with condition 4.
- 7) Fertiliser:
- (a) Fertiliser shall be applied in accordance with a nationally recognized quality assurance program for fertilizer application.
 - (b) For the purposes of this condition a quality assurance program is:
 - i. The New Zealand Fertiliser Manufacturers’ Research Association Code of Practise for Fertiliser Use; or
 - ii. The Code of Practise for Nutrient Management (With Emphasis on Fertiliser Use) NZFMRA 07; or
 - iii. Any other method approved by the Canterbury Regional Council.
- 8) Field capacity:
- (a) The consent holder shall take all practicable steps to:
 - (i) Ensure that the volume of water used for irrigation does not exceed that

required for the soil to reach field capacity. In this condition field capacity means the soil moisture content in the crop root zone after drainage (1-3 days) after thorough wetting (such as a large rainfall event that exceeds the root zone water holding capacity when the macro pores contain air and micro pores water); and

- (ii) Avoid leakage from pipes and structures; and
 - (iii) Avoid the application of water onto non-productive land such as impermeable surfaces and river or stream riparian strips.
- 9) Notice:
- (a) The Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, shall be informed immediately before the first exercise of this consent by the consent holder.
- 10) Fish recovery:
- (a) The consent holder shall notify Central South Island Fish & Game Council at least five clear working days prior to the taking of water under Condition (1) ceasing completely to enable fish recovery within the races, canals and distribution network of the irrigation scheme to take place.
- 11) Modelling nitrate-nitrogen for properties irrigating equal to or greater than 20 hectares:
- (a) With the exception of the first period ending 30 June during which this consent is first exercised, for each preceding 12 month period ending 30 June:
 - (i) An "*approved method*" shall be used to model the nitrate-nitrogen concentration in the soil drainage water below the plant root zone and to prepare a nutrient budget for the "*subject land*" for that prior 12 month period; and
 - (ii) Records shall be maintained throughout the year of the farm management practices and associated data that will be used as input to the "*approved method*"; and
 - (iii) Predictions shall be made of the farm management practices that will be used for the following 12 month period to provide input data to the "*approved method*" taking regard of the need to reduce nitrate leaching below the plant root zone where possible.
 - (b) A record of the predicted and measured input data, the calculations undertaken and the calculated nitrate-nitrogen concentration in the soil drainage water below the plant root zone in accordance with clause (a) shall be:
 - (i) prepared by 31 August each year; and
 - (ii) certified as an accurate record by a suitably qualified person; and
 - (iii) maintained for the property for the duration of the consent; and
 - (iv) provided to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, by 30 September each year, or upon request.
 - (c) For the purposes of Condition (11)(a) an "*approved method*" is:
 - (i) 'Overseer' (AgResearch); or
 - (ii) The Soil Plant Atmosphere Model (SPASMO- HortResearch); or
 - (iii) Any other method approved by the Canterbury Regional Council.
 - (d) For the purposes of this condition, the "*subject land*" means the area that is irrigated between 1 July and 30 June of the following year.

- 12) Irrigation infrastructure:
- a) All new irrigation infrastructures shall be designed and accredited by a qualified professional, and installed in accordance with the accredited design. The design shall take into account the specific requirements of the properties soil types.
- 13) Scheme management plan:
- (a) Prior to the first exercise of this consent, the consent holder shall prepare and submit to the Canterbury Regional Council, a Scheme Management Plan. The Scheme Management Plan shall provide details of the practices and procedures to be put into place to operate the water take and delivery of water to the Scheme area and to monitor and manage the environmental effects arising from the use of the water within the Scheme, in order to ensure compliance with the conditions of this consent and to minimise the potential for adverse effects on the environment arising from the exercise of this consent.
- (b) The Scheme Management Plan shall, as a minimum, address the following matters:
- i. Operational requirements for the take of water for the Scheme from Lake Waitaki.
 - ii. Operational rules for the Scheme including responsibilities and arrangements for water management and distribution, including allocation during water shortages;
 - iii. A template to be used as the basis for individual Farm Environmental Management Plans (FEMPs). That template shall have the following objectives for which the FEMP will develop methods to:
 - Achieve technically efficient use of water, minimising runoff and drainage;
 - Minimise contamination of groundwater and surface water, particularly in terms of faecal contamination, nitrogen and phosphorus;
 - Minimise nutrient losses to water while managing soil fertility to optimise pasture and crop productivity;
 - Minimise adverse effects on groundwater and surface water levels;
 - Maintain the soil in good physical condition;
 - Minimise adverse effects on water bodies and riparian areas through healthy riparian margins and fenced buffer strips;
 - Safeguard significant indigenous biodiversity and ecosystem values within the Scheme area; (replace irrigation area with scheme area)
 - Provide information to the consent holder including land use, area irrigated, stock numbers, and fertiliser use.
 - Provide procedures to ensure the preparation, implementation, regular review, updating and obtaining of consent holder approval for individual FEMPs for all properties receiving water in terms of this consent.
- (c) The Canterbury Regional Council may review the scheme management plan and request the consent holder to modify the scheme management plan prior to the first exercise of this consent.
- 14) Farm environmental management plans (FEMPs)
- (a) Prior to first exercise of this consent, properties irrigating equal to or greater than 20 hectares receiving water from the Scheme, the consent holder shall have prepared and submitted to the Canterbury Regional Council a Farm Environmental Management Plan (FEMP) for each of those properties.

- (b) The FEMPs shall provide details of the practices and procedures to be put into place to manage the environmental effects arising from the use of the water within the irrigated area, in order to ensure compliance with the conditions of consent and to minimise the potential for adverse effects on the environment arising from the exercise of this consent.
- (c) The FEMPs shall include methods to achieve and meet all of the conditions of this resource consent.
- (d) The FEMPs shall include a calculation showing the volume of water considered reasonable and efficient.
- (e) The Canterbury Regional Council may review the FEMPs and request the consent holder to modify the FEMPs prior to the first exercise of this consent.

15) Fencing and riparian planting:

- (a) By, 15 August 2012, within the irrigated area on each property, the consent holder shall ensure that the shareholder or property owner shall undertake the following:
 - (i) Permanent fencing shall be erected at a minimum setback distance of 5 metres from the edge of any natural, permanently flowing, surface water feature, including any wetland.
 - (ii) Riparian planting shall be carried out within fenced areas.
 - (iii) Temporary fencing will be erected when stock are grazing areas of the property where there is access to any other waterways or water feature of any kind not included within Condition 15(a) above.
 - (iv) All fencing will be maintained in a good state of repair.
- (b) The consent holder will by 15 August 2012 fence all scheme races to exclude stock and take any other steps required to prevent any increase in faecal coliforms or sedimentation to the scheme races.

16) Water supply agreement:

- (a) Before exercising this consent, a water supply agreement between the consent holder and owners of properties where water is to be used ('water user') shall be entered into and shall include terms which will achieve the following outcomes:
 - i. That no water from the Upper Waitaki Community Irrigation Scheme shall be provided by the consent holder to any property unless a FEMP has been prepared for the water user in accordance with the template prepared under Condition 13(b)(iii) and Condition 14 and has been approved by the consent holder and reviewed by the Canterbury Regional Council;
 - ii. A requirement for an audit to be undertaken by an appropriately qualified independent person to determine compliance by each water user with the provisions of their FEMP. The audit shall take place each year for the first 3 years after taking of water commences under this consent and thereafter at least once every 5 years. A copy of the audit shall be provided to the Canterbury Regional Council: attention: the RMA Compliance and Enforcement Manager.
 - iii. Provision for access on to the property of the water user by the consent holder's Scheme Manager or their nominated representative, in order to undertake such an audit and/or to undertake spot checks of compliance with the implementation requirements of the FEMP and/or to undertake environmental monitoring in accordance with the requirements of this resource consent;
 - iv. A provision that all new irrigation infrastructures shall be designed and accredited by a qualified professional, and installed in accordance with the accredited design. The design shall take into account the specific requirements of the property's soil types.

- v. A provision that if the water user is taking water using existing irrigation infrastructure they shall obtain an evaluation report prepared by a certified irrigation evaluator. The evaluation shall determine the system's current performance in accordance with the Code of Practice for Irrigation Evaluation 2005. This report shall be obtained within 3 months after water is first delivered to the property. Any recommendations identified in the report shall be implemented within 12 months from the date of receipt of the report. A copy of the report shall be given to the Canterbury Regional Council: attention the Compliance and Enforcement Manager.
 - vi. A provision enabling the consent holder to either not initially supply or once supply has commenced, to restrict or cease the supply of water to a property in the circumstances where there is a non-compliance with conditions 11, 12, 13, 14 and 15.
 - vii. The annual volume of water provided to each property by the consent holder shall not exceed the volume identified in the FEMP for that property.
 - viii. Any change of party to a Water Supply Agreement under these conditions shall be notified to the Canterbury Regional Council within one month of that change.
- 17) Investigation of scheme efficiency and improvements: Before the exercise of this consent, the consent holder will:
- (a) No later than three months of the grant of this consent, the consent holder shall appoint suitably qualified person(s) experienced in the design and operation of border-dyke and spray irrigation schemes to undertake, within 3 months of the date of granting of this consent, a written assessment of the design and operation of the UWC irrigation scheme. The assessment shall identify:
 - (i) Any physical improvements (including piping options where the greatest losses are occurring) that can be made to the scheme conveyance system to reduce the loss of water to groundwater to no more than 10% of the authorised water abstracted under this consent;
 - (ii) Measures which can be implemented in the management of the scheme to reduce the losses of water to no more than 10% of the water abstracted, excluding conveyancing;
 - (iii) On-farm management measures which can be implemented to ensure that water is used to meet the efficiency expectations of the WCWARP and a timeline in which action steps to secure those efficiencies will be completed.
 - (iv) Variations of the soil water holding capacity within the irrigation areas together with application rates and timing between applications.
 - (b) The audit should consider the whole scheme including but not limited to, intake structures, gates, flow rates along channels and borders, length and gradient of borders, control mechanisms, discharge of wipe-off water and length of rotation.
 - (c) The audit report, inclusive of the action steps and timeline required, will be peer reviewed by an independent suitably qualified person and that person will confirm the results of the audit report and/or recommend changes, which changes the consent holder will implement in accordance with the timeframe provided by that independent expert.
 - (d) A copy of all reports shall be forwarded to the Canterbury Regional Council within one month of completion of the report, marked for the attention of the Compliance Officer.
- 18) Review:
- (a) The Canterbury Regional Council may, once per year, on any of the five last working days of May or November, serve notice of its intention to review the conditions of this consent for the purpose of dealing with any adverse effect on the environment that may arise from the exercise of the consent and which is appropriate to deal with at a later stage.

- (b) In undertaking any review, the Canterbury Regional Council may have regard to all FEMPs prepared under Conditions 13(b) and 14 and the findings of the investigation required by Condition 18(b) and may consequently require amendment to the conditions.

19) Lapsing:

- (a) The lapsing date for the purposes of section 125 shall be 30 June 2015.

CRC092847 – To Discharge Water To Water)

- 1) Discharge:
 - a) Water shall only be discharged to the Kurow River at or about map reference NZMS 260 140:1089-0322 as shown on Plan CRC092847A.
 - b) The discharge shall only be of water taken under resource consent CRC001128 and shall only be discharged from the Upper Waitaki Community Irrigation Scheme race.
 - c) Water shall only be discharged at a rate not exceeding 100 litres per second.
- 2) Erosion control:
 - a) All practicable measures shall be undertaken to avoid erosion of the bed or banks of the Kurow River occurring as a result of the discharge.
 - b) In the event of any erosion occurring to the bed or banks of the Kurow River as a result of the discharge, the consent holder shall be responsible for rectifying the situation as soon as practicable.
- 3) Water quality:
 - a) The discharge, after reasonable mixing, shall not cause a change in the colour or a reduction of the clarity of the receiving water body.
- 4) Measuring devices:
 - a) The consent holder shall before the first exercise of this consent:
 - (i) Install a water measuring device in a location that will enable the determination of the continuous rate of flow and volume of water being discharged within an accuracy of 10 percent; and
 - (ii) The measuring device shall, as far as 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.
 - (iii) Take a reading from the measuring device at least once per week when a discharge is occurring; record the date and the reading either electronically or in a log book kept for that purpose; or supply this date to the Canterbury Regional Council. Attention: RMA Compliance and Enforcement Manager, each year during the month of June, or when requested in writing.
 - (iv) Ensure that the water level measuring device is accessible to the Canterbury Regional Council at all times for inspection.
 - (v) Ensure that the water level measuring device is installed, maintained and operated throughout the duration of the consent in accordance with the manufacturer's instructions.
 - (vi) Take all practicable measures to ensure that the water level measuring device is fully functional at all times.
- 5) Certificate of compliance – rate of water discharged:
 - a) Within one month of the commencement of this consent, at two-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 the water measuring device is measuring that rate of water discharged as specified in condition (4)(a).
- 6) Certificate of compliance – installation of measuring device

- a) Within one month of the installation of the measuring device(s), or any subsequent replacement measuring device(s), and at five yearly intervals thereafter, and 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, and demonstrating by means of a clear diagram, that the measuring device(s) has been installed in accordance with the manufacturer's specifications.
- 7) Review:
- a) The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.
- 8) Lapsing:
- a) The lapsing date for the purposes of section 125 shall be 30 June 2015.
- 9) Duration:
- a) The term of this resource consent shall be for a term of five years from the date of grant.

CRC092849 – To Discharge Water To Water

- 1) Discharge:
 - a) Water shall only be discharged to Malcolm Creek via Long Gully at or about map reference NZMS 260 140:1193-9928, as shown on Plan CRC092849A.
 - b) The discharge shall only be of water taken under resource consent CRC001128 and shall only be discharged from the Upper Waitaki Community Irrigation Scheme race.
 - c) Water shall only be discharged at a rate not exceeding 100 litres per second.
- 2) Erosion control:
 - a) All practicable measures shall be undertaken to avoid erosion of the bed or banks of Malcolm Creek via Long Gully occurring as a result of the discharge.
 - b) In the event of any erosion occurring to the bed or banks of Malcolm Creek via Long Gully, as a result of the discharge, the consent holder shall be responsible for rectifying the situation as soon as practicable.
- 3) Water quality:
 - a) The discharge, after reasonable mixing, shall not cause a change in the colour or a reduction of the clarity of the receiving water body.
- 4) Measuring device:
 - a) The consent holder shall before the first exercise of this consent:
 - (i) Install a water measuring device in a location that will enable the determination of the continuous rate of flow and volume of water being discharged within an accuracy of 10 percent; and
 - (ii) The measuring device shall, as far as 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.
 - (iii) Take a reading from the measuring device at least once per week when a discharge is occurring; record the date and the reading either electronically or in a log book kept for that purpose; or supply this date to the Canterbury Regional Council. Attention: RMA Compliance and Enforcement Manager, each year during the month of June, or when requested in writing.
 - (iv) Ensure that the water level measuring device is accessible to the Canterbury Regional Council at all times for inspection.
 - (v) Ensure that the water level measuring device is installed, maintained and operated throughout the duration of the consent in accordance with the manufacturer's instructions.
 - (vi) Take all practicable measures to ensure that the water level measuring device is fully functional at all times.
- 5) Certificate of compliance – rate of water discharged
 - a) Within one month of the commencement of this consent, at two-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 the water measuring device is measuring that rate of water discharged as specified in condition (4)(a).

- 6) Certificate of compliance – measuring device installation
 - a) Within one month of the installation of the measuring device(s), or any subsequent replacement measuring device(s), and at five yearly intervals thereafter, and 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, and demonstrating by means of a clear diagram, that the measuring device(s) has been installed in accordance with the manufacturer's specifications.

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

- 8) Lapsing:
 - a) The lapsing date for the purposes of section 125 shall be 30 June 2015.

- 9) Duration:
 - a) The term of this resource consent shall be for a term of five years from the date of grant.

CRC092850 – To Discharge Water to Water

- 1) Water discharge:
 - a) Water shall only be discharged to the Otiake River at or about map reference NZMS 260 140:1428-9805, as shown on Plan CRC092850A.
 - b) The discharge shall only be of water taken under resource consent CRC001128 and shall only be discharged from the Upper Waitaki Community Irrigation Scheme race.
 - c) Water shall only be discharged at a rate not exceeding 100 litres per second.
- 2) Erosion control:
 - a) All practicable measures shall be undertaken to avoid erosion of the bed or banks of the Otiake River occurring as a result of the discharge.
 - b) In the event of any erosion occurring to the bed or banks of the Otiake River, as a result of the discharge, the consent holder shall be responsible for rectifying the situation as soon as practicable.
- 3) Water quality:
 - a) The discharge, after reasonable mixing, shall not cause a change in the colour or a reduction of the clarity of the receiving water body.
- 4) Measuring device:
 - a) The consent holder shall before the first exercise of this consent:
 - (i) Install a water measuring device in a location that will enable the determination of the continuous rate of flow and volume of water being discharged within an accuracy of 10 percent; and
 - (ii) The measuring device shall, as far as 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.
 - (iii) Take a reading from the measuring device at least once per week when a discharge is occurring; record the date and the reading either electronically or in a log book kept for that purpose; or supply this date to the Canterbury Regional Council. Attention: RMA Compliance and Enforcement Manager, each year during the month of June, or when requested in writing.
 - (iv) Ensure that the water level measuring device is accessible to the Canterbury Regional Council at all times for inspection.
 - (v) Ensure that the water level measuring device is installed, maintained and operated throughout the duration of the consent in accordance with the manufacturer's instructions.
 - (vi) Take all practicable measures to ensure that the water level measuring device is fully functional at all times.
- 5) Certificate of compliance – rate of water discharged
 - a) Within one month of the commencement of this consent, at two-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 the water measuring device is measuring that rate of water discharged as specified in condition (4)(a).

- 6) Certificate of compliance – measuring device installation
 - a) Within one month of the installation of the measuring device(s), or any subsequent replacement measuring device(s), and at five yearly intervals thereafter, and 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, and demonstrating by means of a clear diagram, that the measuring device(s) has been installed in accordance with the manufacturer's specifications.

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

- 8) Lapsing:
 - a) The lapsing date for the purposes of section 125 shall be 30 June 2015.

- 9) Duration:
 - a) The term of this resource consent shall be for a term of five years from the date of grant.

CRC092581 – To Discharge Water to Water

- 1) Water discharge:
 - a) Water shall only be discharged to the Otekaieke River at or about map reference NZMS 260 140:1730-9418, as shown on Plan CRC092851A.
 - b) The discharge shall only be of water taken under resource consent CRC001128 and shall only be discharged from the Upper Waitaki Community Irrigation Scheme race.
 - c) Water shall only be discharged at a rate not exceeding 100 litres per second.
- 2) Erosion control:
 - a) All practicable measures shall be undertaken to avoid erosion of the bed or banks of the Otekaieke River occurring as a result of the discharge.
 - b) In the event of any erosion occurring to the bed or banks of the Otekaieke River, as a result of the discharge, the consent holder shall be responsible for rectifying the situation as soon as practicable.
- 3) Water quality:
 - a) The discharge, after reasonable mixing, shall not cause a change in the colour or a reduction of the clarity of the receiving water body.
- 4) Measuring device:
 - a) The consent holder shall before the first exercise of this consent:
 - (i) Install a water measuring device in a location that will enable the determination of the continuous rate of flow and volume of water being discharged within an accuracy of 10 percent; and
 - (ii) The measuring device shall, as far as 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.
 - (iii) Take a reading from the measuring device at least once per week when a discharge is occurring; record the date and the reading either electronically or in a log book kept for that purpose; or supply this date to the Canterbury Regional Council. Attention: RMA Compliance and Enforcement Manager, each year during the month of June, or when requested in writing.
 - (iv) Ensure that the water level measuring device is accessible to the Canterbury Regional Council at all times for inspection.
 - (v) Ensure that the water level measuring device is installed, maintained and operated throughout the duration of the consent in accordance with the manufacturer's instructions.
 - (vi) Take all practicable measures to ensure that the water level measuring device is fully functional at all times.
- 5) Certificate of compliance – rate of water discharged
 - a) Within one month of the commencement of this consent, at two-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 the water measuring device is measuring that rate of water discharged as specified in condition (4)(a).

- 6) Certificate of compliance – measuring device installation
 - a) Within one month of the installation of the measuring device(s), or any subsequent replacement measuring device(s), and at five yearly intervals thereafter, and 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, and demonstrating by means of a clear diagram, that the measuring device(s) has been installed in accordance with the manufacturer's specifications.
- 7) Review:
 - a) The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.
- 8) Lapsing:
 - a) The lapsing date for the purposes of section 125 shall be 30 June 2015.
- 9) Duration:
 - a) The term of this resource consent shall be for a term of five years from the date of grant.

CRC092852 – To Discharge Water to Water

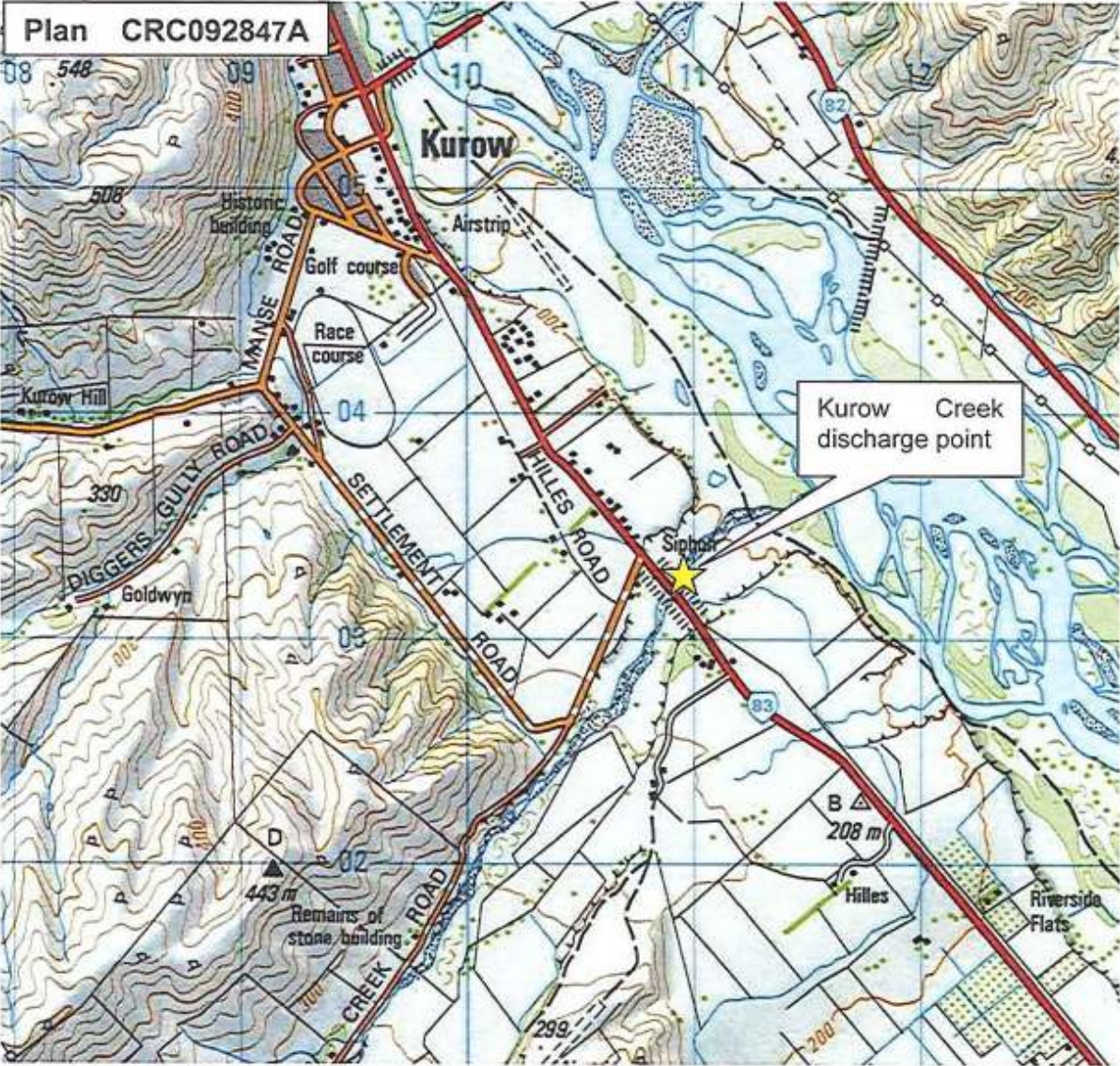
- 1) Water discharge:
 - a) Water shall only be discharged to Tewatapoki Creek at or about map reference NZMS 260 140:1970-9436 as shown on Plan CRC092852A.
 - b) The discharge shall only be of water taken under resource consent CRC001128 and shall only be discharged from the Upper Waitaki Community Irrigation Scheme race.
 - c) Water shall only be discharged at a rate not exceeding 100 litres per second.
- 2) Erosion control:
 - a) All practicable measures shall be undertaken to avoid erosion of the bed or banks of Tewatapoki Creek occurring as a result of the discharge.
 - b) In the event of any erosion occurring to the bed or banks of Tewatapoki Creek, as a result of the discharge, the consent holder shall be responsible for rectifying the situation as soon as practicable.
- 3) Water quality:
 - a) The discharge, after reasonable mixing, shall not cause a change in the colour or a reduction of the clarity of the receiving water body.
- 4) Measuring device:
 - a) The consent holder shall before the first exercise of this consent:
 - (i) Install a water measuring device in a location that will enable the determination of the continuous rate of flow and volume of water being discharged within an accuracy of 10 percent; and
 - (ii) The measuring device shall, as far as 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.
 - (iii) Take a reading from the measuring device at least once per week when a discharge is occurring; record the date and the reading either electronically or in a log book kept for that purpose; or supply this date to the Canterbury Regional Council. Attention: RMA Compliance and Enforcement Manager, each year during the month of June, or when requested in writing.
 - (iv) Ensure that the water level measuring device is accessible to the Canterbury Regional Council at all times for inspection.
 - (v) Ensure that the water level measuring device is installed, maintained and operated throughout the duration of the consent in accordance with the manufacturer's instructions.
 - (vi) Take all practicable measures to ensure that the water level measuring device is fully functional at all times.
- 5) Certificate of compliance – rate of water discharged:
 - a) Within one month of the commencement of this consent, at two-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 the water measuring device is measuring that rate of water discharged as specified in condition (4)(a).

- 6) Certificate of compliance – measuring device installation:
 - a) Within one month of the installation of the measuring device(s), or any subsequent replacement measuring device(s), and at five yearly intervals thereafter, and 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, and demonstrating by means of a clear diagram, that the measuring device(s) has been installed in accordance with the manufacturer's specifications.

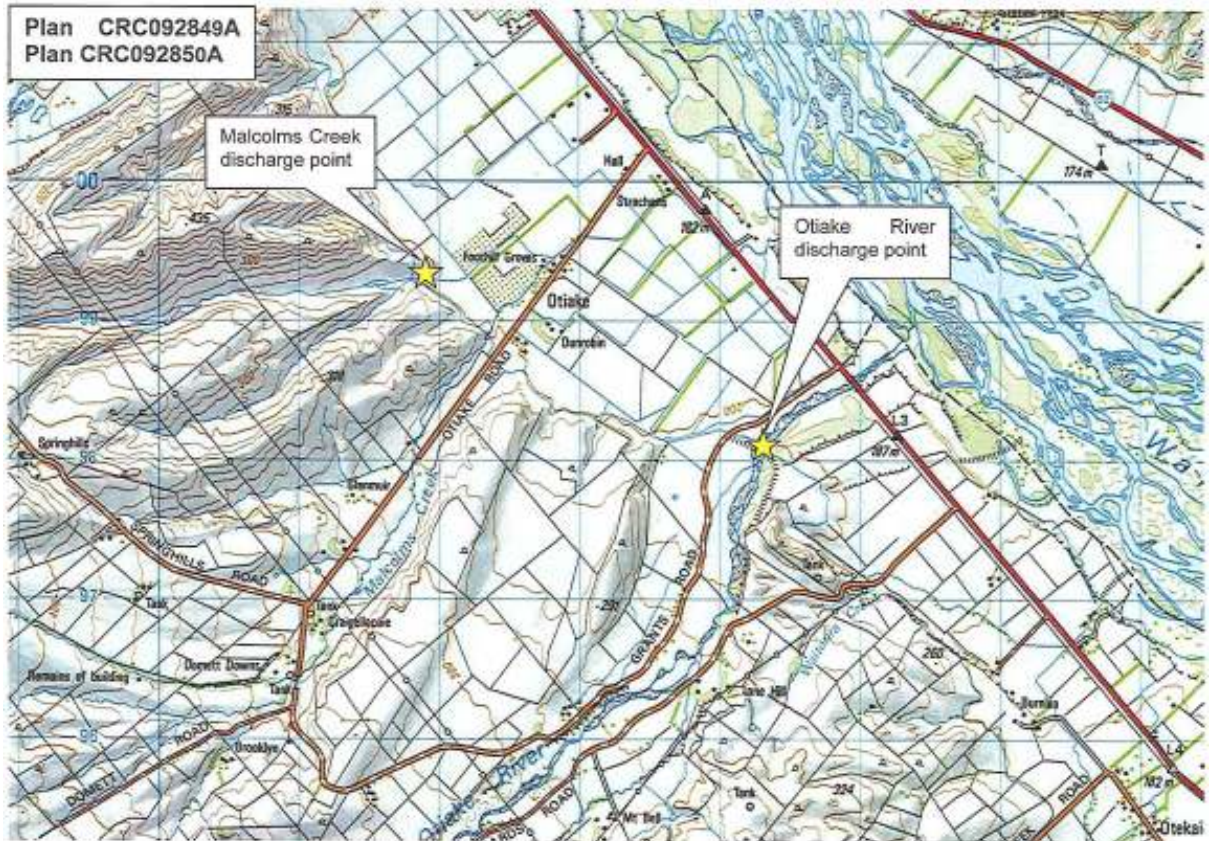
- 7) Review:
 - a) The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise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

- 8) Lapsing
 - a) The lapsing date for the purposes of section 125 shall be 30 June 2015.

- 9) Duration:
 - a) The term of this resource consent shall be for a term of five years from the date of grant.



PLAN CRC092849A & CRC092850A



PLAN CRC092851A & CRC092852A

