

BEFORE THE CANTERBURY REGIONAL COUNCIL

IN THE MATTER OF

The Resource Management Act 1991

AND

IN THE MATTER OF

applications by **Killermont Station Ltd** for a land use permit to undertake works in the bed of the Ahuriri River for the purposes of installing and maintaining an irrigation intake structure (**CRC041776**), and for a water permit to take and use surface water from the Ahuriri River (**CRC041777**) at Woolshed Block, Killermont Station, SH8, Omarama.

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

PART B - SITE SPECIFIC DECISION

TABLE OF CONTENTS

1	INTRODUCTION	3
2	THE PROPOSAL	3
3	DESCRIPTION OF THE ENVIRONMENT	5
4	PLANNING INSTRUMENTS.....	6
5	PRELIMINARY MATTERS	7
6	NOTIFICATION AND SUBMISSIONS.....	7
7	THE SECTION 42A REPORTS	8
8	THE APPLICANT’S CASE.....	11
9	SUBMITTERS	19
10	UPDATES TO THE SECTION 42A REPORTS	21
11	APPLICANT’S RIGHT OF REPLY.....	22
12	STATUTORY CONTEXT	24
13	EVALUATION OF EFFECTS	24
14	EVALUATION OF RELEVANT PLANNING INSTRUMENTS	30
15	EVALAUTION OF OTHER RELEVANT S104 MATTERS	33
16	PART 2 RMA.....	33
17	OVERALL EVALUATION	36
18	DECISIONS AND REASONS	37

1 INTRODUCTION

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

2 THE PROPOSAL

- 2.1 The applicant proposes to take and use water from the Ahuriri River for the spray irrigation of up to 300 hectares of crops and pasture, grazed by stock, excluding dairy cows, at Killermont Station, SH8, Omarama. The area of land being irrigated is referred to as the "Woolshed Block" throughout this decision.
- 2.2 There are two components to the proposal being the take and use of the water and the disturbance of the bed of the river to construct and intake structure. The location of the activities is illustrated in Figure 1 and described further below.

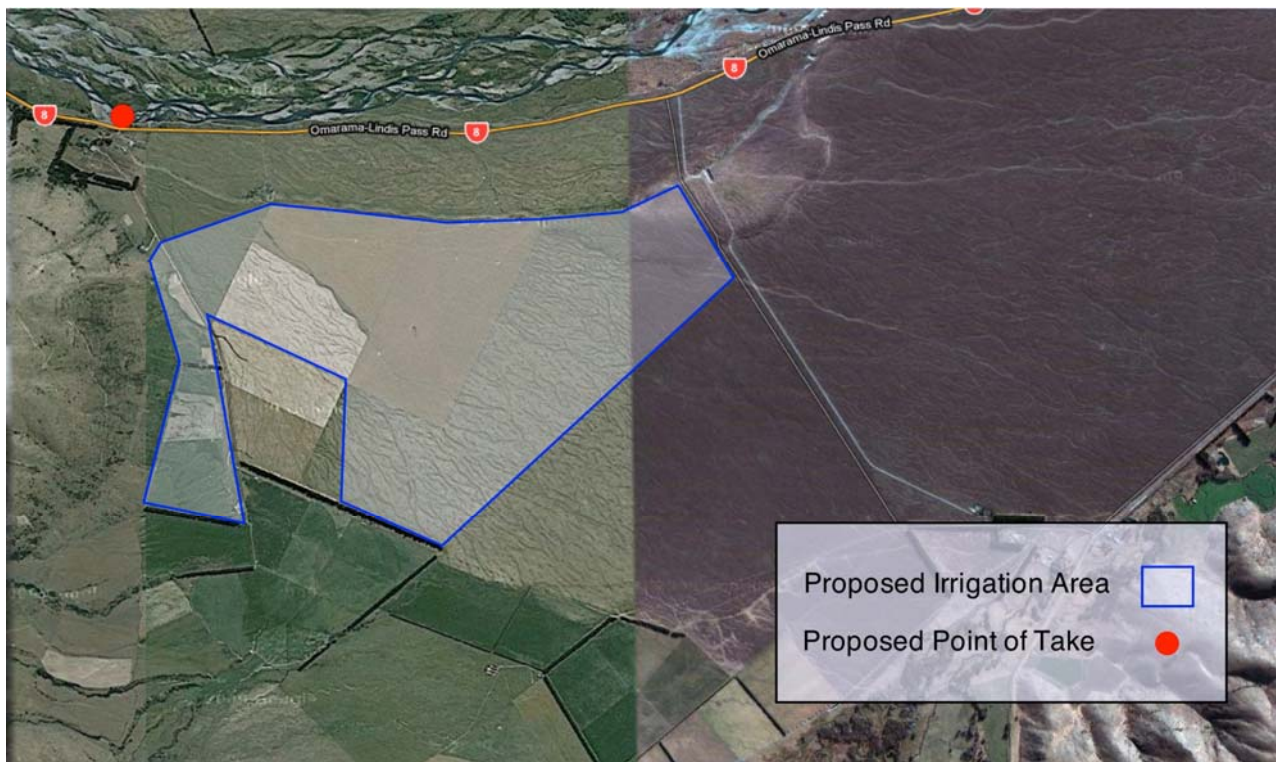


Figure 1. An aerial photo of the applicant's property showing the proposed point of take, the irrigation area, and the proximity to the Ahuriri River. This figure is intended as a visual guide. The application and applicant's evidence was used to determine actual locations.

Description of the take and use

- 2.3 Water will be taken from the Ahuriri River at a maximum rate of 175 litres per second, with a volume not exceeding 15,120 cubic metres per day and 1,680,000 cubic metres per year. The applicant is proposing to use either centre pivot or a k-line system to irrigate land within the 300ha irrigation area.
- 2.4 At the point of intake from the race, a buried pipe between 600 – 900 mm in diameter will deliver water under gravity to the irrigation area. A fish screen is already installed at the intake structure for the race.
- 2.5 The applicant has proposed to adopt the minimum flow for the Ahuriri River as described in the Ahuriri Water Conservation Order and to meter the take with an appropriate water meter. The irrigation season will be between mid September and mid April inclusive.

Description of the land use activity

- 2.6 The applicant has applied to disturb the bed of the Ahuriri River to construct and maintain an intake structure at or about map reference NZMS 260 H39: 552-283 downstream to NZMS 260 H39:558-278.
- 2.7 The applicant modified the intake structure proposal which we discuss further later in this decision.
- 2.8 The river bank at the proposed intake site would be stabilised with a rock and concrete deflector or gabion basket placed on the upstream and downstream side of the intake, to protect the intake from erosion.
- 2.9 The proposal also involves a temporary diversion of water during construction of the intake structure to minimise the work required in flowing water. Although a consent for this diversion has not specifically been sought, we have considered this activity as part of the proposal for the reasons outlined in our Part A decision.

The applications

- 2.10 There are two separate applications pursuant to Section 13 for a land use consent to use the bed of the river (CRC041776) and Section 14 RMA for a water permit to take and use surface-water (CRC041777). Consent is required under the Natural Resources Regional Plan (NRRP) and the Waitaki Catchment Water Allocation Regional Plan (WCWARP) respectively, as discussed further below.
- 2.11 The applications were both lodged with the Canterbury Regional Council (the Council) on 27 February 2004. The applications were publicly notified in August, 2007, there were a number of submissions that are referred to later in this decision. The applications requested a term until 30th April, 2025 (coincident with the expiry of Meridian Energy's consents for the operation of the Waitaki Power Scheme).

Modifications after notification

- 2.12 In the original water permit application, the applicant applied to take 3,150,000 m³ of water per year for irrigation, water harvesting and storage, and stock water supply. The application was notified on this basis. In December 2008, ECan was advised that the applicant wished to amend their proposal and reduce the volume of water taken to 1,680,000 m³ for irrigation and up to 30m³ per day for stock water supply. This change was requested as water harvesting and storage was no longer proposed.
- 2.13 After notification the applicant modified the original pipe intake to a gallery structure which will be buried below the level of the Ahuriri River bed and involving a small submersible pump station located on the bank/terrace at or about NZMS H39:559-277, between the river and SH8. A single intake pipe would exit the pump station and cross under SH8 before entering Run 201B. The detail of the intake gallery is discussed further on in this decision.
- 2.14 The gallery will be engineered to meet specific aims, including the NIWA fish screening guidelines, including;
- (a) Invisible to fish.
 - (b) Low approach velocity (0.005-0.1 m/s).
 - (c) Depth of 0.5 m to the top of the collector pipe/screen.
 - (d) Bed and natural material to form the natural cover.
 - (e) Have no impact on flood carrying capacity of the stream.
- 2.15 The general principle for modifications after notification is that amendments are allowed provided they do not increase the scale or intensity of the activity or significantly alter the character or effects of the proposal. The key consideration is prejudice to other parties by allowing the change. In this case, we are satisfied that the above changes do not significant alter the intensity or effects of the proposal and that no party would be adversely affected by allowing the changes.

Additional consent applications

- 2.16 In addition to this proposed take from the Ahuriri River, the applicant has also applied to for an additional take and use water from the Ahuriri River (via the Tara Hills Water Race) to irrigate an area known as Pebbly Block. The applicant has also applied for two further take and use consents at Frosty Gully and Manuka Creek. Table 2 shows the various Water Permits the applicant has applied for including the associated land use consents for the intakes.

Table 1. Consent applications applied for by Killermont Station and their associated S42A Reports (those considered in this decision are shaded).

S42A Report	Consent Application	Location	Description
Report 23C	CRC041331	Manuka Creek	Take and use water @ 37 l/s
Report 23B	CRC040180	Frosty Gully	Take and use water @ 20 l/s
Report 23B	CRC040181	Frosty Gully	Dam water
Report 23D	CRC041331	Ahuriri River (A)	Take and use water @ 100 l/s
Report 23D	CRC041330	Ahuriri River (A)	Install and maintain intake structure
Report 23D	CRC041332	Ahuriri River (A)	Discharge irrigation water @ 100 l/s
Report 23E	CRC041777	Ahuriri River (B)	Take and use @ 175 l/s
Report 23F	CRC041776	Ahuriri River (B)	Install and maintain intake structure

- 2.17 The applicant has also stated that stock water will be taken from Manuka Creek for the part of the property located south of SH8 and from the Ahuriri River, for the area irrigated north of SH8. The applicant states that the taking and use of this water should be authorised under section 14(3)(b) of the RMA and therefore resource consents for this activity are not required. We note that the Manuka Creek application was modified since notification to exclude use of water for stockwater. In accordance with our discussion on stockwater in Part A, we have therefore not considered the issue of stockwater in this decision.

3 DESCRIPTION OF THE ENVIRONMENT

Ahuriri River

- 3.1 The Ahuriri River rises in the Barrier Range and is primarily fed by snow melt and rainfall runoff. Below the mountain catchment area, it becomes braided as it passes through the flatter areas between Birdwood and Omarama and down to Lake Benmore. The river is highly rated for its amenity values, in particular for trout fishing, picnicking, swimming, duck shooting, kayaking, canoeing and rafting. In addition to this a Black Fronted Tern Restoration Programme is situated on the Ahuriri River. It is also noted in the application that an "iwi site" is located on the south bank of the river, downstream of the proposed abstraction site.
- 3.2 The Ahuriri River is a Wetland of Representative Importance (WERI), a Site of Special Wildlife Importance (SSWI), a Recommended Area for Protection, a Land of National Significance and a Land of Regional Importance.
- 3.3 The Ahuriri River is also recognised as a native bird habitat, a native vegetation area, and for its trout and salmon spawning habitat.
- 3.4 Fish & Game stated in their submission that the Ahuriri River is nationally and internationally renowned for the quality of trout and angling experience it offers and its outstanding natural wildlife habitat. The river and its tributaries also provide spawning and juvenile rearing habitat for resident populations of brown trout.
- 3.5 At the proposed point of abstraction, a sub-channel of the river flows adjacent to SH8. This sub-channel leaves the main braid about 1 kilometre upstream of the proposed intake location. The applicant has observed the sub-channel to carry water year-round.
- 3.6 During flood events, the channel poses a risk of erosion to the true right bank of the river, hence river protection works have been undertaken and include the installation of two rock walls at

right angles from the river bank. The proposed intake structure will be located between these rock walls.

Irrigation area

- 3.7 The proposed irrigation area is on the south side of SH8, adjacent to the south bank of the Ahuriri River. It is stated in the application that this area consists of light drought prone and exposed McKenzie soils. The applicant states that the land gently falls toward the east and is classified as an area of Outstanding Regional Significance.

Other users

- 3.8 Omarama Station and Tara Hills Station hold consent CRC010728.1 to take water from the Ahuriri River via the Tara Hills Water race approximately 6 km downstream of the proposed point of take. Otamatapaio Station and Blackhead Quarries hold resource consents to take water from the Ahuriri River, at locations approximately 20, 14 kilometres respectively downstream of the proposed take.
- 3.9 Southdown Holdings Limited has applied to take and use water from the Ahuriri River under two consent applications. CRC041788 is an application to take water from a location approximately four kilometres downstream of the application by Killermont Station. CRC073115 is an application to take water from a location approximately two kilometres upstream of this Killermont application. The current take and use application (CRC041777) has priority over both of the Southdown Holdings consents to take water from the Ahuriri River.

Site visit

- 3.10 We detailed our site visits in Part A and we do not repeat this information here. Although we visited Killermont Station we did not view the proposed take point in this application.

4 PLANNING INSTRUMENTS

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

Status of the activity

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

CRC041776 – disturb the bed (s13)

- 4.4 This application is listed in Schedule 2 of the Resource Management (Waitaki Catchment) Amendment Act 2004. Section 88A of the RMA therefore does not apply and the relevant plan for determining the status of this activity is the operative NRRP.
- 4.5 The relevant provisions of the NRRP are as follows:

- (a) Rule BLR4 – erection or placement and use of structures; and
 - (b) Rule BLR5 - excavation, drilling, tunnelling, depositing, reclamation, drainage or disturbance in, on, under or over the bed.
- 4.6 It is possible that these activities could be carried out to meet the permitted activity criteria. However, from the information to hand, it is not clear that they will. In particular, Condition 10 of Rule BLR4 and conditions 2 and 4 of Rule BLR5 are unlikely to be complied with. The activity is therefore classified as a **discretionary** activity under Rule BLR4.
- 4.7 In relation to the minor diversion of water associated with construction activities, the relevant plan for determining the status of the activity is the WCWARP. The diversion fails to qualify as a permitted activity under Rule 1 of the WCWARP due to the quantity and rate of water being diverted. However it complies with all other relevant rules in the WCWARP and therefore requires consent as a **discretionary** activity.

CRC041777 – divert, take and use water (s14)

- 4.8 This application is listed in Schedule 2 of the Resource Management (Waitaki Catchment) Amendment Act 2004. Section 88A therefore does not apply and the relevant plan for this activity is the operative WCWARP.
- 4.9 The following rules from the WCWARP are applicable to this application:
- (a) Rule 2, clause (1a) – The applicant has proposed the minimum flow specified in the Ahuriri Water Conservation Order.
 - (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.
- 4.10 In summary, the proposed take and use of water is a discretionary activity under Rule 15 of the WCWARP and requires consent pursuant to section 14 of the RMA.

Overall status of the proposal

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

5 PRELIMINARY MATTERS

Ahuriri Water Conservation Order (AWCO)

- 5.1 Given the location of this proposal, it is subject to the requirements of the AWCO, including ensuring that the minimum flow levels of the Ahuriri River are maintained. In accordance with section 217 of the RMA, we may not grant a consent that is inconsistent with the requirements of the AWCO.
- 5.2 All parties accepted the need to comply with the minimum flows in the AWCO. However an issue of contention was the most appropriate way to ensure these flows are achieved, specifically whether the use of maximum allocation limits was appropriate for this purpose. We set out our findings on this issue in Part A and concluded that setting a limit on total abstraction is the most pragmatic way of achieving the desired minimum flows. However given our overall finding on these applications, we have not discussed the AWCO further in this decision.

6 NOTIFICATION AND SUBMISSIONS

- 6.1 Both applications were notified on 4 August 2007 and a number of submissions were received. Many of the received submissions are equivalent to submissions made in response to all applications notified on 4 August 2007.
- 6.2 Table 2 is taken from the s42A report for the take and use application (CRC041777) and summarises those submissions that directly referenced that application. In addition to those listed, there were other submitters that presented evidence at the hearing that was relevant to these applications. The relevant evidence from submitters is discussed in more detail later in this

decision. Please note that all submissions hold equal importance, even if not specifically listed below.

- 6.3 In relation to the application for works in the bed, a submission was made by Transit NZ expressing concern that the works would affect road and traffic movements.

Table 2. Summary of submissions on applications CRC041777 and CRC041776

Submitter	Reasons	Position
Meridian Energy Ltd	Water quality, metering, duration	Oppose
Dunstan Peaks Station	Water availability, priority, reliability of supply	Oppose
Tara Hills Station	Water availability, priority, reliability of supply	Oppose
Omarama Station Ltd	Water availability, priority, reliability of supply	Oppose
Fish & Game NZ	That the Ahuriri Water Conservation Order minimum flows apply and that the following are addressed by way of conditions: metering, fish screens, duration, adverse effects on water quality and quantity and resulting effects on fish habitat/survival/spawning, timing of instream works, intensified land use and game bird impacts	Oppose
Ohau Company Trust Ltd	Water availability	Oppose

- 6.4 Overall, the key effects of concern relating to applications within this catchment include those relating to adverse effects on ecosystems, water quality and landscape values and duration

7 THE SECTION 42A REPORTS

- 7.1 Comprehensive officer reports (Report 23C and D) on the application and submissions were prepared by the Regional Council's Consents Investigating Officer (Ms Yvette Rodrigo). The reports was supported by specialist reports prepared by:
- (a) Chris Glasson (Landscape effects - individual and cumulative)
 - (b) Dr Michael Freeman (Overview water quality and landscape effects)
- 7.2 In addition, Ms Rodrigo was influenced and supported in her reports by the introductory s42A (Report 1), the planning and technical reports on hydrology and minimum flows (Report 2A and 2B), the planning report outlining annual allocations (Report 3) and the reports on cumulative landscape and water quality effects in the catchment (Reports 4(A) – (F) and 5).
- 7.3 The report was pre-circulated in advance of the hearing. Specific points noted from the s42A report are summarised below.

Adverse effect on people, communities and amenity values

Landscape values

- 7.4 The irrigation area is relatively large (300 hectares) and is situated directly south of SH8. Due to its location, the proposed irrigation area will be highly visible from the road, with its northern boundary running approximately 400m distance from SH8 for a distance of approximately 2.8 kilometres.
- 7.5 Mr Chris Glasson (Landscape Architect) was engaged by ECan to audit the applicant's assessments of landscape effects associated with all applications to take and use water within the Waitaki Basin. His audit of this application is included in Report 5. In summary, Mr Glasson concluded that due to the high visibility of the site and its proximity to SH8, the proposal could have significant effects on landscape values. Mitigation including the provision of a large buffer consisting of tussock grassland and shrubland vegetation however could ensure that these effects were mitigated to acceptable levels.
- 7.6 The irrigation command area is included within Mr Glasson's Landscape Unit 6 – Omarama. For this Unit Mr Glasson concluded that a significant buffer is required between the irrigated area and SH8. The buffer should firstly consist of regenerating tussock, grass, and shrubland vegetation. The vegetation would be located in the first 300m of buffer from SH8. There is a natural terrace on the irrigation site. The terrace is uniform in height although it does fade out at the eastern end of the Woolshed Block. In addition to the 300m distance already described, Mr Glasson recommends that the irrigators be setback a further 300m from the top of that terrace. In addition, he recommends a 100m buffer back from Short Cut Road. He also recommends a 100m buffer along the walking track. This walking track allows access to the Wether Ranges. Additional mitigation measures that Mr Glasson sought were a continuous irrigation pattern (which conforms to the natural land form patterns) and for the intake structure, where relevant, the use of recessive colours that would include recessive colours for related pipework. The applicant proposes utilising the distance between SH8 and the natural terrace as a setback. This is a separation distance of approximately 300m. No further mitigation is proposed.

Recreation and Amenity Values

- 7.7 Ms Rodrigo noted the applicant has not assessed the impacts of the proposed take and use of water from the Ahuriri River on recreation and amenity values, but that because the applicant proposes to adopt a minimum flow consistent with the requirements of the AWCO the outstanding natural features of the Ahuriri and fishery values should be protected.
- 7.8 Ms Rodrigo advised that the disturb bed application has the potential to create levels of sedimentation that would have an adverse effect on amenity values, and would require measures to control the amount of sedimentation that will be discharged and timing of the works to avoid weekends and public holidays.

Adverse effects on other users

- 7.9 Ms Rodrigo agreed with the applicant's assessment that the effects on other users should be minor provided that the AWCO limits are adhered to.

Adverse effects of inefficient use

- 7.10 Ms Rodrigo used the method recommended in Policy 16(c)(ii) of the WCWARP to confirm that the annual volume proposed represents a reasonable annual volume.

Adverse effect of use on water quality

- 7.11 An assessment of cumulative effects on water quality was requested to address the above concerns, in relation to Policy 13 of the WCWARP. Ms Rodrigo noted that the applicant has contributed to the study by MWRL on cumulative effects within the catchment.
- 7.12 The report by MWRL has been audited and the conclusion of Dr Mike Freeman and other experts, at the time Ms Rodrigo compiled her S42A report, is that it would be premature to make robust conclusions about the potential adverse cumulative effects.

- 7.13 Ms Rodrigo advised that the works to construct the intake are likely to increase sediment in the river, but the short duration of the works to construct the intake coupled with appropriate conditions adverse effects on water quality should be mitigated.

Adverse effects on ecosystems

- 7.14 Ms Rodrigo's only concern about ecosystems was the adequacy of the proposed gallery intake with respect to fish screening and invited the applicant to address this issue during the hearing

Adverse effects on Tangata Whenua values

- 7.15 The applicant did not include an assessment of the proposed activity on cultural values. The sites of the proposed activities are within the rohe of Te Runanga O Moeraki. Both Moeraki and Te Runanga O Ngai Tahu were served notice of the applications in August 2007.
- 7.16 Ms Rodrigo noted that Te Runanga O Ngai Tahu have raised concerns relating to mixing of waters between catchments, deterioration of water quality, dewatering and residual flows, changes to sediment flow and deposition and impacts on sites of cultural significance.

Land use consent

- 7.17 Ms Rodrigo could not confirm that the actual and potential effects of the proposed activity were acceptable because of concerns about whether the works within the bed and banks of the Ahuriri River would result in impacts on the river protection works, including the rock walls installed upstream and downstream of the proposed intake.

Positive Effects

- 7.18 Ms Rodrigo noted that irrigation could improve the productivity of the land, resulting in economic benefits to the wider community.

Conclusion on effects

- 7.19 Ms Rodrigo could not confirm that under s104(1)(a), the actual and potential effects of the proposed take and use activity were acceptable when taking account the proposed mitigation. In particular, she added, there is uncertainty regarding the following aspects of the application:
- (a) The impacts on landscape values.
 - (b) The impacts on surface water quality.
 - (c) The impacts on river protection works, including rock walls installed upstream and downstream of the proposed intake.

Statutory Assessment

- 7.20 Ms Rodrigo provided a statutory assessment in relation to her views discussed above. She concluded that the applicant's proposal:
- (a) May not be consistent with Objective 1 (a), (b), and (c) of the WCWARP
 - (b) May not be consistent with Policy 13 of the WCWARP due to there being likely effects on water quality, unless appropriate mitigation is proposed and implemented,
 - (c) May not effectively "avoid, remedy or mitigate" the potential impacts on surface water quality and landscape values as required in Section 5(2)(c) of the RMA,
 - (d) May not be consistent with Section 6 of the RMA Subsections (b), (c) and (e) due to a change in the visual aesthetics in an area of high amenity for which the applicant has not proposed mitigation measures; has not assessed the impacts on cultural values, and the information provided is insufficient to confirm that the proposed fish screening provisions will be adequate to protect the fishery values in the Ahuriri River
 - (e) May not be consistent with Section 7 of the RMA Subsections (c) and (d) due to a lack of "maintenance and enhancement of amenity values" for which the applicant has not

proposed mitigation measures (subsection (c)) and confirmation that an appropriate fish screen will be installed at the intake structure (subsection (d)).

Recommendation

- 7.21 Having considered all relevant matters outlined in section 104(1), Ms Rodrigo was not satisfied that the actual and potential effects of the proposed activity are acceptable. This is based principally on concerns regarding the effects on water quality and landscape and ecological values. On this basis, Ms Rodrigo could not recommend that CRC041776 or CRC041777 be granted.

8 THE APPLICANT'S CASE

- 8.1 Legal counsel for the applicant, Christian Whata, presented opening submissions and called 9 witnesses as follows:
- (a) Dan and Kerry Thomas (Owners – Killermont Station)
 - (b) John Kyle (Mitchell Partnerships Limited)
 - (c) John McIndoe (Aqualinc Research Limited)
 - (d) Stephen Brown (Stephen Brown Environments)
 - (e) Dr John Bright (Aqualinc Research Limited)
 - (f) Robert Engelbrecht (Bob Engelbrecht Consultancy Limited)
 - (g) Dr Ruth Goldsmith (Ryder Consulting Limited)
 - (h) Dr Ruth Bartlett (Kingett Mitchell & Association)
 - (i) Buddy Mikaere (Buddy Mikaere and Associates)
 - (j) Dr Melissa Robson (Ryder Consulting Limited)
- 8.2 We note that the majority of the applicant's expert evidence was presented in conjunction with, Five Rivers Limited and/or Southdown Holdings Limited, which included both the Glen Eyrie Downs and WHL Killermont properties. In this Decision the evidence presented in The Applicant's Case and The Applicants Right of Reply only includes information relevant to the applicant's property, and these applications in particular.
- 8.3 It should also be noted that where the evidence has referred to multiple properties, which includes the applicant's, we have used that information in the context of applying to the applicant's property only. The original evidence should be referred to determine any other property that this information may relate to.

Opening legal submissions

- 8.4 The applicant, together with Five Rivers Ltd, Williamson Holdings Ltd and Killermont Station Ltd, was represented by Mr Christian Whata . Mr Whata also represented McKenzie Water Research Ltd, who presented the cumulative effects assessment on behalf of all applicants seeking consents at this hearing.
- 8.5 Mr Whata opened his evidence by stating that the applicant is committed to best practice and that their farm management proposals are cutting edge. He added that the applicant fully appreciates the need to avoid adverse effects. Importantly, best practice combines with high productivity to make the farm viable.
- 8.6 Mr Whata acknowledged that the application covers relatively large irrigable areas (though small within the context of the Basin as a whole). He added that the applicant should not be penalised for this and should be judged on their merits, which in his view include:
- (a) More efficient and productive use of land and water resources;

- (b) Comprehensive management of resources to agreed standards on an integrated basis so as to avoid effects of significance;
 - (c) Better enablement of both people and communities through long term sustainable and viable use of resources, and
 - (d) Enhancement of stream and terrestrial environments, and protection of valued areas, through uniform farm management practices across large land holdings.
 - (e) Greater ability to respond to and mitigate unanticipated adverse effects through the application of entire farm management systems over large irrigable areas.
- 8.7 Mr Whata then went into detail on the existing environment and noted that it is not a pristine natural environment and reflects the reality of dryland farming in a tough environment. He noted that the applicant's property is currently farmed and these activities have an impact on the environment including generating nutrients, waterways not fenced, minimal riparian planting and significant soil erosion.
- 8.8 Mr Whata then considered more broadly, existing activities are affecting the sub catchments and provided a number of specific examples from the applicant's property regarding soil erosion during a recent wind blow event.
- 8.9 Mr Whata then went into details regarding the permitted baseline in terms of the relevant PNRRP rules. He noted that the permitted activities included: minor takes or diversions for activities such as stock water outside the water bodies identified as being of high natural character; general farming activities such as intensive pastoral grazing, fertiliser application, dryland cropping and ancillary activities.
- 8.10 In terms of land use activities Mr Whata noted that the District Plan permits all farming activities and irrigation (except in Outstanding Landscape Areas in the Waitaki District). Mr Whata stated that the applicant hold a number of resource consents and certificates of compliance that permit certain farm related activities as set out in detail in the evidence of Mr Kyle.
- 8.11 Mr Whata then noted that the applicants have undertaken an assessment of how the ecological values of the property will be affected by applying water to the land. He drew on the other expert witness evidence and noted there will also be ecological benefits, such as improved vegetation cover and exclusion of stock from streams.
- 8.12 Mr Whata then provided an evaluation of the application in terms of the objectives and policies of the WCWARP and the PNRRP. He noted Part II of the RMA and provided an overview of the application in relation to Sections 5-8. In his evaluation he drew on the evidence of other expert witnesses and the applicant's own evidence.
- 8.13 In relation to the s42A Reports, in Mr Whata's view many of the concerns raised stem from a lack of information, a misunderstanding of the information provided or concerns relating to the WQS. Mr Whata outlined other witnesses' evidence that, in his opinion, addressed these issues.

Owners' submission – Dan and Kerry Thomas

- 8.14 Dan and Kerry Thomas are the directors of Killermont Station. They opened their evidence by noting that the property has been in the Thomas Family for 71 years with Dan being a third generation farmer.
- 8.15 They then explained the various committees on which Dan has been active including the Merino wool growers and Ultra Fine Merino Company. They added that they are very passionate about Merino wool having taken on all and any information that would help improve their own wool and flock. They added that their wool is highly regarded in the merino industry.
- 8.16 They noted that Mr Thomas' parents still live on the farm in the Homestead and they are currently going through farm succession. Their evidence then turned to briefly describing the Thomas family of which they noted that their children have learnt so many invaluable life skills from the many opportunities that farming life provides and that everyone helps out around the farm when the work requires.

The Mackenzie Basin

- 8.17 Their evidence then described the Mackenzie Basin and the many recreational uses the Thomas' family undertakes in the area including snow sports, water sports and hunting and fishing.
- 8.18 In 2006, the Thomas' finalised Tenure Review noting that they had lost summer grazing country and riverbed frontage in the process, which caused a reduction in the stocking rate. Consequently they have had to change their farming practice by investing in the existing irrigated area. They noted that they are very proud of how they maintain the unique and protected plants and species that this area is renowned for. The family are committed to preserving the special nature and character of the place and the surrounding areas.
- 8.19 There are many challenges associated with the weather when farming in the Mackenzie Basin according to the Thomas' evidence. The growing season is short with a "real" growing season early October through to the beginning or mid April. They explained that this is when they need to take advantage of the high temperatures and nor'west rainfall.
- 8.20 The Thomas' noted that if they do not get good spring rains the pastures and forage crops are dried off by November. This in turn causes a real problem when trying to grow supplementary feed to carry stock through the harsh winter months. During the summer months they have had to sell their run cows because of a lack of feed. The winter months are just as challenging with snow falls causing feed to disappear for weeks at a time.

Current farming practices

- 8.21 The Thomas' noted that they have invested heavily over the last 40 years, but particularly in the last 6 years, developing a farming operation that will provide better economic returns. Part of this farming operation includes maintaining and enhancing the property so that grass growth is maximised. They provided the example of where they have not put fertiliser on the hill country for 9 years which has resulted in regeneration of native grasses and less scrub in the gullies.
- 8.22 The Thomas' then described the current farm system on Killermont Station that includes 3,200 Merino Ewes, 2,600 Merino Hoggets, 150 Wapiti/Red Hinds and 60 - 80 cattle for fattening each year.

Future ambitions for the property

- 8.23 Due to the challenges they face because of farm succession, the harsh environment and market vulnerability, the Thomas' stated that irrigation is their last option to make a sustainable, viable, progressive farming unit. They added that they are excited about the prospect of being able to perfect the balance on Killermont but overwhelmed by this process and at the thought of having to struggle on as they are would leave the only option left of selling the family farm.
- 8.24 They explained that they hope to be able to establish an irrigated farm to sustain their stocking rate throughout the year (and to increase their stock numbers). This will enable them to take advantage of the market vulnerability by only selling stock when the prices are at their highest and the stock are at their maximum weight for age. They added that this will also release the pressure on the more fragile country and high country in times of extreme weather conditions.

Environmental mitigation

- 8.25 The Thomas' noted that they have studied many farming practices and feel they will definitely be able to progress and implement their proposed FEMP. They added that they know that monitoring nutrient application, discharge and water application are all part of maintaining a healthy irrigated farming unit.
- 8.26 The Thomas' supported other irrigation consents in this catchment and the Mackenzie Basin as a whole because they have seen firsthand the advantages of a well managed farming approach to applying water in times of need.
- 8.27 In conclusion the Thomas' stated that they have invested a huge amount of money and effort in this onerous and lengthy process which they would not have done had they not thoroughly researched all alternative options for their farm.

- 8.28 They added that they have spent a considerable amount of money on an expert team who have advised them that irrigating in the Mackenzie Basin is possible through state of the art farm management plans and ongoing auditing and monitoring.
- 8.29 The Thomas' stated that they appreciated that a high benchmark has been set in terms of maintaining water quality but understand that by continually meeting these benchmarks it will create a sustainable farming unit that will set up their farm for generations to come. They added that they have come into this process with their eyes wide open and appreciate the obligations that are in front of them if the consent is granted. They concluded by noting that securing water is their only option.

Planning issues – John Kyle

- 8.30 Mr John Kyle (Partner, Mitchell Partnerships Limited) was engaged by the applicant (and Southdown Holdings Ltd, Williamson Holdings Ltd and Five Rivers Ltd) to present evidence with respect to various planning documents (Regional Documents and RMA) as well as site specific evidence relating to overall mitigation and conditions.
- 8.31 Mr Kyle outlined the relevant planning documents and which plan the applicant's activity relates to. He noted the 'permitted baseline' concept and added that in terms of relevant Regional Plan rules the permitted baseline is limited to minor takes or diversions for activities such as stock water outside the water bodies identified as being of high natural character. In Mr Kyle's opinion, general farming activities such as pastoral grazing, fertiliser application and ancillary activities are permitted under the NRRP.
- 8.32 He added that in terms of land use effects, farming activities are generally permitted in the Waitaki District and he provided a list of these permitted activities from the Waitaki District Plan. Given the permitted baseline that prevails, it is Mr Kyle's opinion that the landscape issues generated by farming activities are generally not significant.
- 8.33 Mr Kyle then went on to discuss the relevant matter from the RMA including Part 2 and Section 104 matters. He considered that the proposed abstraction and use of water for irrigation will not generate any significant Part 2 issues. The total abstraction is within the limits established by the WCWARP and is consistent with the agreements in place between the MIC and Meridian. With appropriate mitigation and management in place, it is Mr Kyle's view that the applicant's proposal will not generate significant adverse effects on the receiving environment.
- 8.34 Mr Kyle stated that the RMA does not seek to prevent changes to the environment. Rather, it seeks to provide for the use and development of natural and physical resources, subject to the provisions in Section 5. In regard to these applications, in Mr Kyle's opinion the ability to irrigate land will provide significant social and economic benefits to people and communities. These benefits arise from the employment of people on the farms, increased land productivity, and flow on social and economic benefits (e.g. secondary industries, employment) on a local, regional and national level. With appropriate mitigation which is set out within the suggested conditions, values such as the life supporting capacity of the water resources will be safe-guarded, and in some cases enhanced (localised waterways and riparian margins). Furthermore he added that the mitigation proposed will ensure that the applications will not compromise the values of the water resource and its ability to provide for existing uses and meet the needs of future generations.
- 8.35 Mr Kyle then discussed in depth the policies and objectives of the WCWARP and NRRP and how, in his view, the applicant's proposed activities were consistent with these Policies and Objectives. In regards to site specific evidence Mr Kyle drew on the evidence of Mr Brown, Dr Ryder and Dr Robson, which is discussed further below.
- 8.36 Mr Kyle then went on to address specific issues relating planning matters raised by s42A officers addressing specific applications. There were no specific issues raised by My Kyle with respect to these applications that have not been addressed by other witnesses.

Description of the proposed activity (Ian McIndoe)

- 8.37 Mr Ian McIndoe (Aqualinc Research Limited) firstly described all the applications from Killermont Station and their effects on waterways and then described specific aspects of each application.
- 8.38 For the Woolshed Block, he told us that the majority of the property where the proposed irrigation (pivots and linear irrigator) are to be sited slopes evenly in a south-easterly direction,

with a gradient ranging from 10 to 16 m/km. On the western part of the property where the K line irrigation would be located, the land slopes in an easterly direction with a gradient ranging from 5 to 9 m/km.

- 8.39 The land proposed to be irrigated is in general gently sloping to the east. Physical features relevant to irrigation are a terrace formed by the river during its transition from the outwash plain to the more recent alluvial plain, which cuts across the north eastern corner of the property. Near the southern boundary of the proposed irrigation area are the Frosty Gully and Manuka Creeks.
- 8.40 The profile available water (PAW) varies but is primarily represented by three main groups; 45 mm PAW, 65 mm PAW and 85 mm PAW. We note that low PAW soils (45 mm) represent ~50% of the 300 ha proposed.
- 8.41 The intake associated with the Woolshed Scheme is proposed to be located within the bed of the Ahuriri River between map references H39:552-283 and H39:561-278. The intake will be situated opposite the Station woolshed between two existing rock walls placed to prevent erosion of the river bank during floods.
- 8.42 A gallery installed beneath the bed of the Ahuriri River is proposed for the intake. Mr McIndoe provided details of the proposed structure and assured us that it would meet the requirements specified in the NIWA fish screening guidelines.
- 8.43 A proposed 475 mm diameter PN6 PVC pipe, buried with a minimum 400 mm cover will convey the water to the irrigation site. The SH8 crossing is at or about map reference H39:558-276. Transit NZ has indicated they will approve the installation of such a pipeline, so long as the proposed work complies with the standard conditions for installing a pipeline.
- 8.44 A dual pumping system is proposed. The first is a small submersible pump station to be located at or about map reference H39:559-277, on the river bank/terrace between the river and SH8. This is proposed to be buried underground.
- 8.45 The headworks and electrics for the submersible pump station will be situated in a concrete bunded enclosure so that any contaminants are contained. The pumping station will be discrete, and will not be visibly intrusive in the environment. Pumps will all be run by electric motors, which create very little noise. They will also be operating with flooded suction to minimise cavitation and noise.
- 8.46 A second main booster pump station will be located at or about map reference H39:560-276, within Killermont Station land to the south of SH8, and will be above ground.
- 8.47 With respect to the construction of the intake structure he told us the proposed riverbed works are localised and on a small scale, with respect to the size of the Ahuriri River. Where any disturbance occurs to the banks of the river the applicant will undertake remedial work to restore the bank stability required. Any potential adverse changes to the riverbed will be mitigated by ensuring the riverbed is returned to its natural state.
- 8.48 Works on the installation of the gallery are anticipated to be completed in 10 days to 2 weeks and will be undertaken when flows in the Ahuriri River permit and the risk of flood is low. This will help minimise disturbance of the bank and also the risk of sediment entering the river. Works will be undertaken to ensure no disturbance of the existing river bank protection structures occurs.
- 8.49 Mr McIndoe said that as a result of the proposed works, some sediment may be released into the Ahuriri River. The relatively short duration of the proposed works means sediment release will only occur over a short period of time and no long term or ongoing adverse effects will arise. The Ahuriri River in general carries high sediment loads during floods; sediment in the river is a natural occurrence. For these reasons, the effects of sediment entering the river will be minor.
- 8.50 He told us of the practical steps the applicant would take to ensure effects on fish, instream values, amenity values, and other users would be minimised.

Annual volumes (Ian McIndoe)

- 8.51 A flow rate of 175 l/s for irrigation has been applied for, and equates to a 5.0 mm/day over the 300 ha that is to be irrigated; the area will be used primarily for stock grazing, growing pastures and forage crops.

- 8.52 The annual volume of 1,680,000 Mcm/year is based on applying 5,600 Mcm/ha/yr over the irrigation area, which is just less than the MIC share allocation of 6000Mcm/ha/yr.
- 8.53 Irrigation modelling indicates that the seasonal irrigation requirement 80% of the time, assuming 80% application efficiency ranges between 738mm and 822 mm over various soils.
- 8.54 The results of modelling show that an annual allocation of 2,409,240M m³ for the 300ha (803 mm/yr, on average) would be reasonable to meet full irrigation demand every four out of five years. This is greater than what has been applied for and shows that the proposed take will not exceed reasonable use volumes.
- 8.55 Mr McIndoe reported on irrigation demand modelling and told us that the analysis indicated that the applicant may have insufficient water to fully meet demand more frequently than 20 % of the time. The applicant will therefore have to manage the proposed irrigation system to achieve an application efficiency greater than the 80 % that has been modelled to ensure significant yield losses do not occur in extreme years.

Landscape (Stephen Brown)

- 8.56 Stephen Brown (Landscape Architect, Stephen Brown Environments Ltd) was engaged by the applicant (along with three other applicant's subject to this consent process) to assess the landscape effects of their combined implementation.
- 8.57 Mr Brown stated a number of components of the proposals are critical in terms of all of the applicants' combined activities in this area, as listed in Table 1 above..
- 8.58 With respect to the Woolshed Block, Mr Brown restricted his comments to the intake structure. The screens, intake galleries and river-side pumping stations, he told us, would still remain both physically and visually recessed, to the point where they would have little impact on appreciation of the wider river fairway.
- 8.59 However Mr Brown made general comments on the landscape features relevant to the irrigation proposal on the Woolshed Block which is located on a river fan and terrace at the foot of Dunstan and Wether Ranges. Mr Brown's evidence explains that the river terrace bank south of SH8 reaches its maximum height and furthest 'inland' extent (approximately 400-500m) between Killermont Station and the highway. The pivot and linear irrigation system proposed on the Woolshed Block would be both more physically remote and effectively 'screened' by the terrace bank. The stand of pines and other vegetation near Broken Hut Road would also help visually isolate Woolshed Block from that secondary road. Mr Brown refers to the pivot irrigators being set back 600m or more from SH8, and that any irrigation infrastructure components would be absorbed by the backdrop of the Ewe and Wether Ranges.
- 8.60 The main pumping station planned for the Woolshed Intake might be somewhat more prominent, he said, but it would be located across the state highway from the more sensitive river environment and would be strongly linked to the existing entryway to Killermont Station and its farm buildings.

Nutrient discharge allowance (NDA) and groundwater – Dr John Bright

- 8.61 There are four proposed irrigated areas: Frosty Gully (28ha), Manuka Creek (75ha), Woolshed Block (300ha) and Pebbly Block (216ha). As the NDA has been derived for the applicant's entire property, all four blocks of proposed irrigation were discussed in Dr Bright's (Aqualinc Research Ltd) evidence.
- 8.62 Dr Bright noted that the Woolshed Block is divided equally between the Omarama Stream sub-catchment and the Ahuriri River sub-catchment. It is the largest of the four irrigation blocks that Killermont Station has applied for.
- 8.63 In relation to regional groundwater movement, Dr Bright concluded that all water draining below the rootzone on Killermont is expected to flow to regional groundwater in the Ahuriri River basin and to not contribute directly to Ahuriri River or to Omarama Stream flow locally.
- 8.64 The nitrate-nitrogen concentration in groundwater in the Ahuriri River Basin is approximately 0.1 mg/litre, based on monitoring of well H39/0002 located close to Omarama, upstream from the Ahuriri River basin node point. From these measurements Dr Bright concluded that there is very

little impact on groundwater quality from existing agricultural activity and there is available assimilative capacity with respect to the groundwater quality threshold.

- 8.65 Dr Bright noted that static groundwater levels near the Woolshed, and earlier groundwater studies have shown that the Ahuriri River is perched about 40 metres above groundwater level. He told us that simultaneous flow gauging of the Ahuriri River has shown that the river recharges groundwater through the section of river that lies between Clay Cliffs, on the true left bank, and Pebbly Block on the true right bank. He considered it very unlikely that drainage water from Pebbly Block would contribute nutrients to the Ahuriri River at or in the vicinity of Pebbly Block.
- 8.66 Similarly Dr Bright said that the modelled direction of groundwater flow (north-east) is consistent with the spatial pattern of water inputs and the emergence of groundwater into the Ahuriri River flow near Omarama. The direction of flow indicates that drainage water from the area to be irrigated will not contribute to Omarama Stream flow, and therefore will not have a more than minor adverse affect on its water quality.
- 8.67 Dr Bright told us that the nutrient discharge allowance for Killermont Station allocated through the WQS (Part A) is 9,440 kg nitrogen per year (including a 1500 kg re-allocation from WHL Killermont) and 179 kg phosphorus per year. The NDA was based on the Ahuriri Arm having the most stringent requirements for nutrient reduction.
- 8.68 By comparison the predicted average annual nitrogen leaching losses from the whole farm area was 9,254 kg of nitrogen, and 172 kg of phosphorus.
- 8.69 Dr Bright concluded that the effects of the proposed irrigation on surface water bodies would be minor provided the FEMP was followed and there was an opportunity to adapt farm management practices in the event that monitoring showed greater leaching losses than expected. He advocated the use of lysimeters, which would provide the most rapid reflection (compared with groundwater or surface water monitoring) of nitrate-N concentrations in lysimeters.

Farm systems - Robert Englebrecht

- 8.70 Robert Engelbrecht (Director, Robert Engelbrecht Consultancy Ltd) provided a brief overview of the applicant's proposed activity and outlined the information (including site visit) he used to make his assessment.
- 8.71 Mr Engelbrecht told us that he had visited the 2,500 ha Killermont Station farm and noted that it is already had some irrigation, but proposed to upgrade and extend it over a greater area of the farm. The proposed development on this property is to expand the sheep and beef cattle enterprises, as well as provide some cut and carry feed supply to dairy farming operations in the immediate locality.
- 8.72 The proposed irrigation enhancement and further development of Killermont Station is both feasible and practical with the farm programmes as outlined he told us. However precise livestock management would be required, since the sheep, beef cattle and deer will be run in a conventional farming system.

Aquatic ecology and avifauna – Dr Ruth Goldsmith

- 8.73 Dr Ruth Goldsmith (Environmental Scientist, Ryder Consulting Limited) was engaged by the applicant to describe the existing aquatic and avifaunal ecological values associated with the proposed take and use of water, the ecological effects associated with the irrigation developments and the recommended mitigation options to address these effects on Killermont Station.

Existing values

- 8.74 Dr Goldsmith told us that she had observed the presence of didymo at the proposed intake location for Woolshed Block in the Ahuriri River. Other diatom growths and long green filamentous algae (>2cm long) were also present at both sites.
- 8.75 She noted that previous studies on the Ahuriri River have reported high taxonomic diversity and that macroinvertebrate communities are dominated by high quality Deleatidium species mayflies. Her own surveys for this project found that community health indices were indicative of 'excellent' biotic health in the vicinity of the proposed Woolshed Scheme intake.

- 8.76 She told us that five freshwater fish species have been recorded in the Ahuriri River (3 native species, Canterbury galaxias, koaro and upland bully, and 2 introduced species, brown and rainbow trout) in the general vicinity of the proposed intakes. The Ahuriri River is known to support a highly valued sports fishery, and brown and rainbow trout are also present in the vicinity of the proposed Woolshed Block take. None of the three native fish species are classified as rare or uncommon. Other species have been recorded in the Ahuriri River several kilometres downstream of the intake, including alpine, bignose and lowland longjaw galaxias, longfin eel and common bully.
- 8.77 Dr Goldsmith told us that the Ahuriri River is recognized as an important habitat for rare and uncommon bird species, in particular the black-fronted tern and grey duck, which are listed by the Department of Conservation as 'Nationally Endangered' and the falcon, which is listed as 'Nationally Vulnerable'. Previous surveys of the wider Ahuriri River area found the area provides important feeding, roosting and breeding habitat for many key bird species, including black stilt, black-fronted tern, wrybill, banded dotterel, black-billed gull, marsh crake, Australasian bittern, Australasian shoveler and New Zealand scaup.

Potential effects

- 8.78 Dr Goldsmith considered that effects on fish communities as a result of the Pebbly Block intake (and Woolshed Block) will be less than minor because the intake will be screened (buried gallery) and adhere to good practice guidelines for fish screening in Canterbury.
- 8.79 Provided her recommendations for construction of the intakes are followed (#3.16) Dr Goldsmith told us that effects on invertebrates, fish and birds would be short-term and minor in nature.

Irrigation

- 8.80 In Dr Goldsmith's opinion, irrigation and subsequent pasture and crop production would be beneficial to the main bird species that are currently found within the proposed irrigation area (e.g. greenfinch, chaffinch, and skylark). However, she acknowledged that irrigated pastures may also attract Canada geese, which can cause fouling of waterways and pasture and that monitoring of the Canada geese population was therefore recommended on irrigated land adjacent to the Ahuriri River.
- 8.81 Irrigation could result in a reduction in the local rabbit abundance, which could result in mammalian predators (e.g. cats, ferrets and stoats) switching to alternative prey, such as birds. Dr Goldsmith therefore recommended monitoring of mammalian predators in areas adjacent to the Ahuriri River (in consultation with the Department of Conservation), and if necessary the implementation of an appropriate pest management strategy.

Terrestrial ecology – Dr Ruth Bartlett

- 8.82 Dr Ruth Bartlett (Mitchell Partnerships) gave evidence on terrestrial ecological values (particularly native vegetation) on the applicant's property, and the likely effects of irrigation.

Description of vegetation and ecological values

- 8.83 Dr Bartlett stated that the ecological values and effects of the Killermont Station areas are similar to those for WHL Killermont. She added that the cultivated crop and grazing land has already lost almost all of its indigenous vegetation.
- 8.84 Dr Bartlett told us that the proposed Woolshed intake is close to the state highway, and down a steep bank. The gallery would be constructed on the gravelly flats of the river bed. The vegetation cover here is of low value and no adverse effects of the construction activities appear likely.
- 8.85 Dr Bartlett said that the Woolshed intake is upstream of an area recommended for protection under the PNA programme, which is of its particular importance as habitat for breeding river birds. The bed of the Ahuriri changes reasonably frequently, therefore she recommended that the intake locations be surveyed for threatened birds at the beginning of the nesting season, prior to commencing works. She also said that methods to discourage nesting birds may need to be implemented in the intake area.

Effects of the proposal

- 8.86 Although mainly addressing the Pebbly block, Dr Bartlett's view was that irrigation would have a beneficial effect of assisting development of a ground cover that may minimise continued soil loss.

Cultural effects (Buddy Mikaere)

- 8.87 Buddy Mikaere (Principal, Buddy Mikaere and Associates) appeared on behalf the applicant (and two other applicants represented by Mr Whata). He stated that the objective of his evidence was to show how the cultural issues that were raised by Te Runanga O Ngai Tahu (TRONT) and the Ngai Tahu Mamoe Fisher People Incorporated had been addressed.
- 8.88 Mr Mikaere has considered all the applications and his assessment is that provided the suggested mitigation proposals are put in place by way of appropriate consent conditions and incorporated into the respective FEMPs then the overall impact on cultural values of the proposed irrigation and associated infrastructure will be less than minor.
- 8.89 Sections 6(e), 7(a) and 8 of Part 2 of the RMA are normally regarded as the 'cultural' sections according to Mr Mikaere. In his view the applicant is in compliance with these sections of the RMA. Mr Mikaere then provided details on how he believed these applications are compliant with these sections. Mr Mikaere then outlined the relevant 'cultural' policies and objectives from the WCWARP and in summary noted the applicants proposed activities are consistent with these policies and objectives.
- 8.90 While we have considered Mr Mikaere's evidence in full, it is discussed further in that section of our Part A decision dealing with tangata whenua values.

Farm environment management plan (FEMP) – Dr Melissa Robson

- 8.91 Dr Melissa Robson (Ryder Consulting Ltd) presented evidence on behalf of the applicant and the three other properties represented by Mr Whata. Dr Robson's evidence on the purpose and development of the FEMP was covered in Part A of the decision and is not repeated in this section, which only contains evidence specific to the applicants property.
- 8.92 We were unable to locate information in her evidence specific to the Woolshed Block, we note that Ms Robson uses the name "Main Block" which we take may be the same as what Mr McIndoe refers to as the "Woolshed Block", but what we can glean is that:
- (a) The proposed farm system on the "Main Block" is partially irrigated beef, deer and sheep unit;
 - (b) an alternative farm system is for the Pebbly Block to remain in its current condition and all the proposed irrigation to be conducted on the Home Block. In this alternative system, solid manure will be brought on to the Home Block and all irrigated blocks would be grazed and have supplements removed to be exported from the farm; and
 - (c) low rate application of effluent which will be imported from the neighbouring properties.

Amendment to FEMP

- 8.93 On 9 March 2010 the applicant provided an amendment to their FEMP. This amendment did not introduce further farming systems, but did remodel the OVERSEER outputs using both the Developed and Highly Developed setting and reallocated 6,105 kg nitrogen from WHL Killermont to ensure their compliance under the Highly Developed setting. Consequently, the new NDA for Killermont Station tabled by Dr Robson is 14,045 kg nitrogen, which is equal to the modelled nitrogen discharge using the highly developed setting.

9 SUBMITTERS

- 9.1 We note that most of the submissions against the granting of large-scale irrigation applications (of which this proposal is one if one considers all the proposed takes and irrigation blocks proposed by Killermont Station) were aired as generic opposition to the cumulative water quality effects of granting. As such, it has been summarised in Part A and will not be repeated here. However we consider all the Part A evidence along with the specific submissions to this application in our consideration of the issues.

Groundwater and water quality – Peter Callander

- 9.2 Mr Callander presented three briefs of evidence at the hearing, a general brief, a brief on cumulative water quality effects and one on individual applications. In this evidence Mr Callander provided comment on Dr Bright's evidence on the applicant's property in addition to the three other applicants represented by Mr Whata.
- 9.3 Much of Mr Callander's evidence related to a critique of Dr Bright's evidence, in which he interpreted the likely groundwater pathways for individual applicants from the MWRL Water Quality study. Mr Callander considered that Dr Bright's evidence presents a generalised description of a possible migration of nutrients that has been provided to Dr Bright by GHD. In Mr Callander's view however, Dr Bright did not appear to have critically reviewed that information and not described the uncertainties associated with it. Mr Callander provided a description of the uncertainties, which in his view lessen the confidence we should place on their assessment. This summary of uncertainties has been noted.
- 9.4 Mr Callander acknowledged that these uncertainties are largely due to a lack of reliable field data rather than any basic errors in the assessments. However, due to that lack of data he added that it would be appropriate to present either a conservative analysis (which is not the current MWRL approach) or a sensitivity analysis to consider a range of possible nutrient generation and migration scenarios that could arise within the constraints of the information available.
- 9.5 In respect to this application Mr Callander noted Dr Bright's conclusion that nutrients drain to groundwater due to a deep water table and measured surface flow losses between the Clay Cliffs and SH8. This groundwater will contribute to surface flow in the lower gaining reaches of the Ahuriri River.

Landscape effects – Dr Walker, Di Lucas, Anne Stevens

- 9.6 In her site specific evidence Dr Walker noted that the proposed application site overlaps significant inherent values identified in the Tenure Review and WERI sites (being a braided river system with associated wetlands).
- 9.7 Ms Lucas' comments related to all sites of proposed irrigation on Killermont Station (excluding the WHL Killermont block). For these sites she endorsed Ms Steven's assessment regarding the landscape character experienced. There would, in her view be a large loss of naturalness, spaciousness and of the wild and remote desert landscape character of the semi-arid lands.
- 9.8 Anne Steven had direct experience with Killermont Station through being retained by Department of Conservation through the tenure review process. She commented on this application site. However she used the descriptor "Homestead Block" instead of what was commonly use by others, namely Woolshed Block.
- 9.9 She told us about 70% of the land to be irrigated (Woolshed Block) is already cultivated and cropped in geometric paddocks.
- 9.10 The irrigated areas, she considered, were about 250 metres from Shortcut Road. She also told us the linear irrigator (two large and one small centre pivot irrigators, on the south-eastern boundary) would be immediately adjacent to the public walking route to the Wether Range. With this development, much of this walkway would be through or pass very close to the developed paddocks.
- 9.11 Ms Stevens identified the Knot for us and suggested that it appears not to be affected by the proposal although she did note the irrigated area was very close to the Knot.
- 9.12 Finally, she recorded that the lower terraces next to State Highway 8 and the Knot were originally included but are now excluded from the Woolshed Block irrigation.
- 9.13 Ms Stevens did note that the exclusion of the lower terrace and scarp from the proposal was a positive feature. She considered this would help in terms of ensuring that parts of the development, namely the pivot irrigators, would not be visible. However, she was of the view that the pivot irrigators would, on occasion, be potentially visible as they circled around their routes.
- 9.14 She did note that there had been no assessment of the effects from Shortcut Road or in terms of the walking easement to the Wether Range.

- 9.15 Ms Stevens was of the view that if the development was setback from Shortcut Road that would be sufficient to avoid interference with views to the hills behind. Additionally, she considered the closer irrigation is by linear irrigator, which she thought should be less intrusive. She recommended a buffer of 100 to 200 metres be maintained.
- 9.16 She then turned attention to the walking route, noting that passes right through the irrigated area as the centre pivots are shown touching on the eastern boundary of the same.
- 9.17 Ms Stevens thought that while the development on the Woolshed Block was not entirely unexpected, she remained of the view that a setback of at least 100 metres from the walkway to the Wether Ranges had merit.

Ecological effects – Mark Webb

- 9.18 Mr Mark Webb (Fish and Game) told us of the importance of the Ahuriri River as a trout fishery. Apart from the lower reaches which are now beneath Lake Benmore, the Ahuriri River is the last relatively unmodified river fishery of significance in the upper Waitaki Catchment. The National Angler Survey indicates 3,000 to 5,000 angler-days are sustained annually on the river and in the last ten years angler use has approximately doubled. The Ahuriri River has an international reputation for the quality of its fishing.
- 9.19 The most popular areas for fishing are the Lake Benmore delta (a few kilometres either side of SH 8) and above the gorge.
- 9.20 The Clay Cliffs are an important marker for spawning he told us. Angling in the lower reaches of the river, below Clay Cliffs, is greatly influenced by runs of rainbow trout and to a lesser extent brown trout up the river from Lake Benmore. These fish migrate in response to change in river flows particularly floods and freshes in summer when the river is otherwise too low and warm, and in response to the urge to seek suitable spawning habitat in autumn and winter. Spawning runs for trout from Lake Benmore do not appear to extend further upstream than Clay Cliffs. About 30% of all trout spawning in the Ahuriri River or between 30 and 60 redds annually, occurs between Lake Benmore and Clay Cliffs.
- 9.21 Mr Webb was also concerned about the design and effectiveness of proposed fish screens on the buried pipe that would extract the water.

10 UPDATES TO THE SECTION 42A REPORTS

Landscape effects

- 10.1 Mr Chris Glasson audited Mr Brown's assessment and provided comments on the suitability of the mitigation measures in his addendum s42A report.
- 10.2 Ms Rodrigo considered that remaining landscape issues around this application may be resolved provided that the mitigation measures proposed by the applicant and those recommended by Mr Glasson in his addendum report are adopted.

OVERSEER audit

- 10.3 Ms Rodrigo stated in her addendum report that Mr McNae (technical s42A OVERSEER audit) had identified a number of uncertainties relating to the OVERSEER inputs for the property. However in his addendum report, Mr McNae reported there were no outstanding issues with respect to inputs to the OVERSEER model.

Water quality – cumulative effects

- 10.4 The applicant's draft FEMP and water quality assessment was audited by the Council's technical experts. Ms Rodrigo noted that for this application they considered that there is a high level of uncertainty about potential adverse effects on water quality within the Ahuriri Arm of the catchment, and given the potential consequences of those adverse effects, suggested that the application (in conjunction with the applicant's other applications) should not be granted.

Fish screening

- 10.5 Mr McIndoe described some features of the fish screens that are proposed to be used at the intake structure for this application. Proposed Condition 25 of the land use application (CRC041776) refers to this gallery intake and the type of fish screen to be used.
- 10.6 In Ms Rodrigo's view, this condition is not adequate to ensure that the screen will be constructed in accordance with the NIWA Fish Screening Guidelines and that given the significance of the fishery values in the Ahuriri River, she recommended that the condition developed by ECAN in relation to fish screens for gallery intakes be included as part of this consent (CRC041776), should it be granted.

Man-made structures

- 10.7 Ms Rodrigo advised that there were no further details provided by the applicant to confirm how the works will be undertaken so that the rock wall erosion protection structures are not disturbed during installation of the intake.

Stock water

- 10.8 Ms Rodrigo advised that confirmation of the stock water allocation applied for under this consent (CRC041777) had not been withdrawn. Mr McIndoe for the applicant had previously advised that stock water for the Woolshed block is to be sourced from Manuka Creek, however since notification the Manuka Creek application had the stock water component removed.

11 APPLICANT'S RIGHT OF REPLY

Closing legal arguments

- 11.1 Mr Whata provided the closing legal submission on behalf of the applicant and three other applicants subject to this consent process. In his overview he stated that the final officer recommendations have lost sight of the big picture, and more particularly a realistic appraisal of the adverse and positive effects of the proposed farming systems.
- 11.2 He addressed us on the existing and future environment reminding us that the applicant's site was not a pristine natural environment and reflects the reality of a dryland farming tough environment. He discussed with us outstanding issues, including water quality issues, cultural issues, and landscape issues, which we discuss in more detail below.
- 11.3 Mr Whata advised that the applicant had revised their intake and pipeline proposal and have opted for the submerged gallery option in response to Mr Glasson's (s42A) recommendation.
- 11.4 Mr Whata opined in response to Mr Glasson's recommendation of a 300 m buffer from SH8 for irrigated land that the mixture of irrigators would be physically isolated east of SH8, behind the elevated river bank and therefore would be entirely screened from view by the same feature.
- 11.5 He also addressed us in detail in respect of adaptive management, including lock-step, staging, and ratcheting, which we discuss in greater detail later within this Decision.

Minimum flows (Ian McIndoe)

Intake Gallery

- 11.6 Mr McIndoe evidence in his right of reply gave further details around the construction and maintenance of the intake galleries to ensure that the effects are minimised. Mr McIndoe also responded to the issues Dr Meredith raised in his s42A addendum in respect of the difficulty of assessing the structural and operational integrity of galleries once they have been installed.
- 11.7 Mr McIndoe stated that galleries have been in use for water supplies for many years, issues are normally related to unusual conditions or proximity to water supplies. Maintenance depends on how well the galleries are designed and operated. He states that galleries do not 'suddenly block'. The structural ability to act as a filter is not threatened, they will continue to operate as a very effective barrier regardless of how blocked they become.

- 11.8 Mr McIndoe said galleries should be conservatively designed with very low entrance velocities to minimise the need for maintenance. Pipelines can be installed in galleries so that compressed air can be used to clean them, if necessary.

Ecosystems (Dr Ryder)

- 11.9 Dr Ryder concurred with Dr Freemans (S42A) comments that the revised gallery intakes are now more acceptable and subject to appropriate design, installation, and maintenance scrutiny to ensure fish exclusion performance is maintained. Mr Ryder considered the performance criteria proposed by Ms Vesey to be suitable for inclusion in the conditions.
- 11.10 Dr Ryder commented that Dr Allibone's (DoC) concerns surrounding intake screening for fish appear to relate to cumulative effects, but that he accepts that effects will be less than minor for individual takes. Dr Allibone's concern relate principally he thought to the larval koaro which migrate downstream from headwaters to the lake, they are generally widespread throughout the S.I and migrate in high flows in relation to the ratio of abstraction, such river flow will be high so he does not see the risk of entrainment into galleries as significant under such conditions.

Terrestrial ecology (Dr Ruth Bartlett)

- 11.11 Dr Bartlett visited the applicant's property prior to giving her right of reply evidence and undertook further vegetation survey work. Ms Bartlett provided photo's supporting her survey and a map with the route taken for the survey which included traversing the Woolshed Block.
- 11.12 Ms Bartlett noted that most of the land to be irrigated on the outwash plain has already been cultivated or direct drilled. Furthermore she added that some of the cultivated land is in crops or has reverted to a weed cover after crop harvesting. Vegetation on the direct drilled land is hieracium and pasture grasses with scattered hard tussock and occasional native species dotted across it.
- 11.13 In addition to the land already subject to pasture improvement she referred to a large area of modified natural land in the eastern part of the property (Woolshed Block) to be irrigated which is dominated by hieracium, briar, pasture grasses and sparse native grasses, native broom and other species.
- 11.14 In relation to the modified 'natural' areas she told us the presence and cover of indigenous species is greater than for other classes, however the indigenous species do not form a functioning ecosystem and without active management and restoration, their future on this land use type is likely to be very limited. Dr Bartlett estimated that the land cover of native species is much less than 10% on Killermont Station's modified 'natural' blocks.

Cultural effects (Buddy Mikaere)

- 11.15 Mr Mikaere stated that the purpose of his reply evidence is to respond to matters raised in the evidence of David Higgins, Di Robertson, Paul Horgan and Mandy Waka Home on behalf of Te Runanga O Ngai Tahu. In that response he set out at length a further review of the consultation process undertaken with Ngai Tahu. He was clear in his view a longer consultation would not have assisted in terms of identification of application specific issues, but may have been helpful in the formulation of appropriate mitigation, remedial and avoidance strategies. He was of the view that any issues around consultation had been remedied largely because of the content and nature of the FEMPs.
- 11.16 We note that Mr Mikaere's reply is generic to the all the applicants represented by Mr Whata and does not cite cultural concerns specific to any one property including Killermont Station. We note that Mr Mikaere acknowledged that the health and water quality of the Ahuriri Arm had been raised as a specific issues in the CIA and by Ngai Tahu in their submission and that a proportion of leachate from this application will drain to that Arm

Planning (John Kyle)

- 11.17 In his right of reply Mr Kyle provided a set of proposed consent conditions for the applicant's consent. He also included a flow chart that explained how the approach to conditions in terms of response to the proposed OVERSEER modelling and water quality monitoring would be achieved.

12 STATUTORY CONTEXT

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

13 EVALUATION OF EFFECTS

- 13.1 Drawing on our review of the application documents, the submissions, the Officers' Reports, the evidence presented at the hearing and our site inspection, we have concluded that the effects we should have regard to are :
- (a) Visual and landscape
 - (b) Terrestrial Ecology
 - (c) Groundwater
 - (d) Water Quality and ecosystems
 - (e) Effects of intake structure
 - (f) Cultural
 - (g) Positive effects

Visual and landscape

- 13.2 In our Part A decision we summarised the evidence of a number of landscape experts who expressed differing views the effects that irrigation would have on visual effects. We reached some general conclusions on the issue and set out the general approach for assessing landscape effects for individual proposals: We now move on to apply this assessment approach to the current proposal.

Existing landscape

- 13.3 The site is located within Unit 6 Omarama as per Mr Glasson's evidence. This landscape unit is at the southern end of the Upper Waitaki catchment. It is a landscape of an outwash plain and terraces resulting from the actions of the Ahuriri River. Surface is flat to undulating.
- 13.4 The landscape is defined on both sides of the Ahuriri River. It is valley-like with high hills on each side and an enclosure on the southern end being the entrance into Lindis Pass. The northern end closest to Omarama is much more open. Irrigation is already present in this landscape on flat pastures particularly close to Omarama.
- 13.5 The Woolshed Block is located in a prominent and visually accessible section of the Killermont Stations outwash plains, part of a semi-arid expansive plain between Omarama and the Lindis Pass near the stations homestead. The irrigation area is shielded in part by a 4-6m old river terrace that runs the length of the northern boundary of the site and which is 300-500m from SH8.

Changes to landscape

- 13.6 It was generally agreed between the different landscape experts that granting consent to the proposal would bring about the following changes to the landscape:

- (a) Visibility of irrigation and infrastructure particularly the pivot irrigators; and
 - (b) Change to vegetative cover over the 300ha irrigation area.
- 13.7 We do note that it was intended to use both pivot irrigators and also a k line system to irrigate land within the command area.
- 13.8 We move on to assess the significance of these changes taking into account the evidence received from the various experts.

Significance of changes

- 13.9 A useful reference point when considering the significance of the change is how the landscape is treated in the relevant district plan. This is the approach that is supported by the CRPS and PCRS. Those plans provide that the broader landscape of the Basin is an Outstanding Natural Landscape and they seek to protect that landscape from inappropriate use and development. The mechanisms used to achieve that outcome are according to those plans are to be provided for within the district plan.
- 13.10 In this case the Waitaki District Plan provides a Rural Scenic Zone for the application site. This zone has a particular visual amenity that is associated with the dominance of open-space vistas and landforms, lack of intense subdivision and land use, and the overall absence of buildings and structures. However farming and irrigation are permitted activities in this zone.
- 13.11 We do note that the site is surrounded by an Outstanding Natural Landscape, being the adjacent hill areas to the south and the Ahuriri to the north. There is also a QEII covenant area in close proximity to the subject site namely the clay cliffs.
- 13.12 Also of interest in respect of this site is Policy 16.3 of the Waitaki District Plan, which seeks to protect site-specific and outstanding geological or geomorphological features that are of scientific importance. This is of potential relevance to the feature known as "The Knot" as discussed by Ms Stevens in her evidence. Although The Knot is not specifically identified in the Waitaki District Plan, we are of the view that the proposal could compromise the geo-preservation values of The Knot and consider that some protective separation from irrigation would be appropriate.
- 13.13 In respect of the general visibility of the site Mr Glasson told us, and we agree the landscape and the Woolshed Block in particular is visible from SH8 as SH8 runs right alongside the command area. We agreed with him that there is a significant amount of traffic including tourists would use SH8. We think therefore that this is a landscape unit which is quite sensitive to change. Also we note as acknowledged by Mr Brown and argued for by Ms Steven (for Mackenzie Guardians) the view from the road frontage does encompass the Dunstan and Wither Ranges further distant to the south and also The Knot.
- 13.14 All experts agreed that some form of mitigation was required. However there was a difference of opinion on the extent of mitigation necessary. In general Mr Glasson and Ms Steven supported more extensive mitigation measures than Mr Brown including larger set-backs.
- 13.15 Accepting Mr Glasson's view that the landscape does have a high degree of landscape value which is sensitive to change and therefore at risk of degrading visual amenity and natural qualities we consider the mitigation measures he proposes are more appropriate than those proposed by Mr Brown. In summary the key mitigation measures proposed by Mr Glasson were:
- (a) A buffer of at least 600m between SH8 and the irrigation site made up of a vegetative buffer covering the first 300m to the natural terrace and secondly, a 300m buffer distance from the top of the terrace (resulting in the pivot irrigators being setback at least 300m from the top of the terrace);
 - (b) A buffer of at least 100m from Short Cut Road;
 - (c) A buffer along the walking route to the Wether Ranges of 100m.
- 13.16 Overall, we come to the conclusion that in relation to the Woolshed Block without the mitigation measures proposed by Mr Glasson, particularly alongside SH8, we could not support the grant of consent. We conclude that a significant buffer zone is required between the irrigated land and SH8. This buffer should consist of retaining the land form and cover and allowing for tussock

grassland and scrubland to regenerate. The edge of the irrigated area should therefore better relate to the land form.

- 13.17 In respect of buffering from Broken Hut Road we acknowledge the points made by Ms Steven for Mackenzie Guardians however we do not see the viewpoint from Broken Hut Road as being so sensitive because the environment here to us has much more of a working element to it. Overall we have concluded that a 100m setback from Broken Hut Road would suffice. We do not think that a setback from the walking track to Wether Ranges as recommended by both Ms Steven and Mr Glasson has merit, as the on-farm viewing experience will be different from that which a viewer from SH8 would experience.
- 13.18 If these mitigation measures are included, we consider the proposal could proceed without compromising landscape and amenity values. However this conclusion must be considered in combination with our findings on other issues, particularly water quality, to inform our overall decision as to whether consent should be granted.
- 13.19 In reaching this conclusion we have taken into account the potential cumulative effects of the proposal. However our conclusions remain unchanged irrespective of whether we are considering the Woolshed Block in isolation or in combination with other existing and future developments. For this reason and given our overall findings on this application we have not provided a detailed discussion on cumulative landscape effects within this decision.

Terrestrial ecology

- 13.20 The area that is proposed for irrigation on Killermont is a part of a vast flat plain with a sparse vegetation cover almost entirely composed of hawkweed, sheep's sorrel and scattered exotic grasses. Fescue tussock is very occasionally present, along with briar rose. Some wilding pines are establishing on parts of the plains where pine shelterbelts provide a seed source. Irrigation on this flat land would have a positive effect by creating a vegetative cover preventing further soil loss.

Groundwater

- 13.21 The Woolshed Block irrigation is likely to increase regional groundwater concentrations but there is insufficient information to be confident about the quantum. We note Dr Bright's estimate that the average annual concentration of nitrate-N concentration in drainage water from the irrigated areas would be approximately 7.7 mg/L. We accept that this figure represents an upper limit and that the 7.7 mg/L would be diluted by groundwater from other sources but we have no information to gauge the extent of the dilution or and whether the average regional groundwater concentration (between Killermont and Lake Benmore) would increase to > 1 mg/L, which is the MWRL-nominated threshold (Part A).

Water quality and aquatic ecology

- 13.22 In Part A of this decision we rejected the MWRL proposition that all consents sought in this hearing could be granted (with conditions) and without causing cumulative water quality effects. It is incumbent upon us, therefore, to consider (as far as is possible) whether granting this application, in combination with other water permits we grant, will lead to unacceptable water quality effects. In this case it means considering the potential effects of granting this application (in combination with others we grant) on:
- (a) the trophic state of the Ahuriri Arm of Lake Benmore;
 - (b) Groundwater chemistry and in particular the proposed threshold of 1 mg/L nitrate-nitrogen; and
 - (c) Periphyton growths and other ecological effects in the Ahuriri River
- 13.23 A starting point for the consideration of effects is the FEMP. Evidence on the FEMP was given by Dr Robson, but for consistency with other decisions we have independently audited the FEMP.
- 13.24 There is no information in the FEMP explicit to the Woolshed Block but we glean:
- (a) There appears to be provision for low rate application of effluent which will be imported from the neighbouring farm whereas for the Pebbly Block it was explicitly stated that only

solid manures would be imported. The FEMP states that if effluent is spread by tractor, maps showing no spread areas should be carried in tractor cabs.

- (b) the soils are on the Woolshed Block are Mackenzie soils, approximately 50% of which are shallow with a PAW of ~45mm, and the other 50% have PAW ranging from 65mm-85mm. Our view (see Part A) is that the developed setting of OVERSEER may underestimate nutrient loss from the shallow soils and that the highly developed setting, whilst not scientifically robust, provide a more pragmatic conservative estimate of the nitrogen losses that may be expected.
- 13.25 For Killermont Station, the WQS identified the Ahuriri Arm's mitigation requirements as being the most stringent. MWRL through the WQS set Killermont Stations NDA (amended FEMP) for nitrogen at 14,045 kg/y. However this included 6,105 kg reallocated from WHL Killermont. The actual OVERSEER load modelled for Killermont Station was 9229 kg nitrogen/y and 172 kg phosphorus/y using the developed setting.
- 13.26 We are aware that one of the benefits of OVERSEER is that it models whole farm management and that nutrient losses cannot be attributed to the irrigation site alone, but includes the extra stock that it supports. Nevertheless in the case of Killermont Station we are faced with the situation of having 4 separate applications, with, in our view different environmental settings and consequences. We note that Dr Bright made the assumption that the majority (if not all) new nutrient load arising from Killermont would come from irrigated areas and that seems a reasonable assumption to make for the purposes of separating out the likely effects of the different applications.
- 13.27 The modelled loads arising from Woolshed Block alone are difficult to determine. Dr Freeman (addendum evidence Table 7) appears to lump the Pebbly Block and Woolshed Block together (516 ha) and apportions a collective nitrogen load of 7,710 kg nitrogen/y. This load estimate is a good reflection of the alternative system (not preferred by Killermont) whereby the Pebbly Block is left as it is currently and all irrigation takes place on land adjacent to the proposed Woolshed Block and is grazed (i.e. the Woolshed block plus the land adjacent to Woolshed Block irrigated from this take point]. As the OVERSEER output files for the 'home block' gave an estimated nitrogen leaching rate of 8 kg N/ha/y and 17 kg N/ha/y at the developed and highly developed setting, respectively, Dr Freeman's figure appears reasonable. If we apportion the load given by Dr Freeman to Woolshed Block alone, this gives a load of 4,482 kg N/y or ~5% of the nitrogen load arising from new irrigation in the Ahuriri catchment (there being some discussion about what proportion of replacements are actually being exercised) and ~2.6% of the total nitrogen load from applications in the Ahuriri (i.e. new plus replacements).

Effects on waterbodies

Ahuriri River

- 13.28 We accept Dr Goldsmith's evidence that the ecological effects (fish, invertebrates, birds) of the proposed irrigation on the Ahuriri River will be minor.
- 13.29 However we do not have sufficient information to be sure there will not be more than minor effects on periphyton growths in the Ahuriri River. We note Dr Bright's evidence that the Ahuriri River is perched with respect to groundwater on the home block, and that there should be no localised effects (near the intake), however the estimated nitrogen loss is significant and will (accepting Dr Bright's evidence) enter the Ahuriri River further downstream once the nutrient-enriched groundwater arising from irrigating Woolshed Block reaches the river.
- 13.30 We note that Dr Coffey's evidence (from MWRL) in Part A stated that for all three of the Ahuriri sites he surveyed average periphyton cover and biomass were below a threshold of concern. However with an increase in nutrient load arising from this and other consent applications (if granted) this may not continue. We note that the Wilks, Norton and Meredith nutrient limitation study (reported by Meredith, and Snelder in Part A) found the Ahuriri River was nutrient limited by both nitrogen and phosphorus, though phosphorus appeared "more limiting" than nitrogen at the location tested. As the Ahuriri River is highly valued for wildlife, mahinga kai, and recreational values there are good reasons to be conservative.

Ahuriri Arm of Lake Benmore

- 13.31 In Part A we determined that the Ahuriri Arm of Lake Benmore was already close to the oligotrophic-mesotrophic boundary. The proposed Woolshed Block irrigation would contribute

~5% of new nutrient load to the Ahuriri Arm. Taken in isolation this may not seem a great amount but it is a significant proportion of projected cumulative new loading. We have taken this into account when making our final determination.

Avoided, remedied or mitigated

- 13.32 The applicant has proposed a lock-step approach as a measure to ensure that any remaining 'unknowns' are addressed before their activities are fully developed. This is an advancement of the applicant's thinking on adaptive management about which we gave our views in Part A.
- 13.33 The lock-step approach in essence, includes the design and implementation of a pre-irrigation monitoring programme. Simply put, if the baseline assumptions are not confirmed through this monitoring, then irrigation cannot commence.
- 13.34 While attractive at first blush it raised for us the question: Why should consent be granted in the circumstance where what we considered to be fundamental pre-consent research was either not completed or not completed adequately?
- 13.35 Our concern with this approach is that while we see the sense in the circumstances of this case of pre-irrigation monitoring, we note that, firstly, it is more than pre-irrigation monitoring; indeed, it is the design and implementation of a pre-irrigation monitoring programme.
- 13.36 Next, if we are to grant consent on this basis, then our view of the evidence produced there is a very real risk the applicant group would not be able to proceed beyond the pre-irrigation monitoring programme. Rather than grant a consent that could not be given effect to and which might create difficulties for both the applicant group and the consent authority, we considered it more appropriate that we recognise, through declining consent, that the applicant bears the primary responsibility of coming to a hearing with adequate information.
- 13.37 In addition, to the lock-step approach, the applicants have (in Mr Whata's closing arguments) proposed staging (capping nutrient discharge at 80% of the provisional NDA in the first full five years of irrigation) and ratcheting (a mechanism that provides for reducing nutrient discharge in the event that the monitoring reveals that loadings are approaching 90% of the Ahuriri TLI threshold).
- 13.38 The difficulty we have with both of these suggestions is that we are of the view that the Ahuriri Arm is already close to the oligotrophic-mesotrophic boundary and even 80% of the proposed NDA would be sufficient to effect that change in state. Similarly, after 5 years of nutrient discharge (excluding allowances for travel time) we would be reasonably certain that the Ahuriri Arm would have crossed the mesotrophic boundary. In our view, it would be irresponsible to grant a consent on the basis that once the Ahuriri Arm reached that undesirable state, the applicants would then have to ratchet back their nutrient discharge.
- 13.39 In summary we are of the view that the lock-step approach should not be a substitute for a robust AEE and/or supporting evidence in which the state of the existing environment is adequately described and reasonable efforts are made to address reasonably foreseeable environmental effects. As discussed in Part A we are of the view that the MWRL WQS falls short of the standard expected for a proposal (the total consents for irrigation before us) of this magnitude.

Effects of Intake Structure

- 13.40 In relation to the proposed intake structure, the principal effects will be generated during the short period involved in the proposed construction activity of the structure. There is likely to be a short term increase in sediments during construction which will cause fish and some macrophyte taxa to move downstream from the area affected by the works. Dr Ryder submitted that this would be short term and re-colonisation would start almost immediately after construction ceases.
- 13.41 We believe that sediment discharges can be appropriately controlled and mitigated by a comprehensive erosion and sedimentation mitigation plan that is consistent with the Environment Canterbury Erosion and Sediment Control Guidelines (ECAN ESC Guidelines).
- 13.42 Dr Meredith in his addendum evidence noted that gravel gallery intakes are preferred to the original proposal put forward by the applicant, but these type of structures require careful scrutiny of design, installation, and maintenance, such that adequate performance is maintained.

Mr McIndoe in reply acknowledged that galleries can have operational and maintenance issues but considered these issues are well known and are generally associated with unusual circumstances such that it might affect the water take function but the fish screening capacity will always be effective. Including conditions of consent that require evidence demonstrating compliance with the ECAN "Fish Screening: Good Practice Guidelines for Canterbury" report will give some assurance that the gravel gallery fish screening structure will meet guideline standards.

- 13.43 The S42A report advocates an exclusion period for construction be extended to avoid the season opening, salmonid spawning and incubation period. Dr Ryder recommended that construction take place outside the avifauna breeding season of August to December, and the trout spawning period of June to October. He described the movement of native fishery away from the area of construction and or sedimentation and an early re-colonisation post construction such that the effects should be minor. Decontamination of equipment to prevent disturbance or spreading of didymo growths during construction should also apply.
- 13.44 The intake structure as described by Mr McIndoe is designed to safely screen a wide range of fish sizes, including adult and juvenile salmonids, consequently the effects on fisheries is expected to be less than minor.
- 13.45 The completion and acceptance of a Construction Management Plan by Canterbury Regional Council prior to construction commencing will be an important factor in establishing the best practice standards recognised by Canterbury Regional Council and mitigating adverse effects on ecosystems and water quality of the proposed activity to less than minor.
- 13.46 In respect of the diversion associated with construction of the intake, it is over a short length, will be temporary in nature and returns to the same watercourse it is originally part of. Given the nature of the activity, we are satisfied that the effects will be no more than minor. However we consider that it is necessary to impose some brief conditions of consent to ensure that the extent of the diversion is clearly defined and the activity is managed appropriately.

Tangata whenua

- 13.47 The Ngai Tahu objective to undertake mahinga kai enhancement projects in the Lower Ahuriri River area would be detrimentally affected by an increase in nutrient levels above present levels. The Woolshed Block would contribute to the cumulative negative water quality effects of existing and new irrigation proposed in the Ahuriri catchment. Ngai Tahu expressed opposition to any further irrigation, particularly large scale activity due to uncertainty about the effects on key water bodies that might occur as a result. We agree, our finding in Part A of this decision was that any further significant increase in nutrient load from the Ahuriri catchment would likely result in adverse water quality effects to the Ahuriri Arm.
- 13.48 In the application an iwi site downstream of the Killermont intake was referred to, no further information or description was given to this site, we are unable to determine if there is a likely effect, but would take the position that mitigation is unlikely provided sufficient distance is maintained between the 'site' and any of the intake construction work.

Positive effects

- 13.49 The addition of 300 ha irrigated land to the Killermont Station operation would provide an undoubted boost to the properties economic viability and stock finishing capability. The new irrigation would also release the pressure currently placed on the more fragile country in times of extreme weather conditions. There would also be benefits that flow on to the local and regional economy.

Key conclusions on effects

- 13.50 In relation to the actual and potential effects of the proposal, our key conclusions are as follows.
- 13.51 Much of the information provided by the applicant on the Woolshed Block was general to Killermont Station and required an extrapolation exercise to identify the specific or apply the general information to the Woolshed scenario. We adopted the assumption of Dr Bright, that the majority if not all new nutrient load arising from Killermont would come from irrigation activity, which helped to separate out the likely effects of each of the four applications on Killermont Station. The Woolshed Block would contribute ~5% of the nitrogen load arising from new irrigation in the catchment. In Part A we concluded that any additional significant load to the

Ahuriri catchment should not not be consented because it could result in the Ahuriri Arm crossing the meostrophic boundary. The predicted nutrient load from Woolshed Block could, in combination, with other proposed irrigation on Killermont Station, be a significant contributor to a change in the trophic status of the Ahuriri Arm..

- 13.52 The effects of the intake structure being placed in the bed of a channel of the Ahuriri River opposite the Killermont Station woolshed will be mitigated by timing of the works to avoid spawning, coinciding with low flows, taking steps to minimise sediment discharges and ensuring restoration of the river bed and protective river bank structures post the installation. Compliance with the NIWA Fish Screening Guidelines, ECAN Erosion and Sediment Control Guidelines and Construction Management Plan (CMP) will satisfy ecosystem protection requirements.
- 13.53 The landscape effects are likely to be more than minor given the prominence of the command area at one end of a large and natural looking semi-arid alluvial plains, the greening and interruption of the open and expansive dry brown vista will be visible from public roads in the locality. The effects can be mitigated by the screening provided by a terrace that faces SH8 and the planting of native vegetation in the corridor between the terrace and SH8, and setting back the centre pivots from the terrace.
- 13.54 The landscape and recreational effects associated with the location of an installation of the intake structure, pump and piping will be less than minor
- 13.55 The effects on tangata whenua values are uncertain, this is position is supported by the conclusion on the water quality effects in Part A, which requires a conservative approach to be taken in the decision on the applications before us.

14 EVALUATION OF RELEVANT PLANNING INSTRUMENTS

- 14.1 Under s 104(1)(b) of the Act, we are required to have regard to the relevant provisions of a range of different planning instruments. Our Part A decision provides a broad assessment of those planning instruments and sets out the approach we have applied to identification and consideration of the relevant provisions. The following part of our decision should be read in combination with that Part A discussion.
- 14.2 In relation to the current applications, we consider that the most relevant and helpful provisions are found in the regional plans, including in particular the WCWARP and the NRRP. In addition, the Proposed and Operative CRPS and the WDP are of assistance in relation to landscape issues that arise.
- 14.3 The following sections of this decision provide our evaluation of the key objectives and policies from these planning instruments. We have organised our discussion in accordance with the key issues arising for this application, which are water quality, efficient use of water, tangata whenua, landscape values, and activities in beds of lakes and rivers.

Water quality

- 14.4 In relation to water quality, the key documents we have considered are the WCWARP (incorporating the objectives of the PNRRP) and the operative NRRP provisions.
- 14.5 In relation to the WCWARP, we consider that Objective 1 is the critical objective. In particular, Objective 1(b) seeks to safeguard life supporting capacity of rivers and lakes and Objective 1(d) seeks to safeguard the integrity, form, functioning and resilience of the braided river system.
- 14.6 Objective (1)(b) requires us to safeguard the life supporting capacity of rivers and lakes. We determined that the proposed activity was likely to result in the drainage of nutrient to groundwater. This groundwater will contribute to surface flows in the lower gaining flows of the Ahuriri River. The specific effect of the Woolshed Block nutrient load on water quality in the Ahuriri and the Ahuriri Arm of Lake Benmore is uncertain, but the potential adverse effects on the Ahuriri Arm of Lake Benmore becoming mesotrophic are significant. The position we have taken on the efficacy of the WQS as stated in Part A of the decision influences our finding that the Woolshed Block proposal is likely due to its scale and in combination with existing irrigation activities to be inconsistent with Objective 1(b) and 1(d).
- 14.7 Objective 1(c) requires us to manage waterbodies in a way that maintains natural landscape and amenity characteristics and qualities that people appreciate and enjoy. Given our finding in terms of the likely results in the Ahuriri Arm of Lake Benmore becoming more mesotrophic in

summer from its current oligotrophic state and our finding in terms of maximum annual periphyton biomass exceeding MfE guidelines during low-flow summer conditions, then in our view granting consent would not be consistent with Objective 1(c).

- 14.8 We note that Objectives 2, 3, 4 and 5 'in the round' deal with and provide for the allocation of water. However, the critical qualification is that water can be allocated provided that to do so it is consistent with Objective 1. Given the findings we have made about Objective 1, we must conclude that allocating water in terms of the balance objectives would not be consistent with the overall scheme of the WCWARP. We have reached this view taking into account the national and local costs and benefits (environmental, social, cultural and economic) of the proposal, as required by Objective 3.
- 14.9 The Ahuriri River is highly rated for its amenity values, in particular for trout fishing, picnicking, swimming, duck shooting, kayaking, canoeing and rafting. In addition to this, a black-fronted tern restoration program is situated on the Ahuriri River. Taking into account these matters, we do not see how the granting of consent given the water quality outcomes that we are concerned about, that we would be enabling present and future generations to access the water resource to gain cultural, social, recreational, economic and other benefits.
- 14.10 Policy 13 links the WCWARP to the PNRRP (as it existed at the time) by requiring us to have regard to how the exercise of the consent could result in water quality objectives in the PNRRP not being achieved. As explained in our Part A decision, we have considered the objectives of the PNRRP and the now operative NRRP in relation to the current proposal.
- 14.11 The applicant contributed to a WQS that investigated and assessed the water quality implications of a range of consent applications across the Upper Waitaki catchment, much of the supporting evidence for the applicant is at a generic level. The Woolshed Block is one of four separate applications by Killermont Station, and is of a scale that if granted along with the Pebbly Block application will result in the significant nitrogen loss that will enter the Ahuriri River further downstream once the nutrient-enriched groundwater arising from the Woolshed Block irrigation reaches the river.
- 14.12 Under the PNRRP, the Omarama Stream and Ahuriri River were classified (WQL1) as 'Natural' under which the water quality and substrate had to be maintained in that state (i.e. No change). Under the operative NRRP the classification changes to high country alpine, which has the same requirement (no change). We are of the view that granting these consents could result in a deterioration in the quality of the Ahuriri River margins; specifically the breaching of periphyton guidelines under summer low flow conditions.
- 14.13 The Ahuriri Arm of Lake Benmore is classified as an Artificial Lake under Table WQL6 of the NRRP, which has as an outcome the TLI shall not be greater than 3 (i.e. oligotrophic-mesotrophic boundary). As discussed in Part A and above we are of the view that granting these consents would result in a deterioration of lake water quality and cause that outcome to be breached. Therefore on both criteria (maximum TLI and intent of the water quality outcomes) Objective WQL1.2(2) of the NRRP would not be achieved.
- 14.14 For non-point source discharges to groundwater, Objective WQL2 of the PNRRP distinguishes between groundwater that is "*unaffected or largely unaffected by human activities*" [as reported in 2004]. While there is extremely limited groundwater quality data in the Upper Waitaki there appears to be general agreement that nitrate nitrogen concentrations are generally low (<1 mg/l) and the WQS (#3.85d Part A) proposed a threshold of 1 mg/L nitrate-nitrogen for those catchments that sit below the threshold.. Because of the importance of groundwater as a determinant of surface water quality, our view is that the 1 mg/L Nitrate-nitrogen threshold is appropriate. We note the NRRP Objective WQL2.1(3) states that "Where groundwater enters a river of lake, the concentration of any contaminant in the groundwater shall not result in the surface water quality being reduced below the relevant provisions of Objective WQL1, or the standards set by a water conservation order." There has been insufficient data and analysis presented from which to predict maximum concentrations in groundwater and consequently whether the surface water threshold in WQL2.1(3) could be breached
- 14.15 Overall then, having regard to the scheme of the WCWARP and the NRRP we reach a conclusion that granting consent in this case would not be consistent with the key objectives and policies of those plans relating to water quality.

Environmental flow and level regimes

- 14.16 Policies 3 and 4 of the WCWARP refer to the setting of environmental flow and level regimes to achieve the objectives of the WCWARP. This is reflected in the rules of the PNRRP which specifies minimum flows and levels for water bodies and allocation limits for specific activities. In relation to these applications, the applicant proposes to comply with flow and level regimes in the WCWARP, which should ensure that the proposal is consistent with Policies 3 and 4.

Efficient use of water

- 14.1 Objective (4) of the WCWARP seeks to promote “*the achievement of a high level of technical efficiency in the use of allocated water*”. The technical efficiency of the application is consistent with the provisions of the WCWARP. Application by spray within the constraints of an annual volume will require a high degree of efficiency to ensure that crops and pasture are not stressed in extreme conditions and water is not wasted.
- 14.2 Policies 15 – 20 deal with efficient and effective use of water and are applicable to this application. The Policies provide for an efficient use of water so that net benefits are derived from its use and are maximised and waste minimised. We are satisfied that the rates and annual volumes sought by the applicant reflect an efficient and effective use of water and that the reasonable use test can be met. The proposal is compliant with Policy 16(c)(ii) which the applicants used to calculate the annual volume. Irrigation by centre pivot at rates of 5.0 mm/day over the 300 ha will comply with the reasonable use and efficiency provisions of the WCWARP.

Tangata whenua

- 14.3 Objective 1(a) of the WCWARP relates to the integrity of mauri and is closely linked to Objective 1(b). If we are not satisfied that the health of a particular water body is being safeguarded then the mauri is not being safeguarded either. As noted above, we do not have confidence that even with the mitigation measures proposed by the applicant, sustainable water quality outcomes will be achieved. It therefore follows that granting the consents may not maintain the integrity of the mauri and also, will not meet the spiritual and cultural needs of the tangata whenua
- 14.4 Objective WQN1 from Chapter 5 of the NRRP seeks to enable present and future generations to access the regions surface water and groundwater resources to gain cultural, social, recreational, economic and other benefits, while (c) safeguarding their value for providing mahinga kai for Ngai Tahu and (d) protecting waahi tapu and other waahi taonga of value to Ngai Tahu. This objective aligns with one of the principal aspirations expressed by Ngai Tahu during the hearing of enhancing mahinga kai resources and supporting ecosystems. The potential for an increase in algal blooms at important mahinga kai gathering sites such as the Ahuriri Delta would be a serious consequence for Ngai Tahu. This application is one of a number that will result in nutrient losses that travel to the Ahuriri Arm, and our finding that there is likely to be a deterioration in trophic status from oligotrophic and mesotrophic should these applications be granted causes this application to be inconsistent with the objective.
- 14.5 Objective WTL1(d) from Chapter 7 of the NRRP seeks to achieve no overall reduction in the contribution of wetlands to the relationship of Ngai Tahu and their culture and traditions with their ancestral lands, water, mahinga kai sites, waahi tapu and waahi taonga. The traditional relationship that Ngai Tahu are seeking to restore through restoration of mahinga kai and kaitiakitanga practices relate principally to the Ahuriri Delta, and the wetlands in the Lower Ahuriri. Given the uncertainty over the water quality issues related to this and the other applications in the Ahuriri catchment we find that the proposal would be inconsistent with the objective.

Landscape values

- 14.6 We discuss the relevant objectives and policies for landscape in our Part A decision. In summary, these are primarily found in the Proposed and Operative CRPS and the NRRP. In broad terms, these provisions seek the protection of outstanding natural landscapes from inappropriate use and development.
- 14.7 In considering these provisions, we are informed by the provisions of the Waitaki District Plan, which identifies the applicant’s property as being outside the area classified as an Outstanding Natural Landscape. Given this circumstance, a more permissible or relaxed approach to landscape issues (such as they are in the context of this application) is, we think, available to us.

- 14.8 For the reasons already advanced, we think that with appropriate mitigation measures the landscape effects of this proposal are capable of being addressed by conditions and could achieve consistency with the relevant objectives and policies. However, given the finding we make on water quality which ultimately determines the outcome for these applications, we do not think it is necessary for us to advance this matter further.

Activities in beds of lakes and rivers

- 14.9 The key objectives and policies that are relevant to the land use application (CRC041776) can be found in Chapter 6 of the NRRP, which relates to activities in the beds of lakes and rivers. The chapter contains one objective and two related policies.
- 14.10 Objective BLR1 aims to ensure that works in the beds and banks of lake, rivers and streams can be undertaken while minimising effects, including flood-carrying capacity, natural character, ecosystems, other structures, erosion, Ngai Tahu values. Given the conclusions we have reached on these matters above, we consider that, subject to appropriate conditions, the proposed works in the bed are consistent with this objective.
- 14.11 Policies BLR1 and BLR2 aim to control activities associated with the erection, placement, use and maintenance of structures within the bed of rivers to ensure that Objective BLR1 is achieved. This may include restricting activities so that they do not affect flood-carrying capacity, erosion or create plant infestations. For the reasons discussed above, with the imposition of appropriate conditions, we consider that the proposed works in the bed are consistent with these policies.
- 14.12 In respect of the proposed diversion, given its minor nature and our conclusions on effects outlined above, we consider that the activity is consistent with the relevant objectives and policies in the WCWARP seeking to sustain the quality of the environment.

Key conclusions on planning instruments

- 14.13 For all of the above reasons, we consider that granting the take and use consent (CRC041777) would be contrary to the objectives and policies of the WCWARP (incorporating the PNRRP) and the NRRP relating to water quality. As consequence of this is that the proposal would also be contrary to the objectives and policies relating to tangata whenua values. In terms of landscape issues, if the mitigation measures recommended by Mr Glasson were included then we think that a grant of consent would be consistent with both the Operative and Proposed CRPS.
- 14.14 In contrast, we consider that granting consent to the application to disturb the bed (CRC041776) would be consistent with the relevant objectives and policies, provided that appropriate mitigation measures are imposed.

15 EVALAUTION OF OTHER RELEVANT S104 MATTERS

- 15.1 Under s104(6) RMA we may decline application for resource consent on the grounds that it has inadequate information to determine the application. However before doing so, we must have regard to whether any request made of the applicant for further information or reports resulted in further information or any report being available.
- 15.2 Any effects on receiving waters (creeks, rivers, lakes) will be manifest by the ingress of groundwater to the receiving water in question. In our view, the applicant has not provided sufficient information to understand the likely fate of nutrients leached from the irrigation command area to receiving waters. The evidence on this matter is rudimentary, based on few field measurements, and gives little geographic certainty as to where in the Ahuriri River system drainage waters will emerge. Having a reasonable understanding of recharge areas, together with approximate travel time is important in order to gauge the impacts of the activity on Ahuriri system and over what length.
- 15.3 We note the applicant proposes to address these uncertainties through their lock-step approach: where the information is gathered, audited, and conclusions made and agreed prior to exercising the consent. However we have rejected this approach for the reasons set out in Section 13 above.

16 PART 2 RMA

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

decision and are discussed below in the context of the current applications. These comments primarily relate to the take and use application rather than the application for works in the bed.

Section 6 – matters of national importance

- 16.2 Section 6 identifies matters of national importance that we must “recognise and provide for” when making our decision, including preserving the natural character of lakes and rivers (s6(a)), protecting outstanding natural features and landscapes (s6(b)) and the relationship of Maori with the environment (s6(e)).
- 16.3 In relation to s6(a), the proposed activity may compromise some of the values that have been identified as having national and international values in the Water Conservation Order for the Ahuriri River, through the release of nutrients to groundwater and joining with surface water in the lower Ahuriri River. The proposed activity would contribute to a cumulative impact on the natural character of Lake Benmore. While it is unlikely that a shift from Oligotrophic to mesotrophic conditions will be readily seen by the public as deterioration in natural character, for those knowledgeable about lake quality and fisheries it will be perceived that way because it will place Lake Benmore firmly on the continuum of increasing trophic waterbodies that are very difficult to reverse. We are cognisant that Lake Benmore is not a natural waterbody, but it is nevertheless nationally significant because of its importance for power generation and supporting the best lake fishery in the South Island.
- 16.4 Under s6(b), we are required to consider the effect of the proposal on the broad landscape that is a distinctive part of the basin and visible from SH8. The mitigation options provided by the natural terrace formation, the proposed native vegetation and set back of the pivot irrigators from the terrace face will relieve visual vista as seen from vantage points on SH8. The setback from Short Cut Road of 100m will also assist.
- 16.5 Finally, in relation to s6(e), the attachment that Ngai Tahu have demonstrated with the Ahuriri delta in particular, and their efforts to promote restoration of mahinga kai in that area, lead us to conclude that granting these consents would be contrary to s6(e).
- 16.6 For the above reasons, we consider that granting consent to the proposal would not recognise and provide for sections 6(a) and 6(e), as we are required to do under the RMA.

Section 7 – other matters

- 16.7 Section 7 lists the following other matters that we shall “have particular regard to”. We make the following observations in relation to each of the above matters as they are relevant to the application, referring to the sub paragraph numbers of s7:
- (a) The principle of Kaitiakitanga has been observed to the extent that the applicant has endeavoured to consult with and understand the tangata whenua (Ngai Tahu) values that might be subjected to impacts from the proposed Woolshed Block irrigation development. Ngai Tahu Runanga and the tribal authority combined to make it very evident that there are cultural and spiritual values associated with the Ahuriri River and delta that are significant to their customs and practices for current and future generations. The applicant has gone on to develop a Farm Environmental Management Plan and a nutrient mitigation process that they consider will address the kaitiaki interests of Ngai Tahu. We note however that Ngai Tahu remain concerned at the end of the hearing with the scale and consequently the potential cumulative impacts the proposed development might have on downstream waterways and mahinga kai values.
 - (aa) The ethic of stewardship has been followed with respect to land management of the applicant’s property. The applicant has submitted that irrigation is the only way to arrest the very considerable problem of wind-borne soil erosion and control invasive species such as hieracium. We agree with that assessment. On the other hand, however, we have determined the loss of nutrients offsite is likely to cause adverse effects on waterways, even with the significant mitigation measures proposed, which is not consistent with stewardship. This is brought about because of the position of the applicant’s property in the landscape, relative to waterbodies valued by the community.
 - (b) The applicant has demonstrated their proposal constitutes an efficient use of water.
 - (c) We think the effects on recreation and amenity values, particularly those arising from water quality outcomes from a grant of this proposal, will be significant.

- (d) The intrinsic value of terrestrial ecosystems will be affected with existing vegetation replaced by pasture. However the existing value of terrestrial ecosystems within the irrigation command area is low and there is little prospect of its restoration under existing permitted land use. However this may be offset by deterioration of creeks and river downstream should relatively nutrient-enriched groundwater intersect them, and the trophic state of the Ahuriri Arm of Lake Benmore will deteriorate.
- (e) The overall quality of the environment downstream of the applicant's property will in our view be degraded, and although the degree of that degradation cannot be predicted with confidence, there are significant consequences should the Ahuriri Arm become mesotrophic.
- (f) The Ahuriri Arm is highly valued by Ngai Tahu, fishermen, tourists, and the local population. The WCWARP and NRRP recognise the finite nature of water resources in the Mackenzie Basin and seek to ensure that they are maintained or enhanced and certainly not degraded.
- (g) Mr M Webb of F&G told advised us of the importance of the Ahuriri as a trout fishery, being the last relatively unmodified river fishery of significance in the upper Waitaki River. Up to 30% of trout spawning occurs between Lake Benmore and the Clay Cliffs. The river sustains an estimate of 3000-5000 angler-days annually, in the last ten years angler days have approximately doubled.

16.8 Having particular regard to the above matters in the context of section 7, we conclude that overall the grant of consent could not be supported.

Section 8 – Treaty of Waitangi

- 16.9 Finally, section 8 requires that we shall take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi).
- 16.10 Section 8 of the RMA has had a cascading influence on the development of regional and district plans in so far as they affect the Upper Waitaki through the integration of Ngai Tahu values into the respective objectives and policies. The applicants were part of the initiative (MWRL) to develop a Cultural Impact Assessment and the subsequent engagement of a cultural expert (Mr Buddy Mikaere) to assist the individual applicants such as Killermont Station to relate the findings of the CIA to their property. Efforts were made to consult with Ngai Tahu interests to clarify and mitigate identified cultural issues, this included on site visits by Ngai Tahu. While the applicant has developed significant mitigation measures to reduce or remove the negative impacts of the proposed activity, we note that the scale of the proposed development has made it difficult for Ngai Tahu to be confident that the cumulative effects are no more than minor. Their position at the close of the hearing was that they remained opposed to this application unless we (the Commissioners) were assured that in granting this consent (with conditions) effects on water quality would be no more than minor. We cannot give that assurance.
- 16.11 The interests of tangata whenua were addressed by the iwi authority and/or Papatipu Runanga. There can be no doubting the cultural and spiritual interest Ngai Tahu has in the Upper Waitaki catchment. The Ngai Tahu cultural and spiritual interest has been enunciated in many statutory policy and plan documents over the years and also in Ngai Tahu publications, including the Ngai Tahu Claims Settlement Act 1998.
- 16.12 We heard that the traditional mahinga kai resources and gathering sites are in need of enhancement, that the Lower Ahuriri River catchment is identified as a key location for mahinga kai enhancement projects. That the potential for large scale irrigation development and consequent nutrient discharges would have a significant impact on the waterways and mahinga kai opportunities in the lower Ahuriri River catchment. The Woolshed Block proposal will contribute to the cumulative nutrient loading in the area proposed for mahinga kai enhancement.

Section 5 – Purpose of the RMA

- 16.13 Turning now to the overall purpose of the RMA, that is, "*to promote the sustainable management of natural and physical resources*".
- 16.14 The Woolshed Block proposal at 300 ha in area is a relatively large scale, new activity, in a catchment with limited capacity to receive additional nutrient loadings without having a negative effect on trophic levels of the Ahuriri Arm of Lake Benmore or water quality in the lower

catchment of the Ahuriri River. We had insufficient information specific to the Woolshed Block proposal to enable a firm conclusion on the effects on groundwater, surface water and ultimately the Ahuriri Arm. The annual volume is reasonable and proposed method of use efficient. However our Part A conclusions on the WQS remain a principle influence in declining the water take and use part of the Woolshed Block proposal due to the uncertainty that remains despite the evidence we have heard.

- 16.15 The landscape effects would impact, we think, on what is a large and natural-looking semi-arid outwash plain. The naturalness of the landscape dominates the views of travellers on the public roads in the vicinity, principally SH8. There are, we recognise, some potentially mitigating factors, including the setback from SH8 up to the natural terrace that occurs on the irrigation block. That provides some relief by itself, but we think that allowing that area to regenerate tussock and shrubland would also help, combined with Mr Glasson's recommendation that the centre pivots be placed some 300m back from the terrace face. Providing an overall distance of 600m would, we think, greatly assist landscape effects. We agree with the s42A report of Mr Glasson (with the exception of the setback from the access track to the Wether Ranges) that the balance mitigation he proposes will result in the landscape effects being less than minor.

17 OVERALL EVALUATION

- 17.1 Under s104B of the RMA, we have a discretion as to whether or not to grant consent. This requires an overall judgment to achieve the purpose of the Act and is arrived at by:
- (a) Taking into account all the relevant matters identified under s 104;
 - (b) Avoiding consideration of any irrelevant matters;
 - (c) Giving different weight to the matters identified under s 104 — depending on our opinion as to how they are affected by the application of s 5(2)(a), (b), and (c) and ss 6-8 — to the particular facts of the case; and then in light of the above; and
 - (d) Allowing for comparison of conflicting considerations, the scale or degree of conflict, and their relative significance or proportion in the final outcome.

Take and use CRC041777

- 17.2 The proposal's landscape issues raised by submitters can, we think, be mitigated by the irrigation area being screened from view by being located back at least 300m into the application site from the raised terrace combined with allowing tussock, grass and shrubs to regenerate in the 300m distance between SH8 and the raised terrace on the application site. If this occurs, we think this will result in the corridor effect that typifies the outwash plain landscape on entry to the Lindis Pass from Omarama to be retained. The setback from Short Cut Road will also assist.
- 17.3 The effect of the proposed activity on surface water quality in a catchment with limited assimilative capacity to receive additional nutrient loadings has the potential to create adverse water quality effects. The WQS identified the Ahuriri Arm mitigation requirements as being the most stringent, and in the case of Killermont Station allocated a NDA for nitrogen and phosphorus that would comply with the threshold nominated by MWRL. The applicant's evidence was less specific about the individual irrigation proposals on Killermont Station. In the case of the Woolshed Block, our view is that the effects of the proposed activity on surface water quality will not be insignificant in terms of the definition we applied for new irrigation in this catchment. Drainage from irrigation will contribute to regional groundwater and will emerge into the Ahuriri River further downstream, probably near Omarama (Dr Bright's evidence). The degree of dilution that the nutrients would receive by mixing with groundwater on the information we have heard is uncertain. The potential effect on the water quality in the Lower Ahuriri and the receiving arm of Lake Benmore are important factors we must consider. The movement of the oligotrophic state of the Ahuriri Arm of Lake Benmore to mesotrophic would be inconsistent with the NRRP and has been agreed as undesirable by all participants to this hearing.
- 17.4 Having reviewed the application documents, all the submissions, taking into account the evidence to the hearing and taking into account all relevant provisions of the RMA and other relevant statutory instruments we have concluded that the outcome which best achieves the purpose of the Act is to decline consent for CRC041777.

Works in the bed CRC041776

- 17.5 We agree with the applicant, submitters, and the Consent Investigating Officers were generally in agreement that subject to the imposition of appropriate conditions the effects of the applications to disturb the bed of the Ahuriri River would be minor, and grants of consent would be consistent with the objectives and policies of the relevant plan.
- 17.6 In particular, we note that the conditions applicable to Rules BLR4 and BLR5 are capable of being satisfied subject to close attention to the detailed requirements and preparation of an implementation of an ECan Erosion and Sedimentation Control Guidelines plan, Construction Management Plan authorised by ECan and adherence to the ECan "Fish Screening" Good Practice Guidelines for Canterbury. In addition, observance of sensitive exclusion periods for aquatic, avifauna and recreational activities will be required.

18 DECISIONS AND REASONS

- 18.1 Pursuant to the powers delegated to us by the Canterbury Regional Council:
- 18.2 For all of the above reasons and pursuant to sections 104 and 104B of the Resource Management Act 1991, we **DECLINE** application **CRC041777** by Killermont Station Limited for the take and use of water for spray irrigation.
- 18.3 For all of the above reasons and pursuant to sections 104 and 104B of the Resource Management Act 1991, we **GRANT** application **CRC041776** by Killermont Station Limited for the following activity:
- (a) To disturb the bed of the Ahuriri River to construct and maintain a gallery intake structure at or about map reference NZMS 260 H39: 552-283 downstream to NZMS 260 H39:558-278. The works will involve a temporary diversion of water within the bed of the Ahuriri River at the location of the intake.
- 18.4 Pursuant to section 108 RMA, the grant of application CRC041776 is subject to the conditions specified at **Appendix A**, which conditions form part of this decision and consent. The duration of this consent shall be until the 30th April 2025

DECISION DATED AT CHRISTCHURCH THIS 22ND DAY OF NOVEMBER 2011

Signed by:

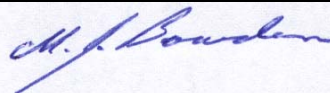
Paul Rogers



Dr James Cooke



Michael Bowden



Edward Ellison



APPENDIX A

Conditions of Consent (CRC041776)

1. The works shall be limited to:
 - a. The construction, maintenance and use of an intake gallery and associated infrastructure;
 - b. Excavation of the Ahuriri River bed to facilitate the works described in (a)

At or about NZMS 260 H39:552-283 downstream to H39:561-278, as shown on Plan CRC041776A which forms a part of this consent.
2. Excavation shall not exceed a depth of 3 metres below the level of the river bed prior to excavation, nor the surface area 60 metres by 40 metres.
3. If further excavation at the site in the river bed is not to occur within seven days following the last working at the site, then the following shall occur:
 - a. All deposits of gravel, sand and other natural material shall be levelled to the natural bed level;
 - b. The excavation area shall be reshaped and formed to a state consistent with the surrounding natural river bed.
4. The Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, shall be notified not less than 3 working days prior to the commencement of works described in condition (1).
5. Prior to commencing excavation, a copy of this resource consent shall be given to all persons undertaking activities authorised by this consent.
6. The consent holder shall ensure that the following procedure is adopted in the event that koiwi (human remains) or taonga (cultural artefacts) are unearthed or are reasonably suspected to have been unearthed during the course of construction and other activities.
 - a. Immediately as it becomes apparent, or is suspected by workers at the site that koiwi or taonga have been uncovered, all activity at the site will cease.
 - b. The plant operator will shut down all machinery or activity immediately, and leave the area and advise his or her supervisor of the occurrence.
 - c. The supervisor shall take steps to immediately secure the area in a way that ensures that koiwi or taonga remain untouched as far as possible in the circumstances and shall notify the consent holder.
 - d. The Consent Holder will notify the New Zealand Police (in the case of koiwi) and the relevant runanga representatives that it is suspected that koiwi and/or taonga have been uncovered at the site.
 - e. The runanga representatives will contact the appropriate kaumatua to act on their behalf in this matter in order to guide and advise the consent holder as to the appropriate course and the consent holder will immediately advise the consent holder of the identity of such kaumatua.
 - f. The consent holder shall ensure that representatives on its behalf are available to meet and guide kaumatua and police (as appropriate) to the site, assisting with any requests they may make.
 - g. If the kaumatua are satisfied that the koiwi or taonga are of Maori origin the kaumatua will decide how they are to be dealt with and will communicate its decision to the consent holder, New Zealand Police and such other parties as are considered appropriate.

- h. Activity on site shall remain halted until the New Zealand Police and the kaumatua have given approval for operations to recommence.
 - i. The consent holder shall ensure that kaumatua are given the opportunity to undertake karakia and such other religious or cultural ceremonies and activities at the site as may be considered appropriate in accordance with tikanga Maori (Maori custom and protocol).
7. Erosion controls shall be installed on all earthworks to prevent sediment from flowing into any surface water body.
8. Works shall not be undertaken in any manner likely to cause erosion of or instability to, the banks or bed of the Ahuriri River; or reduce the flood-carrying capacity of the waterway.
9. The consent holder shall adopt the best practicable options to:
 - a. Minimise soil disturbance and prevent soil erosion;
 - b. Prevent sediment from flowing into any surface water; and
 - c. Avoid placing cut or cleared vegetation, debris, or excavated material in a position such that it may enter surface water.
10. The consent holder shall ensure that construction of the intake does not occur during the period of 1 June to 14 November inclusive, in any one year.
11. At least 20 working days prior to the commencement of the works, the consent holder shall submit to the Canterbury Regional Council, Attention: RMA Enforcement and Compliance Manager an Erosion and Sediment Control Plan (ESCP) that includes, but is not limited to the following:
 - a. a locality map; and
 - b. detailed drawings showing the type and location of erosion and sediment control measures, on-site catchment boundaries, and off-site sources of run-off; and
 - c. drawings and specifications of all designated erosion and sediment control measures with supporting calculations; and
 - d. a programme of works, which includes but is not limited to a proposed timeframe for the works;
 - e. a schedule of inspections and maintenance of erosion and sediment control measures; and
 - f. details of when the erosion and sediment control measures are to be established and decommissioned; and
 - g. measures to ensure that there is no tracking of mud or earth onto the surrounding road network, including the provision of shaker ramps and/or wheel washes where appropriate; and
 - h. measures to be undertaken should erosion and sediment control measures fail and result in contamination of any watercourse or water body.
12. The ESCP shall be prepared in general accordance with the Environment Canterbury Erosion and Sediment Control Guidelines 2007 (ECAN ESC Guidelines).
13. The ESCP shall be communicated to all persons undertaking activities authorised by this consent and a copy of the ESCP shall be kept on site at all times.
14. The Erosion and Sediment Control Plan and any revisions of that document shall be submitted to the Canterbury Regional Council Attention: RMA Compliance and Enforcement Manager for certification that the Erosion and Sediment Control Plan meets all the requirements of the conditions of this consent.

15. No activities authorised by this consent shall commence or be undertaken other than in full compliance with the Erosion and Sediment Control Plan that has been certified by or on behalf of the Canterbury Regional Council RMA Compliance and Enforcement Manager in terms of condition 11.
16. Prior to any construction works being carried out in the period 1 September to 1 February, the consent holder shall ensure that:
 - a. a suitably qualified and independent person inspects the proposed area of works, no earlier than eight working days prior to any works being carried out, and locates any bird breeding sites of birds listed in Schedule A;
 - b. the person carrying out the inspection prepares a written report that identifies all the located bird breeding or nesting sites and provides copies of that report to the consent holder and the Canterbury Regional Council;
 - c. the name and qualifications of the person carrying out the inspection are provided to the Canterbury Regional Council with the report;
 - d. any person carrying out works authorised by this consent are informed of any bird breeding or nesting sites located; and
 - e. where work ceases for more than 10 days, the site will be re-inspected for bird breeding and nesting sites in accordance with parts (a) to (d) of this condition.
17. The consent holder shall ensure that no construction or maintenance work is undertaken within 100m of any bird breeding or nesting sites as identified in accordance with condition 16.
18. Any maintenance works that require bed disturbance in flowing water should be avoided in the first two weeks of November and outside that period Fish and Game should be consulted prior to any works.
19. To prevent the spread of Didymo or any other aquatic pest, the consent holder shall ensure that activities authorised by this consent are undertaken in accordance with the Biosecurity New Zealand's hygiene procedures.

Note: You can access the most current version of these procedures from the Biosecurity New Zealand website <http://www.biosecurity.govt.nz> or Environment Canterbury Customer Services.
20. The consent holder shall ensure that during construction:
 - a. All practicable measures shall be undertaken to prevent oil and fuel leaks from vehicles and machinery.
 - b. There shall be no storage of fuel or refuelling of vehicles and machinery within 20 metres of the bed of a river.
 - c. Fuel shall be stored securely or removed from site overnight.
21. The consent holder shall ensure that works do not prevent the passage of fish, or cause the stranding of fish in pools or channels.
22. The consent holder shall ensure that machinery shall be free of plants and plant seeds prior to use in the waterbody.
23. Upon completion all disturbed areas outside the lake or river bed shall be stabilised and revegetated with similar species to those found in the intermediate vicinity of the particular site following completion of the works.
24. Upon completion all spoil and other waste material from the works shall be removed from site on completion of works.
- 25.

- a. The consent holder shall ensure that if water is abstracted the gallery and, or, intake shall be designed to prevent native and exotic fish species from entering the system.
 - b. The fish screen shall be designed by a person with experience in freshwater ecology and fish screening techniques, and constructed in a manner that ensures the principals of the NIWA fish screening guidelines (Fish Screening: Good Practice Guidelines for Canterbury, NIWA Client Report 2007-092, October 2007, or other revision of these guidelines. (Copy available on www.ecan.govt.nz)) are achieved.
 - c. No water may be taken in terms of this permit until, upon completion of the intake structure a report is provided to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager. The report shall be prepared by the consent holder for certification and shall demonstrate compliance with the following:
 - i. Design plan for the gallery specifying gallery dimensions;
 - ii. Detail of depths and sizes of layers of gravel over the gallery;
 - iii. Photographic evidence of key stages of construction of the gallery, including demonstrating compliance with gravel specifications in sub clause (c)(ii) above;
 - iv. Any ongoing maintenance required by the manufacturer is carried out in accordance with their specifications.”
 - d. The intake structure shall be maintained in good working order. Records shall be kept of all inspections and maintenance. And those records shall be provided to the Canterbury Regional Council upon request.
26. Water shall only be temporarily diverted within the bed of the Ahuriri River for the purpose of installation and maintenance of an irrigation supply pipeline, installed and maintained in accordance with this consent (CRC041776).
27. The diversion of water referred to in Condition 26 shall only occur over a maximum reach of 50 metres at or about map references NZMS 260 H39:552-283 downstream to H39:561-278.
28. The diversion of water shall not impede fish passage or cause the stranding of fish in pools or channels.
29. For the period of diversion, all water diverted shall remain within the bed.
30. When diversion ceases, water shall be returned to its original course.
31. 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 pursuant to Section 128 of the RMA, 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.
32. The lapsing date for the purposes of section 125 shall be 31st December 2016.

Advice note:

Nothing in this consent authorised the taking and use of water for irrigation purposes. A separate consent is required from the Canterbury Regional Council for this activity.

Plan CRC041776



Schedule A – list of bird species

South Island Pied Oystercatcher

Black Stilt

Pied Stilt

Wrybill

Banded Dotterel

Black-fronted Dotterel

Grey warbler

Fantail

Bellbird

Silvereye

Spur-winged Plover

Paradise Shelduck

Grey Duck

NZ Shoveler

Grey Teal

NZ Scaup

Black-billed Gull

Red-billed Gull

Caspian Tern

White-fronted Tern

Black-fronted Tern

White-winged Black Tern

Australasian Bittern

Marsh Crake

Spotless Crake

Cormorant/shag colonies

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