

APPLICANT: DW MCAUGHTRIE

REPORT OF KERI JOHNSTON

Consent ID	Description	Table 3 Location	Table 5 Location
CRC011940	To divert water at a rate not exceeding 85 litres per second, and a volume not exceeding 7,344 cubic metres of water per day, and to take and use water at a rate not exceeding 50 litres per second, and a volume not exceeding 4,320 cubic metres per day and 421,388 cubic metres per year, from a water race, for spray irrigation of 85 hectares at Willowburn Station, and 10,840 cubic metres per year for stock water purposes, adjacent to State Highway 8.	Not applicable	Upstream of Waitaki Dam, but not upstream of the outlets of the glacial lakes
Activity Status			
<p>Rule 2, Table 3 WCWARP: Not applicable.</p> <p>Rule 6, Table 5 WCWARP: The proposed annual volume is within the allocation limit for "Upstream of Waitaki Dam, but not Upstream of the Outlets of the Glacial Lakes".</p> <p>Overall status: Any activity that complies with Rule 6 is a discretionary activity under Rule 15</p>			
Consent ID	Description		
CRC011939	To discharge irrigation bywash water at a rate not exceeding 50 litres per second, with a volume not exceeding 4,320 cubic metres per day, to Willowburn Swamp		
Activity Status			
<p><u>TRP</u>: As this application was lodged prior to the notification of Chapters four and five of the Proposed Natural Resources Regional Plan (PNRRP), it is the TRP which controls the activity status of this application pursuant to s88A of the RMA. The TRP has no provisions which authorise the discharge of water into water, therefore s77C(1)(a) of the RMA applies, and the activity is discretionary.</p>			

1 PROPOSAL

- DW McAughtrie (heron in referred to as "the applicant") seeks the renewal of water rights WTK691631, A, B and C which authorised the diversion and taking of water from a water race at a rate of 85L/s and not exceeding 51 megalitres (51, 000 cubic metres) per week.

2. The damming and diversion of water into the race from the Wairepo occurs under resource consent CRC940233B, held by the Sutherlands (Benmore Station). This consent allows between 0L/s and 60L/s of a 90L/s diversion, to be taken into a storage dam on Sutherlands property, leaving between 30L/s and 90L/s to flow into the water race that can be accessed by the applicant. The minimum required to be maintained in the water race by the Sutherlands at all times is 30L/s.
3. If water is not taken by the applicant, the race carries on through the applicant's property and discharges into Willowburn Swamp.

1.1 Timeline and Summary of Significant Amendments made to the Applications

Timeline	CRC011939 and CRC011940
Date of Lodging	28 March 2001
First Notifiable Date	10 November 2004
WCWARP Notifiable Date	6 October 2006
Public Notification	4 August 2007

4. The applications were lodged in March 2001. As the applications were lodged six months prior to the expiry of the above consents, the applicant is current operating under s124 continuation.
5. In October 2006, an annual volume of 935,000 cubic metres per year for irrigation purposes was proposed.
6. As a result of discussions with Meridian Energy Ltd regarding derogation approval, this is amended to 516,800 cubic metres per year.
7. It was also proposed to accept the minimum flow for the Wairepo Stream as defined in Table 3 of the WCWARP.
8. Resulting from a site visit to the property in December 2008 and a verbal conversation in March 2009, with the CRC Reporting Officer for this application, it was concluded that a minimum flow was not needed. The diversion of water into the race is controlled by the Sutherland's consent and the water race is purely a conveyance channel to get water from Wairepo Stream to the applicant's property.
9. The rate of take has also been reduced from 85L/s to 50L/s, and the irrigation annual volume from 516,800 cubic metres per year to 421,388 cubic metres per year.
10. A stock water volume of 10,840 cubic metres per year is now included, giving a total of 432,228 cubic metres per year for irrigation and stock water purposes. This is still much less than the notified annual volume of 935,000 cubic metres per year.
11. No other changes have been made to the applications.

1.2 Derogation Approval

12. Derogation approval was obtained from Meridian Energy Limited on 17 June 2009.

2 BACKGROUND INFORMATION

2.1 Property Details

13. The property is 2,200 ha in total located adjacent to SH8, between Twizel and Omarama. The property currently runs deer, beef cattle and sheep.
14. The part of the property that this application relates to is partly irrigated using k-line irrigation from a water race fed from the Wairepo Stream. A mobile pump system is used to vary the point of take from the water race within the area irrigated by this consent. However, of late, the applicant has made use of a holding pond immediately downstream from where water enters the property, to enable the rate of

take and volume to be collected and then used from there. The pond is entirely below ground, and therefore, does not need resource consent.

2.2 Water Source

15. The water race has no natural inflows other than the diversion from the Wairepo Creek.
16. The flow patterns of the race do not provide good aquatic habitat for fish.
17. The Willowburn Swamp is a *Carex* wetland of approximately 40ha. It consists of slow moving streams and an extensive willow area.

3 SUBMISSIONS

18. These applications were notified in 2003, as part of the “ministerial call-in”. A total of 314 submissions were received.
19. A summary of the 2007 submissions is as follows:

Resource Consent	Submissions in support	Submission in opposition	Neutral
CRC011939	1	13	2
CRC011940	1	16	2

20. Details of the submissions made in response to all applications that were publically notified at the same time in 2003 and 2007 are contained in CRC Report 1, Appendix 5. I have reviewed this report and adopt it as a true and accurate summary of the submissions received.
21. Details of the submissions received made individually on these applications are as follows:

Submitter	Issues	Support/ neutral/ oppose
Meridian Energy Ltd	The rate and volume does not reflect actual and reasonable use, effects on water quality, flow metering requirements.	Oppose
The Department of Conservation	High proportion of flow in creek to be taken, potential effects on in stream values, fish screens, and water quality.	Oppose
Central South Island Fish and Game Council	Important to consider Ahuriri Catchment flows and the importance for habitat for Lake Benmore trout.	Oppose

22. Derogation approval has been obtained from Meridian Energy Ltd. The applicant will install a flow meter, and has provided mitigation to ensure that effects on water quality are minor as discussed later in this report.
23. The submissions of Fish and Game and the Department of Conservation are in relation to the Wairepo Stream, and not the water race from which the applicant abstracts.

4 CRC011940 - TAKE AND USE CONSENT - ASSESSMENT OF ENVIRONMENTAL EFFECTS

4.1 Effects on other water users

Effects on other water users	
Comments	<p>This is the renewal of an existing water right. A reduction on the rate and volume previously authorised is being sought. This take does not affect any Table 3 WCWARP allocation limits.</p> <p>The CRC reporting officer for this application agrees that effects on other water users are minor.</p>

24. The Glens and the applicant (for their "bottom block") use water from the race system for stock water also. Both take points are downstream of this abstraction. The applicant needs to ensure continual flow for their own stock water use downstream as well.
25. The 90L/s which Sutherlands are able to divert into the race from Wairepo Stream is already included in the Table 3 allocation for the Wairepo Stream. This application refers to 50L/s of the 90L/s able to be diverted by Sutherlands and therefore, is not a separate allocation.
26. Mitigation is proposed restricting the rate of take and volume per week. Given this, effects on other users are considered to be minor.

4.2 Effects on ecosystems

Minimum flow requirements	
Proposed Environmental Flow Regime	
Comments	<p>The proposed abstraction does not impact on any Table 3 WCWARP of allocation.</p> <p>The proposed abstraction is from a water race, and the flow in the race is out of the applicant's control.</p> <p>A fish screen is already installed on the irrigation suction pipe used to abstract water from the race.</p> <p>The CRC reporting officer for these applications agrees that effects on ecosystems are minor. .</p>

27. The diversion of water from the Wairepo Stream is controlled by the Sutherlands, who are required to cease diversion when the flow at the boundary of the two properties is at or below 30L/s. Given this, the applicant's available water is completely controlled by the amount diverted and then taken by Sutherlands. If no water is being diverted, none can be taken by the applicant.
28. Given this, no minimum flow is proposed for the applicant's water race, as it is already controlled.
29. The race supports little or no in-stream values as its flows are highly variable depending on the amount of water being diverted into the race system, and at times, can be dry.
30. The applicant uses a mobile pump system and the suction pipe is already screened to prevent fish from entering the irrigation system, and this is suffice because of the limited ecosystem values or potential of the race.
31. Therefore, effects on in-stream values are considered to be minor.

4.3 Effects of inefficient water use

Reasonable and Efficient Use Seasonal Volumes and Land Use	
Land Use	Mixed (cropping, and pasture for fattening sheep and beef cattle)
Area to be irrigated (hectares)	85 ha within a command area of 170 ha
Method of application	Spray
Daily application depth	5mm
Return period	4 days
Return period application depth	20mm
Soil profile available water	Ranges from 30mm to 130mm. 15% of the irrigation area is light soils (PAW < 75mm), 5% of the irrigation area is medium soils (PAW >75mm but less than 110mm), and 80% of the irrigation area is heavy soils (PAW > 110mm).
Effective Irrigation Season Rainfall	200mm
Seasonal volume required (m³/year)	412,388 m ³ /year
Stock Water Seasonal volume required (m³/year)	10,840 m ³ /year
Comments	<p>The proposed irrigation annual volume has been determined using Schedule WQN9v2 of the NRRP, incorporating the parameters above.</p> <p>The proposed stock water annual volume has been determined using Schedule WQN11 of the NRRP.</p> <p>The CRC reporting officer for these applications is not currently satisfied that effects of an inefficient take are minor, and concerns raised in the s42a report have been addressed below.</p>

32. The proposed irrigation annual has been amended and is now consistent with that proposed in the s42a report.
33. The proposed application depth of 20mm per return period is less than 50% of the water holding capacities expected.
34. In accordance with Policy 16 (c) of the WCWARP, ensuring that no more than 50% of the water holding capacities of the soils is applied, and the implementation of an annual volume, the use of water for irrigation is considered to be efficient.
35. Policy 19 of the WCWARP encourages the piping and/or sealing of distribution systems. The race has been in place for over 40 years, and as such, it is now well sealed, and race losses have been assumed to be zero.
36. Policy 21 of the WCWARP requires all water takes to be metered. To ensure that this application is consistent with this policy, the applicant proposes to meter their take.
37. Given this, effects of inefficient water use are considered to be minor.

4.4 Effects of the use of water on water quality

Effects on Water Quality	
Comments	<p>The CRC reporting officer for these applications is not currently satisfied that effects of water quality are minor.</p> <p>Cumulative effects on water quality have been addressed by Mackenzie Water Resources Limited (MWRL) and are summarized below.</p> <p>Local effects have also been addressed below</p>

38. The calculated nutrient mitigation requirement of the receiving environments determined in the MWRL Study has identified an N and P threshold for each property.
39. "OVERSEER® has been RUN by a QUALIFIED person to model the N and P outputs from the proposed farming system. The results of the model have been incorporated in to the table below. The following table shows that the applicant can meet the property thresholds proposed by the MWRL study.

	Nitrogen Threshold (kg/farm)	Phosphorous Threshold (kg/farm)
MWRL Water Quality Study Property Thresholds	6,584	156
OVERSEER® outputs	6,452	77

40. The applicant is committed to implementing the "Mandatory Good Agricultural Practices" set out within the FEMP (see Appendix D). Implementing these practices ensure that the OVERSEER® results are validated. This along with ensuring that the property thresholds of the WQS (set out in the table above) are not exceeded will ensure that the cumulative effects of the use of water for irrigation on water quality are no more than minor.
41. Whilst the applicant is within their property thresholds, the MWRL Study identified that the applicant still has to consider specific on farm effects and the impacts these activities could have on the local receiving environment. This requires a specifically developed Farm Environmental Management Plan (FEMP) to identify and implement appropriate mitigation measures set out in the draft attached (see Appendix D).
42. At a workshop held in Twizel in August 2009, the applicants met with Ms Melissa Robson of GHD Limited. A "desk top" on farm risk assessment was undertaken. This is considered to be the "starting point" of the FEMP.
43. The workshop identified potential on farm risks specific to each farm along with possible mitigation measures. The on farm risks identified during the desktop risk assessment need to be verified by an appropriately qualified person who has carried out a site visit. It is anticipated that this will occur should the applications be granted. For this property, the following potential risks were identified:
- Evidence of erosion
 - Runoff from winter feed crops
 - Laybacks from waterways from fertiliser application
 - Track runoff - check
 - Willowburn Stream and Swamp
 - Fencing off water ways
44. The applicant has committed to carrying out a full on farm risk assessment, proposing mitigation, monitoring and auditing will occur within 12 months of the commencement of the consents (as these applications seek renewal of existing activities), and this has been proposed as conditions of consent. All risks will be addressed in a Farm Environmental Management Plan (FEMP).

45. Given that the N and P thresholds from the MWRL Study can be met, and the applicant's commitment to addressing on farm risks with the implementation of the FEMP, the effects of the use of water on water quality for both the local receiving environment and cumulative effects are considered to be minor.

4.5 Effects on people, communities and recreational value, including landscape

Effects on People, Community and Recreational Values, including Landscape	
Comments	<p>Landscape effects have been addressed by UWAG's Landscape Architect, Mr Andrew Craig, who considers that this proposal will have a minor effect on landscape values.</p> <p>An appropriate minimum flow is proposed and the applications are within allocation limits set by the WCWARP, therefore effects on people, communities and recreational values are minor.</p> <p>The CRC reporting officer for these applications is satisfied effects are minor subject to conditions.</p>

4.5.1 Landscape

46. This application seeks the renewal of existing water rights.
47. The three properties to which the applications relate are part of a substantially modified rural environment, whereby cultivation and fencing occur regularly.
48. Willowburn and Ellis-Lea has the most "visible" of the irrigation areas, being that adjacent to SH8, and irrigation has been occurring on the property of Ellis-Lea continually since the race began.
49. The applicant has a defined area to be irrigated, restricted to the "flat country". Irrigation does not occur on the area of land classified as "outstanding landscape" by Waitaki District Council.
50. Mr Andrew Craig is a landscape architect who is providing general and specific recommendations on behalf of UWAG clients to this hearing. His conclusions reflect that the general effects on the MacKenzie landscape of these applications within the basin will be significantly less than minor. I adopt his recommendations to the committee.

4.5.2 People, communities and recreational values

51. The activities all occur in a rural setting, where the dominant land use is pastoral farming. Given that the proposed activities all occur on private farmland; as such the use of water is unlikely to adversely affect amenity values.
52. The WCWARP sets an annual allocation "cap" for agricultural and horticultural activities within defined areas (Table 5). The applicant has proposed an annual allocation limit for their own resource consents for the use of water, as well as implementing Farm Management Plans, which require existing irrigation systems to be audited and improved where possible, and new systems to be designed and installed by accredited personnel, and implementing initiatives to ensure that water is used wisely.
53. The primary objective of an annual allocation is to ensure that the water is used efficiently and effectively for the land use, soil type and climatic conditions. The applicant has proposed an annual volume that is considered to reflect reasonable and actual use and this is within the allocation limit defined by Table 5.
54. It is also noted that the allocation limits set in Table 3 of the WCWARP do not apply to this application as water has already been diverted by another consent holder prior to it being able to be used by the applicant.
55. Therefore, given the applicant's commitment to ensuring efficient use of water on their property, and that the take is within allocation limits, it is considered that effects on people and communities will be minor.

4.6 Effects on Tangata Whenua Values

Effects on Tangata Whenua	
Comments	The CRC reporting officer for these applications considers the effects on Tangata Whenua are uncertain and may therefore be more than minor

56. Te Runanga O Ngai Tahu submitted on all applications in the catchment, seeking that all applications be declined.
57. The primary reasons for this were that the applications were considered to be inconsistent with the policies and objectives of the WCWARP, and also at odds with the cultural objectives of the RMA.
58. This application is entirely within the limits defined by the WCWARP. Te Runanga O Ngai Tahu had considerable input into the creation of the WCWARP.
59. However, it is acknowledged that Te Runanga O Ngai Tahu have a significant relationship with the Waitaki Catchment, and as such, appropriate minimum flow conditions, and management of water quality effects, is proposed by the applicant to ensure that the potential effects on the environment, including tangata whenua values are minor.

5 CRC011939 – DISCHARGE CONSENT - ASSESSMENT OF ENVIRONMENTAL EFFECTS

5.1 Effects on flood carrying capacity and erosion

60. When water is discharged into a waterway, the flow, and potentially the velocity, of the receiving waterbody is increased, thereby decreasing carrying capacity and localised scour at the discharge site.
61. Willowburn Swamp is a marshy area and is well established, making it less subject to erosion. It is also noted that the discharge has been occurring since the early 1950's without any adverse erosion resulting to Willowburn Swamp, and the discharge will continue to operate in the same way as it has historically, with no increased frequency.
62. Given this, flood carrying capacity and erosion effects will be minor.

5.2 Effects on water quality and ecosystems

63. The water that is discharged into Willowburn Swamp is excess water that is diverted. It is un-used (i.e. it has not been used for irrigation prior to the discharge occurring) and therefore, it is of the same quality as that being diverted, and therefore, the quality of water in Willowburn Swamp is unaltered.
64. Given this, effects on water quality and ecosystems are minor.

5.3 Effects on other water users and amenity values

65. When water is discharged there is the potential to cause adverse effects on other users of stream due to the contamination of the water, or cause an unsightly plume that has a visual effect.
66. It has been occurring for a number of years without any complaint from other users, of which one is the applicant.
67. Given that the quality of the water being discharged into Willowburn Swamp is unaltered from that being diverted, there is no effect on other users, or amenity values.

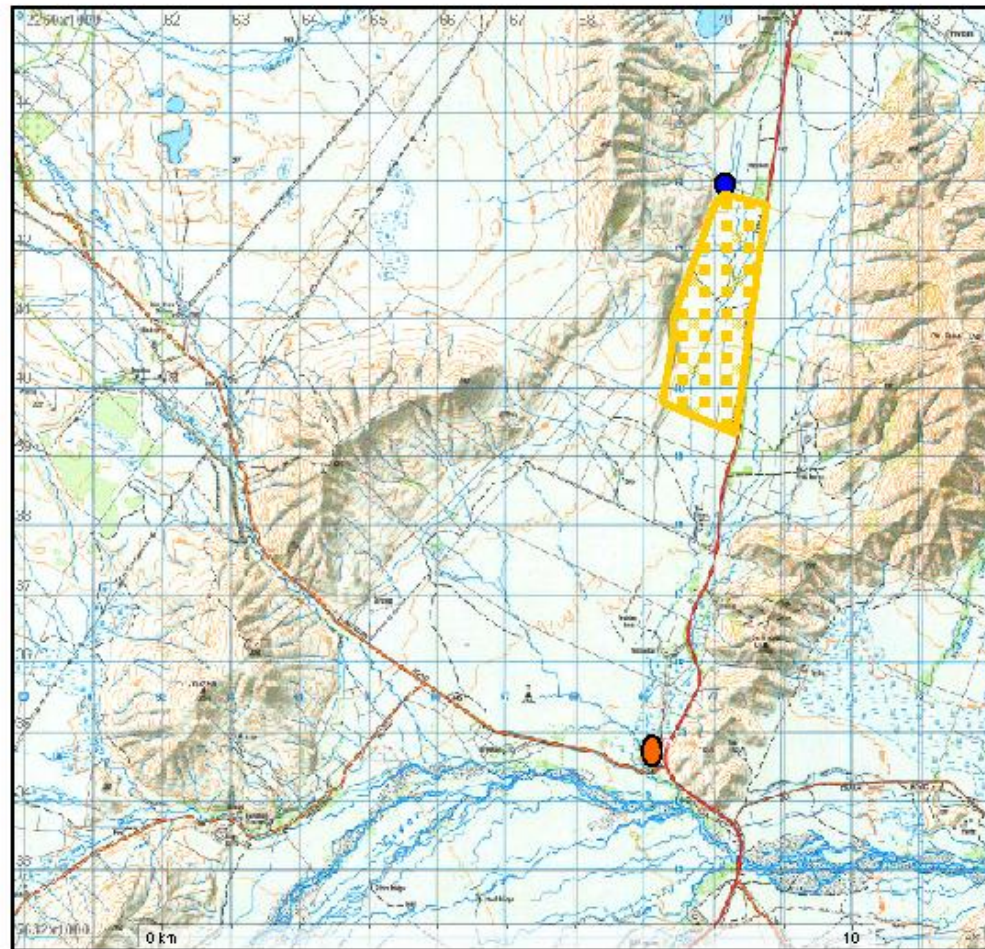
5.4 CONCLUSIONS

68. The potential effects associated with the take and use of water and the related discharge of water have been assessed and are considered to be minor.

APPENDIX A – LOCATION PLAN SHOWING AREA TO BE IRRIGATED

DW MCAUGHTRIE LOCATION PLAN

-  TAKE
-  DISCHARGE
-  AREA TO BE IRRIGATED



APPENDIX B – PROPOSED CONDITIONS

CRC proposed conditions used with tracked changes.

Please note that conditions relating to water quality thresholds and FEMP's are to be added.

Recommended draft conditions for water permit CRC042661		
No.	Condition Code ¹	Details
Divert		
1	WP01	<p><i>Name of waterbody:</i> Wairepo water race</p> <p><i>Map reference:</i> for irrigation between NZMS 260 H39:701-430 and H39:696-396, and for stockwater only between map references NZMS 260 H39:696-378 and H39:690-346</p> <p><i>Instantaneous rate:</i> 85 litres per second</p> <p><i>Volume:</i> 7,344 cubic metres per day</p>
Use		
2	WP04	<p><i>Instantaneous rate:</i> 85 50 litres per second</p> <p><i>Volume:</i> 4,320 cubic metres per day, 421,388 cubic metres per year</p> <p><i>Type of irrigation:</i> Spray irrigation</p> <p><i>Number of hectares:</i> 85 hectares within a command area of 370170 hectares</p> <p><i>Use:</i> crops and pasture for grazing stock excluding milking dairy cows</p> <p><i>Plan No:</i> "CRC011940" (Attachment 1)</p>
3	WP05	Efficiency of use
4	WP06	Backflow preventer
Mitigation		
5	WP09	Fish Screen Already has a fish screen in place
Measuring & Metering		
6	ME03	Open channel
7	ME04	
8	ME05	
9	ME06	<i>Waterway:</i> Wairepo water race
Administrative Conditions		

¹ See Report 1, Condition 6 for condition code and wording.

10	AD01	
11	AD03	
12	AD04	Lapse date

Table : Recommended draft conditions for discharge permit CRC011939		
No.	Consent Code	Details
Scope		
1	DP01	<i>Waterbody from:</i> Irrigation race <i>Waterbody to:</i> Willowburn Swamp <i>Map reference:</i> NZMS 260 H39:690-346 <i>Discharge rate:</i> 85 litres per second <i>Plan:</i> "CRC011939" <i>Other:</i> The water shall be unused conveyance water and shall contain no contaminants.
Operation and Maintenance		
2	DP02	<i>Waterbody:</i> Willowburn Swamp
3	LU13 modified	The discharge shall not occur in a manner likely to cause erosion of, or instability to, the banks or bed of the Willowburn Swamp; or reduce the flood-carrying capacity of the waterway
4	DP03	
5	DP04	Not necessary as take metered and applicant has no control over how much water is received.
Administrative Conditions		
6	AD03	Review
7	AD04	Lapse date

APPENDIX C – PHOTO GALLERY



Where water enters the property from the Sutherlands



Holding area for water immediately downstream of where the race enters the property

APPENDIX D – DRAFT FARM ENVIRONMENTAL MANAGEMENT PLAN (FEMP)