

APPLICANT: AN HOPE

REPORT OF KERI JOHNSTON

Consent ID	Description	Table 3 Location	Table 5 Location
CRC041542	To take and use water from an infiltration gallery from Grays River at a maximum rate not exceeding 166 litres per second, and a volume not exceeding 1,428,000 cubic metres per year, at map reference NZMS 260 138:0930-6440, for spray irrigation of up to 238 hectares of crops and pasture for grazing stock, excluding milking dairy cows, at Haldon Road, Twizel.	Grays River and tributaries	Upstream of Waitaki Dam, but not upstream of the outlets of the glacial lakes
CRC041543	To take and use water from an infiltration gallery from Snow River at a maximum rate not exceeding 84 litres per second, and a volume not exceeding 882,000 cubic metres per year, at map reference NZMS 260 138:1230-6130, for spray irrigation of up to 147 hectares of crops and pasture for grazing stock, excluding milking dairy cows, at Haldon Road, Twizel.	Grays River and tributaries	Upstream of Waitaki Dam, but not upstream of the outlets of the glacial lakes
Activity Status			
<p><u>Rule 2, Table 3 WCWARP:</u></p> <p>CRC041542 – “connected groundwater” as defined by the WCWARP.</p> <p>CRC041543 – The Snow River has no permanent flow, and therefore, is considered to be “shallow groundwater” as defined by the WCWARP.</p> <p>The take’s are within the allocation limit for Grays River and Tributaries, but an alternate minimum flow is proposed.</p> <p><u>Rule 6, Table 5 WCWARP:</u> 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><u>Overall status:</u> Any activity that contravenes Rules 2 or 6 is a non-complying activity under Rule 16</p>			
Consent ID	Description		
CRC041545	To discharge unused irrigation water to an un-used waterway, and then to the Grays River at a maximum rate of 29 litres per second, at or about map reference NZMS 260 138:0471-5823, at Haldon Road, Twizel.		
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

1. AN Hope (heron in referred to as “the applicant”) farms Grampians Station, situated at the head of the Hakataramea Pass, down to the Grays River swamps. The property currently runs sheep and beef cattle.
2. The applicant proposes to irrigate 385 hectares using centre pivot irrigation, irrigating pasture used predominantly for sheep grazing with some cattle at approximately the same ratio’s as are carried now.
3. 238 hectares will be irrigated with water from the Grays River at a rate of 166L/s to supply two centre pivots.
4. 147 hectares will be irrigated with water from Snow River at a rate of 84L/s to supply one centre pivot.
5. Both takes will utilise an infiltration gallery adjacent to each stream (not in the active channel) to abstract water. The galleries will be covered with coarse aggregate and the amount of water taken controlled by gates on the outlet pipe of the gallery and then to a flow measuring device.
6. For the Grays River pivots, whilst 166L/s will be abstracted, 29L/s will be returned to the river. This is because water flows under gravity to the pivots from the gallery via an open race. Water is only pumped at the point where the race is closest to to the pivot centre. If only the rate needed to be abstracted (in this case 166L/s) flowed in the race, the pump would be working to abstract all available water, and this would result in the water in the race to vortex and the pump would suck in air, and eventually over-heat. The additional water flow of 29L/s stops this from happening by providing a “buffer” flow in the race.

1.1 Timeline and Summary of Amendments made to the Applications

Timeline	CRC041542, CRC041543, CRC041545
Date of Lodging	26 January 2004
First Notifiable Date	30 March 2004
WCWARP Notifiable Date	7 November 2006
Public Notification	4 August 2007

7. The applications were lodged in 2004.
8. The annual volumes for both take applications (CRC041542 and CRC041543) were reduced in February 2009 to reflect to MIC shareholding of the applicant.
9. The proposed minimum flow for these applications was amended in June 2009 as a result of the hydrological analysis for the Grays River catchment undertaken by Mr Richard de Joux, from 1, 800L/s to 1, 500L/s.
10. The discharge point for CRC041545 was amended from I38: 0262-6076 (directly to the Gray’s River) to I38: 0471-5823 (to land then to water at the end of the irrigation race).
11. The application was notified with the grid reference I38: 0262-6076. This location is just below the third pivot, but in order to achieve the discharge, a channel would need to be constructed from the irrigation race below the pivot to the Gray’s River.
12. The preferred location of I38: 0471-5823 means that the water can carry on through the irrigation race, and be discharged to an un-used waterway without any earthworks needing to be carried out, and into a “wet area” to the Gray’s River. The “wet area” buffers the discharge.
13. The “wet area” is on the property of Mr Mark Urquhart and he has no concerns with the applicant’s proposed discharge, therefore, I consider that, having regard to S93 and S94 of the RMA, that the

application does not need to be re-notified, as the effects of discharging at the preferred location are less than the notified application, and Mr Urquhart has given approval.

14. The CRC Reporting Officer for this application agrees with my assessment and has recommended that the amended location does not need to result in the application being re-notified (See paragraph 13 of Report 20C for CRC041545).
15. No other changes have been made to the applications.

1.2 Mackenzie Irrigation Company Shares held

Name: AN Hope	Number
Property Shares	1
Irrigation Shares	385

1.3 Derogation Approval

16. Derogation approval was obtained from Meridian Energy Limited on 11 September 2009. This is attached to this report as Appendix B.

2 BACKGROUND INFORMATION

2.1 Property Details

17. The property is part leasehold and part freehold, and carries 21,000 stock units (17,500 as sheep and 3,500 as beef cattle).
18. Tenure review is inevitable, and will result in a loss of grazing area on the higher country currently grazed. Therefore, there could be a considerable loss of carrying capacity (estimated to be in the order of 4,000 to 5,000 stock units).
19. Economic reality has meant that other opportunities need to be looked at to maintain viability, and irrigation is one of these options.
20. Without water the property is limited to producing store stock and wool.
21. Irrigation will provide the means to maintain the feed supplies to the existing stock and reduce any overgrazing during dry periods. It will also allow for intensified farming both because of economic necessity (high operating costs) but to also allow for making up the stock units lost to tenure review. It will also allow for improved stock performance.
22. However the increased scale from irrigation may only offset the losses to carrying capacity resulting from tenure review.

2.2 Water Source

23. The applicant seeks to take water from the Grays River and Snow Stream.

The Grays River

24. The Grays River is located on the eastern fringe of the Tekapo Basin and drains the western slopes of the Grampians, Dalgety, Rollesby and Two Thumb ranges. The river discharges into the Tekapo River approximately 19.5km upstream of Lake Benmore.
25. In its lower reaches, the Grays River provides a significant fisheries and wildlife habitat.

Snow River

26. Snow River drains the western slopes of the Grampians Range and flows into the Grays River. The river has a channel length of approximately 18.6km and a catchment area of 77km². The lower 5km to 6km are normally dry, and only in flood conditions does the river experience run-off. The abstraction from the Snow River is from the subsurface flow (i.e. in the dry reach of the river), using a gallery.

27. Given this, the Snow River below the Hakataramea Pass Road has little or no fishery or habitat values.

Discharge Location

28. The discharge is into a wetland located on Gray's Hill Station. The wetland has been fenced and protected, and is recognised now as an area of "National Significance".

3 SUBMISSIONS

29. A summary of the submissions is as follows:

Resource Consent	Submissions in support	Submission in opposition	Neutral
CRC041452	3	18	2
CRC045453	3	16	2
CRC041545	3	18	2

30. Details of the submissions made in response to all applications that were publically notified at the same time in 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.
31. Details of the submissions received made individually on these applications are as follows:

Submitter	Issues	Support/neutral/oppose
Mark Urquhart, Grays Hill	The taking of water from Grays River would be in direct competition with his own consent. The submitter believed that this could be rectified by reducing the low flow criteria. (CRC041542).	Oppose
Meridian Energy Ltd	The applicant does not hold sufficient MIC shares, effects on water quality, flow metering requirements.	Oppose
Central South Island Fish and Game Council	Cumulative effect on the Tekapo Fishery	Oppose

32. The applicant and Mr Urquhart have agreed to a flow sharing committee for the Grays River.
33. The applicant has purchased sufficient MIC shares and 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.

34. In respect of the Fish and Game submission, the take is within the allocation limits specified in Table 3 of the WCWARP.

CRC41542 AND CRC041543 - TAKE AND USE CONSENTS

4 ASSESSMENT OF ENVIRONMENTAL EFFECTS

4.1 Effects on other water users

Summary of Effects on other water users	<p>Both applications are new takes, for which MIC shares have been purchased. The take's are within the allocation limit set for the Grays River Tributaries in Table 3 of the WCWARP of 500L/s.</p> <p>There are no other users on Snow River.</p> <p>There is one other user on the Grays River (Gray's Hills Station), who has a resource consent for 150L/s and one in process for 100L/s. The applicant and Gray's Hills Station have agreed to establish a flow sharing regime.</p> <p>The CRC reporting officer for these applications agrees that effects on other water users are minor.</p>
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35. Table 3 of the WCWARP specifies an allocation of 500L/s for this catchment, excluding Sawdon and Edward Streams.
36. The applicant seeks 250L/s in total, but with a continuous discharge of 29L/s, being 221L/s in total. Other applications in process, or already granted total 250L/s. Therefore, these applications are within the allocation limit.
37. There are no other users at all on Snow River, or bores within a 2km radius, and therefore, the abstraction will have no direct effect on any other user.
38. In terms of the Grays River, the applicant and Gray's Hills Station have agreed to establish a flow sharing regime and minimum flow to ensure equitable sharing of the resource.
39. 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

Summary of Effects on Ecosystems	<p>The applicant proposes a minimum flow of 1,500L/s which is lower than that specified in Table 3 of the WCWARP.</p> <p>The applicant abstracts from a gallery which, in the case of the Grays River, is 10m from the active channel, and the Snow River is dry, therefore, fish screens are not needed. The CRC reporting officer for these applications agrees.</p> <p>The CRC reporting officer for these applications considers that effects on ecosystems are uncertain because of the proposed minimum flow.</p>
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40. The applicant proposes a minimum flow of 1,500L/s to be measured in the Grays River at Days Bridge.

41. This is less than the minimum flow specified for the Grays River in the WCWARP of 1,800L/s as it is believed that the 1 in 5 year, 7 day low flow value in the WCWARP is incorrect. Mr Richard De Joux presented further information on this.
42. It is my understanding that Fish and Game and the Department of Conservation have agreed to the proposed minimum flow as part of Mr David Stewart's report (CRC Surface Water Hydrology).
43. The abstraction points utilise gallery intakes, which are buried adjacent to the river channel at a distance of 10m, to capture subsurface flow. Given this, fish screens are not required.
44. Therefore, effects on in-stream values are minor.

4.3 Effects of inefficient water use

Summary of Effects of Inefficient Water Use	Land Use	Mixed (cropping, and pasture for fattening sheep and beef cattle)
	Area to be irrigated (hectares)	385
	Method of application	Spray
	Daily <u>net</u> application depth	5mm (assumed 80% efficiency for centre pivot irrigation)
	Return period	3 days
	Return period application depth	15mm
	Soil profile available water	PivotA Simons+Grampians+Curraghmore 110mm Streamlands+Glenrock 90mm PivotB Glenrock 50mm Streamlands+Glenroc 70mm PivotC Mackenzie 55mm Larbreck 40mm
	Effective Irrigation Season Rainfall	180mm
	Seasonal volume required (m³/year)	2,310,000 m ³ /year
	Volume to be included in Table 5 (WCWARP) allocation	3,284,400 m ³ /year

Comments	<p>The proposed irrigation annual volume has been determined using the MIC share agreement of 600mm/ha/year. This is <u>less</u> than a volume determined using Schedule WQNv2.</p> <p>The volume to be included in the Table 5 allocation is the notified annual volume. This takes into the account the diversion of 29L/s.</p> <p>The CRC reporting officer for the applications agrees that effects on inefficient water use are minor.</p>
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45. The proposed application depth of 15mm per return period is less than 50% of the water holding capacities expected. This is considered to be an efficient use of water.
46. The proposed annual volume is based on the MIC supply agreement of 600mm per hectare per year.
47. Schedule WQN9v2 for the above soil types and intensive pasture, using the effective irrigation season from the above table, give an annual allocation for 385 hectares of 2, 371, 900 cubic metres per year, which is more than the applicant is entitled too under MIC.
48. Policy 19 of the WCWARP encourages piping or sealing distribution systems. This will be a new race system and with modern construction techniques, losses from race systems are now minimal and it is expected that this would be the case in this instance.
49. 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.
50. Given this, effects of inefficient water use are considered to be minor.

4.4 Effects of the use of water on water quality

Summary of Effects on Water Quality	<p>The CRC reporting officer for these applications is not currently satisfied that effects of water quality on a local or basin wide level 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>
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51. The calculated nutrient mitigation requirement of the receiving environments determined in the MWRL Study has identified an N and P threshold for each property.
52. “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	58,120	1,240
OVERSEER® outputs	48,102	177

53. The applicant is committed to implementing the “Mandatory Good Agricultural Practices” set out within the FEMP (see Appendix E). 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.

54. 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 E).
55. 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.
56. 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 Grampians Station, the following potential risks were identified:
 - Runoff from winter feed crops
 - Laybacks from waterways from fertiliser application
 - The wetland that receives excess water that is diverted but not taken
 - Fencing off water races
57. The applicant has committed to carrying out a full on farm risk assessment, proposing mitigation, monitoring and auditing will occur prior to the commencement of the consents. All risks will be addressed in a Farm Environmental Management Plan (FEMP).
58. 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

<p>Summary of Effects on People, Communities and Recreational Values, including Landscape</p>	<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 not satisfied effects are minor.</p>
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Landscape

59. These are applications for “new” water, however, part of the property is already irrigated and part of a substantially modified rural environment, whereby cultivation, and fencing occur regularly.
60. Greening of this specific area of land therefore occurs seasonally during the irrigation season, which is therefore a temporary effect that is already experienced in this location with the applicant’s existing consent and others nearby.
61. The applicant has a defined area to be irrigated.

62. 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.

People, communities and recreational values

63. The applicant has proposed an appropriate minimum flow condition for the water body from which they have applied to take and use water. A minimum flow is designed to adequately protect people, community and amenity values within the waterway.
64. 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.
65. 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 Environmental 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.
66. 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.
67. It is also noted that each take is within the allocation limits set in Table 3 of the WCWARP. The allocation limit in Table 3 is set to protect in-stream values and effects on other users. It has an “environmental” focus.
68. Therefore, given the applicant’s commitment to ensuring efficient use of water on their properties, and that the take is within allocation limits set to protect in-stream values and other users, it is considered that effects on people and communities will be minor.

Conclusion

69. Given this, the effects on people, communities and recreational values, including landscape are considered to be minor.

4.6 Effects on Tangata Whenua Values

76. Te Runanga O Ngai Tahu submitted on all applications in the catchment, seeking that all applications be declined.
77. 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.
78. The application is entirely within the allocation limits defined by the WCWARP even though an alternate minimum flow is proposed. Te Runanga O Ngai Tahu had considerable input into the creation of the WCWARP.
79. 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.

CRC042545 – DISCHARGE CONSENT

5 ASSESSMENT OF ENVIRONMENTAL EFFECTS

5.1 Effects on flood carrying capacity and erosion

80. When water is discharged into a waterway, the flow, and potentially the velocity, of the receiving waterbody is increased, thereby decreasing carrying capacity and potentially causing localised scour at the discharge site.
81. The discharge is an un-used waterway in the first instance. The un-used waterway resembles a grassed swale and at one time, would have carried overland flow to the “wet area”. It is also noted that the rate of discharge at 29L/s is a small flow and will be energy of the water will be dissipated through the discharge process.
82. Given this, effects on flood carrying capacity and erosion from the discharge are unlikely to occur.

5.2 Effects on water quality and ecosystems

83. The water that is discharged into the Grays River is water that is taken but not used. As described in Section 1 of this report, it is needed to stop the pump from sucking in air and over-heating. Water carries along the race, and where the race ends, it flows an un-used water way, and from here it flows into a “wet area” that has a direct connection to the Gray’s River.
84. The discharge 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 the Grays River is unaltered. It is also a small quantity of water compared to that in the Grays River.
85. Therefore, effects on water quality and ecosystems are minor.

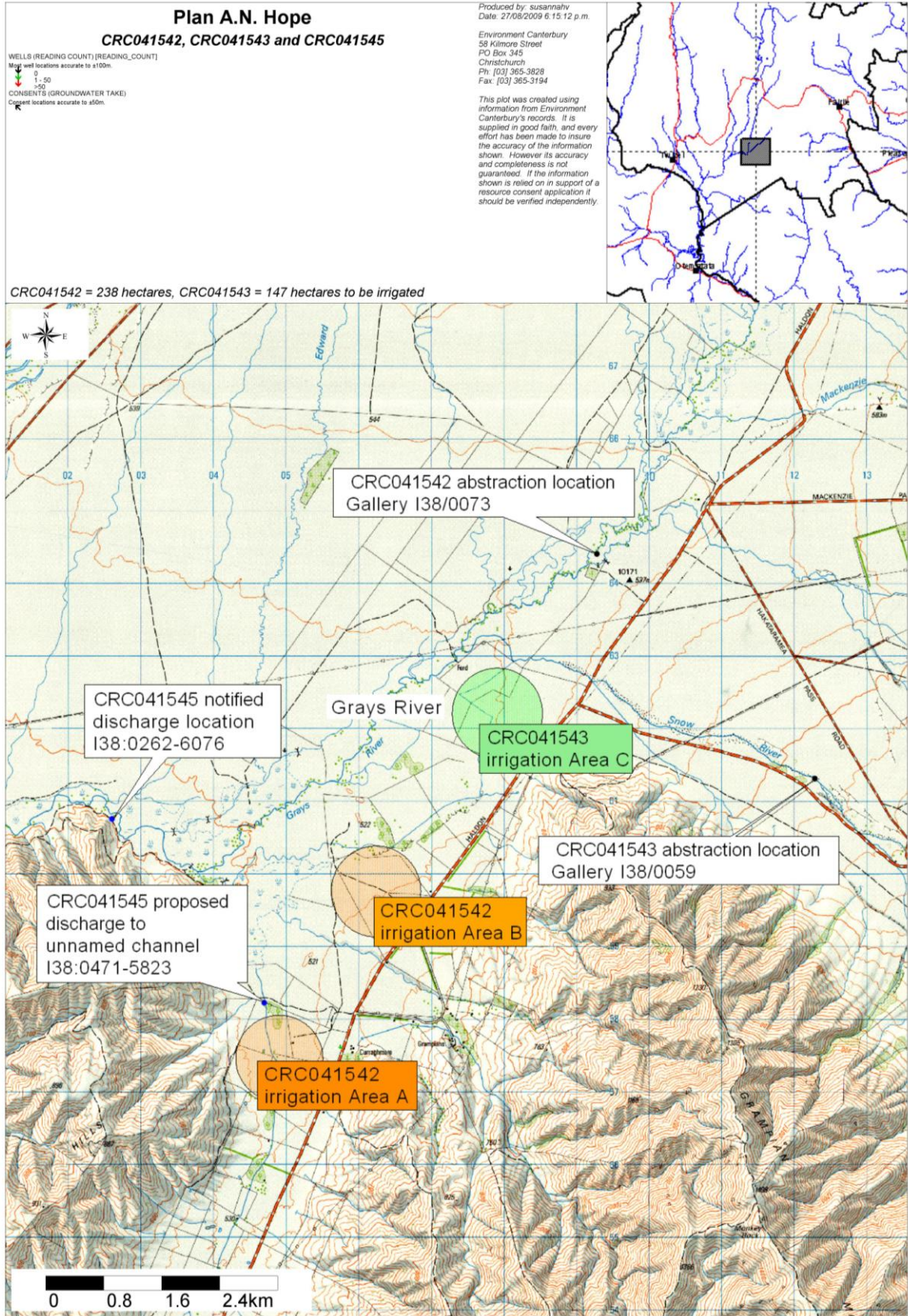
5.3 Effects on other water users and amenity values

86. 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 causing an unsightly plume.
87. The wet area is joins the Urquhart property, Grays Hill Station.
88. Given that the quality of the water being discharged is unaltered from that being diverted, there is no effect on other users or amenity values.

6 CONCLUSIONS

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

APPENDIX A – LOCATION PLAN SHOWING AREA TO BE IRRIGATED



APPENDIX B – DEROGATION APPROVAL



11 September 2009

Gillian Erso
Environment Canterbury
PO Box 345
Christchurch

Dear Gillian

Application by AN Hope

1. We write to you to outline the basis of Meridian Energy Limited (*Meridian*) providing its derogation approval of the applications numbered CRC041542 and CRC041543 by AN Hope. We refer to the letter to Ecan from Chapman Tripp dated the 25th of June 2009 setting out Meridian's position on derogation approvals generally.
2. Meridian has read and considered the applications CRC041542 and CRC041543 by AN Hope and provides derogation approval on the following basis:
 - 2.1. AN Hope shall only be entitled to take and use water from Grays River (at map reference NZMS 260 138:0930-5440) at a maximum rate of 166 litres per second for the spray irrigation of 238 hectares identified in the application;
 - 2.2. The maximum daily volume shall not exceed 14,342 cubic metres per day and the annual volume shall not exceed 1,428,000 cubic metres per annum and this shall be allocated as agricultural and horticultural activity upstream of Waitaki Dam but not upstream of the outlets of the glacial lakes under Rule 6, Table 5 of the Waitaki Catchment Water Allocation Regional Plan;
 - 2.3. The annual volume provided for in Clause 2.2 shall be time-tranched in accordance with the following table:

APPENDIX C – PROPOSED RESOURCE CONSENT CONDITIONS

CRC proposed conditions 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 CRC041542		
No.	Condition Code	Details
Take		
1	WP01	<p><i>Name of waterbody:</i> Grays River</p> <p><i>Map reference:</i> NZMS 260 I38:0930-6440</p> <p><i>Gallery:</i> I38/0073</p> <p><i>Instantaneous rate:</i> 166 litres per second</p> <p><i>Volume:</i> 1,642,200 cubic metres between 1 July and the following 30th June</p>
Use		
2	WP04	<p><i>Instantaneous rate:</i> 137 litres per second</p> <p><i>Volume:</i> 1,428,000 between 1 July and the following 30th June</p> <p><i>Type of irrigation:</i> Spray irrigation</p> <p><i>Number of hectares:</i> 238 hectares</p> <p><i>Use:</i> crops and pasture for grazing stock excluding milking dairy cows</p> <p><i>Plan No:</i> "Plan A.N Hope" (Attachment 1)</p> <p>Insert tranching table from derogation approval</p>
3	WP05	
4	WP06	
Mitigation		
5		Gallery I38/0073 shall be no closer than two metres to the bed of the Grays River.
6	Non-standard	<p>The applicant shall keep a log of evapotranspiration and rainfall on a daily basis in a log book for that purpose. A copy of the log shall be provided to the Canterbury Regional Council upon request.</p> <p>Part of the FEMP</p>
7	WP07	<p><i>Name of waterbody:</i> Grays River</p> <p><i>Map reference:</i> NZMS 260 I38:038-601</p> <p><i>Minimum flow:</i> 1.5 cubic metres per second</p> <p><i>Flow graph:</i> See Report 2A</p> <p>Add:</p> <p>PROVIDED THAT whenever the flow in the Grays River at map</p>

		reference NZMS 260 I38: 038-601 falls below 2 cubic metre per second, the Canterbury Regional Council, in consultation with a Water Users Committee representing, but not limited to, surface water and hydraulically connected groundwater users, who are subject to the above minimum flow, has determined upon a water sharing regime which limits the total daily abstraction from the resource then the taking of water in accordance with that determination shall be deemed to be in compliance with condition [XXX] of this consent.
8		The consent holder shall ensure water races used to convey water diverted in terms of this permit are well maintained to minimise losses.
Measuring & Metering		
9	ME02	
10	ME03	Not needed - piped
11	ME04	
12	ME05	
13	ME06	<i>Waterway: Grays River</i>
14	WP08	<i>Waterway: Grays River</i> <i>Map reference: NZMS 260 I38:038-601</i> To be used with ME03-05
Administrative Conditions		
15	AD01	
16	AD02	<i>Number of working days: 5</i> <i>Month 1: March</i> <i>Month 2: July</i> <i>Waterbody: Grays River and tributaries</i> <i>Cross reference to Condition: 6</i>
17	AD04	Lapse date

Recommended draft conditions for water permit CRC041543		
No.	Condition Code	Details
Take		
1	WP01	<i>Name of waterbody: Snow River</i> <i>Map reference: NZMS 260 I38:1230-6130</i> <i>Gallery: I38/0059</i> <i>Instantaneous rate: 84 litres per second</i> <i>Volume: 1,642,200 cubic metres between 1 July and the following 30th</i>

		June
Use		
2	WP04	<p><i>Instantaneous rate:</i> 137 litres per second</p> <p><i>Volume:</i> 882,000 cubic metres between 1 July and the following 30th June</p> <p><i>Type of irrigation:</i> Spray irrigation</p> <p><i>Number of hectares:</i> 147 hectares</p> <p><i>Use:</i> crops and pasture for grazing stock excluding milking dairy cows</p> <p><i>Plan No:</i> "Plan A.N Hope" (Attachment 1)</p> <p>Insert tranching table from derogation approval</p>
3	WP05	
4	WP06	
Mitigation		
5	Non-standard	Gallery I38/0073 shall not be buried less than two metres below the bed of Snow River.
6	Non-standard	<p>The applicant shall keep a log of evapotranspiration and rainfall on a daily basis in a log book for that purpose. A copy of the log shall be provided to the Canterbury Regional Council upon request.</p> <p>Part of FEMP</p>
7	WP07	<p><i>Name of waterbody:</i> Grays River</p> <p><i>Map reference:</i> NZMS 260 I38:038-601</p> <p><i>Minimum flow:</i> 1.5 cubic metres per second</p> <p><i>Flow graph:</i> See Report 2A</p> <p>Add:</p> <p>PROVIDED THAT whenever the flow in the Grays River at map reference NZMS 260 I38: 038-601 falls below 2 cubic metre per second, the Canterbury Regional Council, in consultation with a Water Users Committee representing, but not limited to, surface water and hydraulically connected groundwater users, who are subject to the above minimum flow, has determined upon a water sharing regime which limits the total daily abstraction from the resource then the taking of water in accordance with that determination shall be deemed to be in compliance with condition [XXX] of this consent.</p>
Measuring & Metering		
8	ME01	
9	ME03 ME02	
10	ME04	
11	ME05	
12	ME06	<i>Waterway:</i> Grays River

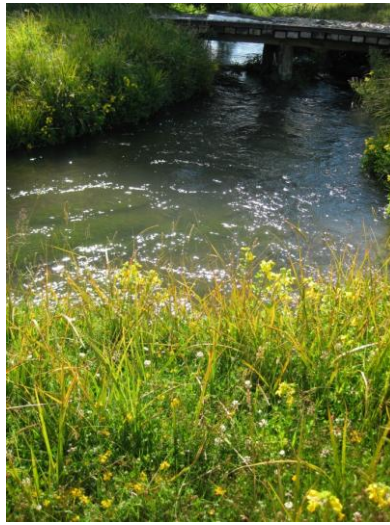
13	WP08	<p>Waterway: Grays River</p> <p>Map reference: NZMS 260 I38:038-601</p> <p>To be used with ME03-05</p>
Administrative Conditions		
14	AD01	
15	AD02	<p>Number of working days: 5</p> <p>Month 1: March</p> <p>Month 2: July</p> <p>Waterbody: Grays River and tributaries</p> <p>Cross reference to Condition: 6</p>
16	AD04	Lapse date

Recommended draft conditions for discharge permit CRC041545		
No.	Consent Code	Details
Scope		
1	DP01	<p>Waterbody from: Grays River</p> <p>Waterbody to: unnamed stream channel</p> <p>Map reference: NZMS 260 I38:0471-5823</p> <p>Discharge rate: 29 litres per second</p> <p>Plan: "Plan A.N. Hope"</p> <p>Other: The water shall by unused conveyance water and shall contain no contaminants.</p>
Operation and Maintenance		
2	DP02	Waterbody: Unnamed stream channel
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 unnamed stream channel; or reduce the flood-carrying capacity of the waterway
4	DP03	
5	DP04	Not needed
Administrative Conditions		
6	AD03	Review
7	AD04	Lapse date

APPENDIX D – PHOTO GALLERY



Grays River take point on left



Grays take looking upstream



Snow Stream gallery position



Discharge Location (1)



Wetland

APPENDIX E – DRAFT FARM ENVIRONMENTAL MANAGEMENT PLAN