

# APPLICANT: BELLFIELD LAND COMPANY LTD

## (HENBURN STREAM)

### REPORT OF HAIDEE McCABE

Consent ID	Description	Table Location	3	Table 5 Location
CRC071649	To take and use surface water from Hen Burn Stream at a maximum rate not exceeding 30 l/s and a volume not exceeding 18,144 m <sup>3</sup> /week and 312,000 m <sup>3</sup> /year between map reference NZMS 260: H39:615-337 and H39:615-336 or H39:619-339 and H39:621-338 for the spray irrigation of 52 hectares for grazing sheep and beef cattle at 318 Henburn Road, Omarama.	Hen Burn Stream		Upstream of Waitaki Dam but not upstream of the outlets of the glacial lakes.
<b>Activity Status</b>				
<p><u>Rule 2, Table 3 WCWARP:</u> The take is within the allocation limit set for the Henburn Stream as clarified by this evidence, and accepts the minimum flow as specified in the WCWARP for Henburn Stream.</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><b>Overall status:</b> Any activity that complies with Rules 2 and 6 is a discretionary activity as per <u>Rule 15</u></p>				
Consent ID	Description			
CRC071650	To disturb the bed and place a structure in the bed of the Henburn Stream to facilitate the abstraction of water, and carry out associated maintenance work to sustain the abstraction for consent CRC071649 at 318 Henburn Road.			
<b>Activity Status</b>				
<p><u>TRP:</u> There is no operative regional plan so S77C of the RMA applies, and the activity is <b>discretionary</b>.</p>				

NRRP: The activity may not comply with condition 9 of Rule BLR2 (discharge of sediment) and condition 8 of Rule BLR3 (works in surface water), therefore the activity is **discretionary** under rule BLR8.

**Overall status: Discretionary**

## 1 PROPOSAL

1. Bellfield Land Company Ltd (herein referred to as the applicant) farm Quailburn Downs, between the Henburn and Quailburn Rd, between Omarama and Twizel.
2. The applicant applied for CRC071649 and CRC071650 on the 1 December 2006 by Haidee McCabe of IR Solutions. CRC071649 seeks to take and use water from Henburn Stream at a rate not exceeding 30 l/s for the spray irrigation of 52 hectares of pasture for grazing sheep and beef. CRC071650 is to disturb the riverbed and construct a buried infiltration gallery in the Henburn Stream to facilitate the abstraction of water.
3. The applicant holds resource consent, CRC001096.1. to take and use water from the Henburn Stream at a rate of 30 L/s with a volume not exceeding 5,184 m<sup>3</sup> in any period of 15 consecutive days. The volume is the limiting factor and only provides for two days of irrigation per 15 days. This take is located approximately 1.5km downstream of this proposed new consent (CRC071649). The new consent proposed allows for the same 30l/s flowrate but an annual volume based on 6,000 cubic metres of water per hectare per season. If the new consent application is granted then the existing consent will be surrendered.
4. The applicant previously had a consent lodged for 8 l/s from Horse Gully (CRC041023) which is a tributary of the Henburn Stream. This was for spray irrigation and stock water purposes. This consent application was withdrawn on the 1st May 2007.
5. The proposed irrigation area is shown on a plan in Appendix A.

### 1.1 Timeline and Summary of Significant Amendments made to the Applications

Timeline	CRC071649	CRC071650
Date of Lodging	01 December 2006	01 December 2006
Notifiable Date	01 December 2006	31 January 2007
Public Notification	04 August 2007	04 August 2007

6. These applications were lodged in December 2006 seeking a new consent for the take and use of water from the Henburn Stream and land use consent for the disturbance of a river bed for the intake.
7. In December 2008, it was confirmed that the Henburn Stream minimum flow as per the WCWARP would be complied with. Clarification was provided that there was no wetland in the irrigation area (which was subsequently confirmed with the IO site visit).
8. Clarification was provided to Ecan on the 15<sup>th</sup> June 2009, in relation to the proposed intake structure being changed to a buried gallery intake, seasonal volume determined by Irricalc, water quality in terms of a Farm Environmental Management Plan (FEMP) will be provided and that landscape has already been adequately addressed.
9. No other amendments have been made to the applications.

## 2 BACKGROUND INFORMATION

### 2.1 Farm Details

10. Bellfield Land Company Ltd (herein referred to as 'the applicant') operates Quailburn Downs; a - 2,200 ha freehold hill country property near Omarama. The farm is merino sheep and beef cattle with 22% of the stock made up of cattle and the remaining 78% of sheep. The farm has approximately 90 ha of existing irrigation made up of spray.
11. The applicant has proposed to provide a total reticulated stock water scheme with this proposed irrigation development to ensure that stock can be excluded from waterways.
12. The applicant is proposing to continue to farm in a similar manner with this proposed irrigation development. The proposed irrigation development will provide many benefits and some are listed below:
  - a) Fattening cattle: with an increase in the area of irrigation there can be an increase in the number of cattle fattened.
  - b) Fattening merino hoggets. The applicant currently carries all merino lambs through a winter, shears them and then fattens and sends to the freezing works. The proposed irrigation development will ensure that this can be done in dry years.
  - c) Making winter feed.
  - d) Growing crops for feed, as an example Lucerne and ryecorn.
13. The applicant has proposed to increase the stock units from the present 8,000 to approximately 9,000.

### 2.2 Water Source

14. The Henburn Stream drains the Diadem Range toward the east and the Cloud Range toward the west. It consists of several tributaries that converge prior to entering the Henburn Gorge. The Henburn Stream then combines with the Quailburn Stream before discharging into the Ahuriri River.

### 2.3 Mackenzie Irrigation Company Shares held

Name: Bellfield Land Company Ltd	Number
Property Shares	1
Irrigation Shares	52

15. Irrigation shares are required for the full irrigation area as this consent is a new consent.

### 2.4 Derogation Approval

16. Derogation approval was obtained from Meridian Energy Limited on the 11<sup>th</sup> September 2009 – Appendix D.

### 3 SUBMISSIONS

17. A summary of submissions is as follows

Resource Consent	Submissions in support	Submission in opposition	Neutral
CRC071649	2	18	2
CRC071650	2	17	2

18. Details of the submissions made in response to all applicants that were publically notified at the same time in 2006 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.
19. Details of the submissions received that are not common to all applications are as follows:

Submitter	Issues	Support/neutral/oppose
AJ and WH Sutherland	Identification of the exact take point needed.	Oppose
Ohau Company Trust Ltd	Water scheduling specified that will ensure all applicants equitable use of water resources. Reassess minimum flow limits to accommodate the scheduled use of water.	Oppose
Central South Island Fish and Game Council	The submission generally indicates that F&G support the WCWARP including minimum flows, flow-sharing and allocation limits. F&G considers the Henburn to be over-allocated by this application (unless it can be demonstrated otherwise e.g. replacement).	Oppose

20. Further consultation has occurred with Mr Bill Sutherland on the 18 November 2008 in the form of a letter and a visit from the applicant's consultant. This outlined the withdrawal of consent CRC041023 to take water from Horse Gully lodged by the previous owner. It also detailed the irrigation proposal and rates and enclosed a map of the area.
21. This consultation was designed to provide Mr Sutherland with all of the required information so that he could make a decision whether he was actually affected and whether to withdraw his submission. During the visit Mr Sutherland had indicated he was happy with the clarification provided, however it appears the submission was not withdrawn.
22. We believe that the Ohau Company Trust Ltd submission relates to the Quailburn catchment and not the Henburn since Ohau Company Trusts applications are within the Quailburn catchment. This application cannot have any effect on the proposed take of Ohau Company Trust Ltd. Therefore we consider that this submission is not relevant to this consent.
23. F&G support the WCWARP minimum flows and the applicant has proposed 20l/s as required by the plan. With regard to the Henburn Stream being fully allocated, at face value it would appear so but the AEE did identify that the applicant's existing consent would be surrendered if this application was

successful. Consequently the Henburn Stream will not be over-allocated but will remain fully allocated.

24. Furthermore the applicant clarified recently in an email to F&G and DOC dated 26th August 2009, various details and updates on the application since notification. Feedback was sought but had not been received at the time of writing this evidence.

## 4 CRC071649 – TAKE AND USE CONSENT - ASSESSMENT OF ENVIRONMENTAL EFFECTS

### 4.1 Effects on other water users

Effects on other water users	
<b>Comments</b>	<p>This application will effectively replace the existing consent if granted, approximately 1 km upstream. There is no increase in rate but an increase in volume.</p> <p>The CRC reporting officer for these applications agrees that effects on other water users are minor.</p>

25. There is one existing water user on an upstream tributary of the Henburn Stream known as Horse Gully. Messrs W and A Sutherland exercise an existing consent (CRC020508) to divert, take and use 50l/s from Horse Gully.
26. Table 3 of the WCWARP specifies an allocation limit of 0.08m<sup>3</sup>/s for the Henburn and Tributaries.
27. This allocation limit established by the WCWARP, aims to ensure that where there are competing users for the resource the effects on these users are 'acceptable'.
28. As already identified the current consent (CRC001096.1) to take and use water at a rate not exceeding 30l/s will be surrendered if this application is granted. Consequently this application along with the surrendering of the existing consent is within the overall allocation limit for the Henburn and Tributaries as per the WCWARP.
29. This application proposes to take water from approximately 1km further upstream but this does not affect any other user because the only other user and their resource consent is over 5km upstream from this application.
30. The take sits within the area defined as "Upstream of Waitaki Dam, but not upstream of the outlets of the glacial lakes" in Table 5 of the WCWARP. Table 5 sets a cumulative allocation of 275 million cubic metres per year for this area.
31. Report 3 – Annual Allocations to Activities (Rule 6 Table 5) acknowledges that the granting of the applications subject to this hearing will not result in the cumulative allocation limit being exceeded.
32. Mitigation is proposed restricting the rate of take, volume per week and minimum flows. Given this, effects on other users are considered to be minor.

## 4.2 Effects on Ecosystem values

<b>Effects on Ecosystem Values</b>	
<b>Comments</b>	<p>The Henburn Stream and tributaries is specified in Table 3 of the WCWARP. The minimum flow is 20L/s as measured at Henburn Road.</p> <p>The CRC reporting officer for these applications agrees that effects on ecosystems are minor.</p>

33. The minimum flow proposed by the WCWARP was developed to ensure that the aquatic values of the Henburn Stream are protected. The applicant proposes to accept the minimum flow for the Henburn Stream as defined in Table 3 of WCWARP.
34. A water level recorder will be installed on the Henburn Stream to ensure compliance with the minimum flow. The take itself will also be appropriately metered.
35. The intake is proposed to be fish screened in accordance with "Fish Screening: good practice guidelines for Canterbury, NIWA Client Report: CHC2007.092, October 2007".
36. Given this, effects on ecosystem values will be minor.

## 4.3 Effects of inefficient water use

<b>Reasonable and Efficient Use Seasonal Volumes and Land Use</b>	
<b>Land Use</b>	Intensive mixed (Cropping, Sheep and Beef)
<b>Area to be irrigated (hectares)</b>	52 (within a command area of 130ha)
<b>Method of application</b>	Spray
<b>Efficiency of application</b>	80%
<b>Daily application depth</b>	5 mm
<b>Return period</b>	3-4 days
<b>Return period application depth</b>	15 – 20 mm
<b>Soil profile available water</b>	Range from 45-140mm (T Webb)
<b>Effective Irrigation Season Rainfall</b>	190 mm/ha/yr
<b>Seasonal volume as per Irricalc (m<sup>3</sup>/year)</b>	378,430 m <sup>3</sup> /year (728mm/season)
<b>Seasonal volume required (m<sup>3</sup>/year)</b>	312,000m <sup>3</sup> /year (600mm/season)
<b>Volume to be included in Table 5 (WCWARP) allocation</b>	312,000m <sup>3</sup> /year (600mm/season)

<b>Comments</b>	<p>The proposed annual volume has been determined using 600mm (as per MIC shareholding) for 52Ha and justified by Irricalc which is considered to be consistent with Policy 16 c of the WCWARP.</p> <p>The CRC reporting officer for these applications is not currently satisfied that effects on inefficient water use are minor, and concerns raised in the S42a report have been addressed below.</p>
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37. The proposed application depth of 15-20mm per return period is less than 50% of the water holding capacities expected. This is considered to be an efficient use of water.
38. Policy 16 (c) of the WCWARP defines two alternative approaches for determining appropriate annual volumes for irrigation. These are as follows:
  - i) soil-moisture measurements, local rainfall and evapotranspiration modeling for the 1-in-5 year dry season (the year for which seasonal demand is exceeded in 20 percent of years); or
  - ii) the difference between peak total seasonal demand as shown in Table A1, Environment Canterbury Report U05/15 and the effective summer rainfall exceeded 80 percent of the time from an approved rainfall site.
39. The first method described is a soil water balance approach, and the second is more commonly referred to as Schedule WQN9v2.
40. Irricalc is a soil water balance approach developed by Aqualinc Research Ltd, and who carried out the modeling for this application. This method is a daily accounting system of the water entering and exiting the soil within the root zone of a particular crop.
41. Furthermore, Irricalc models the effect of all of the factors mentioned in Policy 16(a), namely land use, soil water-holding capacity and spatial variability, spatial and temporal rainfall and potential evapotranspiration variability, as well as irrigation system operation and management.
42. The model inputs are attached to this report as Appendix F.
43. Policy 15 and 19 of the WCWARP encourages the piping or otherwise sealing of water distribution systems to minimise water losses and meet efficiency and effective use requirements. This system is proposed to be completely piped to a spray irrigation system and reticulated trough system within the irrigation area.
44. 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.
45. Given this, effects of inefficient water use are minor.

#### 4.4 Effects of the use of water on water quality

<b>Water Quality</b>	
<b>Comments</b>	<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 been addressed below</p>

46. The property, according to the MWRL Water Quality Study, is located within the Henburn and Quailburn catchment and Henburn, Quailburn and Ahuriri Surface water catchments. For this property, the Lake Benmore mitigation requirements are the most stringent and are accounted for in the overall property from the MWRL Study.

47. The calculated nutrient mitigation requirement of the receiving environments determined in the MWRL Study has identified the N and P thresholds for the property. These are shown in the table below.
48. "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. This table shows that the applicant can meet the property thresholds which are the most restrictive.

	<b>Nitrogen Threshold</b>	<b>Phosphorous Threshold</b>
MWRL Water Quality Study Property Thresholds	7355	207
OVERSEER® Outputs	7351	196

49. The applicant is committed to implementing the "Mandatory Good Agricultural Practices" set out within the Farm Environmental Management Plan (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.
50. 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 FEMP to identify and implement appropriate mitigation measures set out in the draft attached (see Appendix E).
51. 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.
52. 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 application be granted.
53. For Quailburn Downs, the desktop risk assessment identified the following potential risks:
- Evidence of erosion
  - Runoff from winter feed crops
  - Laybacks from waterways from fertiliser application
  - Location of troughs
  - Soil post ryecorn
  - Track runoff - check
  - Cookes Pond
  - Buffer from Quailburn Stream; identify on map and photos
54. The applicant has committed to implementing the FEMP including an on farm risk assessment, appropriate mitigation, monitoring and auditing before the first exercise of this consent. The FEMP has been proposed as condition of consent and the draft FEMP is attached to this evidence as Appendix E.
55. Draft mitigation has already been identified by the applicant and are summarized below:
- a) 20mtr buffer from waterways when applying fertilisers within irrigation area
  - b) Irrigation buffer from Quailburn Stream of at least 20mtrs
  - c) Riparian fencing and planting at strategic locations
  - d) GPS spreader and maps used when applying fertiliser
56. Given that the N and P thresholds from the MWRL Study can be met, and the applicants 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 Landscape

Effects on Landscape	
<b>Comments</b>	<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>The CRC reporting officer for these applications considers that effects are acceptable with appropriate irrigation design.</p>

57. 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 further applications within the basin will be significantly less than minor. I adopt his recommendations to the committee. In terms of the specific placement of the irrigation structures associated with this application, I confirm the following:
- e) The irrigation area proposed is already part of a substantially modified environment, whereby land has been progressively cultivated and re-grassed, top dressed, new fences and pylons though the property.
  - f) The irrigation development is not visible from the State Highway
  - g) The irrigation development is some 500 metres from Henburn Road and is unlikely to be visible from Henburn Road.
  - h) The Henburn Road is a fairly remote no exit road, with the development further up the road from Clay Cliffs Winery on the other side of the Henburn Gorge.
  - i) The ridgeline is unaffected by the development
  - j) No hills or slopes are within the irrigation command area
58. Therefore, it is concluded that effects on landscape values will be minor.

#### 4.6 Effects on People, Communities and Amenity Values

Effects on People, Communities and Amenity Values	
<b>Comments</b>	<p>The CRC reporting officer for these applications considers that effects are acceptable with appropriate irrigation design</p>

59. The applicant has proposed the minimum flow as specified in the WCWARP 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.
60. 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.
61. The WCWARP sets an annual allocation "cap" for agricultural and horticultural activities within defined areas (Table 5) which in Section 5.1 is considered to be met. The applicant has proposed an annual allocation limit for their own resource consents for the use of water.
62. Water quality is addressed in Section 5.4 in terms of cumulative and individually with the FEMP and landscape has been considered with Section 5.5
63. Therefore, given the applicant's commitment to ensuring efficient use of water on their properties, to the minimum flow values and other users, it is considered that effects on people, communities and amenity will be minor.

#### 4.7 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

64. Te Runanga O Ngai Tahu submitted on all applications in the catchment, seeking that all applications be declined.
65. 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.
66. This application is considered to be within the allocation limits and in accordance with the minimum flows of the WCWARP. Te Runanga O Ngai Tahu had considerable input into the creation of the WCWARP.
67. An email was sent to Paul Horgan on the 26th August 2009, outlining the proposal and any changes made since notification. Feedback was sought but not received at the time of writing this evidence.
68. 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 CRC071650 – LANDUSE CONSENT - ASSESSMENT OF THE ENVIRONMENTAL EFFECTS**

69. The potential effects considered to be relevant to this activity are as follows:

### **5.1 Effects of the works on flood-carrying capacity and erosion**

70. The intake is proposed to consist of an infiltration gallery buried up to approximately one metre below stream bed level which is considered appropriate for the intake size and stream velocities; any excavated materials will be replaced to bring the area back to bed level. The intake should be installed within approximately half a day.
71. The intake is proposed to be located in the stream bed but should have no effect on the flowing water as it is proposed to be buried.
72. The main flowing water may be disturbed on installation of the intake when the stream may need to be temporarily diverted around the area where the intake pipe is being installed. On completion of construction, the stream will be reinstated over the infiltration gallery.
73. The proposed intake structure should not create any erosion or increase bank instability to other banks in the vicinity given the buried and unobtrusive nature proposed.
74. It is noted that the Henburn Stream is a stable stream bed and is not subject to adverse bank erosion or changing of course.
75. The Henburn Bridge is approximately 2km downstream of the intake location and is not considered effected by the activity proposed given the stream flow and capacity and is not considered to be affected.
76. Given this the effects on flood-carrying capacity and erosion of Henburn Stream are considered to be minor as concluded by the Reporting Officer.

### **5.2 Effects of the works on water quality and ecosystems**

77. Works around the intake area will be undertaken during the initial construction and on an as needed basis for such activities as maintenance at the beginning of the irrigation season.
78. It is acknowledged that the in-stream works can cause a temporary discolouration of the water and particularly from the perspective of the aquatic ecosystems that may be present in the stream; such sedimentation can have an impact at sensitive times such as spawning, which can therefore be avoided.
79. Sedimentation can also affect downstream users taking water for domestic or stock water purposes.
80. The most common approach is to avoid undertaking works within flowing water, thereby avoiding the possibility of increasing levels of suspended sediment contained within the waterway. In this instance it is simply not practicable for the works associated with the intake to occur in an area where water is not flowing.
81. However it is proposed that the stream be temporarily diverted around where the intake is to be located so that works do not occur in continuously flowing water.
82. The intake is proposed to be fish screened in accordance with "Fish Screening: good practice guidelines for Canterbury, NIWA Client Report: CHC2007.092, October 2007".
83. The area of works will be re-instated on completion of works to minimise the adverse effects on riparian ecosystems
84. Given the short term nature of the work, and the proposed mitigation measures as per the consent conditions, effects on ecosystem values and water quality are able to be effectively mitigated as concluded by the Reporting Officer.

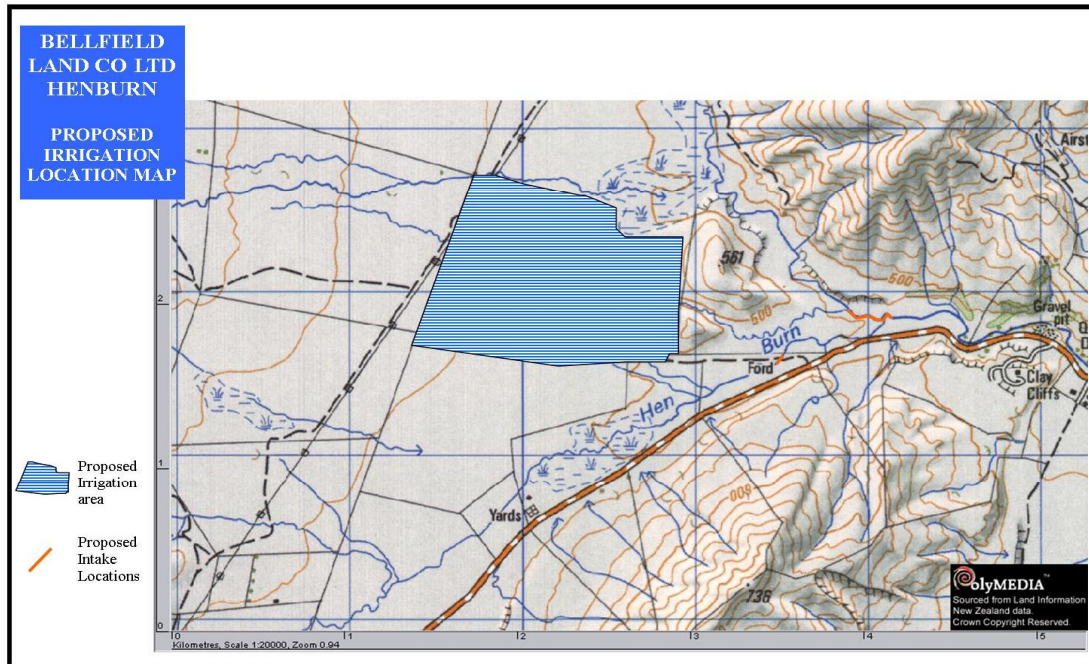
### **5.3 Effects on amenity, people, communities and Tangata Whenua values**

85. The proposed intake abstraction is on the applicants property near a remote no exit road.
86. The intake will be inconspicuous as it is located under the river bed and covered by rock material. The water will be piped. After the initial construction, the disturbed area should re-vegetate and in time blend back into the surroundings.
87. In relation to Tangata Whenua values, accidental recovery protocol has already been proposed by the applicant. Furthermore with email correspondence with Ngai Tahu, the land use consent has not been raised as a concern associated with the water permit.
88. The Reporting Officer considers the effects on Tangata Whenua values are minor given all other effects are considered minor. The effects on amenity, people, communities and Tangata Whenua values are considered minor.

## **6 CONCLUSIONS**

89. The potential effects associated with the take and use of water, and the related ancillary landuse activities have been assessed, taking the concerns of submitters into account, and are considered to be minor.

# APPENDIX A: AREA OF PROPOSED IRRIGATION DEVELOPMENT AT QUAILBURN DOWNS



## APPENDIX B:

Photo A: Proposed Irrigation Area. This area is currently developed dryland.



Photo 2: Henburn Stream



## APPENDIX C: PROPOSED CONDITIONS

CRC Proposed conditions used with track changes

Please note that conditions relating to water quality and FEMP are still to be added

Table 3: Recommended draft conditions for water permit CRC071649		
No.	Condition Code <sup>1</sup>	Details
<b>Divert &amp; Take</b>		
1	WP01	<p><i>Name of waterbody:</i> Hen Burn</p> <p><i>Map reference:</i> NZMS 260 H39:615-337 and H39:615-339<del>6</del> or H39:619-339 and H39:621-338</p> <p><i>Instantaneous rate:</i> 30 litres per second</p> <p><i>Volume:</i> 2,592 cubic metres per day and <del>271,050</del> 312,000 cubic metres between 1<sup>st</sup> July and the following 30<sup>th</sup> June</p> <p><i>Insert tranching regime from Derogation Approval</i></p>
<b>Use</b>		
2	WP04	<p><i>Type of irrigation:</i> Spray irrigation</p> <p><i>Number of hectares:</i> 52 hectares</p> <p><i>Use:</i> crops and pasture for grazing stock <del>excluding milking dairy cows</del></p> <p><i>Do not wish to limit stock type. FEMP will ensure N and P discharges are not exceeded.</i></p> <p><i>Plan No:</i> "CRC071649" (Attachment 1)</p>
3	WP05	
4	WP06	
<b>Mitigation</b>		
5	WP07	<p><i>Name of waterbody:</i> Hen Burn</p> <p><i>Map reference:</i> NZMS 260 H39:631-337</p> <p><i>Minimum flow:</i> 20 litres per second</p> <p><i>Flow graph:</i> See Report 2A <i>Refer to general evidence of Mr Boraman to potentially amend consent condition to reflect position</i></p>
6	Non-standard	<p>(a) No water shall be taken in terms of this permit as referred to in condition 1 until a report is provided to the Canterbury Regional Council, Attention RMA Compliance and Enforcement Manager demonstrating the existing fish exclusion measures have been designed and installed in accordance with Fish Screening: Good Practice Guidelines for Canterbury, NIWA Client Report 2007-092, October 2007.</p>

<sup>1</sup> See Report 1, Appendix 6 for condition code and wording.  
Bellfield Land Company Ltd – CRC071649 and CRC071650

		(Copy available on <a href="http://www.ecan.govt.nz">www.ecan.govt.nz</a> ). (b) The fish exclusion measures shall be maintained in accordance with Fish Screening: Good Practice Guidelines for Canterbury, NIWA Client Report 2007-092, October 2007.
<b>Measuring &amp; Metering</b>		
7	ME02	Piped: <b>Telemetry optional – (b ii) <u>or</u> (diii)</b> <b>May not be practical depending on network coverage, radio link and whether necessary.</b>
8	ME04	<b>Datalogger required as per MIC/MEL Conditions</b>
9	ME05	
10	ME06	
11	ME07	<i>Waterway: Hen Burn</i>
12	WP08	<i>Waterway: Hen Burn</i> <i>Map reference: NZMS 260 H39:631-337</i> <b>To be used with ME03-05</b>
<b>Administrative Conditions</b>		
13	AD01	
14	AD02	<i>Number of working days: 5</i> <i>Month 1: March</i> <i>Month 2: July</i> <i>Waterbody: Scrubby Creek</i> <i>Cross reference to Condition: 6</i>
15	AD04	Lapse date

<b>Table 4: Recommended draft conditions for CRC071650</b>		
<b>No.</b>	<b>Consent Code<sup>2</sup></b>	<b>Details</b>
<b>Scope</b>		
1	LU01	(a) Installation, maintenance or replacement of gallery intake structures within bed of Hen Burn, including excavation of gravel and sediments, (b) Maintenance only necessary to maintain adequate flow of water to irrigation intake.
<b>Location</b>		
2	LU02	<i>Cross reference to Condition: 1</i>

<sup>2</sup> See Report 1, Appendix 6 for condition code and wording.  
Bellfield Land Company Ltd – CRC071649 and CRC071650

		<p><i>Name of watercourse:</i> Hen Burn</p> <p><i>Map reference:</i> NZMS 260 H39:615-337 and H39:615-3396 or H39:619-339 and H39:621-338</p> <p><i>Plan:</i> "CRC071650" (Attachment 1)</p>
<b>Limits of Excavation</b>		
3	Non-standard	The gallery shall be approximately 5 to 10 metres long, constructed of 300 millimetre diameter PE pipe with slots not exceeding 5 millimetres, oriented at a 45 degree angle upstream.
4	Non-standard	<p>The installation of the gallery is <del>shall take half a day to complete.</del> <b>shall take up to 1 day.</b></p> <p><i>Had said approximately ½ a day which may be somewhat restrictive once re-leveling is complete.</i></p>
5	Non-standard	Depth of excavation will be up to 2.5 metres below bed level, with the gallery installed at a depth of at least 1 metre below bed level.
6	Non-standard	Within the bed, the stream may be diverted around the works site so as to minimise the work required in flowing water with a length of no more than 50 metres.
7	Non-standard	Any gravel, sand and other natural material excavated as part of the works authorised by this consent during the disturbance of the bed of Hen Burn, must be deposited on, or near to, the excavation site, and shall be reshaped and formed to a state consistent with the surrounding natural riverbed.
<b>Erosion Protection</b>		
8	LU10	
9	LU11	<i>Waterbody:</i> Hen Burn
10	LU12	
1	LU13	<i>Waterbody:</i> Hen Burn
<b>Prior to Construction</b>		
12	LU08	
13	Non standard	The Canterbury Regional Council Compliance Monitoring Officer shall be notified of the intention to carry out works and their intended type and scope at least 48 hours prior to the commencement of work.
14	LU31	Bird survey
<b>During Construction</b>		
15	LU14	
16	LU18	
17	LU21	
18	LU23 modified	All practicable measures shall be undertaken to minimise

		vehicles and machinery entering Hen Burn.
19	LU22	
20	LU26	
21	LU24	
22	LU25	
<b>Accidental Discovery Protocol</b>		
23	LU09	
<b>Upon Completion</b>		
24	LU28	
25	Non standard	On completion of works, the area shall be restored to its original condition as far as practicable.
<b>Administrative Conditions</b>		
26	AD03	
27	AD04	

# APPENDIX D: DEROGATION APPROVAL



# **APPENDIX E: DRAFT FARM ENVIRONMENTAL MANAGEMENT PLAN**



# APPENDIX F: IRICAL