By email to: rochelle.lord@orc.govt.nz

Ideas for sustainable futures

Ahikā Consulting
Rm 2 & 7, Third Floor,
2 Dowling St, Dunedin
PO Box 1320, 9054

03 742 1093
info@ahika.co.nz
www.ahika.co.nz

8 June 2021

Dear Rochelle

This letter provides a further response to Minute 3 - Directions of the Commissioner.

Question:
I request the applicant to provide a further concise document (at their earliest convenience) containing only photographs (not videos) that clearly identifies the relevance of the photographs, the locations in the Royal Burn (or new Chums Creek) where they were taken and the expert evidence that they are intended to support.

Response:
All of the photos and videos were taken on the North Branch and main stem of the Royal Burn, and were referenced in paragraphs 39, 91 and 95 of my evidence. The date of each recording is provided in the folder title. A plan showing where they were taken was provided, and is attached again to this letter for convenience.

Mr McQuilkin was asked to collect a weekly visual record of flows at the following locations over summer 2020/21:

- Location 1 - the North Branch of the Royal Burn at the lower point of take A.K.A. the New Chums offtake;
- Location 2 - the North Branch of the Royal Burn at Glencoe Road;
- Location 3 (from 28/2/21 onwards) the main stem of the Royal Burn at the proposed low flow cut-off monitoring location; and
- Location 4 - the main stem of the Royal Burn at the Crown Range Road crossing.

The photos and videos show multiple examples where the majority of the flow is left in the creek at the lower point of take on the North Branch of the Royal Burn, only to be lost to ground before the creek reaches Glencoe Road. This supports our[1] assertion that there is a significant losing

[1] Evidence of Hilary Lennox, Matt Hickey and Dean Olsen

reach in this location. Flows then recover again and increase significantly by the time the Royal Burn reaches the Crown Range Road crossing due to the gaining reach. This hydrological regime was confirmed by the NIWA flow gauging. undertaken earlier this year.

From 21 February onwards, Mr Mcquilin has also taken footage of the staff gauge, which was installed 30 m upstream from the Crown Range Rd crossing. The flow level is shown to be constant here even when the North Branch of the Royal Burn is dry at Glencoe Road. This supports multiple comments in my evidence (including statements made by LOFTS users) regarding how the presence of the gaining reach means that water is still available for downstream permitted activity users even when the North Branch of the Royal Burn is dry upstream.

Snapshots of the photos, along with annotations, are provided below. The resolution has been redcued to allow for this document to be emailed, so please refer to the originals where necessary. Please also note that the video records are more complete and provide more information, so should not be ignored.

Ngā mihi nui

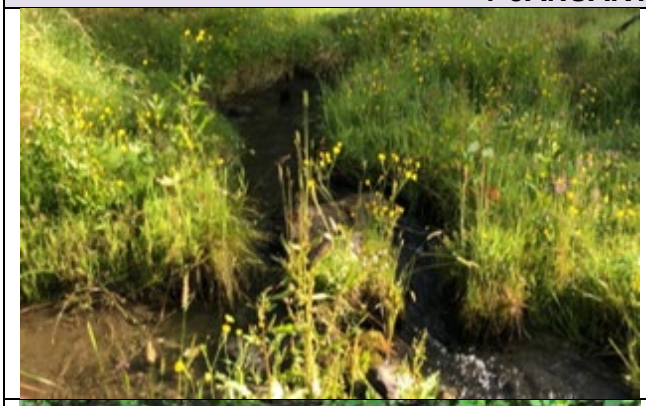
Hilary Lennox


Photo/video monitoring locations
1 = Lower RBNB Point of Take (Brodie Race offtake)
2 = RBNB @ Glencoe Rd
3 = Royal Burn @ site boundary
4 = Royal Burn @ Crown Range Rd
Upper RBNB Point of Take
Lower RBNB Point of Take
(Brodie Race offtake)
1
Glencoe Rd
2
"Swamp"
3
Proposed low flow cut-off monitoring location
Certificate of Compliance RM20.330 LOFTS Water Ltd
Crown Range Rd
4
N

16 DECEMBER 2020	
	Location 1 - lower point of take on RBNB Approx. 70% of flow remains in RBNB (this photo is a still taken from the video)
	Location 2 - RBNB @ Glencoe Rd No flow, creek bed is dry in places Flow that remained at Location 1 has been lost to ground along the losing reach
	Location 4 - main stem of the Royal Burn at @ Crown Range Rd High flow Flows have recovered along the gaining reach

23 DECEMBER 2020	
	Location 1 - lower point of take on RBNB Approx. 60% of flow remains in RBNB
	Location 2 - RBNB @ Glencoe Rd No flow, standing water only Flow that remained at Location 1 has been lost to ground along the losing reach
	Location 4 - main stem of the Royal Burn at @ Crown Range Rd High flow Flows have recovered along the gaining reach

30 DECEMBER 2020	
	Location 1 - lower point of take on RBNB Approx. 80% of flow remains in RBNB
	Location 2 - RBNB @ Glencoe Rd No flow, standing water only Flow that remained at Location 1 has been lost to ground along the losing reach
	Location 4 - main stem of the Royal Burn at @ Crown Range Rd High flow Flows have recovered along the gaining reach

7 JANUARY 2021	
	Location 1 - lower point of take on RBNB Approx. 95% of flow remains in RBNB Photo taken following a 90mm rain event
	Location 2 - RBNB @ Glencoe Rd Low flow, significantly reduced compared to upstream Most of the flow that remained at Location 1 has been lost to ground along the losing reach Photo taken following a 90mm rain event
	Location 4 - main stem of the Royal Burn at @ Crown Range Rd High flow Flows have recovered along the gaining reach Photo taken following a 90mm rain event

13 JANUARY 2021	
	Location 1 - lower point of take on RBNB Approx. 90% of flow remains in RBNB
	Location 2 - RBNB @ Glencoe Rd Low flow, significantly reduced compared to upstream Most of the flow that remained at Location 1 has been lost to ground along the losing reach
	Location 4 - main stem of the Royal Burn at @ Crown Range Rd High flow Flows have recovered along the gaining reach

20 JANUARY 2021	
	Location 1 - lower point of take on RBNB Approx. 60% of flow remains in RBNB Photo taken following a rain event
	Location 2 - RBNB @ Glencoe Rd Low flow, significantly reduced compared to upstream Most of the flow that remained at Location 1 has been lost to ground along the losing reach Photo taken following a rain event
	Location 4 - main stem of the Royal Burn at @ Crown Range Rd High flow Flows have recovered along the gaining reach Photo taken following a rain event

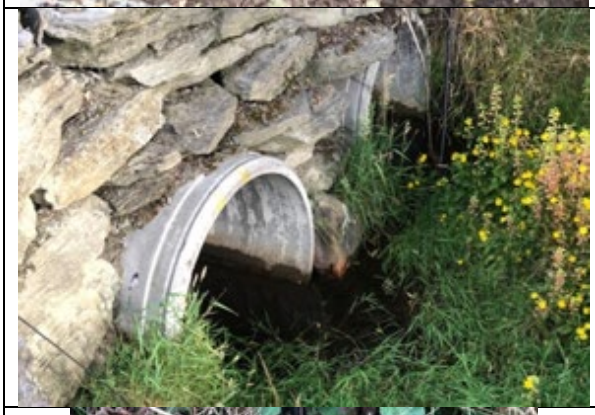
3 FEBRUARY 2021	
	Location 1 - lower point of take on RBNB Approx. 60% of flow remains in RBNB
	Location 2 - RBNB @ Glencoe Rd No flow, creek bed is dry in places Flow that remained at Location 1 has been lost to ground along the losing reach
	Location 4 - main stem of the Royal Burn at @ Crown Range Rd High flow Flows have recovered along the gaining reach

10 FEBRUARY 2021	
	Location 1 - lower point of take on RBNB Approx. 60% of flow remains in RBNB Photo taken following rain event
	Location 2 - RBNB @ Glencoe Rd Low flow, significantly reduced compared to upstream Most of the flow that remained at Location 1 has been lost to ground along the losing reach Photo taken following a rain event
	Location 4 - main stem of the Royal Burn at @ Crown Range Rd High flow Flows have recovered along the gaining reach Photo taken following a rain event (This photo is a still taken from the video)

17 FEBRUARY 2021	
	Location 1 - lower point of take on RBNB Approx. 80% of flow remains in RBNB
	Location 2 - RBNB @ Glencoe Rd Very low flow, significantly reduced compared to upstream Most of the flow that remained at Location 1 has been lost to ground along the losing reach
	Location 4 - main stem of the Royal Burn at @ Crown Range Rd High flow Flows have recovered along the gaining reach

19 FEBRUARY 2021	
	Location 1 - lower point of take on RBNB Approx. 90% of flow remains in RBNB (This photo is a still taken from the video)
	Location 2 - RBNB @ Glencoe Rd No flow, creek bed is dry in places Flow that remained at Location 1 has been lost to ground along the losing reach

25 FEBRUARY 2021	
	Location 1 - lower point of take on RBNB Approx. 90% of flow remains in RBNB
	Location 2 - RBNB @ Glencoe Rd No flow, creek bed is dry in places Flow that remained at Location 1 has been lost to ground along the losing reach
	Location 4 - main stem of the Royal Burn at @ Crown Range Rd High flow Flows have recovered along the gaining reach
	Location 4 - staff gauge Water level consistent with that observed on other occasions

28 FEBRUARY 2021	
	Location 1 - lower point of take on RBNB Approx. 80% of flow remains in RBNB
	Location 2 - RBNB @ Glencoe Rd No flow, creek bed is dry in places Flow that remained at Location 1 has been lost to ground along the losing reach
	Location 3 - proposed low flow monitoring location High flow Flows have recovered along the gaining reach
	Location 4 - staff gauge Water level consistent with that observed on other occasions

3 MARCH 2021	
	Location 1 - lower point of take on RBNB Approx. 70% of flow remains in RBNB
	Location 2 - RBNB @ Glencoe Rd Very low flow (slight trickle only), significantly reduced compared to upstream Most of the flow that remained at Location 1 has been lost to ground along the losing reach
	Location 3 - proposed low flow monitoring location High flow Flows have recovered along the gaining reach
	Location 4 - staff gauge Water level consistent with that observed on other occasions

10 MARCH 2021	
	Location 1 - lower point of take on RBNB Approx. 70% of flow remains in RBNB
	Location 2 - RBNB @ Glencoe Rd Very low flow, significantly reduced compared to upstream Most of the flow that remained at Location 1 has been lost to ground along the losing reach
	Location 4 - main stem of the Royal Burn at @ Crown Range Rd High flow Flows have recovered along the gaining reach
	Location 4 - staff gauge Water level consistent with that observed on other occasions

17 MARCH 2021	
	Location 1 - lower point of take on RBNB Approx. 80% of flow remains in RBNB
	Location 2 - RBNB @ Glencoe Rd Very low flow, significantly reduced compared to upstream Most of the flow that remained at Location 1 has been lost to ground along the losing reach
	Location 3 - proposed low flow monitoring location High flow Flows have recovered along the gaining reach
	Location 4 - staff gauge Water level consistent with that observed on other occasions

24 MARCH 2021	
	Location 1 - lower point of take on RBNB 100% of flow remains in RBNB
	Location 2 - RBNB @ Glencoe Rd Very low flow, significantly reduced compared to upstream Most of the flow that remained at Location 1 has been lost to ground along the losing reach (This photo is a still taken from the video)
	Location 3 - proposed low flow monitoring location High flow Flows have recovered along the gaining reach
	Location 4 - staff gauge Water level consistent with that observed on other occasions