

**BEFORE THE COMMISSIONER APPOINTED BY
THE OTAGO REGIONAL COUNCIL**

IN THE MATTER of the Resource Management
Act 1991 ("the Act")

AND

IN THE MATTER BSTGT Ltd and A P McQuilkin, N
J McQuilkin, K L Skeggs, S A
McQuilkin and G M Todd being
Trustees of the A P McQuilkin
Family Trust
Consent Application RM19.151

**EVIDENCE IN REPLY OF HILARY LENNOX
ON BEHALF OF BSTGT LTD AND
A P MCQUILKIN, N J MCQUILKIN, K L SKEGGS, S A MCQUILKIN AND
G M TODD BEING TRUSTEES OF THE A P MCQUILKIN FAMILY TRUST**

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EVIDENCE IN REPLY OF HILARY LENNOX

1. My name is Hilary Lennox. My qualifications and experience are set out in my evidence in chief dated 1 June 2021.
2. I continue to confirm that the matters in this evidence are within my knowledge and expertise and I have not omitted to consider any material matter that could influence my opinion.
3. I have reviewed the evidence provided by Mr David Whyte. Mr Whyte's evidence contains a number of errors and misunderstandings, some of which I discuss below. I have not discussed the minor errors as these are relatively immaterial and are described accurately elsewhere in my earlier evidence.
4. For the sake of convenience each heading in this evidence refers to the corresponding paragraph in the evidence of Mr Whyte.
5. Many of the errors I discuss arise from misunderstandings. It is apparent that Mr Whyte has entered private property on his site visits, without permission or notice to any of the land owners. I confirm that no contact has been made with the applicants or me, or Mr Hickey (Mr Whyte's hydrology counterpart).

Paragraphs 23(d)(ii), 42, and 45

6. New Chums race does not collect water from any other creeks. Any tributaries along the path of the race downstream of the metering location have been piped under the race. The meter, therefore, records the total take.

Paragraph 25

7. If Mr Whyte had asked the applicants how this infrastructure is used, rather than entering the site and inspecting the infrastructure without the owner's consent, the applicant could have explained that water taken is usually directed into the pond. From here, water is gravity fed to where it is used. The bypass has been installed for use on occasions when the pond is unavailable e.g. when it is under repair. Furthermore, whether the water taken is conveyed via the pond or not is immaterial. The pond

is there to provide storage, but that does not mean that the take must cease when the pond is full as long as water being taken is still being used.

Paragraph 26

8. Again, if Mr Whyte had asked the applicants, they could have explained that a control gate was installed on the offtake, and not in the creek, in August 2019. The gate was required for maintenance purposes elsewhere on the farm in summer 2020 and a cap was used to control the take instead during this period instead. I understand that a gate has since been reinstalled.

Paragraph 35-37

9. Mr Whyte has ignored the Tri Burn catchment, which lies in between the New Chums and Royal Burn catchments. Mr Whyte in his Figure 1 has mistakenly combined the Tri Burn catchment with his New Chums Creek catchment while also overstating the size of the Royal Burn catchment. My figure below corrects this. The extent of these catchment area errors means that the figures in his Table 1 are incorrect.

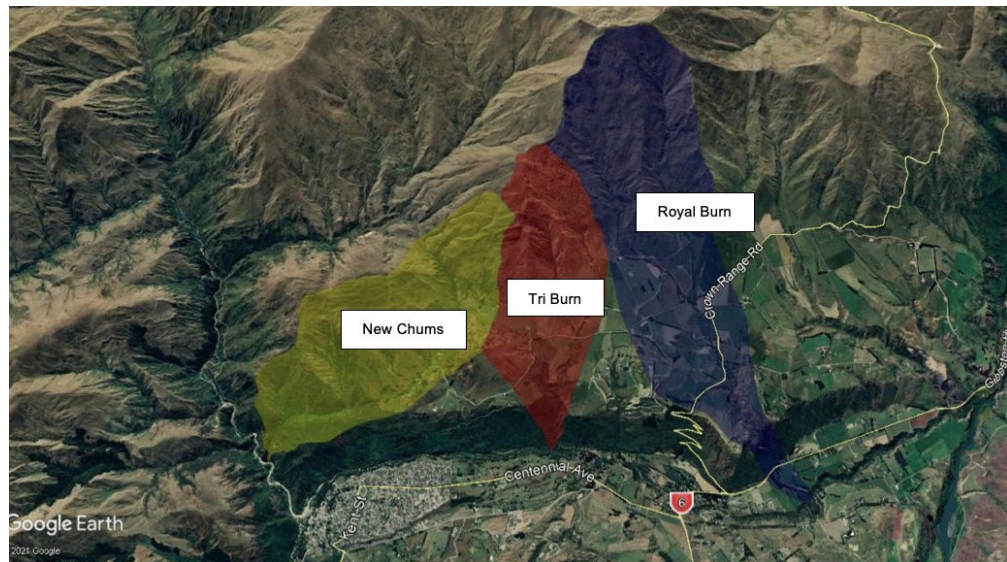


Figure 1: The independent catchment areas of New Chums, Tri Burn and Royal Burn

Paragraphs 34-55

10. Mr Whyte asserts that the MfE modelled flow data provides an overestimation of the MALF and mean flow of the two subject creeks.

However, the use of this modelled data was accepted by Mr Ravenscroft, Mr Hickey, Dr Olsen, Ms Miller, Mr Veendrick, and Ms King. Mr Whyte also questions why the MfE modelled flow data shows the Royal Branch of the North Burn to have higher flows than New Chums Creek, whereas his calculations show the opposite. I would suggest that this is because Mr Whyte has grossly overestimated the size of the New Chums catchment.

Paragraphs 62 and 63

11. Mr Whyte does not seem to understand Policy 6.4.1A. Under Policy 6.4.1A, a groundwater take is allocated as surface water where it shares hydrological connection with adjoining surface water bodies. There is no vice-versa in this rule. The RPW does not require a surface water take to be allocated as groundwater.

Paragraph 64

12. In the notes below the table, Mr Whyte makes a reference to 96284, which has been cancelled. I do not know why this condition was imposed on these consents, but I do not think that the applicant does not necessarily need to replace 96285. The primary allocation sought is available under RM14.364.01 alone if required.

Paragraph 66

13. Mr Whyte asserts that higher flows have only been abstracted during rainstorm events, and neglects to consider the effect that snowmelt has on spring flows, even though this is a consideration elsewhere in his evidence.

Paragraphs 64-71

14. I am not sure what point Mr Whyte is trying to make here, because all he has demonstrated is that the maximum rate sought (89.5 L/s) is less than what he deems to have been taken historically (259.26 L/s, which is incorrect because he shouldn't have included the data from 3073B¹).

¹ The meter for 3073B measures how much of the total take is used at the McQuilkin property, not how much is taken from the creek.

Mr Whyte also makes reference to the historic consented maximum rate of take (652.3 L/s), despite saying elsewhere that this is irrelevant.

Paragraph 76

15. I'm not sure what Mr Whyte is trying to say here. Bracken's Gully is a different catchment. Mr Whyte suggests that flow is moving from New Chums into Brackens, but that the resulting flow is measured in the New Chums water race.

Paragraphs 77-80

16. I'm not sure what Mr Whyte is trying to demonstrate here other than that he accessed various parts of the applicants' properties without consent. It is unusual that someone with Mr Whyte's experience would consider it appropriate to enter a working farm without the landowner's permission.

Paragraph 90

17. This is incorrect. The flow in New Chums Creek has not been directed from the natural watercourse. I think Mr Whyte is referring to other watercourses along the flow path of the New Chums race. However, as noted above, these watercourses do not flow into the New Chums race. Nor are these watercourses even in the New Chums catchment.

Paragraphs 91-98

18. Mr Whyte is asking for information that would take many years to collect. The hydrology of any catchment is diverse and varies from year to year. Add into the equation the complex and dynamic surface-groundwater interactions across the Crown Terrace, which are influenced by various other users too, and it becomes even more difficult to collect the information that Mr Whyte wants. I would suggest that the level of information sought is not proportionate to the potential risk, nor is it typically required in other applications to take surface water in Otago, and so I do not see how it would add value in the case of this consent application.

19. What Mr Whyte seems to be overlooking is that the application represents an improvement in the status quo environment, so if there are adverse effects of concern, they ought to be readily apparent.

Paragraph 100

20. Mr Whyte states that the original application sought 1,296 m³/year for stock water. This is incorrect. The original application sought 1,296 m³/day for stock water and baseflow. The revised stock water figure (45 m³/day) is significantly less than this.

Paragraph 101

21. This is incorrect. The monthly limit sought is 210,361 m³/month. See paragraphs 127 and 147 of my earlier evidence.

Paragraphs 99-117 (and Paragraph 70)

22. There seems to be some misunderstanding about what is being applied for or how water is taken, especially in the context of surface water from variable flow mountain streams. The applicants are applying to take a combined maximum of 89.5 L/s. Simply because the sum of maximum rates across the different streams and intakes achieves a value of 89.5 L/s does not mean that this is what will or must be abstracted and as Mr Whyte surmises delivered at the point of take.
23. In Para 116 Mr Whyte concludes that because one gauging in February 2021 showed flows were less than 50 L/s at the lower point of take on the North Branch of the Royal Burn, then the applicant is unable to achieve their maximum rate of take. This is despite his own gaugings after accounting for takes showing at times there would be far in excess of 50 L/s at the same take location (Appendix A of Mr Whyte's evidence) and metering data showing that at times 50 L/s is obtainable.
24. Rates of take are granted as a maximum, not an average or some other nominal value. This does not preclude an applicant taking less than their maximum consented rate at different times of the year depending on demand or availability. Maximum rates are usually accompanied with a seasonal volume to ensure the amount of water taken is efficient for the need.

25. The applicants will have to manage their takes carefully to ensure that and the proposed residual flow and low flow cut-offs are adhered to, and that monthly/annual limits are not exceeded. Mr Whyte has tried to simplify this by suggesting that the applicant wishes to take at 89.5 L/s most of the time, which is certainly not the case. The applicants simply cannot take at the maximum proposed rates when there is not enough water in the creeks. Proposed residual flow and low flow cut-offs will mean that the applicants cannot lawfully take all of the water from the creeks, as suggested by Mr Whyte.

Paragraph 118

26. The reason why NIWA gauged u/s and d/s of each point of take is so the rate of take could be calculated easily. Mr Whyte's assertion at Paragraph 119 is, therefore, correct.

Paragraphs 120-122

27. I think Mr Whyte is confirming here what we already know, which is that there are naturally gaining and losing reaches on the Royal Burn.

Paragraph 136.

28. I do not accept that it is safe to infer contamination risk from overseas studies of golf courses in different environments. This is a matter (if it is relevant at all) that should have been raised by Mr Whyte with people who have the specific knowledge of the fertiliser and pesticide/herbicide use on BSTGT's property. I do not know of any reason to assume that fertiliser and herbicide/pesticide on the applicant's land is any more hazardous to ground water than the use of the same substances in relation to pasture or crop management.

Paragraph 139

29. I do not consider it appropriate for Mr Whyte to propose that ORC should declare the Crown Terrace and Nitrogen Sensitive Zone. Furthermore, the PC6A regime has been suspended by Plan Change 6AA and is currently under review. Also, N losses controlled under PC6A were to be 'measured' using Oveseer™, not lysimeters.

Paragraph 143

30. The low flow cut-off has been proposed at a location below the losing reach so that the potential impact on downstream users can be more closely managed. Note that what is being proposed is a low flow cut-off, not a minimum flow.

Paragraphs 147 and 148

31. Observations in 2018 indicate that in very dry years, the extent of the losing reach is greater than that seen typically. However, this reach is usually perennial and will be more so following the imposition of the proposed residual and low flow cut-offs. Mr Whyte has not considered all of the data provided to support our observations regarding the losing reach, but does provide commentary himself on the gaining and losing reaches (Paragraphs 120-122 of his evidence).

Paragraph 153

32. Mr Whyte, who is not an instream ecologist, does not explain why he believes Mr Hickey's assessment to be flawed. No additional survey evidence is presented to identify instream values that are different to those observed by Mr Hickey and Dr Olsen.

Paragraphs 156-158

33. See above for discussion on the gate at the Brodie Race offtake.

Paragraph 160

34. Properties downstream on the Brodie Race have no legal right to any water from the Brodie Race.

Paragraph 172

35. Mr Hickey has plotted the GPS references provided by NIWA and so his map is more accurate than NIWA's.

Paragraph 184

36. Mr Whyte suggests that a residual flow of 10 L/s should be applied at both points of take on the Royal Burn after determining that the mean annual flow is 5.9 - 6.8 L/s at the upper point of take, and 6 - 7 L/s at the

lower point of take on the Royal Burn. It is not clear why Mr Whyte is seeking a residual flow that is greater than his calculated mean annual flow.

Paragraph 192

37. I disagree with Mr Whyte's interpretation of the 'swamp'. Nonetheless, any effects of the proposal will be less than occurring previously, not greater.

Paragraph 194

38. I think Mr Whyte is suggesting that the golf course needs more water than pasture, which is not the case. Converting pasture to golf course will result in decreasing water demand. Mr Whyte does not take issue with the evidence of Mr David Howard.
39. There are several other errors in Mr Whyte's evidence, but either I have addressed these matters elsewhere, or they have been addressed by other experts (both those working for the applicant and those working for ORC) and so I have not felt the need to discuss these any further here.

Date: 11 June 2021



Hilary Lennox