

**From:** [Keri Johnston](#)  
**To:** [Plan Hearings](#)  
**Subject:** Orari Water Users - Plan Change 7 Hearing Evidence  
**Date:** Friday, 17 July 2020 9:44:41 am  
**Attachments:** [image002.png](#)  
[image003.png](#)  
[Orari Water Users Statement of Evidence Keri Johnston Plan Chane 7 FINAL 170720.pdf](#)

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Please find this attached.

Kind regards,

Keri



Keri Johnston | [Natural Resources Engineer \(CMEngNZ\)](#)


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**BEFORE THE COMMISSIONERS APPOINTED BY  
THE CANTERBURY REGIONAL COUNCIL**

**IN THE MATTER** of Proposed Plan Change 7 to the  
Canterbury Land and Water  
Regional Plan

**SUBMITTER** **ORARI WATER USERS**  
**(SUBMITTER NUMBER PC7-145)**

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**STATEMENT OF EVIDENCE OF KERI JOHNSTON**

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## **INTRODUCTION**

1. My full name is Keri Joy Johnston. I am a director and principal of Irricon Resource Solutions Limited (**Irricon**), a role I have been in since 2007. Irricon is a resource management and environmental engineering consultancy, working extensively in the field of water resources management.
2. Prior to this, I worked for RJ Hall Civil and Environmental Consulting Limited as an Environmental Engineering Consultant, Environment Canterbury as a Consents Planner and Environmental Management Systems Engineer, and Meridian Energy Limited as a Graduate Civil Engineer.
3. I have 20 years' experience as a Natural Resources Engineer. My expertise is in managing water resources (quantity and quality) from all aspects including design of flow and allocation regimes, planning and consenting, hydrology, farm environment planning, and modelling.

## **Qualifications and experience**

4. I hold a Bachelor of Engineering in Natural Resources Engineering from the University of Canterbury. I am a Professional Member of Engineering New Zealand and a Chartered Professional Engineer (CMEngNZ).
5. I also hold a National Certificate (Level 4) in Irrigation Evaluation, a certificate in the design and management of farm dairy effluent systems, and I am an accredited RMA Decision Maker.
6. Since 2019, I have been the chair of Irrigation New Zealand.

## **Background**

7. I am familiar with the provisions of PC7 to which these proceedings relate. In preparing my evidence, I have reviewed the relevant parts of the section 32 Report and the section 42A Report in respect of the Orari Water Users Group (**OWUG**) submissions.

### **Code of Conduct**

8. I have been given a copy of the Environment Courts code of conduct for expert witnesses. I have reviewed that document and confirm that this evidence has been prepared in accordance with it and that all opinions that I offer in this evidence are within my expertise. I have not omitted to refer to any relevant document or evidence except as expressly stated. I agree to comply with the code and in particular to assist the Commissions in resolving matters that are within my expertise.
9. I have been asked by the Submitter to provide this brief of evidence in relation to their submission on Proposed Plan Change 7 to the Canterbury Land and Water Regional Plan (**PC7**).

### **Scope of Evidence**

10. My evidence is specific to the Orari River Catchment provisions of PC7 and addresses the proposed changes to the allocation limit in Table 14(h) of PC7 for the Orari River.
11. I have addressed the Section 42 report throughout my evidence where relevant.

### **ALLOCATION LIMIT FOR THE ORARI RIVER**

12. The allocation limit set in Table 15 of the LWRP for the Orari River was 1,524 L/s initially, reducing to 1,400 L/s three years from the plan becoming operative and then a further reduction to 800 L/s in 2040.
13. OWUG raised the concern in their submission about the proposed change to the allocation limit in PC7, which reduced the allocation limit at three years from operative (changed to current) to 1,182 L/s in the Section 42 report (the notified plan had a proposed allocation limit of 1,069 L/s).
14. The Section 42 report notes, at paragraph 6.41:

*We note that 1,524 L/s was considered to be the total allocation for the Orari mainstem at upstream of Ohapi Creek (Headwaters, Upper Orari, Upper Coopers, Lower Orari and Coopers, Petries Creek) excluding the*

*Timaru DC take in 2011 when the Orari River Flow and Allocation Plan was developed. It was calculated using the stream depletion methodology set out in Schedule 9 of the CLWRP i.e. in the Orari Conjunctive Use Zone all the shallow groundwater takes were assessed using this methodology despite being counted as direct for minimum flow purposes. Since then a small number of consents have been surrendered, and the actual allocation has decreased from that provided for in that Plan.*

15. I was engaged by OWUG to work with ECan staff in 2012 to calculate the allocation for the Orari River and its tributaries. The Section 42 report is correct in that Schedule 9 methodology was used to determine the allocation limit; however, the Timaru DC takes **were** included in the allocation limit.
16. At the time the plan was developed, the Timaru DC held two large takes from the Orari River. CRC011982 authorised a take of 210 L/s and this was surrendered by Timaru DC post the plan becoming operative as was agreed during the plan development process. The agreed surrender of this consent meant that the first allocation reduction at three years from operative would be reached (and in fact bettered).
17. However, CRC011991 also held by Timaru DC, was renewed in 2017 for a rate of 1,526 L/s (an increase from 526 L/s).<sup>1</sup> This was allowed to occur because the use of water is for community supply purposes and is a first priority use of water.
18. The two Timaru DC consents combined increased the allocation by 790 L/s, being an increase of 1,000 L/s under CRC173644 and a decrease of 210 L/s by the surrender of CRC011982. Other changes have resulted in decreases to the allocation as consents have been renewed for lesser rates of take, or also surrendered.
19. Since then, and this has certainly been the practice for PC7, community supply takes are excluded from the allocation limits. This makes sense when you look at what happened for the renewal of CRC011991, and the impact that this had on the allocation limit set in the plan.

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<sup>1</sup> The new consent number is CRC173644

20. The Section 42 report also proposes reducing the allocation by the amount attributed to consents in the Upper Coopers Creek area defined in Section 14 of the LWRP. The Section 42 report amends this from 331 L/s to 218 L/s at paragraph 6.39. I agree with this.
21. I disagree that the method to change the allocation for the Orari River is simply a matter of subtracting the Upper Coopers Creek consents from the plan limit. As also identified in the Section 42 report at paragraph 6.42:
- The current Resource Consent Inventory stream depletion calculations have increased all the estimates (except for those which were already direct and one consent that was previously higher).*
22. This increase is a function of modelling. It is not, in real terms, an increase in abstraction, and therefore, to adjust the allocation in response to new modelling is sensible. It is the same predicament as the release of a new version of Overseer which increases the nitrogen lost to water output – simply a function of the model, not a real increase to the environment.
23. If the limit for the Orari River is to be changed in PC7, then it makes sense that it should reflect all of the changes since the allocation limit was last assessed.
24. This would mean that community supply takes should be removed from the allocation calculations (as is proposed under PC7), Upper Coopers Creek takes also excluded<sup>2</sup>, and the latest stream depletion assessments used.
25. Therefore, the allocation for the Orari River is **1,454.14 L/s**. A copy of my allocation calculations for the Orari River are attached to my evidence in **Appendix One**.

**Dated 17 July 2020**

**Keri Johnston**

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<sup>2</sup> Please note that takes from Lower Coopers Creek are still included.

## APPENDIX ONE

### Table SD1 – Orari River

Consent No.	Maximum Rate	SD Effect	SD (L/s)	Include in Allocation	Comments
CRC052461.2	12	high	3.08	Yes	
CRC962188	15	high	3.96	Yes	
CRC011686A	11.5	high	4.88	Yes	
CRC030666	15	direct	15.00	Yes	
CRC970531	30	high	7.44	Yes	
CRC030334.2	24	direct	24.00	Yes	
CRC010078	30	direct	30.00	Yes	
CRC082928.2	19	direct	19.00	Yes	
CRC991204.2	22.5	direct	22.50	Yes	
CRC991204.2	22.5	high	7.40	Yes	
CRC111279	35	high	23.22	Yes	
CRC164000	60	high	23.61	Yes	
CRC112037	26	direct	26.00	Yes	
CRC135228	45.5	direct	45.50	Yes	
CRC020838	56	high	37.64	Yes	
CRC962360.1	76	high	41.48	No	This consent is in Upper Coopers Creek
CRC981979.1	80	direct	80.00	No	This consent is in Upper Coopers Creek
CRC064112	94.5	high	74.65	Yes	
CRC011440.3	84.5	direct	84.50	Yes	
CRC100009	52.6	direct	52.60	Yes	
CRC164698	10.0	high	6.75	Yes	
		TOTAL	511.73		

### Table SW1 – Orari River

Consent No.	Maximum Rate (L/s)	Include in Allocation	Comments
CRC962566.1	70	Yes	
CRC122801	62	Yes	
CRC962356.1	32	Yes	
CRC970463.1	25	Yes	
CRC155131	20	Yes	
CRC173644	1526	No	Community supply take
CRC962512	20	Yes	
CRC166770	60	Yes	
	TOTAL	289	

**Table SD5 – Coopers Creek (consents in Lower Coopers Creek only)**

Consent No.	Maximum Rate	SD Effect	SD (L/s)	
CRC142208	2.1	direct	2.10	
CRC052873.2	7.5	direct	7.50	
CRC166750	4.9	direct	4.90	
CRC981199	22.5	direct	22.50	
CRC991141	8	direct	8.00	
CRC142224	23	direct	23.00	
CRC940825	29.5	high	9.71	
CRC063140	35	direct	35.00	
CRC163140	35	direct	35.00	
CRC133194	30	high	15.29	
CRC970121.1	38	high	17.81	
CRC142223	30	direct	30.00	
CRC962378.2	30	direct	30.00	
CRC093599	45	high	27.19	
CRC041317.1	35	direct	35.00	
CRC972101.2	91	direct	91.00	
CRC970525	55	high	50.60	
CRC972061	65	direct	65.00	
CRC082926.3	96	high	59.81	
			TOTAL	569.41

**Table SW4 – Coopers Creek (consents in Lower Coopers Creek only)**

Consent No.	Maximum Rate (L/s)	Include in Allocation Allocation
CRC962477	46	Yes
CRC970883.1	38	Yes
	TOTAL	84

**GRAND TOTAL = 1,454.14 L/s**