

Submission on Plan Change 7 to the Canterbury Land and Water Regional Plan

By **Webster-Brown, J**

Submitter Identification number: **PC7-559**

Wishes to be heard: **Yes**

Would consider making a joint submission at the hearing: **Yes**

Submitted on: **12/09/2019**

This submission was submitted via Environment Canterbury's online submission portal. The Submissions portal generates pdf files of submissions (as attached). However, some of the information that appears in the pdf files is not consistent with information the submitter entered into the portal, specifically, where submitters have ticked:

- "I wish to be heard in support of my submission" ; and
- "If others make a similar submission I will consider presenting a joint case with them at a hearing".

Additionally, the submissions portal has generated submitter and submission point numbers that are not consistent with the numbering applied in the Summary of Decisions Requested. Submission points in the Summary of Decisions Requested (SODR) are numbered using the following format:

PC7 – Submitter ID #.Submission point #

The correct submitter identification number and submitter information is specified above. This will be the number referred to in the SODR.

Proposed Plan Change 7 to the Land and Water Regional Plan

Form 5 Submission on publically notified proposal for policy statement or plan, change or variation

Clause 6 of Schedule 1, Resource Management Act 1991

To Environment Canterbury - Tavisha Fernando
Date received 12/09/2019 3:42:11 PM
Submission #89

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Wishes to be heard? No
Is willing to present a joint case? No

Proposed Plan Change 7 has been developed to respond to emerging resource management issues, to give effect to relevant national direction, to implement recommendations from the Hinds Drains' Working Party, and to implement recommendations in the Waimakariri and Orari-Temuka-Opihi-Pareora (OTOP) Zone Implementation Programme Addenda (ZIPA).

- Could you gain an advantage in trade competition in making this submission?
- No
- Are you directly affected by an effect of the subject matter of the submission that
(a) adversely affects the environment; and
(b) does not relate to trade competition or the effects of trade competition
- Yes

Submission points

Point 89.1

Submission

The limits and targets proposed for nitrate-nitrogen concentrations in the Cust, Courtenay and Silverstream waterways are too high to ensure the environmental health of these waters and their downstream environments. Although consistent with NPS - Freshwater attribute limits set to prevent toxic effects on aquatic organisms, they offer no protection against the effects of excessive nitrification of these environments; effects which will result in excessive algal growth and loss of biodiversity. I note that the targets for some of these waterways barely meet even the toxicity limits; for Silverstream the target set is at the national bottom line for acceptable quality.

Relief sought

Delete these limits, and replace with nitrate-nitrogen limits which offer the greatest practical protection for these ecosystems. I concede that it might not be possible to meet the nitrate-nitrogen limits to prevent excessive algal growth proposed in other reputable water quality guidelines such as ANZECC, or as proposed in the recently released revision of the NPS attribute limits, but limits or targets that seek to maintain (at best) the current poor state of these waterways are surely not acceptable. Regardless of how difficult it will be to reduce nitrate, or how long it may take, we should aim to **improve** the quality of these waterways.

Section: Section 8 Waimakariri

Sub-section: 8.6 8.7 Allocation Limits and Water Quality L

Provision

Table 8-5: Water Quality Limits and Targets for Waimakariri Rivers

Point 89.2

Submission

The nitrate-nitrogen limit proposed for groundwater is half the current MAV stipulated for NZ drinking water. For private well supplies this limit is to be met by the median value (i.e., half of all measurements made of nitrate-nitrogen can be above this value). For town supply, this is a maximum. This is wrong on many levels.

1. We know that there is strong scientific evidence that human health effects occur at nitrate-nitrogen levels considerably lower than the current MAV. The WHO guidelines (and therefore the NZ Drinking Water Standards) will almost certainly reduce the MAV for nitrate in the near future. Setting a limit this high will ensure that this groundwater aquifer cannot provide safe drinking water into the future.
2. Are private well owners more tolerant of nitrate than the residents of rural towns ... or perhaps more expendable?
3. This aquifer is now known to connect to the urban aquifer beneath Christchurch city, from which the drinking water supply for over 300,000 people is drawn. Allowing such a high concentration of nitrate to remain in the Waimakariri aquifer will affect not only the residents of this zone, but also those of the second largest city in New Zealand. The cost of removing nitrate from the city supply will be exorbitant, and borne by rate payers (of which I am not one, for the record).

Relief sought

Delete the limits proposed and replace with nitrate-nitrogen values that are consistent with a vision of securing a safe potable drinking water supply for both Waimakariri and Christchurch city residents into the future. We need a future-proofed plan for groundwater protection, not a plan that seeks to maintain the current poor quality of Waimakariri groundwater in a regime of (likely) increasingly stringent NZ Drinking Water Standards.

Section: Section 8 Waimakariri

Sub-section: 8.6 8.7 Allocation Limits and Water Quality L

Provision

Table 8-7: Waimakariri Nitrate-nitrogen Limits for Drinking Water Supplies from Groundwater

Point 89.3

Submission

As for my submission on the nitrate-nitrogen limits and targets proposed for rivers and streams in the Waimakariri Zone, I am concerned that the values proposed are far too high (particularly in spring-fed reaches of the rivers referred to) to prevent eutrophication of the waterways and consequent loss of biodiversity.

Relief sought

Delete and replace nitrate-nitrogen limits with values more consistent with ecosystem protection and seeking an improvement in water quality (rather than maintaining a poor quality status quo).

Section: Section 14 Orari-Opihi-Pareora

Sub-section: 14.6 Allocation and Water Quality Limits

Provision

Table 14(C): Water Quality Limits for Orari-Temuka-Opihi-Pareora Rivers

Freshwater Management Unit	River type	Representative River name and measurement location	Dissolved Inorganic Nitrogen (DIN)	Dissolved Reactive Phosphorus (DRP)	Nitrate-Nitrogen		Ammoniacal Nitrogen ¹	
			[annual median] [mg/L]	[annual median] [mg/L]	Annual median [mg/L]	Annual 95 th percentile [mg/L]	Annual median [mg/L]	Annual maximum [mg/L]
	Hill-fed Upland	Orari River at Gorge	0.04	0.001	-	-	0.01	0.01
	Hill-fed - Lower	Orari River at Parke Road	1.62	0.003	1.61	2.8	0.01	0.03
	Hill-fed - Lower	Coopers Creek at SH72	0.91	0.003	0.90	3.0	0.01	0.04
		McKinnons Stream at Wallaces Bridge	-	0.004	4.9	9.8	0.01	0.19

<u>Orari</u>	<u>Spring-fed Plains</u>	<u>Ohapi Creek upstream Orari River Confluence</u>	<u>0.7</u>	0.017	0.68	2.7	0.01	0.19
		<u>Petries Drain at Canal Rd</u>	=	0.003	5.0	6.3	0.01	0.09
		<u>Rhodes Stream at Parke Rd</u>	=	0.003	N/A	N/A	0.01	0.22
		<u>Old Orari Lagoon Outfall at Orari Mouth Reserve</u>	=	0.009	N/A	N/A	0.014	0.05
<u>Temuka</u>	<u>Hill-fed lower</u>	<u>Hae Hae Te Moana Glentohi</u>	<u>0.07</u>	0.003	-	-	0.01	0.03
		<u>Waihi River Waimarie</u>	<u>0.16</u>	0.004	-	-	0.01	0.03
		<u>Temuka River Manse Bridge</u>	<u>1.5</u>	0.008	1.5	2.6	0.01	0.09
	<u>Spring-fed plains</u>	<u>Raukapuka Creek at Coach Road</u>	=	0.005	1.8	3.3	0.01	0.03
		<u>Smithfield Ck at Te Awa Rd</u>	=	0.013	3.8	6.4	0.01	0.49
		<u>Taumatahahu River at Murray St</u>	=	0.016	1.4	2.4	0.02	0.11
<u>Ophi</u>	<u>Lake-fed</u>	<u>Opuha at Skipton Br.</u>	<u>0.25</u>	0.001	-	-	0.01	0.04
	<u>Hill-fed Lower</u>	<u>Ophi at Rockwood</u>	<u>1.1</u>	0.005	1.1	2.4	0.01	0.04
	<u>Hill-fed Lower</u>	<u>Ophi at Grassy Banks</u>	<u>0.45</u>	0.004	0.45	1.3	0.01	0.02
	<u>Hill-fed Lower</u>	<u>Te Ana Wai River at Tengawai Bridge</u>	<u>0.15</u>	0.007	0.14	1.2	0.01	0.02
	<u>Spring-fed Plains</u>	<u>Orakipaoa Creek at Milford Lagoon Rd</u>	=	0.022	1.4	2.8	0.014	0.47
<u>Timaru</u>	<u>Hill-fed Lower</u>	<u>Washdyke Creek 70 m downstream of railway bridge</u>	=	0.059	4.4	6.1	0.052	0.34
	<u>Hill-fed Lower Urban</u>	<u>Taitarakihi Creek SH1 Bridge</u>	<u>0.37</u>	0.24	-	-	0.26	2.2
		<u>Saltwater Creek SH1 Bridge</u>	<u>0.15</u>	0.19	0.03	1.9	0.08	0.54
	<u>Spring-fed Plains</u>	<u>Seadown Drain above No 1 Drain confluence</u>	=	0.023	6.4	8.8	0.015	0.58
<u>Pareora</u>	<u>Hill-fed Lower</u>	<u>Pareora River at Huts</u>	<u>0.3</u>	0.004	0.29	1.2	0.01	0.06
		<u>Pareora River at SH1</u>	<u>0.2</u>	0.007	0.20	2.0	0.01	0.02

¹Based on pH 8 and temperature 20°C.

N/A - Target applies instead, refer to water quality targets for this attribute in Table 14(d) below

Point 89.4

Submission

As for my submission on the nitrate-nitrogen limits and targets proposed for groundwater in the Waimakariri Zone, I contest that the proposed limits are far too high to constitute **protection** of the drinking water resource for the residents of this zone.

Relief sought

Delete these limits and replace with values more consistent with current knowledge regarding the potential health effects of nitrate in drinking water. Set limits that will not render the groundwater unsuitable as a potable supply, when the NZ Drinking Water Standards for nitrate are revised, as they inevitably will be. Currently, allowing groundwater concentrations to reach the NZDWS MAV (11.3 mg/L) will mean that even a minor reduction in the nitrate MAV (and it is likely to be more than minor) will have major repercussions for private well owners and municipal water supplies. We should be aiming to improve, not maintain, the current problems with groundwater quality.

Section: Section 14 Orari-Opihi-Pareora

Sub-section: 14.6 Allocation and Water Quality Limits

Provision

Table 14(g): Water Quality Limits and Targets for Orari-Temuka-Opihi-Pareora Groundwater

Groundwater Province	Nitrate-Nitrogen concentration (mg/L)		Maximum concentration (mg/l)	<i>E.coli</i>	Other Contaminants ¹
	Limit	Target		95 th percentile	Any sample
	Annual average concentration (mg/l)	Annual average concentration (mg/l)			
Fairlie Basin	=	5.65	11.3	<1 organism / 100 millilitres	< ½ MAV ²
Geraldine	2.8	=			
Opihi	4.7				
Orari	2.7				
Lower Pareora	2.6				
Rangitata Orton	=				
South Branch Pareora	5.65	=			
Taiko Stream		-			
Te Ana Wai		-			
Levels Plains	=	5.65			
Timaru	5.65	=			
Upper Pareora					

¹Other contaminants of health significance as listed in the New Zealand Drinking Water Standards (2008)

²Maximum acceptable value