

**BEFORE THE CANTERBURY REGIONAL COUNCIL  
HEARING COMMISSIONERS**

**IN THE MATTER** of the Environment Canterbury  
(Transitional Governance Arrangements)  
Act 2016

**AND**

**IN THE MATTER** of submissions on Proposed Plan Change  
7 to the Land and Water Regional Plan and  
Proposed Plan Change 2 to the  
Waimakariri River Regional Plan

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**SUMMARY OF EVIDENCE OF BRIDGET O'BRIEN FOR  
CHRISTCHURCH CITY COUNCIL**

**11 November 2020**

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## **INTRODUCTION**

1. My name is Bridget O'Brien. I here summarise key points of my evidence, highlighting areas of agreement and disagreement between my opinion and that expressed by or on behalf of submitters and in the officer's report.

## **OVERVIEW**

2. Christchurch is very fortunate to have a very high quality groundwater source for the residents and businesses of the city and Lyttelton Harbour. This is a taonga which should be protected for future generations.
3. The proposed Plan Change 7 does not take into account the high likelihood that the maximum acceptable value (MAV) in the Drinking-water Standards for New Zealand (DWSNZ) could reduce as a result of recent research that shows a link between much lower nitrate concentrations and colorectal cancer, or that the Council may choose to take a precautionary approach in its water safety plan in light of this evidence.
4. While it may be possible to treat the water to remove nitrate, this would be both difficult and expensive, and could cost in the order of \$610 million to construct and \$24 million per year to operate. By way of comparison, this equates to 19 years of planned capital expenditure by Christchurch City Council on water supply, and would result in a 75% increase in operational costs.
5. It is my view that Plan Change 7 should take a precautionary approach to protecting Christchurch's groundwater supply from nitrate contamination to protect the health of people drinking the water. While proposed Plan Change 7 would result in less deterioration in groundwater quality than would otherwise be the case, my view is that it does not go far enough.
6. My view is that a limit of 1 mg/L nitrate-nitrogen (NO<sub>3</sub>-N) for Christchurch aquifers is appropriate. More stringent land use measures would be

required to achieve this than are proposed in Plan Change 7, to achieve much faster reductions in nitrate losses from intensive land use.

#### **POINTS OF AGREEMENT**

7. I agree with Mr Kalley Simpson for Waimakariri District Council, that imposing a 10 year term for water take consents for community water supplies is incompatible with funding timeframes, asset lives and planning and consultation timeframes.
8. Water used for community water supply is more important than other uses and a 10 year consent term does not give the community the certainty it needs that sufficient water will be provided to meet its needs.
9. I am concerned that the proposed rules in PC7 relating to this could set a precedent that could impact on the Christchurch water supply when the Christchurch-West Melton chapter of the Land and Water Regional Plan is prepared.

#### **POINTS OF DISAGREEMENT**

10. In Dr John Black's rebuttal evidence, he suggests that water suppliers should not take a precautionary approach to water supplies, and that we should limit our consideration of risk to the maximum acceptable values set out in the current Drinking-water Standards for New Zealand.
11. This is at odds with the risk-based approach set out in the New Zealand Drinking-water Safety Plan Framework (Ministry of Health, 2018) which was prepared following the Havelock North drinking water contamination incident. This represents a major shift in drinking water regulations, away from mere compliance with the drinking water standards, to a comprehensive risk-based approach. Water suppliers must prepare water safety plans in accordance with this framework.
12. The framework sets out six fundamental principles of drinking water safety. The most relevant principles to this hearing are Principle 2 (protection of source water is of paramount importance) and Principle 6 (apply a preventive risk management approach). These are described in the guidelines as follows:

***Principle 2: Protection of source water is of paramount importance***

*Protection of the source of drinking-water provides the first, and most significant, barrier against drinking-water contamination and illness. It is of paramount importance that risks to sources of drinking-water are understood, managed and addressed appropriately.*

***Principle 6: Apply a preventive risk management approach***

*A preventive risk management approach provides the best protection against waterborne illness. Once contamination is detected, illness may already have occurred. This requires systematic assessment of risks throughout a drinking-water supply from source to tap; identification of the ways these risks can be managed; and control measures implemented to ensure that management is occurring properly. Adequate monitoring of performance of each barrier is essential.*

13. The best way of protecting the quality of the drinking water for Christchurch is to protect the source of the groundwater from contamination. This includes the area north of the Waimakariri River which modelling for PC7 has shown is a source of water for Christchurch aquifers.
14. In taking a preventive risk based approach, as a water supplier we need to take into account all the risks that could result in contamination of the drinking water supply. This includes taking into account new health evidence, rather than just limiting our assessment to compliance with the current drinking water standards.
15. Based on the evidence of Dr Tim Chambers, I am concerned about the health impacts of the nitrate-nitrogen concentrations that are projected to occur in the Christchurch aquifers as a result of intensive land use north of the Waimakariri River. While these are below the maximum acceptable value in the drinking water standards, there is a risk that this maximum value could reduce in light of this new research.
16. As described in my evidence, I think that reductions in nitrate-nitrogen losses from land use need to occur more quickly, to protect the quality

of the Christchurch aquifers so that we can continue to provide safe drinking water for the residents and businesses of Christchurch and Lyttelton Harbour far into the future.

Dated at Christchurch this 11<sup>th</sup> day of November 2020

A handwritten signature in black ink, appearing to read 'Bridget Mary O'Brien', with a long horizontal flourish extending to the right.

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Bridget Mary O'Brien