

Factsheet

Christchurch drinking water

1. Christchurch has an excellent track record with untreated drinking water

Christchurch City Council has strict hygiene procedures in place for the safe operation of our drinking-water supply network. We have provided untreated drinking water from confined underground aquifers safely and securely for many years, and we are committed to maintaining constant vigilance over our supply. Currently, about 30 per cent of the water supply is not treated with chlorine. The quality of the district's groundwater remains excellent and we test it—beyond levels required under the Drinking Water Standards—from sampling points across the city every day, to ensure it is free of bacterial contaminants. We have a lengthy track record of bacterial compliance with the Drinking Water Standards and there is no evidence of elevated levels of water-borne disease in Christchurch as compared to cities with chlorinated drinking water supplies.

2. Chlorine treatment was triggered by the loss of secure bore water status

The loss of Christchurch's secure bore water status in December 2017 was the catalyst for the introduction of chlorine treatment to the drinking-water supply. It is important to note that it was not due to a change in the quality of the drinking water itself; it was a response to assessment of the risk of contamination. In the absence of secure status, the Council resolved on 25 January 2018—on the advice of staff and Dr Alistair Humphrey, Medical Officer of Health (Canterbury)—to temporarily disinfect its water supply in the Christchurch city urban zone by adding chlorine for a period of up to 12 months. The purpose was to meet the Drinking Water Standards while the Council undertook a programme of fast-tracking the upgrading of the city's (non-secure) below-ground well heads. The resolution was to remove the chlorine from the pump stations when recommended by the Council's expert and approved by the Drinking Water Assessor and Medical Officer of Health. That resolution was included in the Water Safety Plan approved in March 2018.

3. Chlorine levels in Christchurch are low

In accordance with the approved Christchurch Water Safety Plan, the Council has removed the chlorine dosing from pump stations where all well heads have been signed off as secure by an expert and agreed by the Drinking Water Assessor (about 30 per cent of the supply). This was the case until 16 July 2019, when the Council was advised that the Drinking Water Assessor had been instructed by the Ministry of Health not to accept any more well-head security reports. Since then, we have continued to reduce the chlorine dose from 0.5 to 0.2 parts per million (ppm) once all wells at a pump station have been signed off as secure by an expert. At the end of September we reduced the dose to 0.2ppm at all operational pump stations needing chlorination. At 0.2ppm, the taste and smell of chlorine in the drinking water is very low, if not imperceptible.

4. Responding to changing perceptions of risk

In June, following a public report to Council about the drinking-water supply network, the drinking water assessor and the Medical Officer of Health (Canterbury), Dr Humphrey, raised concerns with the Council about whether there was an effective barrier against the risk of contamination within the network. These concerns related to long-term pre-existing factors highlighted in the report, including a backlog of infrastructure renewals due to prioritising earthquake repairs and other services over planned water supply renewals, resulting in an increase in leaks and interruptions to service. They said that until a revised Water Safety Plan was submitted to the Ministry of Health for approval, the risk of contamination within the network remained unquantified. In the meantime, they preferred that the network was protected by chlorination. The Council had been previously working towards a self-imposed deadline of the end of September 2019 to have sufficient well heads upgraded and signed off to remove all chlorine from the city's drinking-water supply. However, in accordance with Dr Humphrey's and the Assessor's new advice, the Council is now maintaining a minimal chlorine dose of 0.2ppm at well heads certified as secure by an expert in well-head security but not agreed by the Drinking Water Assessor. This approach will continue until such time as the Ministry of Health has reviewed the Council's revised Water Safety Plan for the Christchurch City urban zone, which was submitted at the end of September.

5. Working within a shifting regulatory environment

The Havelock North Inquiry has resulted in a much lower tolerance for risk across drinking water suppliers, expert assessors and the regulatory agencies. The tightening of the regulatory environment is reflected in the recently revised Drinking Water Standards (2018), the new guidelines for Water Safety Plans (2019), and the recent changes to the Health Act 1956.

The Drinking Water Assessor approved the Christchurch City Water Safety Plan in March 2018. This confirmed the management process for a safe and secure supply of drinking water in Christchurch. However, in December 2018, the Ministry of Health announced a new framework for developing Water Safety Plans. The Council then agreed, on a voluntary basis, to develop new Water Safety Plans in accordance with the draft framework handbook issued in January 2019. The Council has since revised five Water Safety Plans for Banks Peninsula water supplies in accordance with this framework, and, most recently, for the Christchurch and Lyttelton Harbour Basin, which was submitted on 30 September 2019. This revised plan included undertaking a rigorous assessment of all risks to the water supply and the current and future steps for managing them.

In August 2019, the Ministers of Health and Local Government announced the establishment of a new regulatory framework for drinking water. Under the new framework, 'secure bore status' would no longer be sufficient to demonstrate safety of a drinking-water supply, as it does not prevent contamination that may occur in the pipes between the bore and the household consumer, effectively making residual disinfection (usually chlorine) mandatory. At the same time, it was announced that exemptions would be allowed under special circumstances, and that is what the Council is preparing for.

6. Applying rigorous risk management to drinking water

The Council has provided untreated drinking water from confined aquifers safely and securely for many years and is committed to maintaining constant vigilance over its supply. This relies on

managing the risk of contamination and incorporates continuous improvement of our water supply network—including the wells, pump stations, mains and sub-mains, backflow prevention devices, reservoirs and associated equipment—and management systems. The Council is currently taking preventative measures to manage the risks identified in the distribution network in accordance with our current Water Safety Plan. These include:

- Installing and maintaining high-quality infrastructure
- Ensuring network water pressure is maintained within safe operating limits
- Network controllers on duty 24 hours a day / 7 days a week to manage operations and respond to incidents
- Strict hygiene procedures for any work on the network and an approved installer programme
- A backflow prevention programme
- Using chlorine when necessary to protect public health.

7. Christchurch is different to Havelock North

There are important differences between the situation that existed in Havelock North and the Council's approach to drinking water safety in Christchurch. For example, the Council has:

- An up-to-date Water Safety Plan for each community water supply to identify and manage risks to public health—six of which have been developed and submitted under the new framework for Water Safety Plans
- An excellent groundwater source and a well-deepening programme for the Christchurch supply
- An accelerated well-head remediation programme under way and, pending completion of the programme, an interim procedure to shut down flood-prone below-ground wells in storm events
- A good relationship with Environment Canterbury
- Full bacterial compliance for all urban water distribution zones.

The Council remains committed to providing a water supply in the Christchurch City urban zone and Lyttelton Harbour Basin that is safe to drink, in accordance with the Drinking Water Standards. We continue to oppose the imposition of mandatory use of residual chlorine as a disinfectant and intend to seek an exemption under the proposed new framework.