

Key points

- 23 Wells are sampled each season by MDC
- Marlborough groundwater quality is generally of a very high standard
- Exceptions are caused by both natural and manmade processes
- The most common naturally occurring issue at 56% of sites was low pH
- Naturally elevated manganese levels occurred at 30% of sites, but only one was of health significance
- Iron concentrations exceeded the aesthetic guideline at 22% of sites
- Naturally occurring arsenic is a more widespread issue than first thought
- The main manmade contaminant is nitrate-nitrogen which exceeded the ecological guideline at 26% of sites monitored

Why we monitor

Groundwater is the main source of drinking water in Marlborough and it is important to monitor it's quality so that we know it is safe.

From 2010 onwards the Council will report annually on the standard of Marlborough's groundwater quality.

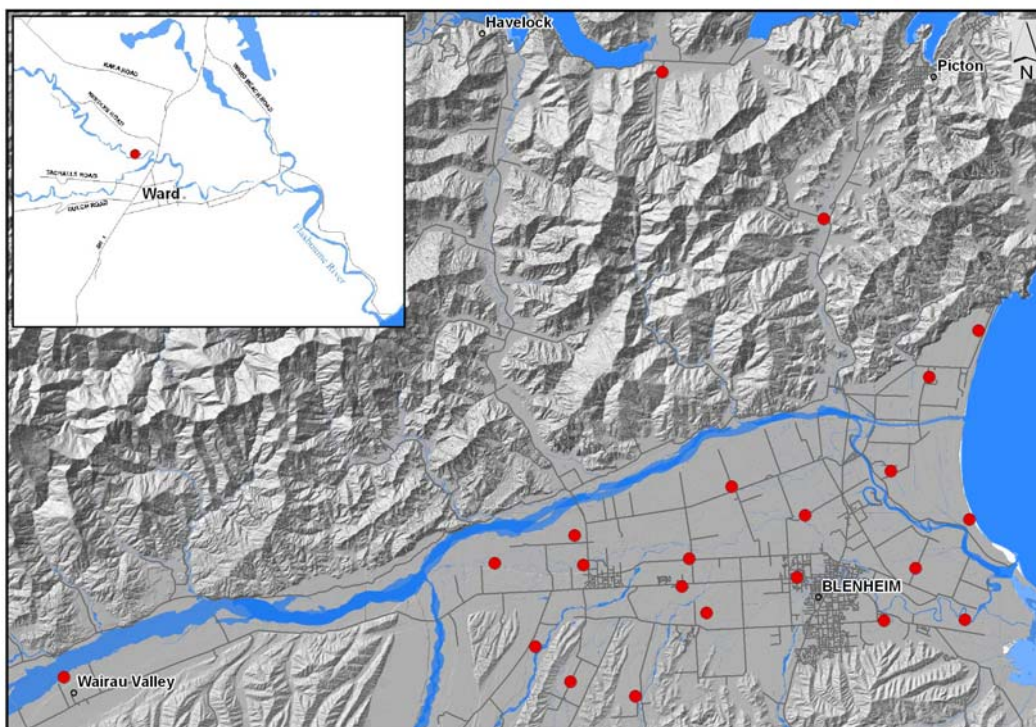
The information is used to refine rules, policy, land use practices, and to generally inform the community of the state of underground water in Marlborough.



The photo shows an environmental monitoring officer taking a sample of groundwater from a well for pesticide analysis.

Where and how we monitor groundwater quality

The Marlborough District Council samples the quality of groundwater each season at the district wide network of 23 wells shown in the map below. The purpose is to see if it meets health, ecological and aesthetic standards, and if there are any long term trends.



What are some of the issues with local groundwater quality?

Low pH and high or elevated levels of manganese, iron, arsenic, ammoniacal-nitrogen or boron can occur naturally in Marlborough groundwaters.

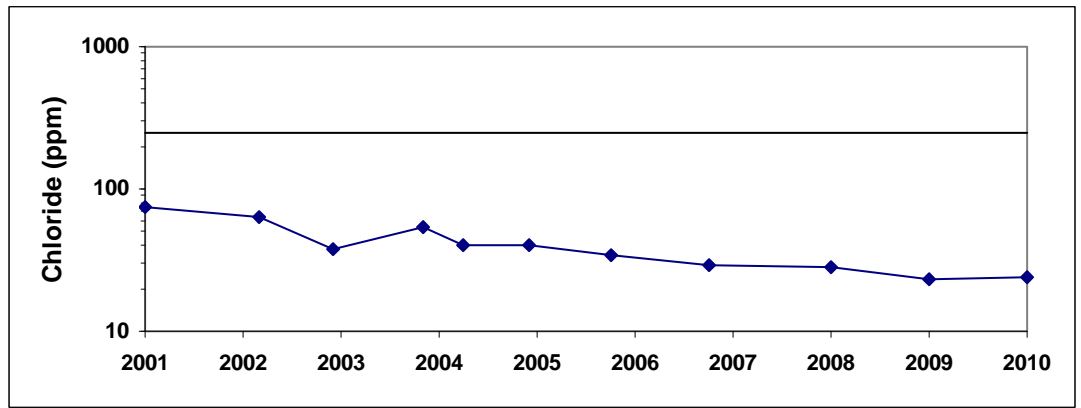
This is caused through water-rock interaction and is reasonably common in some groundwaters. The good news is these problems can be treated.

Are there any trends in groundwater quality?

The Council not only monitors the state of groundwater quality in relation to human health or environmental standards, but also looks for changes over time.

In general there are no overall regional changes in groundwater quality. In some cases water quality is improving as the graph above showing the level of chloride at a coastal well shows. This is due to younger groundwater being induced into the Rarangi area from further south due to increases in abstraction by well pumping.

This is balanced by deteriorating trends in water quality in other areas of Marlborough such as a rise in nitrate-nitrogen levels in the unconfined Wairau Aquifer west of Renwick. This is illustrated by the graph below where the solid line represents the human health limit. This highlights the variable nature of local aquifers and their susceptibility to landuses.



What can you do?

It is important not to pollute our aquifers which are natural water reservoirs.

If you live or work over an unconfined aquifer, take care not to spill chemicals as they may end up in someone else's groundwater downstream. The photograph below shows what not to do.



We are also learning that naturally occurring arsenic is more common than first thought in local groundwater, but the risk factors remain uncertain. If you own a well at Rarangi, Wairau Valley, Lower Wairau or in the Southern valleys, you may wish to

have your water analysed for arsenic to make sure it is safe to drink.

