



OUR WATER SUPPLY

THE FACTS – KEEPING PEOPLE SAFE

How well do you know your water supply?

Water is one of our most important assets. Residents, industry, businesses and farms depend on a supply of safe, affordable water.

Mackenzie District Council looks after 5 water schemes that supply water to 4500 households and for livestock. Approximately a 2,361,010m³ of the water we produce is used for domestic consumption, and the rest is largely used for livestock.

To make sure water is safe for consumption, Council processes and treats all water before it is supplied, and then regularly tests the water to make sure the treatments are working. Council is required to share this information with Environment Canterbury which issues the Resource Consents that permit Mackenzie District Council's water activities.

There are two pieces of legislation that control the quality of Council-supplied water, the Health Act 1956 and the Drinking Water Standards 2006 (Revised 2008). These deal with not only water quality, but with monitoring and data collection too.

Council is also required to have Water Safety Plans to guide the safe management of supplies and identify any potential risks.



Testing our Water

To keep us all safe, it is important that the quality of the water being supplied is regularly monitored. Council uses an external contractor to look after the day-to-day management and operations of the water supply network.

Our water treatment plants are operated by trained staff, and samples are sent to a IANZ (International Accreditation New Zealand) accredited laboratory for analysis.

The next page explains how water is treated to make it ready for consumption.

An example of a water treatment process

This diagram is an example of how water can be treated to make it suitable for human consumption.

If the water source is relatively pure (generally when the source is groundwater (as it is in Mackenzie District) steps 2, 3 and 4 are not required.

1. Intake: Water is taken from the source. Logs, fish, and plants are screened before the water is drawn into the treatment plant. If the source is groundwater, the “screening” is done by gravels as the water travels under the earth’s surface. Sometimes very little treatment is required for groundwater.

2. Not applicable in Mackenzie.

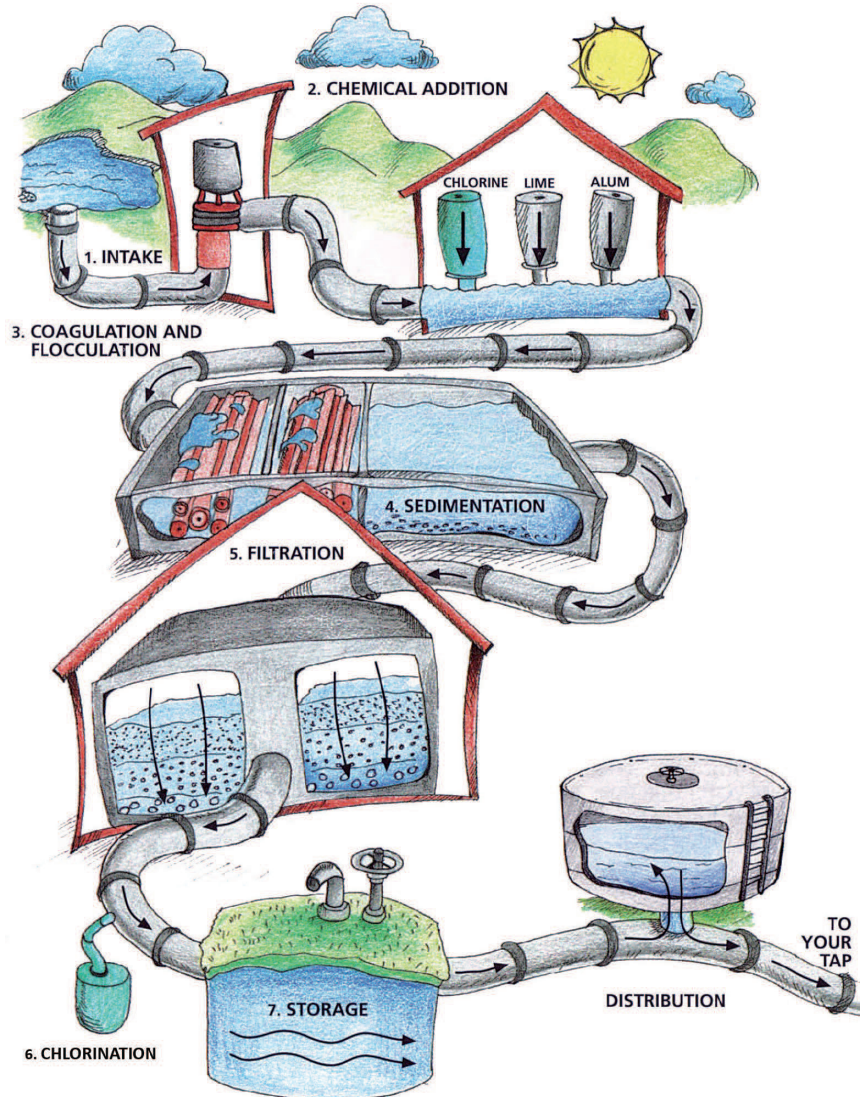
3. Not applicable in Mackenzie.

4. Not applicable in Mackenzie.

5. Filtration: The water then flows through filters. There are a variety of filter types, from layers of fine sand and gravel to modern membranes. The filters are used to remove any particles remaining in the water.

6. Chlorination: A small amount of chlorine is added to kill any remaining germs, and to keep the water safe as it travels to the public.

7. Storage: The water is stored in a closed tank or reservoir. This allows time for the chlorine to mix throughout the water so that disinfection takes place before the water flows out for distribution.



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Our Water Treatment Plants

TREATMENT PLANT	TREATMENTS	E. COLI SAMPLING FREQUENCY (minimum)
Twizel	Chlorination, UV ¹ , filtration	2 x week at the plant 1 x week at the reticulation
Tekapo	Chlorination, UV	2 x week at the plant 1 x week at the reticulation
Fairlie	Chlorination	2 x week at the plant 1 x week at the reticulation

¹Ultra Violet (UV) light is used to prevent any organisms present from reproducing, and so limiting their ability to harm people. It works on protozoa (cryptosporidium and giardia), bacteria and to some extent on viruses.

Boil Water Notice

Occasionally an unforeseen event may mean that Council needs customers to take extra measures to make sure water is safe to use. When this happens, Council issues a Boil Water Notice which will contain the steps that you need to take.

A Boil Water Notice requires that all water to be consumed (including water for teeth cleaning, and washing fruit and vegetables) should be boiled for 1 minute before it is used.

Boil Water Notices are published in several ways:

- Council website (www.mackenzie.govt.nz)
- Council's Facebook page
- To the media as a media release

Water Restrictions

Why do we have water restrictions?

In Mackenzie district our water comes from a variety of rain-fed sources, and we have a range of local climates and average rainfall totals. We are a district which is growing with new properties being built and new people moving to join us. We are also starting to see the impacts of climate change and over the coming years our district will face increasing extreme weather conditions. This will have an impact on our water supplies.

It often seems that water is abundant, but drinkable tap water is not an infinite resource - only about 1.2% of the planet's water is suitable for drinking. Safe drinking water is also expensive to produce and supply to our houses.

During extreme dry spells we put in place water restrictions to ensure we are all using water wisely. When we're in a drought, we don't know when it's going to end, so restrictions are a smart and proactive way of conserving water and minimising wastage.

Our restrictions limit outdoor water use. This means we can focus on having water for use in our homes and for our commercial customers. It is important that people aren't letting their hoses run wild when water is scarce.

We have five stages of water restrictions that we can apply during dry spells:



Water Restrictions

www.mackenzie.govt.nz

1	Conserve water	Maximum 4 hours watering permitted each day, including lawns.
2	Sprinkler and hose restrictions	Maximum 2 hours watering permitted each day. No watering of lawns.
3	Single hand-held hose only	Maximum 1 hour watering permitted each day. No watering of lawns.
4	Single hand-held hose only	Maximum 30 minutes watering permitted each day. No watering of lawns.
5	Total hose ban	No watering permitted.

NOTE: Depending on the conditions we may need to adjust the exact restrictions at the time.



FAQS

Twizel's Water Supply

Why does Twizel only have one bore providing water when there used to be three?

There are indeed three bores providing water to Twizel. All three are still in use. Generally only one is needed to provide the water Twizel needs. During the summer we usually use two bores to meet the need. Only during extreme conditions would we need to have all three going.

Automatic programming allows the three bores to operate as and when they are needed. They are triggered by the levels of raw water in the source.

Why didn't we have these problems in the 'Project Days' (when hydroelectricity scheme was being built)?

Although more people lived in the town at times during the 1960s/70s, the population then contained a large number of single people living in condensed circumstances. The built-up area of the town was approximately half the size it is now. To manage the doubling in size to its current area, Council has been working to upsize the supporting infrastructure. The water treatment plant has already been done, and we are working on the core water pipework.

Why do people who live at the ends of the water system struggle to get enough water to run their appliances?

The original town water pipes were of a diameter that was able to service the much smaller town area that existed then. As the town spread more and more new pipes were added into the original (ring) main. However, the total amount of water available is still limited by the size of the original main.

When demand for water increases, for example in a dry summer, the system does not contain enough water to fully service those living further away.

Currently Council is working to replace the ring main with a larger diameter pipe. This should mean that more water can be delivered to the people living at the ends of the system.

I've heard that Council switches off the water pumps to control usage. Is this true?

When our treated water leaves the water treatment plant, it is pumped into the water main which circulates it to the end-user. We aim to keep the water supplied at a specific pressure. The pumps are programmed so that if the pressure drops another pump automatically kicks into life to help support the pressure and flow in the water system.

Although the system is fully automatic it is monitored in our office. If a pump malfunctions an alarm is triggered and we can rectify it quickly.

Because we understand our hot summers mean people need more water during those months, we programme any routine maintenance work on our pumps for the winter months when we generally only need one operational pump at a time. This means that during the summer we can expect to have all our pumps available to work as needed (barring unforeseen breakdowns).

Why do we have water restrictions, why can't we just take more water when we need it?

Our ability to take water is governed by a Resource Consent issued by Environment Canterbury. This includes a permitted all-of-year average and a daily summer-time average. Breaches of the conditions of a consent can result in prosecution and a fine imposed by the courts. Any fines or additional costs would have to be passed on to the ratepayer.

But we are surrounded by lakes and rivers...

Here in Mackenzie District we are able to enjoy our lakes and rivers for a variety of recreational purposes. However, these resources are mainly under the control of the electricity generating companies, and the water is not available for other uses (except sometimes fighting fires by special arrangement with FENZ). Council cannot

just take lake water for its own use (for example, for watering parks).

Our houses and gardens

How much water can I use? Is it 700 litres?

Every household pays a water rate. This covers basic consumption and the cost of supplying and maintaining the infrastructure.

The amount of water allowed under the water rate is 700m³ per year.

- This equals: 700,000 litres
- This is an average of 1917.8 litres per day (700,000 / 365 days)
- The average person in NZ uses 227 litres per day (mainly for toilets, hygiene - bathing etc - and laundry)
- 8 average people can live in a house and still not use the whole of the annual amount of water covered by their rates.

Is Council going to start charging us for water?

Drinking-quality water is expensive to produce, and Council has always had the ability to charge for excess water consumption. Council's annual Fees and Charges contains the provision for Council to charge for water once the annual 700m³ has been consumed. The charge is currently (2023-24) \$0.97/m³ (1000 litres) or about 4 days of average use for one person.

Why are we not permitted to use plastic tanks to collect our own rainwater?

You are allowed to install your own tanks to collect rainwater from your property. In fact, Council encourages people to do this.



However, developers sometimes put caveats on a subdivision that limit some things that you can do in that subdivision. These limitations may affect things like cat ownership, or the type of building materials

you can use, or things that may have an adverse visual impact on the area. We recommend you check your house title for any caveats that may apply.

Why does Council care if I water my garden? Restrictions always seem to target my garden.

Drinking-quality water is expensive to produce. Raw water from the environment needs to be treated to make sure it doesn't contain germs or foreign bodies that might cause disease or damage our appliances, and we need to treat water for consumption so that it meets national standards for purity.

Because of the cost of producing quality water, Council's priorities are to supply water for:

- Basic hydration
- Body cleanliness
- Food management and preparation
- House cleaning
- Vegetable gardens (food production).

Report a Problem

Like any service, Council's water supply can occasionally have a problem. It might be discoloured water, or the sudden appearance of a leak in a pipeline, or something else. If you discover a problem please contact us as soon as possible so that we can investigate, repair the problem, and get the service back to normal.

More information about Council-operated water supplies can be found from:

- Council's website
- Council's Long Term Plan 2018-28 (available on the website and at Council's offices)

Contact us

Call 0800 685 8514 (Toll Free in NZ)

After Hours or Emergency call 0800 685 8514

Email: info@mackenzie.govt.nz