Manganese in Drinking Water FAQ

What is causing discolouration in drinking water in Cobden?

The discolouration is primarily caused by manganese, iron, and/or naturally occurring organic matter in the source water, Muskrat Lake.

As part of the treatment process, chlorine is added to disinfect the water. Chlorine can react with manganese and organic material, which may contribute to yellow, brown, or tea-coloured water.

What is manganese?

Manganese is a naturally occurring mineral found in soil, rocks, groundwater, and surface water. It is commonly present in lakes and rivers, including Muskrat Lake.

Why are manganese levels elevated this year?

Manganese concentrations in Muskrat Lake have been changing rapidly due to environmental conditions, including heavy rainfall, strong winds, and temperature fluctuations. These conditions cause mixing within the lake, resulting in higher and more variable manganese levels entering the water treatment plant. Elevated organic matter in the lake has also contributed to the challenges experienced this summer.

How does the Cobden Water Treatment Plant remove manganese?

The Cobden Water Treatment Plant uses potassium permanganate as part of the treatment process. Potassium permanganate oxidizes dissolved manganese, converting it into particles that can be removed through filtration.

For the process to work effectively, operators must carefully match the amount of potassium permanganate added to the manganese concentration in the source water.

Who owns and operates the water treatment plant?

Ownership lies with the Township of Whitewater Region, while the Ontario Clean Water Agency (OCWA) is contracted to handle all operational responsibilities.

The Ontario Clean Water Agency (OCWA) is a non-profit crown agency established in 1993 to provide water and wastewater services that protect public health and the environment across Ontario. OCWA serves both small rural communities and large urban centers, offering technical expertise, operational support, and cost-effective solutions to ensure safe and sustainable water infrastructure.

Is the Township receiving any external support to help manage the discoloured water issue?

Yes. The Ontario Clean Water Agency's (OCWA) Process Optimization Team (POTS) has been providing ongoing support and guidance to local water system operators. OCWA staff are actively monitoring system performance and making adjustments to the treatment process as needed to maximize manganese removal. These efforts are focused on optimizing treatment operations and reducing manganese concentrations in the drinking water supply as effectively as possible.

Additionally, Township and OCWA staff are engaging with other municipalities that have history with manganese in drinking water issues.

How is water quality being monitored?

The Township and OCWA are conducting enhanced monitoring of manganese levels in both the raw water source and treated drinking water. Samples are collected regularly and reviewed to help guide treatment adjustments and ensure water quality is closely monitored.

Does potassium permanganate cause pink water?

Potassium permanganate is effective at removing manganese, but only within a narrow window. Too much potassium permanganate can easily lead to pink coloured water instead of clear. Too little, potassium permanganate may not remove magnesium resulting in brown coloured water. The addition of potassium permanganate is undertaken in a slow and controlled manner over several days.

Why has it taken so long to fix the issue?

The discoloured water is being caused primarily by rapidly changing manganese levels and unusually high amounts of naturally occurring organic matter in Muskrat Lake. Because manganese levels have been changing rapidly, maintaining the ideal dosage has been challenging.

Where can I find the latest test results?

The Township will provide ongoing updates, including manganese monitoring results, through its website and public notices.

Are we the only municipality dealing with this?

No. Elevated manganese levels in drinking water sources are not unique to the Township of Whitewater Region. Municipal water systems across Ontario, Canada, and internationally have experienced manganese-related challenges, particularly where source water conditions change due to seasonal turnover, temperature shifts, low oxygen levels, or naturally occurring manganese in lakes, rivers, and groundwater.

Health effects of manganese in drinking water?

Although humans need to consume small amounts of manganese to be healthy, too much manganese in drinking water can lead to adverse health effects in infants.

Drinking water that contains high levels of manganese can be a health risk to infants (those under the age of 12 months). Formula-fed infants may be especially at risk if the water used to prepare the formula contains levels above the guideline value. This is because:

- their brains are developing rapidly
- they drink more water based on body weight
- they absorb more manganese and are less able to remove it from their bodies

Exposure to manganese in drinking water can cause:

- neurological and behavioural effects
- deficits in memory, attention and motor skills

For adults and older children, short-term exposure to manganese in drinking water slightly above the guideline is unlikely to cause negative health effects.

Are there Health Guidelines for Manganese?

Although the Province of Ontario does not have a health-based drinking water quality standard for manganese, it does have an aesthetic objective of 0.05 mg/L (50 µg/l) for manganese. The aesthetic objective is meant to prevent staining of fixture units (e.g. sinks, toilets, etc.) as well as taste issues.

Health Canada's maximum acceptable concentration (MAC) for total manganese in drinking water is 0.12 mg/L, this is a health-based value intended to protect infants, the most sensitive population. This value is also protective for children and adults

What should I do if I am concerned that manganese in my drinking water is affecting my health?

If you have concerns about potential health effects from manganese in your drinking water, you should consult your healthcare provider. They can review your individual health situation, discuss any symptoms you may be experiencing, and recommend appropriate medical advice or testing if necessary.

For information about local drinking water quality, residents may also contact the Renfrew County and District Health Unit.

Can I use the water for bathing and showering?

Manganese will not enter the body through the skin or by breathing in vapours while showering or bathing. Bathing and showering in water that contains levels of manganese above the guideline value is considered safe.

Can pets drink the water?

Residents with concerns about their pets' health should consult their veterinarian. Current public health recommendations are focused on human health, particularly infants.

Does boiling water remove manganese?

No. Boiling water does not remove manganese and may slightly increase its concentration as water evaporates.

How can I remove coloured water and sediment from my home?

If you notice discoloured water, run your cold water taps until the water runs clear. In most cases, this takes 5 to 10 minutes, but it may take up to one hour.

If water does not clear after one hour of running cold water, please contact the Township at 613-646-2282 ext. 127 or submit a report through the Township's Feedback page at www.whitewaterregion.ca/feedback.

After-hours concerns can be reported online or by calling the Township's after-hours line at 613-647-3333.

How long will it take to resolve the issue?

Addressing elevated manganese levels may require operational changes, equipment upgrades, or treatment improvements. The Township is working to identify and implement the most effective long-term solution as quickly as possible.

What else can be done?

The water system operator is flushing fire hydrants in Cobden to remove the manganese from the distribution system piping.

What can be done in the future?

In 2026, The Township secured $4,023,212 in funding by the Province of Ontario towards the Cobden Water Treatment Plant Health & Safety Upgrades Project which 73% of the total project cost of $5,511,250. This funding will help stabilize future water increases.

These improvements will help enhance drinking water quality and reliability by:

- Addressing manganese-related water quality concerns;
- Improving the plant's ability to manage Harmful Algal Blooms (HABs);
- Reducing the formation of Trihalomethanes (THMs);
- Replacing aging infrastructure components;
- Implementing a modern Supervisory Control and Data Acquisition (SCADA) system, and;
- Strengthening overall treatment processes to ensure safe, reliable drinking water continues to be delivered to residents.

Where can residents get updated information?

Residents should continue to monitor updates from:

- The Township of Whitewater Region website and Facebook page.
- Residents are encouraged to subscribe to Township notifications to receive updates directly. Subscription information is available on the Township's website or by scanning the QR code provided by the Township.
- The Renfrew County and District Health Unit (RCDHU) website at www.rcdhu.com/healthy-living/safe-water/.
- Health Canada: https://www.canada.ca/en/health-canada/services/environmental-workplace-health/reports-publications/water-quality/water-talk-manganese.html

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