



## FAQ's - Greater Vernon Water Quality

1. What is water hardness?
2. What is a Coliform?
3. How often is the water tested and what is it tested for?
4. Does Greater Vernon Water add Fluoride to the drinking water?
5. Why is there a Chlorine Taste and Odor? What if I am sensitive to it?

### Question #1: What is water hardness?

**Answer:** The hardness of water is generally due to the presence of calcium and magnesium in the water. Hardness is reported in terms of calcium carbonate and in units of milligrams per litre (mg/L). Waters with values exceeding 120 mg/L are considered hard, while values below 80 mg/L are considered soft. Harder water has the effect of reducing the toxicity of some metals (i.e., copper, lead, zinc, etc.). Soft water may have corrosive effect on metal plumbing, while hard water may result in scale deposits in the pipes. If the water has a hardness of greater than 500 mg/L, then it is normally unacceptable for most domestic purposes and must be treated.

The two major water sources for Greater Vernon Water (GVW):

- 1) Kalamalka Lake hardness is 180 mg/L and
- 2) Duteau Creek hardness is 30 mg/L.

### Question #2: What is a Coliform?

**Answer:** Total Coliforms are a group of bacteria that are naturally found on plants and in soils, water, and in the intestines of humans and warm-blooded animals. Because Total Coliforms are widespread in the environment, they can be used as one of the many operational tools to determine the efficacy of a drinking water treatment system. While the presence of Total Coliform bacteria does not necessarily cause disease, it may indicate the presence of pathogens that cause human illness.

*Escherichia coli* (E.coli) is a member of the coliform group of bacteria that is naturally found in the intestines of humans and warm-blooded animals. As it is not usually found naturally in other environments such as on plants or in soils or water, the presence of *E. coli* in a water sample is a good indicator of recent fecal contamination. The ability to detect fecal contamination in drinking water is a necessity, as pathogenic microorganisms from human and animal feces in drinking water pose the greatest danger to public health.

### Question #3: How often is the water tested and what is it tested for?

**Answer:** GVW complies with the Drinking Water Protection Act Regulations. The Regulation has sections dealing with water potability, the collection of samples and sets criteria that sample results must meet. There are over 60 locations for the weekly collection of samples from GVW water systems. These samples are tested by GVW Water Quality staff at its lab and at an accredited lab listed with the province. Water samples are tested for Total Coliform and E.coli. The presence of E.coli indicates the water may contain bacteria harmful to human health and would trigger an immediate "notice" for water system users. In addition to the weekly tests, GVW conducts annual potability tests on water from its sources and within the distribution systems. These tests measure chemical and physical properties such as metals, minerals and colour. The results of these potability tests are compared to the Guidelines for Canadian Drinking Water and are located at:

<http://www.rdno.ca/index.php/services/engineering/water/greater-vernon-water/water-sources>.

### Question #4: Does Greater Vernon Water add Fluoride to the drinking water?

**Answer:** GVW does not add Fluoride to the drinking water. Fluoride occurs naturally in minerals and soils. The Fluoride concentration in natural waters varies widely depending on factors such as the water source and the geological formations. The Guidelines for Canadian Drinking Water Maximum Allowable Concentration for fluoride is 1.5 mg/L.

The two major water sources for GVW:

- 1) Kalamalka Lake fluoride is 0.25 mg/L and
- 2) Duteau Creek fluoride is < 0.10 mg/L.



### **Question # 5: Why is there Chlorine Taste and Odor? What if I am sensitive to it?**

**Answer:** The water sources for GVW are Duteau Creek and Kalamalka Lake. The water from Duteau Creek is treated via the Duteau Creek Water Treatment Plant and Kalamalka Lake water is treated at the Mission Hill Water Treatment Plant. For more information on GVW water treatment facilities. <http://www.rdno.ca/index.php/services/engineering/water/greater-vernon-water/facilities-operations>

Chlorine is added at the end of the treatment process to ensure water is protected from harmful bacteria and micro-organisms. The chlorine dosage is monitored to ensure the disinfection remains stable through the entire distribution system and where this is not achieved, chlorine booster stations have been added.

The levels of free chlorine leaving the treatment facilities are kept between 1.6 to 2.0 mg/L and within the system operation targets 0.5 and 1.0 mg/l or parts per million so there is always chlorine present in the system to ensure acceptable water quality. Free chlorine residual is managed to not drop below 0.2 mg/L at the ends of the system. To maintain an effective disinfectant in the system during the low usage periods or peak flows, the concentration may be adjusted. This is to account for seasonally changes in the system that may cause chlorine residuals to decrease more rapidly, including distribution system flushing or maintenance projects.

Some customers can be sensitive to changes in chlorine levels and will notice the fluctuations more than others. These changes do not signal a significant change of chlorine in the system, but is more likely due to seasonal changes in water quality, indicating that the chlorine is dissipating more quickly in a certain area. Even though these changes may be detected, the chlorine level is still well within the accepted range.

#### **Chlorine odor can be minimized by:**

- Putting an open pitcher of water in the refrigerator overnight will allow the chlorine to dissipate.
- Adding a slice of citrus or cucumber to the water to de-chlorinate the water in a few hours.
- Boiling water and making coffee or tea will reduce the chlorine by approximately 30%
- A Vitamin C tablet of 1,000 mg may be crushed and added to bath water. For those with sensitivities, other alternatives to help minimize chlorine levels can include the installation of activated carbon based faucet and shower filters. For recommendations on filters, NSF is a non-profit organization that tests and certifies drinking water filtration products. They can be contacted at [www.nsf.org/certified/DWTU](http://www.nsf.org/certified/DWTU) or visit your local plumbing or hardware store and look for the NSF label. Additional information is also available at Health Canada website <http://www.hc-sc.gc.ca/ewh-semt/water-eau/drink-potab/mater/index-eng.php>