

## Foreword:

March/April 2019

The safety of public water sources has received intense media focus in Canada during the last 20 years. In particular, there has been attention drawn to systems that have been on long-term Boiled Water Advisory Notice. In response, the provincial and federal governments have introduced more stringent rules regarding water distribution, and Water Safety Officers have been tasked with enforcing them.

As a result of Pete's Lake water system coming under this scrutiny, the membership of Pete's Lake Water Users' Society (PLWUS) needs to make some decisions soon that will have significant impact on our access to water, the safety of the water, and the cost of it.

Seventy-five percent of our members participated in a PLWUS survey in 2014. Of these, 91% applied some form of treatment to their water before using it for drinking or cooking. About 65% treated their water to a standard that would render it free of parasites and bacteria, but only 15 to 20% applied sufficient treatment to also protect them from viruses.

With this series on Drinking Water Safety we aim to improve our members' water use strategies so that, as soon as possible, we can confidently say that 100% of our users take water potability seriously. We want to be sure that safe water is being provided to all our families and visitors at all times.

In this series:

- We will present some basic information about the dangers of drinking untreated water and the characteristics of the microbes that create these dangers.
- We will lay out a brief description and history of the Pete's Lake water system, including a summary of 10 years of microbiological testing and why the water is not safe to drink without treatment.
- We will provide information on various water treatment options, how they work and what their capabilities and limitations are.

## Waterborne Diseases: An Introduction

### Who is most at risk?

- Pregnant women
- Infants and young children
- People ages 60 and up
- People who smoke, drink, have poor nutrition or difficulty sleeping
- People getting over major surgery, injuries, or heart attack
- People with acutely weakened immune systems (e.g. cancer treatment, organ transplant, HIV/AIDS)
- People already ill with something else (e.g. flu or chronic illness) or under stress

### How does water get contaminated?

- From infected humans or animals in the watershed
  - pets, livestock, poultry or wild animals such as beaver, deer, and rodents

### What organisms in water are of greatest concern?

- Parasites
- Bacteria
- Viruses

### What are the symptoms? How would I know if I am infected?

- A person can be infected without noticeable symptoms.
  - A person can pass on a disease – whether or not they feel sick.
- Illness can start as soon as 2 days after infection or sometimes up to 4 months later.
- Common symptoms: diarrhea, stomach cramps, nausea, vomiting
- More severe symptoms: fever, swollen glands → *seek medical help immediately*
- Long term symptoms: (examples)
  - Cryptosporidia (parasite) can affect the liver, pancreas, bladder and even lungs.
  - Campylobacter (bacteria) can cause reactive arthritis and long-lasting intestinal problems. Guillain-Barre syndrome, which causes sudden muscle weakness and (recoverable) full body paralysis, is often associated with Campylobacter infection.
  - Rotavirus (virus) in young children can result in respiratory symptoms and seizures.

### Besides drinking the water, what else do I need to think about?

- Brushing teeth
- Washing hands
- Washing vegetables
- Using water for cooking that does not include thorough boiling
- Drinking water for pets

### How can I make sure my drinking water is safe?

- You cannot tell if your water is safe by how it looks, smells or tastes
- *(more information provided later in the series)*

### Stay tuned for

### *Drinking Water Safety Part 2: More (than you want to know) About Waterborne Diseases*