



Village of Pembroton

Water Conditioning Update

Why are we adjusting the pH of our water source?

In March 2016, the Village undertook a water conditioning assessment sampling drinking water from 20 Pembroton homes as a first step in determining how to improve the slightly corrosive nature of our water. The results indicated that the low pH and alkalinity of Pembroton's water was, in some cases interacting with household fittings and fixtures, resulting in elevated lead concentrations.

Working with engineers, the Village determined that the addition of soda ash to our source water would address the low pH and alkalinity. The control of pH and alkalinity is one of the most effective ways to minimize leaching from building plumbing systems and components.

The Canadian Drinking Water Guidelines consider pH as an 'Aesthetic Objective'. An 'Aesthetic Objective' is established for parameters that may impair the taste, smell, or colour of water but does not cause adverse health effects.

What are the project objectives?

To adjust the pH and alkalinity to make the water less corrosive while meeting the Aesthetic Objectives of the Canadian Drinking Water Guidelines.

How does the system work?

Soda ash (sodium carbonate) raises the pH of water when injected into a water system. Injection systems are a point-of-entry system.

Will it affect the taste of the water?

The recommended soda ash levels should not significantly change the taste of the water; however, it is not known at this time as each water source responds differently to the addition of any element. Other communities who treat their water with soda ash have reported a slight 'soda' taste at times.

Quick Facts

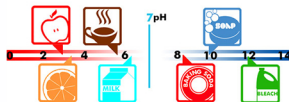
What is pH?

pH stands for "potential of Hydrogen". pH is a measure of the concentration of hydrogen ions in a solution. pH can range from 0 to 14. A pH value of 7 means a substance is neutral. Water with a pH of less than 7 is considered acidic and with a pH greater than 7 is considered basic. The lower value indicates acidity, and a higher value is a sign of alkalinity.

Current pH Level: approx. 6.3

Target pH Level: 8.5-9.5

pH levels of common substances:



Questions?

Contact us at 604.894.6135 or admin@pembroton.ca



Village of Pemberton Water Conditioning Implementation Timeline

System Start up Phase May 8th - 12th

During this phase, the system will be turned on and tested intermittently, and soda ash will begin to be injected into the system.

Commissioning Phase (15 days) May 12th - 31st

During this phase, staff will be running and monitoring the system consistently to ensure it maintains a stable pH level. If the level is maintained, monitoring will move to the Optimization Phase.

Optimization Phase (maximum of 3 months)

Once a stable pH has been established, staff will be monitoring pH and alkalinity levels throughout the distribution system on a weekly basis. The Village will also undertake regularly scheduled watermain flushing to purge the distribution system during this period. Throughout the Optimization Phase, staff will be sampling five locations within the water distribution system to monitor pH, alkalinity, copper, iron and lead. Staff will adjust the pH dosage accordingly based on the results of the sampling. The system will then be calibrated to maintain a pH level that achieves optimal results in reducing corrosion.

Follow up Phase (maximum of 6 months)

Staff will continue to monitor the system and carry out weekly testing for pH and alkalinity throughout our distribution system.

At the end of the six months, if our results are within the Health Canada Corrosion Control Guidelines, we will move to the Operational Phase. If results are not within the Guidelines, the Village will consider corrosion inhibitors.

Operational Phase

Once the Follow up phase is completed, yearly sampling will be implemented for lead, pH, alkalinity, copper and iron during summer months. The Village will continue to work with Vancouver Coastal Health (VCH) to confirm the required long-term routine testing schedule. It should be noted VCH continues to recommend flushing throughout the entire VCH region regardless if water treatment exists in municipal water systems.