

Carleton University Water Treatment Program and Legionella Testing

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Since March 2020 and the beginning of the pandemic, most of the buildings on the Carleton University campus have been closed and/or have had limited usage. As a result of this closure, the buildings have limited water flow which could create conditions for *Legionella* bacterial growth.

Two distinct illnesses, Legionnaires’ disease and Pontiac fever, have been associated with Legionella bacteria. The milder form is Pontiac fever, an influenza-like illness that is rarely fatal. Legionnaires’ disease is a much more serious form, with severe pneumonia-like symptoms, and is fatal in 10–15% of the cases.

Legionella is potentially a serious health concern in many public buildings. The only effective way of preventing such outbreaks is the proper design, operation, and maintenance of components in mechanical systems that are susceptible to bacterial growth and dissemination. Testing is useful for determining the effectiveness of the operation and maintenance program.¹

Legionella growth is most favourable when water conditions are between 25-42 °C, pH is between 6-8 and if you have stagnation of your water supply. Legionella is primarily spread through the formation of aerosols. Cooling towers and open water sources such as fountains are the most possible sources. Legionella bacteria does not survive at temperatures above 49 °C and domestic hot water systems are not as great as a concern for growth.

Carleton University has been flushing the water in our buildings as well as testing for the presence of any Legionella bacteria regularly since March 2020 to ensure the safety of all members of our campus community. Carleton University has also been following the testing protocols as outlined in the [Public Works and Government Services Canada Standard, MD15161 -2013 Control of Legionella in Mechanical Systems.](#)

Carleton University tests for Legionella as per below.

System Type	Frequency	Test Type
Cooling Towers	Weekly	Microbial activity
	Monthly	Legionella
	Start-Up	Rapid Pathogens Analysis
Humidifiers - Steam	Every 3 months	Microbial activity
	When indicated by testing	Rapid Pathogens Analysis

1 – MD 15161 -2013 Control of Legionella in Mechanical Systems, <https://www.tpsgc-pwgsc.gc.ca/biens-property/documents/legionella-eng.pdf>

Humidifiers – Non-Steam	Monthly	Microbial activity
	Every 3 months	Legionella
	When indicated by testing	Rapid Pathogens Analysis
Open Water System	Weekly	Microbial activity
	Every 2 months	Legionella
	24 hours after start-up, cleaning and disinfection	Rapid Pathogens Analysis
Domestic Hot Water Systems	Monthly – showers with tank storage at < 50 deg. C	Microbial activity
	Every 6 months (most remote shower)	Legionella
	When indicated by testing	Rapid Pathogens Analysis

In addition to Legionella testing, Carleton conducts regular testing of our cold water systems to ensure our drinking water remains healthy and safe.

If you have any questions please contact ehs@carleton.ca.