

Annual Water Distribution Report 2016

Thompson is a city in northern Manitoba. Known as the "Hub of the North" Thompson is located 739 km (459 mi) north of the provincial capital of Winnipeg. Founded in 1956 after the discovery of a large body of nickel, Thompson has evolved from a mere mining town into a regional service center for northern Manitoba and its peoples. It has a population of 13,123 (2011 census) residents, which also serves as a trade center for an additional 50,000 to 65,000 Manitobans. Today the economy is flourishing with major industries consisting of transportation, education, service and support industries, mining, health care, government, and hydroelectric - with lots of room for growth.

The main source for water supply for the City is Burntwood River. Vale own and operate the water treatment plant and it provide the city with safe potable water as per 1956 agreement. The City owns the distribution network and is responsible for distribution of the drinking water in a safe and cost effective manner to the consumers.

This report was created to provide the public with access to the information available about the drinking water they consume and the water infrastructure.

Distribution system

The water distribution system is the network of underground pipes used to convey the treated water from the water treatment plant to the homes and businesses in Thompson. The total length of water distribution network is 74.8 kilometers. Distribution pipe consist mostly of ductile and cast iron. The average age of the network is around 51 years. City carries out regular maintenance in the distribution system such as water break repairs and seasonal line flushing to keep the lines clean.

Water Testing

Water samples are taken on a weekly basis, both from the Water Treatment Plant and our distribution system. Every week the City tests raw water (untreated river water), treated water (water leaving the WTP), the 3 distribution locations, chosen based on area and availability (mostly schools/commercial). These samples are then sent to

ALS Laboratory Group for analysis. All water quality test results are submitted to the provincial Office of Drinking Water for review.

Test Parameters

Bacterial testing: Every week these samples are tested for the presence of Total Coliform and E. coli bacteria. If these bacteria are present in the water it is an indication that disease causing organisms may also be present.

Disinfectant testing: Chlorine levels are tested at the water treatment plant and in the distribution system every time we take water samples for bacterial analysis.

Trihalomethane testing: Trihalomethane (THM's) is formed as a by-product when chlorine is used to disinfect water. They result from the reaction of chlorine and organic matter in the water being treated. The THM's produced may have adverse health effects at high concentrations.

Haloacetic Acid testing: Haloacetic acids (HAAs) are a common undesirable by-product of drinking water chlorination. Exposure to such disinfection by-products in drinking water, at high levels over many years, has been associated with a number of health outcomes by epidemiological studies.

Testing Results

Water Quality Standards		Percent Compliance	Corrective Action Forms
<i>Bacterial</i>			
<i>E. coli</i>	Less than one <i>E. coli</i> bacteria detectable per 100 mL in all distributed water	100	N/A
Total coliform	Less than one total coliform bacteria detectable per 100 mL in all distributed water	100	100
<i>Disinfection</i>			
	A free chlorine residual of at least 0.1 mg/L at all times at any point in the water distribution system	83	1
<i>Chemical</i>			
Total trihalomethanes (THMs)	Less than or equal to 0.10 mg/L as annual average of quarterly samples		0.0521
Lead	Less than or equal to 0.01 mg/L in the water distribution system	100	N/A

Monitoring Requirements		Percent Compliance
<i>Bacterial</i>		
Total coliform and <i>E. coli</i>	Weekly sampling program with each set of samples consisting of one raw, one treated, and a minimum of three distribution samples	98
	Consecutive sample sets must be separated by at least 5 days	100
<i>Disinfection</i>		
Free chlorine	At the same times and location(s) as bacteriological distribution system sampling	100
Total chlorine (distribution system)	At the same times and location(s) as bacteriological distribution system sampling	100
<i>Chemistry</i>		
General chemistry	One raw and one treated water sample once every six months	50
Trihalomethanes (THMs)	Four preserved distribution system samples taken on a quarterly basis during February May, August, and November, every year	100
Total Haloacetic Acids (HAA's) (distribution system)	Four preserved distribution system samples taken on a quarterly basis during February, May, August and November, each year at locations established by the Drinking Water Officer	100
Lead	As per the instructions of the Drinking Water Officer	100



Operation and Maintenance Highlights

Department repaired 38 water main breaks this year, down from 45 in 2015. We also repaired 18 service breaks, down from 48 in 2015. However with the aging of water main infrastructure the increase in the number of water breaks may be expected in coming years.

Unidirectional flushing of the distribution network was 100% complete during the Summer/Fall of 2016.

Future Initiatives for Improvement

The City will carry out an aggressive flushing/valve program as per the unidirectional flushing plan to clear the water mains to help keep up our residuals. The City has also started water main renewal program since 2012. Total amount of watermain replaced from 2013-2016 is approximately 5.1 Kilometers. This year the City will be replacing approximately 2200m of watermain. City will continue with its effort to replace the aging water main infrastructure with a commitment to provide its citizens with safe drinking water.

Please visit the Vale's website for a copy of the water treatment plant annual report. If you have any questions or suggestions, please contact City at nmaclaine@thompson.ca.