

Winnipeg Water



The water from Deacon travels through two branch aqueducts that supply the distribution reservoirs located within the city. We test the water in the branch aqueducts as it enters Hurst Reservoir and McPhillips Reservoir. We test it again as it leaves the distribution reservoirs, and again after rechlorination.

We test the water at the distribution reservoirs (McPhillips, Hurst and MacLean) every week during warm weather and every two weeks during winter.

We rechlorinate the water leaving the distribution reservoirs as it enters the network of water mains serving Winnipeg. Three pumping stations and distribution reservoirs satisfy the peak daily demands of the city. We maintain an average free chlorine residual of between 0.3 and 0.4 mg/ L in the distribution system. We test every week in summer and every two weeks in winter at 19 locations throughout the distribution system in order to maintain this average.

Each week we take microbiological samples for Total Coliform and Heterotrophic Plate Counts at 65 places within the distribution system. This together with the chlorine residual testing ensures that the water supplied to our customers meets Provincial and Federal health guidelines.

In addition to the testing for residual chlorine, bacteria, protozoa, fluoride and orthophosphate, we carry out tests for:

- ▶ Routine water chemistry
- ▶ Metals (analyzed by the City and Province)
- ▶ Disinfection by-products

With these tests we measure how the water changes within the distribution system and measure the quality of the water that we deliver to residents.

In addition to the routine testing programs, we respond to customer inquiries and concerns about water quality. In many cases we will collect additional samples as part of our investigation. Seasonal changes in water quality, water main disturbances, cross connections in plumbing systems, and problems within building plumbing systems may lead to this additional sampling.

For further information, please call our **Water Quality line at 986-4683** or contact us by e-mail at wquality@city.winnipeg.mb.ca

What is Being Measured	How it's Measured	Guideline or Regulation	Winnipeg Average	Winnipeg Range	Comments
Odour	odour number	inoffensive	50	20 to >200	Offensive to some customers at times
Geosmin	parts per trillion	no guideline	4	less than 2 to 63	Common taste and odour compound
IPMP - 2- isopropyl-3-methoxypyrazine	parts per trillion	no guideline	<2	<2	Common taste and odour compound
IBMP - 2-isobutyl-3-methoxypyrazine	parts per trillion	no guideline	<2	<2	Common taste and odour compound
MIB - 2-methylisborneol	parts per trillion	no guideline	<10	<10	Common taste and odour compound
246 TCA - 2,4,6-trichloroanisole	parts per trillion	no guideline	<2	<2	Common taste and odour compound
236 TCA - 2,3,6-trichloroanisole	parts per trillion	no guideline	<2	<2	Common taste and odour compound
345 TCV - 3,4,5-trichloroveratrole	parts per trillion	no guideline	<2	<2	Common taste and odour compound
Chlorophyll-a	parts per billion	no guideline	<1.0	<1.0	Chlorophyll is found in algae
Microcystin LR	parts per billion	no more than 1.5	<0.3	<0.3	Meets the guideline
Turbidity (clearness)	units	no more than 1.0	0.62	0.22 to 3.5	Does not always meet the guideline
Colour, True	units	no more than 15	<5	<5 to 5	Meets the guideline
Total Dissolved Solids	mg/L	no more than 500	106	92 to 115	Meets the guideline
Conductivity	microsiemens per centimetre	no guideline	162	154 to 175	Another measure of dissolved solids
pH	units	between 6.5 and 8.5	7.2	6.5 to 7.6	Meets the guideline
Temperature	° C	no more than 15	10.4	2.4 to 20.5	Does not always meet the guideline
Total Alkalinity	parts per million as calcium carbonate	no guideline	70.1	60.3 to 84.3	–
Total Hardness	parts per million as calcium carbonate	no guideline	81.225	79.1 to 84.9	80 to 100 parts per million is recommended
Total Organic Carbon	parts per million	no guideline	10.5	9 to 13	–
Total Inorganic Carbon	parts per million	no guideline	16.75	14 to 20	–
Fluoride	parts per million	no more than 1.5	0.51	0.05 to 0.96	Meets the guideline
Nitrate	parts per million	no more than 10	<0.04	<0.02 to 0.08	Meets the guideline
Phosphate	parts per million	no guideline	1.58	0.90 to 2.84	Added for corrosion protection
Chloride	parts per million	no more than 250	9.4	6.8 to 11	Meets the guideline
Sulfate	parts per million	no more than 500	2.5	2.4 to <10	Meets the guideline
Chlorine (combined)	parts per million	no more than 3	0.42	0.24 to 0.51	Meets the guideline
Chlorine (free)	parts per million	no guideline	0.46	<0.05 to 1.06	–
Trihalomethanes	parts per billion	no more than 100	119	82.3 to 155	Does not always meet the guideline
Haloacetic acids	parts per billion	no guideline	100	77.7 to 131	Guideline under review by Health Canada
Calcium	parts per million	no guideline	22.9	19.5 to 25.7	Contributes to hardness
Magnesium	parts per million	no guideline	6.07	5.20 to 6.60	Contributes to hardness
Sodium	parts per million	no more than 200	2.16	1.80 to 2.40	Meets the guideline
Potassium	parts per million	no guideline	1.27	1.10 to 1.40	–
Iron	parts per million	no more than 0.30	0.06	<0.03 to 0.10	Meets the guideline

What is Being Measured	How it's Measured	Guideline or Regulation	Winnipeg Average	Winnipeg Range	Comments
Copper	parts per million	no more than 1.0	0.08	<0.05 to 0.23	Meets the guideline
Lead	parts per million	no more than 0.010	<0.002	<0.0001 to <0.002	Values can exceed the guideline where water is supplied to older homes with lead service connections.*
Aluminum	parts per million	no guideline	<0.03	<0.03	–
Arsenic	parts per million	no more than 0.025	<0.002	<0.002 to 0.002	Meets the guideline
Chromium	parts per million	no more than 0.05	<0.0005	<0.0005	Meets the guideline
Nickel	parts per million	no guideline	<0.0010	<0.0010	–
Cadmium	parts per million	no more than 0.005	<0.00003	<0.00003	Meets the guideline
Manganese	parts per million	no more than 0.05	<0.05	<0.05	Meets the guideline
Zinc	parts per million	no more than 5.0	<0.05	<0.05	Meets the guideline
Antimony	parts per million	no more than 0.006	0.0004	0.0003 to 0.0004	Meets the guideline
Barium	parts per million	no more than 1.0	0.014	0.012 to 0.015	Meets the guideline
Beryllium	parts per million	no guideline	<0.0002	<0.0002 to <0.001	–
Bismuth	parts per million	no guideline	<0.0002	<0.0002 to 0.0003	–
Boron	parts per million	no more than 5	0.02	0.01 to 0.04	Meets the guideline
Cesium	parts per million	no guideline	<0.0001	<0.0001	–
Cobalt	parts per million	no guideline	<0.0002	<0.0002	–
Lithium	parts per million	no guideline	0.002525	0.0023 to 0.003	–
Molybdenum	parts per million	no guideline	0.0002	<0.0002 to 0.0002	–
Rubidium	parts per million	no guideline	0.0017	0.0015 to 0.0018	–
Selenium	parts per million	less than 0.01	<0.0004	<0.0004 to <0.002	Meets the guideline
Silicon	parts per million	no guideline	1.41	0.66 to 2.08	–
Silver	parts per million	no guideline	0.00012	<0.00002 to 0.0019	–
Strontium	parts per million	no guideline	0.036	0.032 to 0.039	–
Tellurium	parts per million	no guideline	<0.0002	<0.0002 to 0.0002	–
Thallium	parts per million	no guideline	<0.00002	<0.00002	–
Thorium	parts per million	no guideline	0.0002	<0.0001 to 0.0005	–
Tin	parts per million	no guideline	<0.0005	<0.0002 to 0.0010	–
Titanium	parts per million	no more than 0.02	0.0006	0.0004 to 0.0008	Meets the guideline
Uranium	parts per million	no guideline	<0.0001	<0.0001	–
Vanadium	parts per million	no guideline	<0.0002	<0.0002 to <0.001	–
Zirconium	parts per million	no more than 0.1	<0.002	<0.002	Meets the guideline

*For more information on lead in drinking water [click here for link to www.city.winnipeg.mb.ca/waterandwaste/pdfs/lead_control_program.pdf](http://www.city.winnipeg.mb.ca/waterandwaste/pdfs/lead_control_program.pdf)

Bacterial Testing

What is Being Measured	Guideline	Our Test Results	Comments
Number of total coliform bacteria tests done in year	1820 samples	3199 samples	More testing than required by the guideline / provincial regulation.
Number of times that total coliform bacteria show up in a test	no more than 320 positive total coliform tests per year	28 positive test results	All locations with positive results were resampled for total coliform and fecal coliform testing. All resamples were negative and met the guideline / provincial regulation.
Number of times that more than 10 total coliform bacteria show up in a test	should not occur	5 samples with more than 10 total coliform bacteria	The locations were resampled as per the guideline. All resamples were negative and met the guideline/ provincial regulation.
Number of heterotrophic (bacteria) plate count (HPC) tests done	no guideline	3199 samples	–
Number of times that HPC counts are more than 500 colonies	should not occur	14 samples with a bacteria count of more than 500 colonies	Resamples for HPC were no more than 500 and met the guideline/ provincial regulation.

Guidelines from 'Summary of Guidelines for Canadian Drinking Water Quality' by Health Canada, March 2001