Milwaukee Water Works Water Quality Report

Safe, Abundant Drinking Water.

The Milwaukee Water Works (MWW) is pleased to present its Annual Water Quality Report. This is in accordance with U.S. Environmental Protection Agency (EPA) and Wisconsin Department of Natural Resources (DNR) requirements of public water suppliers to provide the public with an annual statement describing the water supply and the quality of its water.

The key piece of information for most consumers is this: our drinking water quality continues to surpass all state and federal regulations, without exception. This report includes other information of interest to consumers: water quality test results, definitions, source of water, how to reduce exposure to lead in drinking water, and a note to immuno-compromised persons.

The Milwaukee Water Works produces high quality drinking water to 831,000 people in Milwaukee and 14 neighboring communities.

We treat Lake Michigan water at two plants, passing the water through multiple barriers of the treatment process, including ozonation, which destroys illness-causing microorganisms, controls taste and odor, and reduces chlorinated disinfection byproducts.

Our 350 professional and dedicated employees in water treatment, distribution, engineering, customer service, and administration, are committed to providing a reliable supply of superior quality water.

Important Information

This is important information about Milwaukee's drinking water. If you cannot read this report, please ask someone to interpret it for you.

Informacion Importante Para Nuestros Clientes que Hablan Espanol

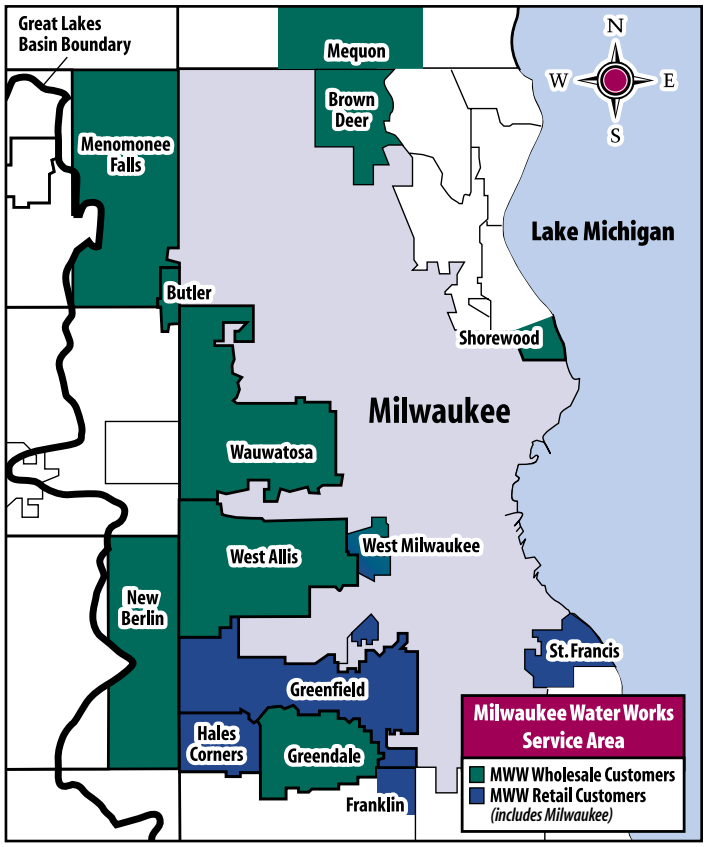
Esta es una informacion importante sobre el agua potable de la ciudad de Milwaukee. Para obtener una copia en Español favor de llamar 414-286-2830.

Lug tseem ceeb rua cov siv dlej kws has lug Moob

Ntawm nuav yog cov lug tseem ceeb qha txug kev haus dlej nyob nroog Milwaukee. Yog mej nyeem tsi tau cov lug nuav, thov lwm tug txhais rua mej.

Milwaukee's Drinking Water Receives an "A" for Quality

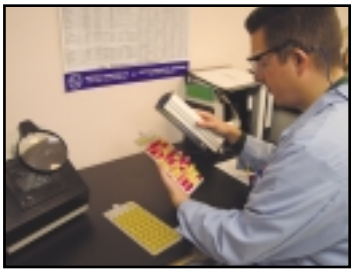
Milwaukee's drinking water is rated among the highest quality in the nation. In an evaluation of the tap water in 101 major U.S. cities, *Men's Health Magazine* awarded Milwaukee a water quality grade of "A." Milwaukee was one of only 12 cities to receive the best grade in the report card outlined in the March 2004 issue.



Source of Milwaukee's Drinking Water

The source of Milwaukee's drinking water is Lake Michigan, a surface water source. As water flows through rivers and lakes and over land surfaces, naturally occurring substances may be dissolved in the water. The water can also be affected by animals and/or human activities. These substances are then called contaminants. Surface water sources may be highly susceptible to contaminants. The Wisconsin Department of Natural Resources performed a Source Water Assessment in 2003. You can view this report at **http://www.dnr.state.wi.us/org/water/dwg/swap/surface/milwaukee.pdf**.

Contaminants that might be expected in *untreated* water include: inorganic contaminants, such as salts and metals; biological contaminants, such as viruses, protozoa and bacteria; organic chemicals from industrial or petroleum use; pesticides and herbicides; and radioactive materials.



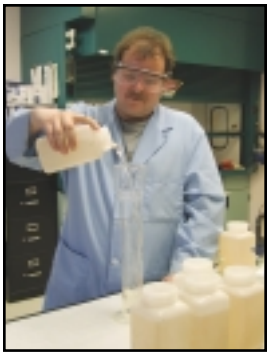
Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. Learn more about contaminants and potential health effects by calling the EPA's Safe Drinking Water Hotline, **800-426-4791**.

Information for Persons with Compromised Immune Systems

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons, such as persons undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly persons and infants can be particularly at risk from infections. These people should seek advice about drinking water from their healthcare providers. Additional information is available from the Centers for Disease Control (CDC) (**www.cdc.gov**).

The City of Milwaukee Health Department has prepared a pamphlet based on U.S. Environmental Protection Agency and CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium.* Copies of this pamphlet are available from the Milwaukee Health Department, **(414) 286-3606**. Or, view a copy of the pamphlet online in English or Spanish at **www.milwaukee.gov/health** and click on ***Air/Water/*Toxics**.

Extensive Testing to Ensure Quality



The EPA requires water utilities to test for 90 regulated contaminants on a regular basis. The Milwaukee Water Works tests for over 425 known contaminants to assure that whether you are a residential customer or an industrial user of our water, you are receiving the highest quality water possible. Most of the contaminants are not detected.

Cryptosporidium

Cryptosporidium is a microscopic protozoan that when ingested, can result in diarrhea, fever, and other gastro- intestinal symptoms. The Milwaukee Water Works and the Milwaukee Health Department consider *Cryptosporidium* a priority, and have tested both the raw (untreated) and treated drinking water for *Cryptosporidium* since 1993. The organism is found in many surface water sources (lakes, rivers, streams) and comes from human and animal waste in the watershed. The risk of *Cryptosporidium* from drinking water has been reduced to extremely low levels by an effective treatment combination including ozonation, coagulation, sedimentation, filtration, and disinfection.

Lead and Copper

The MWW is required to monitor the drinking water in a number of homes each year for lead and copper, and has optimized corrosion control by adding an amount of phosphate to the drinking water at the treatment plant. Water can absorb lead from solder, fixtures, and pipes found in the plumbing of some buildings and homes.

Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested or flush your tap for 2–3 minutes before using tap water. Additional information is available from the EPA's Safe Drinking Water Hotline, **800-426-4791**.

Milwaukee
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Treated Water Quality

Listed below are contaminants **detected** in Milwaukee's drinking water during 2004. *All are below levels allowed by state and federal laws.* A list of the hundreds of other compounds not detected in our water quality monitoring effort can be found at: www.mpw.net/pages/water/docs/2004FinishedWaterQuality.pdf

Substance	Ideal Goals (MCLGs)	Highest Level Allowed (USEPA – MCLs)	Median Value	Highest Level Detected	Source(s) of Contaminant
Aluminum	0.2 mg/L	NR	0.08 mg/L	0.15 mg/L	Water treatment additive; natural deposits
Bromate	10 ug/L	10 ug/L (RAA)	6.5 ug/L (RAA)	NR	Byproduct of drinking water disinfection
Barium	2 mg/L	2 mg/L	0.018 mg/L	0.019 mg/L	Natural deposits
Chromium	100 ug/L	100 ug/L	3 ug/L	4 ug/L	Natural deposits
Chlorine, Total		4 mg/L	1.32 mg/L	1.73 mg/L	Residual of drinking water disinfection
Copper	1.3 mg/L	1.3 mg/L (AL)	0.099 mg/L (AL)	NR	Corrosion of building plumbing systems
Fluoride		4 mg/L	1.17 mg/L	1.7 mg/L	Water treatment additive; natural deposits
Haloacetic Acids, Total	0 ug/L	60 ug/L	2.5 ug/L	4.9 ug/L	Byproduct of drinking water disinfection
Lead	0 ug/L	15 ug/L (AL)	4.8 ug/L (AL)	NR	Corrosion of building plumbing systems
Nickel	100 ug/L	100 ug/L	5 ug/L	6 ug/L	Metal alloys, electroplating, batteries, chemical production
Potassium	NR	NR	1.4 mg/L	1.5 mg/L	Natural deposits
Radium – combined	0 pCi/L	5 pCi/L	0.7 pCi/L	0.7 pCi/L	Natural deposits
Sulfate	500 mg/L	NR	28 mg/L	31 mg/L	Natural deposits
Sodium	NR	NR	7.9 mg/L	10.9 mg/L	Natural deposits
Total Organic Halides	NR	NR	28 ug/L	54 ug/L	Byproduct of drinking water disinfection
Trihalomethanes,Total	0 ug/L	80 ug/L	4 ug/L	12 ug/L	Byproduct of drinking water disinfection
Turbidity		< 0.3 NTU 95 % of the time	0.06 NTU	0.16 NTU	Natural deposits
Total Organic Carbon	TT	TT	1.5 mg/L	2.4 mg/L	Natural deposits
Total Coliform Bacteria	0	<5 % of samples/month	0 %	0.7 %	Naturally present in the environment
Uranium, Total		20 pCi/L	0.54 pCi/L	0.57 pCi/L	Natural deposits

Definitions

AL = Action Level — The concentration of a contaminant that triggers treatment or other requirement that a water system must follow. Action Levels are reported at the 90th percentile for homes at greatest risk.

Haloacetic Acids — mono-, di-, and tri-chloroacetic acid; mono- and di-bromoacetic acid; and bromochloroacetic acids

< means "less than"

Maximum Contaminant Level (MCL) — The highest level of a contaminant that is allowed in drinking water

Maximum Contaminant Level Goal (MCGL) — The level of a contaminant in drinking water below which there is no known or expected risk to health

mg/L — milligram per liter = parts per million

Median — The middle value of the entire data set for the parameter (range from high to low)

NTU — Nephelometric Turbidity Units — unit to measure turbidity

NR — not regulated

pCi/L — Picocuries per liter is a measure of the radioactivity in water. A picocurie is 10^{-12} curies

RAA = Running Annual Average — the average of (4) quarterly samples collected in one year

TT = Treatment Technique — A required process intended to reduce the level of a contaminant in drinking water

Trihalomethanes — chloroform, bromochloromethane, dibromochloromethane and bromoform

ug/L — microgram per liter = parts per billion

Milwaukee
Water Works

Handy and Frequently Used Telephone Numbers and Websites

24-Hour Water Emergency: **(414) 286-3710**

Customer Service *Monday-Friday, 7:30 a.m. to 5 p.m.*
(414) 286-2830 • TDD: **(414) 286-2025**

Milwaukee Water Works website: **www.water.mpw.net**

To obtain a copy of our full 10-page water quality report, visit our website at this link, **www.mpw.net/Pages/water/docs/2004FinishedWaterQuality.pdf**

City of Milwaukee Health Department: **www.milwaukee.gov/health**

U.S. Centers for Disease Control: **www.cdc.gov**

U.S. Environmental Protection Agency: **http://www.epa.gov/safewater**

Wisconsin Department of Natural Resources: **www.dnr.state.wi.us**

Public Service Commission of Wisconsin: **http://psc.wi.gov**

This information presented by:
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Milwaukee Water Works is a member of the American Water Works Association, the Association of Metropolitan Water Agencies, and the American Water Works Association Research Foundation.

Educational Information

If you use water for aquariums, home brewing, photography, and other hobbies, you will find a water facts page at **www.mpw.net/Pages/water/docs/2005GP.pdf**

Home water conservation guide **www.h2ouse.org**

Environmental Terms Glossary **www.epa.gov/OCEPAterms/**

National Oceanic and Atmospheric Administration **www.noaa.org/**

University of Wisconsin Milwaukee Great Lakes WATER Institute **www.uwm.edu/Dept/GLWI/**

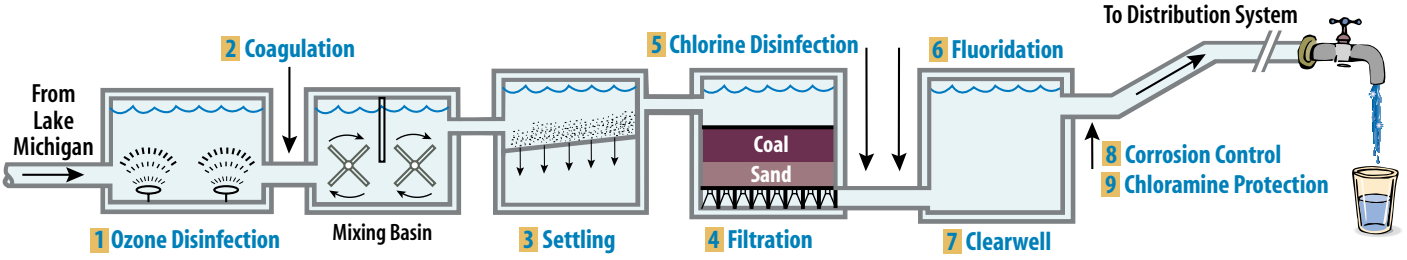
American Water Works Association consumer webpages, "Your Water. Your Health. Our Priority." **www.drinktap.org**

Great Lakes Water Management Initiative **www.cglg.org/projects/water/annex2001**

For children **www.epa.gov/kids**

Home of the S/V Denis Sullivan, Wisconsin's freshwater flagship **www.pierwisconsin.org**

Milwaukee Water Works Drinking Water Treatment Process



1. **Ozone Disinfection —** Ozone gas is bubbled through the incoming lake water. Ozone destroys disease-causing microorganisms including *Giardia* and *Cryptosporidium,* controls taste and odor, and reduces chlorinated disinfection byproducts.
2. **Coagulation —** Very fine particles in the water adhere together to form larger particles as the coagulant alum is mixed into the water. Large particles are more effectively removed during the settling and filtering processes.
3. **Settling —** Settling is the process in which solid particles settle out and are removed from the water.
4. **Filtration —** The water is slowly filtered through 24" of anthracite coal and 12" of crushed sand to remove very small particles.
5. **Chlorine Disinfection —** After filters, chlorine is added as a secondary disinfectant. This provides extra protection from potentially harmful microorganisms.
6. **Fluoridation —** Fluoride, when administered at low levels, is proven to help prevent tooth decay.
7. **Clearwell —** Treated water is stored in deep underground tanks and pumped as needed through the distribution system.
8. **Corrosion Control —** A phosphorous compound is added to help control corrosion of pipes. This helps prevent lead and copper from leaching from plumbing into the water.
9. **Chloramine Protection —** Ammonia changes the chlorine to chloramine, a disinfectant that maintains bacteriological protection in the distribution system.