

# 2001 Water Quality Report

We are pleased to bring you Evanston's annual water quality report, an information service for our water customers. The Evanston water utility is committed to providing you with the highest quality of drinking water. In 2001, as in past years, your tap water has met all USEPA and State drinking water health standards and has had no violations to report. Of the hundreds of substances that are monitored, only a handful were actually detected in our drinking water and all were well below federal standards!

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## Your Water Source

Lake Michigan, Evanston's source of water, is not just a major commerce artery and a recreational resource with miles of scenic shoreline, it's also a great source of drinking water! Almost half of the world's fresh water comes from Lake Michigan and the other Great Lakes. According to the United States EPA, the quality of Lake Michigan water has improved dramatically over the past 20 years. The regulations in place restrict the industrial and sewage treatment plant effluents from entering Lake Michigan thereby lowering the risk of having these contaminants in the water. All 63 miles of shoreline within Illinois are now considered to be in good condition. The Illinois EPA will be doing a source water assessment by May, 2003. As this assessment becomes available, we will summarize the results and incorporate the information in this report. Further information on source water assessments is available on the USGS web site at <http://il.water.usgs.gov>.

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*View the City's website at*  
***[www.cityofevanston.org](http://www.cityofevanston.org)***  
*for more information*  
*on our water treatment process.*

## Capital Improvement Program

In order to ensure that the water we provide to you is safe and reliable, the Evanston Water Utility continually plans improvements to renew and replace our existing infrastructure and improve services. Major projects this year have been:

- ◆ The installation of turbidity monitoring units (test for water clarity) on each of the 24 filters providing alarms at the first sign of any problem.
- ◆ The installation of the second phase of a three year program to install new water meter reading devices with radio transmission for accurate and timely billing.
- ◆ Conducting a complete engineer's analysis of our facility from its structural integrity to the treatment process to ensure that this over 100 year-old facility is maintained and improved to provide dependable and safe delivery of potable water to your home tap.

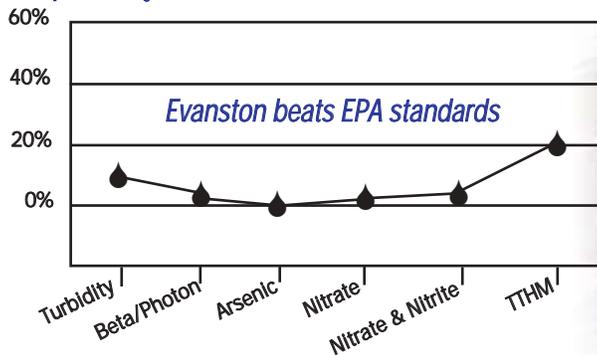
Today, the Water Department's 45 employees continue Evanston's tradition of excellence by working around the clock for your health and safety. We're proud of our water and pledge to continue to provide you with the highest quality water that is humanly and technologically possible.

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*Thank you for the opportunity to serve you.*

# City of Evanston 2001 Water Quality Report

## Evanston's percentages of the EPA's allowed concentration of contaminants



## EVANSTON 2001 WATER QUALITY DATA Detected Substances

Substance	Goal (MCLG)	Highest Allowed (MCL)	Evanston Result	Evanston Minimum	Evanston Maximum	Source of Contamination
Turbidity (Cloudiness)	NA	TT=Monitored by % Exceeding 0.5 NTU and max allowed is 5 NTU	0% of samples exceeded 0.5 NTU	0.01	0.09	Soil runoff
Beta/Photon Emitters (pCi/l)*	0	50	2	2	2	Decay of natural and man-made deposits.
Barium (ppm)	2	2	0.018	0.018	0.018	Erosion of natural deposits.
Arsenic (ppb)	NA	50	0.700	0.700	0.700	Erosion of natural deposits.
Nitrate (as nitrogen) (ppm)	10	10	0.3	0.3	0.3	Runoff and natural erosion.
Nitrate & Nitrite (ppm)	10	10	0.3	0.3	0.3	Runoff and natural erosion.
Fluoride (ppm)	4	4	0.96	0.96	0.96	Runoff and natural erosion.
<b>DISINFECTION BY-PRODUCTS</b>						
Substance	Goal (MCLG)	Highest Allowed (MCL)	Evanston Result	Evanston Minimum	Evanston Maximum	Source of Contamination
Total Trihalomethanes (ppb)	NA	100	21.5	9	37	By-product of drinking water chlorination.
Bromodichloromethane (ppb)	NA	NA	7.5	3	13	By-product of drinking water chlorination.
Chloroform (ppb)	NA	NA	10.25	4	18	By-product of drinking water chlorination.
Dibromochloromethane (ppb)	NA	NA	3.75	2	6	By-product of drinking water chlorination.
<b>Unregulated Parameters</b>						
Substance	Goal (MCLG)	Highest Allowed (MCL)	Evanston Result	Evanston Minimum	Evanston Maximum	Source of Contamination
Sulfate (ppm)	NA	NA	14.1	14.1	14.1	Runoff and natural erosion.
Sodium (ppm)	NA	NA	6.7	6.7	6.7	Runoff and natural erosion.

**ppm** = Parts Per Million or milligrams per liter

**ppb** = Parts Per Billion or micrograms per liter

**pCi/l** = Picocuries Per Liter, a measure of radioactivity

**NTU** = Nephelometric Turbidity Units (measures water clarity)

**TT** = Treatment Technique, a required process to reduce the level of a contaminant.

**Disinfection by-products** = Total Trihalomethanes are used to regulate the amount of allowable by-products of chlorination. They represent the sum of bromodichloromethane, bromoform, chloroform, and dibromochloromethane which are not individually regulated.

**Fluoride** = The Illinois Department of Public Health recommends an optimal fluoride range of 0.9 ppm to 1.2 ppm.

**Turbidity** = A measure of clarity of water related to its particle content. Serves as an indicator of the effectiveness of water treatment process.

**Sodium** = There is not a state or federal MCL for sodium. Sodium levels below 20 mg/l (ppm) are not considered to be a health issue.

**NA** = Not Applicable

**MCLG** = Maximum Contaminant Level Goal, the level of a contaminant in drinking water below which there is no known or expected risk to health.

**MCL** = Maximum Contaminant Level, the highest level of a contaminant that is allowed in drinking water. A MCL is set as close to a MCLG as feasible, based on what a water utility can achieve using the best available technology.

\* last tested in 1997 due to historically low levels

# Where do contaminants come from?



In general, people obtain drinking water (both tap and bottled water) from rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of land or through the ground, it dissolves naturally occurring minerals and radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include:



- 1) microbial contaminants from a variety of sources, such as viruses and bacteria which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife;
- 2) inorganic contaminants such as salts and metals which can be naturally occurring or result from urban storm runoff, industrial or domestic water discharges, oil and gas production, mining or farming;
- 3) pesticides and herbicides which come from agricultural, stormwater runoff and residential uses;
- 4) organic chemical contaminants, including synthetic and volatile organics which are by-products of industrial processes and petroleum production and can also come from gas stations, urban storm runoff and septic tanks;
- 5) radioactive contaminants which can be naturally occurring or be the results of oil and gas production and mining activities.

The primary sources of pollution threatening Lake Michigan include air deposition (pollution from the air, rain and snow), runoff and industrial discharge.

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. In order to ensure that tap water is safe to drink, the USEPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

During 1997 and 1998, the Evanston Water Department sampled untreated lake water on a monthly basis for the presence of cryptosporidium, a microbial parasite. Of 18 samples analyzed, only one empty cryptosporidium cell was detected prior to the filtration process. Cryptosporidium is generally removed through filtration - which removes solid particles - and disinfection.

Some people may be more vulnerable to contaminants in tap or bottled water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly and infants can be particularly at risk for infections. These people should seek advice about drinking water from their health care providers. The EPA and Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by cryptosporidium are available from the Safe Drinking Water Hotline. (800) 426-4791 or visit, [www.epa.gov/OW](http://www.epa.gov/OW).

For specific information about the Water Department, your water's quality, a complete water quality report of all tested contaminants or any other water-related question, please contact the Evanston Water Department at (847) 866-2942. The public is welcome to attend our Council meetings where decisions related to your water treatment facility are made.

*More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at (800) 426-4791.*

City of Evanston  
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Quality Report

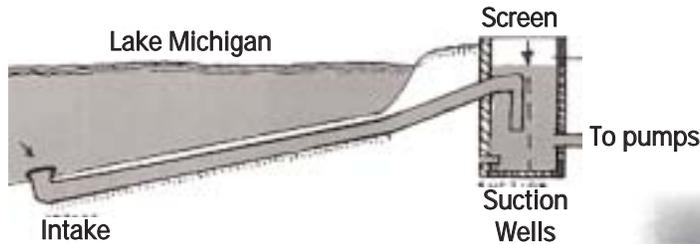
# About your water

The Evanston Water Treatment Plant has the capacity to pump up to 108 million gallons a day of pure drinking water to Evanston and the other communities we serve: Skokie, and the Northwest Water Commission comprised of Arlington Heights, Buffalo Grove, Palatine and Wheeling. Evanston's vast water system includes 155 miles of water mains, two multimillion gallon storage facilities and almost 1,300 hydrants.

From the raw water pumps that bring water in from Lake Michigan, to the finished water pumps that send the treated water to your home, system redundancies like auxiliary natural gas engines are in place so you'll never go without safe drinking water.

## Here's how it's done:

*Six centrifugal pumps lift the water from suction wells to begin its journey through the treatment plant.*



*Chlorine to disinfect, fluoride for dental health and aluminum sulphate and polymers to coagulate suspended solids and form a floc, are added to the water. Carbon is added as necessary to mitigate taste and odor.*



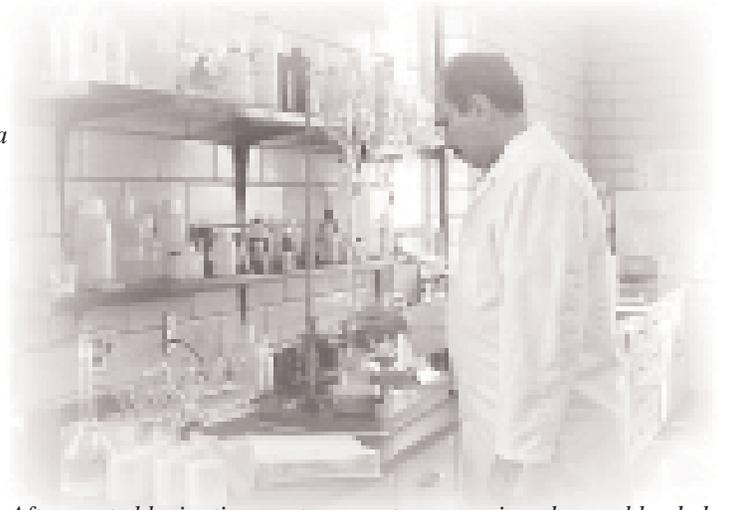
Chemical Feeders

*The floc, resulting from coagulation, contains algae, bacteria and other impurities which sink to the bottom of the settlement basins in four to eight hours.*



Filters

*Water flows through filters which contain a layer of anthracite coal and filter sand, removing the tiniest of particles.*



*After post chlorination, water goes to reservoirs where a blended phosphate is added for corrosion control. Water is continuously sampled and analyzed for quality assurance before being pumped into the distribution system.*

# Questions & Answers

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## Q.A. *Is it true that tap water quality is getting worse?*

No. It might seem that way from what you read and hear, but actually the opposite is true. Water suppliers must meet many more rules today than we did a few years ago, and standards for many of the regulated chemicals and microbes are more strict. Twenty-five years ago, we did not have the technology to know what was in our drinking water. Today, we have sophisticated testing instruments that enable us to know more about our water than ever before. The drinking water community is continually improving treatment processes as it learns more each year.

## Q.A. *Is bottled water safer than tap water?*

Not necessarily. Studies have shown that microbes may grow in the bottles while on the grocers' shelves. You don't need to buy bottled water for safety reasons if your tap water meets all federal and state drinking water standards (Evanston's does!). If you want water with a different taste, you can buy bottled water, but it costs up to 1,000 times more than tap water. Of course, in emergencies, bottled water can be a vital source of drinking water for people without water.

## Q.A. *What is "hard" water?*

The answer may surprise you. Hardness in drinking water is caused by two nontoxic chemicals usually called minerals: calcium and magnesium. If either of these minerals is present in your water in substantial amounts, the water is said to be "hard," because making a lather or suds for washing is "hard" (difficult) to do. Thus cleaning with hard water is difficult. Water containing little calcium or magnesium is called "soft" water (Maybe it should be called easy!). Evanston's water is considered to be moderately hard. It ranges from 123 parts per million of hardness to 168 and averages 136 parts per million or approximately 7.5 grains. This level of hardness does not require the use of a water softener.

## Q.A. *Is it okay to use hot water from the tap for cooking?*

No. Use cold water. Hot water is more likely to contain rust, copper, and lead from your household plumbing and water heater because these contaminants generally dissolve into hot water from the plumbing faster than into cold water.

## Q.A. *Water often looks cloudy when first taken from a faucet and then it clears up. Why is that?*

The cloudy water is caused by tiny air bubbles in the water similar to the gas bubbles in beer and carbonated soft drinks. After a while, the bubbles rise to the top and are gone.

## Q.A. *How can I locate my home's master valve?*

It is important to know where the master valve is in case you have a major leak and need to shut the water off in a hurry. The most common locations in our house or apartment are:

- ◆ Where the water supply enters your home
- ◆ Near your clothes-washer hook-up
- ◆ Near your hot water heater

To determine if the valve you have found is the correct one, try turning it off and see if it shuts off all water faucets in your home. If not, repeat this process with each valve you find until you identify the correct one. If you are unable to locate it, contact your plumber for assistance. Once you have found the valve it is a good idea to mark it with something distinctive like bright paint, a tag, or ribbon. This will help you locate it quickly in case of an emergency.