

An aerial photograph of Chicago, Illinois, showing the city's dense urban landscape and its proximity to Lake Michigan. The skyline is dominated by numerous skyscrapers, with the Willis Tower (formerly Sears Tower) being a prominent feature. The city extends to the water's edge, where a sandy beach and a promenade are visible. The water of Lake Michigan is a deep blue-green color. The sky is clear and blue.

THE CITY OF CHICAGO'S

# WATER

2006 QUALITY REPORT

ATTAINING GOALS TO A BETTER FUTURE

RICHARD M. DALEY, MAYOR

THE DEPARTMENT OF WATER MANAGEMENT

JOHN F. SPATZ, JR., COMMISSIONER



## CONTACT INFORMATION

Water in the Street or Basement Call 311

Water Quality Questions (312) 744-8190

Water Bill Questions (312) 744-4H2O  
TTY (312) 744-2968

E-mail and Internet E-mail: [water@cityofchicago.org](mailto:water@cityofchicago.org)  
[www.cityofchicago.org/watermanagement](http://www.cityofchicago.org/watermanagement)

When e-mailing always include your name, account number & call back number.

EPA's Water Resource Center (800) 832-7828

EPA's Safe Drinking Water Hotline (800) 426-4791

EPA's Regional Offices (Illinois) (312) 353-4919

EPA's General Information Line (312) 353-2000  
TTY (312) 886-4658

## Things You Should Know and Can Do:

- Instead of letting the tap water run until it is cold fill a pitcher with cold water and leave it in the refrigerator; it saves time and water.
- While brushing your teeth, instead of leaving the tap running you should fill up a glass to rinse your mouth.
- Baths use less water than a typical shower. Soaking in a partially filled tub will use less water than a short shower.
- The average person spends less than 1% of his or her total personal expenditure dollars for water, wastewater, and water disposal services.
- Less than 1% of the water treated by public water systems is used for drinking and cooking.
- Bottled water can be up to 1000 times more expensive than tap water.
- Today, at least 400 million people live in regions with severe water shortages.

**PLEASE VISIT OUR WEBSITE**

**FOR MORE INFORMATION**

[www.cityofchicago.org/watermanagement](http://www.cityofchicago.org/watermanagement)



The Department of Water Management has been actively adopting reliable technologies that offer customer convenience, and improve our performance in serving you. Among the most notable:

- **CONSERVATION**—Chicago continues to lead the way in conservation efforts. We are aggressively renewing our infrastructure to reduce loss due to leaks. We also work to encourage responsible water use, thoughtful storm water management, and other steps that can preserve our natural resources and enhance our environment.
- **INTERACTIVE VOICE RESPONSE**—We have activated a system that allows you to use just your voice to check the status of a water bill, and pay by check or credit card. We are testing (and about to implement) systems that allow you to check the status of a Senior Citizen Exemption (from the sewer portion of your bill) and to apply for participation in a payment plan. This will cut down significantly on telephone wait times.
- **FULL PAYMENT CERTIFICATES (FPC)**—Our new on-line service allows title companies to obtain an FPC when buyer and seller are closing on a property. The secure web site allows the parties to switch the account from the seller to the buyer, agree on a final reading (or request one), and to make certain the account is transferred when the property changes hands. This offers major improvement over the old paper FPCs that always involved significant time and effort by the seller, and potential inconvenience to the buyer.
- **ON-LINE PAYMENT**—Our web site offers the convenience of on-line payment for FREE. By eliminating the fee, we hope to encourage customers to take advantage of this payment method to cut down on the paper in your life.
- **AUTOMATIC METER READING (AMR)**—We are working with the private sector to develop the best means of reading meters automatically. This means we will be able to send you an accurate bill based on your actual usage each and every time. No more over- or under-estimating your bill. And, we will not need to enter your building to collect that actual reading. You can feel safer and will not need to make arrangements to be present for the reading.
- **LOW PRICE**—Chicago water customers enjoy the lowest rates of any big city in the country. We charge \$9.95 per 1,000 cubic feet. That means that for the price of an 8 oz. bottle of water from the store, you can get 1,000 gallons from us—piped right into your home. The average bi-monthly water bill for a Chicago single-family residence is \$26.69.

**CHICAGO WATER: ALWAYS IN GOOD TASTE**



## Conserve water and help your plants thrive with a City of Chicago Rain Barrel!

# WATER 2006

You can purchase a discounted (\$40) Chicago Rain Barrel, while supplies last, beginning May 21, 2007. Rain barrels are available for City of Chicago residents only. Limit one per household. Reservations are NOT required. Simply go to one of the locations noted below with your \$40 check made out to "City of Chicago." Please make sure your check has your current address on it. Cash will not be accepted.

### Chicago Center for Green Technology

445 N. Sacramento Blvd.

Hours: Tues 4:00 PM–7:00 PM Thurs 1:00 PM–4:00 PM;

Sat 11:00 AM–3:00 PM

### Greenmaker Building Supply 2500 N. Pulaski

Hours: Mon–Wed: 8:00 AM–6:00 PM; Thurs 8:00 AM–8:00 PM; Fri 8:00 AM–5:00 PM;

Sat 9:00 AM–4:00 PM

You may also pick one up at one of our Barrel Bonanza events this summer. Visit our website for more information and dates.

The rain barrels are made from barrels that previously contained food and are black or terra cotta in color. They hold 50 gallons of rain water, have a mosquito-proof screen on top, two overflow holes and spigot and drain holes. Rain barrels fit in the empty back seats of most cars. Rain barrel brochures explaining installation and maintenance will be distributed at time of purchase.

### Questions?

Contact [rainbarrel@cityofchicago.org](mailto:rainbarrel@cityofchicago.org) or 312-743-WATER (743-9283). For more information visit [www.cityofchicago.org/Environment](http://www.cityofchicago.org/Environment), "Learn About Rain Barrels" link.

This is a program of the Chicago Departments of Environment and Water Management



**HYDRANT INSPECTION:** During the month of September and into October, the Chicago Fire Department will be conducting its annual inspection of fire hydrants in Chicago to ensure that they are working properly. During the inspection the hydrants are opened and closed. This action can cause sediment to become dislodged from inside the water main system causing your tap water to become discolored or rusty in appearance.

The simplest and quickest way to resolve the issue is to flush your tap. This can be accomplished by allowing your cold tap water to run until clear. If after 30 minutes your tap water has not cleared you should call the Water Quality Surveillance Section at 312-744-8190 during regular business hours or 311 if it is after hours.

## Water Quality Data Table Footnotes

**TURBIDITY:** Turbidity is a measure of the cloudiness of water caused by suspended particles. We monitor it because it is a good indicator of water quality and the effectiveness of our filtration system and disinfectants.

**FLUORIDE:** Fluoride is added to the water supply to help promote strong teeth. The Illinois Department of Public Health recommends an optimal fluoride range of 0.9 mg/l to 1.2 mg/l.

**SODIUM:** There is not a state or federal maximum contaminant level (MCL) for sodium. Monitoring is required to provide information to consumers and health officials that are concerned about sodium intake due to dietary precautions. If you are on a sodium-restricted diet, you should consult a physician about this level of sodium in the water.

**HAA5:** Effective January 2002, HAA5 is a regulated parameter.

**UNREGULATED CONTAMINANTS:** A MCL for this contaminant has not been established by either state or federal regulations, nor has mandatory health effects language. The purpose of unregulated contaminant monitoring is to assist USEPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted.

## Definition of Terms

**Maximum Contaminant Level Goal (MCLG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

**Maximum Contaminant Level (MCL):** The highest level of contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

**Maximum Residual Disinfectant Level (MRDL):** The level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap.

**Maximum Residual Disinfectant Level Goal (MRDLG):** The level of a disinfectant added for water treatment below which there is no known or expected risk to health.

**Highest Level Detected:** This column represents the highest single sample reading of a contaminant of all the samples collected in 2006.

**Range of Detection:** This column represents a range of individual sample results, from lowest to highest, that were collected during the CCR calendar year.

**Date of Sample:** If a date appears in this column, the Illinois EPA requires monitoring for this contaminant less than once per year because the concentrations do not frequently change. If no date appears in the column, monitoring for this contaminant was conducted during the CCR calendar year.

**Action Level (AL):** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

**Treatment Technique (TT):** A required process intended to reduce the level of a contaminant in drinking water.

**Cryptosporidium:** Analysis has been conducted monthly on the source water since April 1993. Cryptosporidium has not been detected. Treatment processes have been optimized to ensure that if there are cryptosporidium cysts in the source water, they will be removed during the treatment process. By maintaining low turbidity and thereby removing the particles from the water, the threat of cryptosporidium organisms getting into drinking water system is greatly reduced. The most common source of contamination from cryptosporidium is animal waste.

**Lead:** 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 might be higher than other homes in your community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home, flush your tap for 30 seconds to 2 minutes before using tap water, or you may wish to have your water tested. Additional information is available from the EPA's Safe Drinking Water Hotline at (800) 426-4791.

## Unit of Measurement

ppm – Parts per million, or milligrams per liter

ppb – Parts per billion, or micrograms per liter

ppt – Parts per trillion, or nanograms per liter

NTU – Nephelometric Turbidity Unit, used to measure cloudiness in drinking water

%<0.3 NTU – Percent samples less than 0.3 NTU

% pos/mo – Percent positive samples per month

pCi/L – picocuries per liter, used to measure radioactivity

nd – Not detectable at testing limits

n/a – Not applicable

< = less than, > = greater than



## 2006 Water Quality Data: Detected Contaminants

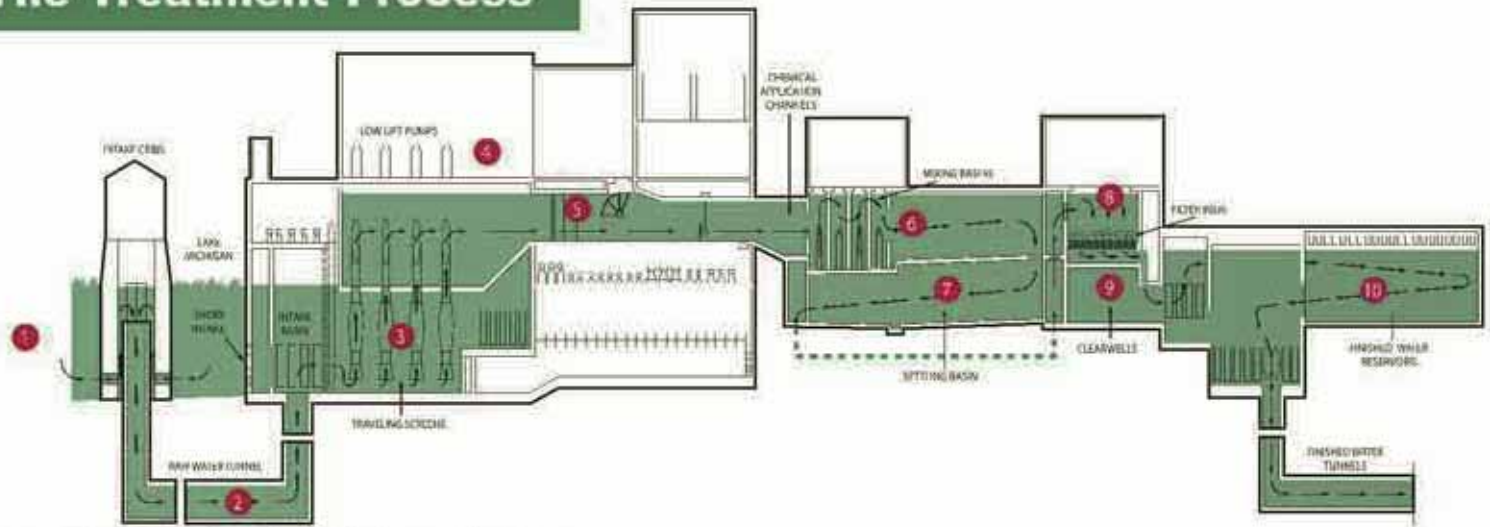
Contaminant (unit of measure) Typical Source of Contaminant	MCLG	MCL	Highest Level Detected	Range of Detection	Violation	Date of Sample
<b>Microbial Contaminants</b>						
TOTAL COLIFORM BACTERIA (% pos/mo) Naturally present in the environment.	0%	5%	0.7% in Aug.	(4 out of 572 samples)	-	-
Fecal Coliform and E. Coli (# pos/mo) Human and animal fecal waste.	0	*	2 (Fecal coli) in Sept.	(2 out of 498 samples)	-	-
TURBIDITY (%<0.3 NTU) Soil runoff.	n/a	TT/95%	100.00%	n/a	-	-
TURBIDITY (NTU) Soil runoff.	n/a	TT=1NTUmax	0.15	n/a	-	-
<b>Inorganic Contaminants</b>						
BARIUM (ppm) Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.	2	2	0.020	0.020 - 0.020	-	-
COPPER (ppm) Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives.	1.3	AL=1.3	<0.003 (90th percentile)	0 sites exceeding AL	-	06/01/06 to 08/24/06
LEAD (ppb) Corrosion of household plumbing systems; Erosion of natural deposits.	0	AL=15	6.10 (90th percentile)	0 sites exceeding AL	-	06/01/06 to 08/24/06
NITRATE (AS NITROGEN) (ppm) Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.	10	10	0.34	0.30 - 0.34	-	-
NITRATE & NITRITE (AS NITROGEN) (ppm) Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.	10	10	0.35	0.30 - 0.35	-	-
<b>Disinfectant/Disinfection By-Products</b>						
TTHMs [TOTAL TRIHALOMETHANES] (ppb) By-product of drinking water disinfection.	n/a	80	16.0**	9.40 - 20.8	-	-
HAAs [HALOACETIC ACIDS TOTAL OF 5] (ppb) By-product of drinking water disinfection.	n/a	60	8.88**	6.70 - 11.3	-	-
CHLORINE (as Cl <sub>2</sub> ) (ppm) Drinking water disinfectant.	4 MRDLG	4MRDL	0.664	0.638 - 0.664	-	-
TOC [TOTAL ORGANIC CARBON] The percentage of Total Organic Carbon (TOC) removal was measured each month and the system met all TOC removal requirements set by the Illinois Environmental Protection Agency.						
<b>Radioactive Contaminants</b>						
BETA/PHOTON EMITTERS (pCi/L) Decay of natural and man-made deposits.	0	50	2.00	nd - 2.00	-	11/05/2001
<b>Unregulated Contaminants</b>						
BORON (ppb) Erosion of naturally occurring deposits; Used in detergents and as a water softener; Used in production of glass, cosmetics, pesticides, fire retardants and for leather tanning.	n/a	n/a	18.0	14.0 - 18.0	-	-
BROMODICHLOROMETHANE [TTHM] (ppb) By-product of drinking water disinfection.	n/a	n/a	7.50	3.40 - 7.50	-	-
BROMOFORM [TTHM] (ppb) By-product of drinking water disinfection.	n/a	n/a	nd	nd	-	-
CHLOROFORM [TTHM] (ppb) Used as a solvent for fats, oils, rubber, resins; A cleansing agent. Found in fire extinguishers.	n/a	n/a	10.9	3.80 - 10.9	-	-
DIBROMOCHLOROMETHANE [TTHM] (ppb) Used as a chemical reagent; An intermediate in organic synthesis.	n/a	n/a	4.30	2.20 - 4.30	-	-
DICHLOROACETIC ACID [HAA] (ppb) By-product of drinking water disinfection.	n/a	n/a	5.90	2.60 - 5.90	-	-
TRICHLOROACETIC ACID [HAA] (ppb) By-product of drinking water disinfection.	n/a	n/a	4.50	3.00 - 4.50	-	-
DIBROMOACETIC ACID [HAA] (ppb) By-product of drinking water disinfection.	n/a	n/a	1.20	nd - 1.20	-	-
SULFATE (ppm) Erosion of naturally occurring deposits.	n/a	n/a	28.1	27.2 - 28.1	-	-
<b>State Regulated Contaminants</b>						
FLUORIDE (ppm) Water additive which promotes strong teeth.	4	4	0.98	0.89 - 0.98	-	-
SODIUM (ppm) Erosion of naturally occurring deposits; Used as water softener.	n/a	n/a	6.80	6.70 - 6.80	-	-

\* A routine sample and a repeat sample are total coliform positive, and one is also fecal coliform or E. coli positive.

\*\* Highest running annual average computed quarterly.



# The Treatment Process



1. Water from Lake Michigan enters the intake crib at depths of 20 to 30 feet.
2. Water enters the purification plant's intake basin through a tunnel beneath the lake bed.
3. Water is filtered through eight traveling screens to catch debris.
4. Water is pumped by low lift pumps up 25 feet for the first chemical treatment.
5. Water flows from the chemical application channels.
6. Water flows through mixing basins to begin the flocculation process.
7. Flocculation water passes into settling basins to sit for four hours allowing floc to settle.
8. Water is filtered through precisely graded sand and gravel performing a "natural polishing."
9. Filtered water flows into clearwells for its final chemical application.
10. From finished water reservoirs water flows to the distribution system.

## EDUCATIONAL STATEMENTS REGARDING COMMONLY FOUND DRINKING WATER CONTAMINANTS

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. More information about contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline (1-800-426-4791).

Some people may be more vulnerable to contaminants in drinking 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 from infections. These people should seek advice about drinking water from their health care providers. USEPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the USEPA's Safe Drinking Water Hotline (1-800-426-4791).

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it can dissolve naturally occurring minerals and radioactive materials, and pick up substances resulting from the presence of animals or human activity.

### Possible contaminants consist of:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife;
- Inorganic contaminants, such as salts and metals, which may be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming;
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff and residential uses;
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and may also come from gas stations, urban storm water runoff and septic systems; and
- Radioactive contaminants, which may be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, 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.

Finally, in compliance with the new provisions of the Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR), the Chicago Department of Water Management is currently undertaking monthly source water monitoring for *Cryptosporidium*, *E. coli*, and turbidity, a process that began in October 2006 and will last for two years, ending in November 2008. The goal of LT2ESWTR is to require water systems, whose source water is susceptible to *Cryptosporidium* contamination, to improve control of the pathogen. Monitoring performed in 2006 did not detect any *Cryptosporidium* or *Giardia* in source water samples collected.

### Violation Description

There were no monitoring violations during 2006

### Start

### Finish

## SOURCE WATER ASSESSMENT SUMMARY

The Illinois EPA implemented a Source Water Assessment Program (SWAP) to assist with watershed protection of public drinking water supplies. The SWAP inventories potential sources of contamination and determines the susceptibility of the source water to contamination. The Illinois EPA has completed the Source Water Assessment Program for our supply.

### Source Water Location

The City of Chicago utilizes Lake Michigan as its source water via two water treatment plants. The Jardine Water Purification Plant serves the northern areas of the City and suburbs, while the South Water Purification Plant serves the southern areas of the City and suburbs. Lake Michigan is the only Great Lake that is entirely contained within the United States. It borders Illinois, Indiana, Michigan, and Wisconsin, and is the second largest Great Lake by volume with 1,180 cubic miles of water and third largest by area.

### Susceptibility to Contamination

The Illinois EPA considers all surface water sources of community water supply to be susceptible to potential pollution problems. The very nature of surface water allows contaminants to migrate into the intake with no protection, only dilution. This is the reason for mandatory treatment for all surface water supplies in Illinois. Chicago's offshore intakes are located at a distance that shoreline impacts are not usually considered a factor on water quality. At certain times of the year, however, the potential for contamination exists due to wet-weather flows and river reversals. In addition, the placement of the crib structures may serve to attract waterfowl, gulls and terns that frequent the Great Lakes area, thereby concentrating fecal deposits at the intake and thus compromising the source water quality. Conversely, the shore intakes are highly susceptible to storm water runoff, marinas and shoreline point sources due to the influx of groundwater to the lake.

Further information on our community water supply's Source Water Assessment Program is available by calling the City of Chicago, Department of Water Management at 312-744-6635.



Message from  
**Mayor Richard M. Daley**



Dear Water Customer:

As Mayor of the City of Chicago, I am pleased to bring you our annual report on the quality of Chicago's drinking water. Not only does Chicago's water meet and exceed all state and Federal standards as regulated by the Environmental Protection Agency, but I believe it is among the best tasting and most economical drinking water in the country.

The Chicago Department of Water Management purifies more than one billion gallons of water per day for distribution throughout Chicago and 123 neighboring suburbs. Through the efforts of the citizens of Chicago and the Water Department, our city has shown a 30 percent decrease in water usage since 1990. However, it takes the participation of everyone to ensure that our precious resources will be here for generations to come.

I invite you to read this report and learn about our Senior Citizen Exemption and installing a new automatic metering system. The report also outlines specific ideas for you to use at home to conserve water, including disconnecting downspouts and installing rain barrels.

Please make every effort to use water wisely and thank you for your interest in the City of Chicago's water quality.

Sincerely,

Mayor

Para obtener el informe de la calidad del agua 2006 en español, por favor llame a nuestro centro de información al numero (312) 744-4H2O (744-4426).

## WATER: The Pure Facts

- Water regulates the earth's temperature.
- The overall amount of water on our planet has remained the same for two billion years.
- Most of the earth's surface water is permanently frozen or salty.
- Water moves around the earth in a water cycle. The water cycle has five parts: evaporation, condensation, precipitation, infiltration and surface run-off.
- Water is the only substance that is found naturally on earth in three forms: liquid, gas, solid.
- Don't over water your lawn.
- To prevent water loss from evaporation, don't water your lawn during the hottest part of the day or when it is windy.
- Defrost frozen food in the refrigerator or in the microwave instead of running water over it.
- When washing dishes by hand, use two basins—one for washing and one for rinsing rather than let the water run.
- Use a broom, rather than a hose, to clean sidewalks and driveways.
- If you have a swimming pool, get a cover. You'll cut the loss of water by evaporation by 90 percent.
- Repair dripping faucets and leaky toilets. Dripping faucets can waste about 2,000 gallons of water each year. Leaky toilets can waste as much as 200 gallons each day.
- A quarter of the world's population is without safe drinking water.

The Department of Water Management  
Jardine Water Purification Plant  
1000 East Ohio Street  
Chicago, Illinois 60611

**City of Chicago**  
**Richard M. Daley, Mayor**



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