

City of Chicago
**2009 Water
Quality Report**

RICHARD M. DALEY, MAYOR
DEPARTMENT OF WATER MANAGEMENT · JOHN F. SPATZ, JR., COMMISSIONER



PLEASE VISIT OUR WEBSITE
FOR MORE INFORMATION
www.cityofchicago.org/watermanagement

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
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

Lawn Care and the Environment

How you cut your lawn affects its health as well as how it looks. Mow high (3 + inches in summer) and don't cut more than 1/3 off the top at a time. This encourages deep roots and a healthier lawn that can better withstand drought and weeds.

Sharpen the blades of your mower every 14 hours of use. You will use less energy, reduce the potential for disease and give your lawn a cleaner look.

Lawn clippings of 1-inch or less break down quickly, provide nutrients and improve soil where the roots grow.

During the high heat of summer let your lawn go dormant. An established lawn only needs ¼ - inch to ½ - inch of water (or rain) every 2 to 4 weeks to survive, and will then green up when the weather cools.

The best time to water is early in the morning. This minimizes evaporation and reduces the chance of disease. Deep grass roots can be encouraged by providing 1-inch of water per week, and will allow you lawn to better withstand drought.

Avoid fertilizing during the summer months. Fertilizing your lawn more than twice a year requires more watering and mowing, and may increase both disease and insect problems.

To learn more please visit:

U.S. Environmental Protection Agency website on Healthy Lawn, Healthy Environment
<http://www.epa.gov/greenscapes>

University of Illinois Extension website Lawn Talk: Lawn care Information for Northern Illinois
<http://urbanext.illinois.edu/lawntalk/>

MeterSave is now available

To encourage even greater participation, last year we developed a new program called "MeterSave". This program encourages homeowners living in non-metered single family homes or two-flats to volunteer to have a water meter installed. Most non-metered customers will save money on their water bill by volunteering for a meter. Meters help monitor water consumption and small changes in daily practices can easily save water and money. We are even providing a 7-year guarantee that your water bills will not exceed what you would have paid as a non-metered customer.

In addition, MeterSave participants can choose from one of the following water conservation tools (and two if a whole block volunteers!): rain barrel, water meter monitor (a refrigerator magnet that shows water usage), outdoor water conservation kit, or indoor water conservation kit.

With a meter (installed free-of-charge), you will only be billed for the water that you use. Having a water meter also makes you more aware of your water usage, so you can track your water efficiency efforts. MeterSave truly makes sense for family finances, and for stewardship of the environment. We strongly encourage you to take part in this program and take advantage of the savings now.

Do you already have a water meter?

There are two types of water accounts in Chicago:

1. Non-Metered Accounts

- Billed every 6 months
- Mostly single-family homes and 2-flats
- Can volunteer for a meter through MeterSave

2. Metered Accounts

- Billed every 1 - 2 months depending on the account
- Mostly multiunit, commercial, industrial, wholesale, and new construction
- Have a water meter installed on the premises

What's the difference?

Non-Metered water bills are based on a flat rate assessment of such things as your lot size and the number of water fixtures installed. Typically, a detail of the assessment is provided on the front of the bill.

Metered water bills are based on the actual water usage. The number of gallons or cubic feet is listed and multiplied by the water rate. The 2010 water rate is \$2.01 per 1,000 gallons (or \$15.00 per 1,000 cubic feet) and is one of the lowest in the nation. The water rate charged is the same for all metered accounts, both for Chicago residents and the 48 direct suburban connections.

The sewer usage charge is also listed on all water bills, regardless of metering status. The 2010 sewer charge is 86% of the water charge.

Water Quality Data Table Footnotes

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

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

to all of Chicago!

What to expect

The water shut-off valve must be accessible and clear of clutter. Be prepared to answer the following:

- Do you have a basement? If you don't have a basement, installation may require additional labor but you should still volunteer.
- If you have a basement, is the area around the water shut-off valve or water pipe un-finished or is the shut-off valve in a mechanical room? If the answer is yes, this is the optimal scenario to install a meter. Unfortunately, some fully-finished or remodeled basements have hidden the water shut-off valve. With a minimal amount of work, an access door can be created and you should still volunteer.

Some installs, may need more than one visit for completion.



For years, the Department of Water Management has been urging you to help conserve and protect Lake Michigan—our great natural resource.

To maintain your 7-year guarantee

1. The owner must retain ownership of the home
 - Guarantee does not transfer to future owners
2. Be current on water bill
 - Active payment plan is current
 - Current water bill is not delinquent

To volunteer for a meter

1. Be the owner or have approval from the owner of
 - Single family residence
 - Two-flat residence
2. Be current on water bill
 - Active payment plan is current
 - Current water bill is not delinquent

The cost of installation

There is no charge to you for the meter and installation of the water meter and automatic meter reading (AMR) technology.

Signing up is Easy

You can visit our web site at www.metersave.org and complete the online registration or by simply calling 3-1-1 or 312-744-4H2O at any time. You can even schedule the date and time of your water meter installation on our website after you've registered.

Volunteering for a water meter is easy—and it is in your interest. Make the call today.

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 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.

Department of Water Management Emerging Contaminant Study

Analytes are the combination of Endocrine Disrupting Chemicals, Pharmaceuticals and Personal Care Products

The Department of Water Management is currently testing for the presence of compounds known as Endocrine Disrupting Chemicals (EDCs) and Pharmaceuticals & Personal Care Products (PPCPs), which are considered to be emerging contaminants. We encourage you to visit the United States Environmental Protection Agency (USEPA) website to learn more about EDCs (<http://www.epa.gov/ncer/science/endocrine/>) and PPCPs (<http://www.epa.gov/ppcp/>).

At this time, human health effects have not been demonstrated at the trace levels at which these unregulated compounds are being detected. Nevertheless, more research is being conducted on the presence and impacts of these Analytes in our nation's waters and on human health (studies are being conducted by groups such as the USEPA and the Water Research Foundation).

Advances in technology over the past several years now allow for the detection of compounds at extremely low concentrations. Since it is difficult to conceptualize a trillion of anything, the following example from The MegaPenny Project website (<http://www.kokogiak.com/megapenny/>) may help. It would take approximately 2.6 trillion pennies to fill the Willis Tower (formerly known as the Sears Tower). One ppt (1 ng/L) would equal approximately 2.5 pennies within a solid Willis Tower made entirely of pennies!

Most of these compounds are not regulated; do not have standardized analyte lists, methods, or reporting limits. So, we have sent samples to three independent laboratories with extensive experience in doing EDC and PPCP analyses. By sending samples to multiple laboratories, it is possible to comment on both lab performance and the actual occurrence patterns of EDCs and PPCPs.

For more information about our Analyte Testing Program and the most recent results of the tests please visit our web site at The City of Chicago web site, Department of Water Management, "City of Chicago Emerging Contaminant Study."

Unit of Measurement	Unregulated Contaminant Monitoring Rule II (UCMR II)
ppm: Parts per million, or milligrams per liter	Our water system was required to monitor for all contaminants required under the Unregulated Contaminant Monitoring Rule II (UCMR II). All of the 2009 UCMR II results were non-detected. Inquiries and results may be obtained by calling the Water Quality Division office at (312) 742-7499.
ppb: Parts per billion, or micrograms per liter	
NTU: Nephelometric Turbidity Unit, used to measure cloudiness in drinking water	
%<0.3 NTU: Percent samples less than 0.3 NTU	
pCi/L: Picocuries per liter, used to measure radioactivity	

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 Goal (MRDLG): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use disinfectants to control microbial contaminants.

2009 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
Microbial Contaminants						
TOTAL COLIFORM BACTERIA (% pos/mo) Human and animal fecal waste.	0	5%	0.39% in August	n/a	—	—
FECAL COLIFORM AND E. COLI (# pos/mo) Human and animal fecal waste.	0	0	2	n/a	—	—
TURBIDITY (%<0.3 NTU) Soil runoff. Lowest monthly percent meeting limit.	n/a	TT	98.900%	98.900% - 100.00%	—	—
TURBIDITY (NTU) Soil runoff. Highest single measurement.	n/a	TT=1NTUmax	0.68	n/a	—	—
Inorganic Contaminants						
BARIUM (ppm) Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.	2	2	0.0208	0.0201 - 0.0208	—	—
COPPER (ppm) Corrosion of household plumbing systems; Erosion of natural deposits.	1.3	AL=1.3	0.032 (90th percentile)	0 sites exceeding AL	—	—
LEAD (ppb) Corrosion of household plumbing systems; Erosion of natural deposits.	0	AL=15	6.07 (90th percentile)	1 site exceeding AL	—	—
NITRATE (AS NITROGEN) (ppm) Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.	10	10	0.384	0.381 - 0.384	—	—
TOTAL NITRATE & NITRITE (AS NITROGEN) (ppm) Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.	10	10	0.384	0.381 - 0.384	—	—
Disinfectant/Disinfection By-Products						
TTHMs [TOTAL TRIHALOMETHANES] (ppb) By-product of drinking water disinfection.	n/a	80	19.900*	11.100 - 22.700	—	—
HAA5 [HALOACETIC ACIDS] (ppb) By-product of drinking water disinfection.	n/a	60	8.940*	4.800 - 12.200	—	—
CHLORINE (as Cl₂) (ppm) Drinking water disinfectant.	4.0	4.0	1.15	0.07 - 1.15	—	—
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 IEPA.						
Unregulated Contaminants						
SULFATE (ppm) Erosion of naturally occurring deposits.	n/a	n/a	29.200	26.000 - 29.200	—	—
State Regulated Contaminants						
FLUORIDE (ppm) Water additive which promotes strong teeth.	4	4	1.28	1.24 - 1.28	—	—
SODIUM (ppm) Erosion of naturally occurring deposits; Used as water softener.	n/a	n/a	7.82	7.43 - 7.82	—	—
Radioactive Contaminants						
COMBINED RADIUM (226/228) (pCi/L) Decay of natural and man-made deposits.	0	5	1.38	1.300 - 1.380	—	03-17-2008
GROSS ALPHA excluding radon and uranium (pCi/L) Decay of natural and man-made deposits.	0	15	0.88	0.090 - 0.880	—	03-17-2008

*Highest Running Annual Average Computed.

Maximum Residual Disinfectant Level (MRDL): The highest level of a drinking water disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary that addition of a disinfectant is necessary for control of microbial contaminants.

Highest Level Detected: This column represents the highest single sample reading of a contaminant of all the samples collected in 2009.

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

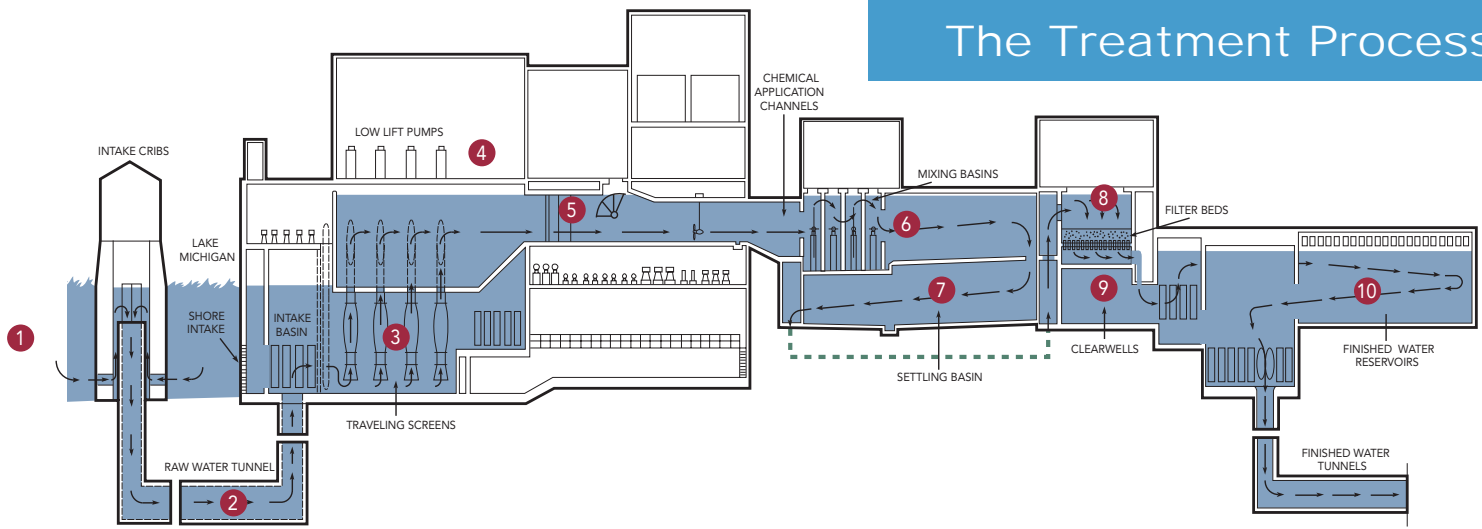
Date of Sample: If a date appears in this column, the Illinois EPA requires monitoring for this contaminant less than once per year because the concentrations do not frequently change. If no date appears in the column, monitoring for this contaminant was conducted during the Consumer Confidence Report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

nd: Not detectable at testing limits. **n/a:** Not applicable

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.

Cryptosporidium: No *Cryptosporidium* has been detected in our source water since we started monitoring in April 1993.

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,

Every community requires a good source of fresh water to guarantee both the personal and economic wellbeing of its citizens. As residents of Chicago, we are dependent on Lake Michigan. The purified tap water provided by the Chicago Department of Water Management meets or exceeds all state and Federal standards as regulated by the Environmental Protection Agency.

I encourage you to review the information in this report. It contains valuable information about the quality of our drinking water, and the steps we are taking to monitor the water quality of Lake Michigan. It addresses what we as residents can do the help protect and conserve this natural resource.

The most prominent program detailed in this report is MeterSave. As of January 1, 2010, this program is now available citywide to all residents who do not have water meters. I encourage everyone eligible to participate in this effort.

With a water meter you will only be billed for the water you use. By installing a water meter you can actively monitor and conserve your water usage, and in the process reduce the amount of money you spend on your water use.

Chicago water is second to none, and together we can work to keep it the most enviable resource in the world.

Sincerely,

Richard M. Daley
Mayor

Para obtener el informe de la calidad del agua 2009 en español, por favor llame a nuestro centro de información al numero (312) 744-4H2O (744-4426).

Did You Know:

- Chicago is the only major city that is not fully metered. To avoid a federal mandate, we should embrace metering now to save water and money.
- Water bills for Chicago's average customer could decrease by 17-33% if homeowners have water meters. (Based on data gathered from other large cities where metering has been implemented.)
- Chicagoans currently pay less for water use than every other major metropolitan area in the country. Nationally, the average cost for consuming 1000 gallons of water is \$3.11; Chicagoans pay \$2.01.
- More than 5.4 million people, or 44% of the population of the State of Illinois, depend on the Chicago Department of Water Management (DWM) to provide a reliable supply of drinking water from Lake Michigan.
- Over the past five years, the City of Chicago has implemented a \$591 million capital improvement program that has saved millions of gallons of water. That program included the annual replacement of aging infrastructure, replacing leaky water mains, upgrading public swimming pools and ensuring that all new public drinking fountains have on/off controls.

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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