


City of Chicago  
2017  
WATER  
QUALITY  
REPORT



City of Chicago  
Rahm Emanuel, Mayor

Department of Water Management  
Randy Conner, Commissioner



## CITY OF CHICAGO, DEPARTMENT OF WATER MANAGEMENT (DWM) SOURCE WATER ASSESSMENT SUMMARY FOR THE 2017 CONSUMER CONFIDENCE REPORT (CCR)

**PLEASE VISIT OUR WEBSITE  
FOR MORE INFORMATION**  
[www.cityofchicago.org/watermanagement](http://www.cityofchicago.org/watermanagement)

**WATER IN THE STREET OR BASEMENT**  
Call 311

**WATER QUALITY QUESTIONS**  
(312) 744-8190

**DEPARTMENT OF FINANCE 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.*

**IEPA'S REGIONAL OFFICES (ILLINOIS)**  
(847) 608-3131

**EPA'S SAFE DRINKING WATER HOTLINE**  
(800) 426-4791

**EPA'S WATER RESOURCE CENTER**  
(800) 832-7828

**EPA'S GENERAL INFORMATION LINE**  
(312) 353-2000

TTY (312) 886-4658

**If you have any questions about this report  
please contact Alan Stark at:**  
(312) 742-7499

## **2017 VOLUNTARY MONITORING**

The City of Chicago has continued monitoring for Cryptosporidium, Giardia and E. coli in its source water as part of its water quality program. To date, Cryptosporidium has not been detected in these samples, but Giardia was detected in 2010 in one raw lake water sample collected in September 2010. Treatment processes have been optimized to provide effective barriers for removal of Cryptosporidium oocysts and Giardia cysts in the source water, effectively removing these organisms in the treatment process. By maintaining low turbidity through the removal of particles from the water, the possibility of Cryptosporidium and Giardia organisms getting into the drinking water system is greatly reduced.

In 2017, DWM has also continued monitoring for hexavalent chromium, also known as chromium-6. USEPA has not yet established a standard for chromium-6, a contaminant of concern which has both natural and industrial sources. Please address any questions or concerns to DWM's Water Quality Division at 312-742-7499. Data reports on the monitoring program for chromium-6 are posted on the City's website which can be accessed at the following address below:

[http://www.cityofchicago.org/city/en/depts/water/supp\\_info/water\\_quality\\_resultsandreports/city\\_of\\_chicago\\_emergincontaminantstudy.html](http://www.cityofchicago.org/city/en/depts/water/supp_info/water_quality_resultsandreports/city_of_chicago_emergincontaminantstudy.html)

This year, as in years past, your tap water met all USEPA and state drinking water health standards. Our system vigilantly safeguards its source water supply, and we are able to report that the Department of Water Management, City of Chicago had no violation of a contaminant level or of any other water quality standard in the previous year. This report summarizes the quality of water that we provided last year, including details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. We are committed to providing you with this information because informed customers are our best allies.

## **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 determined 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 of 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 312-742-7499 or by going online at <http://dataservices.epa.illinois.gov/swap/factsheet.aspx>

# DETECTED CONTAMINANTS

Contaminant (unit of measure) Typical Source of Contaminant	MCLG	MCL	Highest Level Detected	Range of Detections	Violation	Date of Sample
<b>MICROBIAL CONTAMINANTS</b>						
<b>TOTAL COLIFORM BACTERIA</b> (% pos/mo) Naturally present in the environment	0	5%	0.4%	N/A	-	-
<b>FECAL COLIFORM AND E. COLI</b> (# pos/mo) Human and animal fecal waste.	0	0	0	N/A	-	-
<b>TURBIDITY</b> (NTU/Lowest Monthly %≤0.3 NTU) Soil runoff.	N/A	TT (Limit: 95%≤0.3NTU)	100% (Lowest Monthly %)	100% – 100%	-	-
<b>TURBIDITY</b> (NTU/Highest Single Measurement) Soil runoff	N/A	TT (Limit: 1 NTU max)	0.26	N/A	-	-
<b>INORGANIC CONTAMINANTS</b>						
<b>BARIUM</b> (ppm) Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits	2	2	0.0193	0.0191 - 0.0193	-	-
<b>COPPER</b> (ppm)** Corrosion of household plumbing systems; Erosion of natural deposits; leaching from wood preservatives.	1.3	AL = 1.3	0.0782 (90 <sup>th</sup> percentile)	0 sites exceeding AL	-	6/1/2015-9/30/2015
<b>LEAD</b> (ppb)** Corrosion of household plumbing systems; Erosion of natural deposits.	0	AL = 15	9.11 (90 <sup>th</sup> percentile)	3 sites exceeding AL	-	6/1/2015-9/30/2015
<b>NITRATE</b> (AS NITROGEN) (ppm) Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.	10	10	0.36	0.32 - 0.36	-	-
<b>TOTAL NITRATE &amp; NITRITE</b> (AS NITROGEN) (ppm) Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.	10	10	0.36	0.32 - 0.36	-	-
<b>DISINFECTANT/DISINFECTION BY-PRODUCTS</b>						
<b>TTHMs</b> [TOTAL TRIHALOMETHANES] (ppb)* By-product of drinking water disinfection.	N/A	80	25.6	13.4 - 34.8	-	-
<b>HAA5</b> [HALOACETIC ACIDS] (ppb)* By-product of drinking water disinfection.	N/A	60	14.5	6.1 - 16.4	-	-
<b>CHLORINE</b> (as Cl <sub>2</sub> ) (ppm) Water additive used to control microbes.	4.0	4.0	1	1 - 1	-	-
<b>TOC</b> [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.						
<b>UNREGULATED CONTAMINANTS</b>						
<b>SULFATE</b> (ppm) Erosion of naturally occurring deposits.	N/A	N/A	26.3	26.2 - 26.3	-	-
<b>SODIUM</b> (ppm) Erosion of naturally occurring deposits; Used in water softener regeneration.	N/A	N/A	8.06	7.81 - 8.06	-	-
<b>STATE REGULATED CONTAMINANTS</b>						
<b>FLUORIDE</b> (ppm) Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories	4	4	0.75	0.59 - 0.75	-	-
<b>RADIOACTIVE CONTAMINANTS</b>						
<b>COMBINED RADIUM</b> (226/228) (pCi/L)** Decay of natural and man-made deposits.	0	5	0.84	0.5 - 0.84	-	2/11/2014
<b>GROSS ALPHA</b> excluding radon and uranium (pCi/L)** Erosion of natural deposits.	0	15	6.6	6.1 - 6.6	-	2/11/2014

Note: TTHM, HAA5, and Chlorine are for the Chicago Distribution System.

\*Data expressed as LRAA – Locational Running Annual Average (See Definition of terms for Details)

\*\*The state requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though accurate, is more than one year old. Some contaminants are sampled less frequently than once a year; as a result, not all contaminants were sampled for during the CCR calendar year. If any of these contaminants were detected the last time they were sampled for, they are included in the table along with the date that the detection occurred. Compliance monitoring for lead and copper is conducted every 3 years. Radiochemical contaminant monitoring is conducted every 6 years.

# 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.

## UNIT OF MEASUREMENT

**PPM:** Parts per million, or milligrams per liter (mg/L)

**PPB:** Parts per billion, or micrograms per liter (µg/L)

**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

## 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.

## 2017 VIOLATION SUMMARY TABLE

We are pleased to announce that no monitoring, reporting, treatment technique, maximum residual disinfectant level, or maximum contaminant level violations were recorded during 2017.

## WATER QUALITY DATA TABLE FOOTNOTES

**TURBIDITY:** Turbidity is a measure of the cloudiness of the 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.

**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 been set. 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.

**FLUORIDE:** Fluoride is added to the water supply to help promote strong teeth. The Illinois Department of Public Health currently recommends an optimal fluoride level of 0.7 mg/L, with a range of 0.6 mg/L to 0.8 mg/L.

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

**LEAD:** If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Department of Water Management, City of Chicago, is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

## 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 of disinfectants to control microbial contaminants.

**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 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 this calendar year.

**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 that triggers treatment or other required actions by the water supply.

**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.

**Locational Running Annual Average (LRAA):** The average of 4 consecutive quarterly results at each monitored sample location. The LRAA should not exceed 80µg/L for TTHM and 60 µg/L for HAA5.



## *Message from* Mayor Rahm Emanuel

Dear Resident:

I am pleased to report that Chicago continues to enjoy high quality tap water that once again exceeds the standards set by the U.S. Environmental Protection Agency for safe, clean drinking water.

As concerns over the safety of public water supplies remain high, I am proud that we continue to deliver almost 1 billion gallons daily of clean and delicious drinking water to residents of Chicago and the surrounding suburbs.

Before it gets to your tap, the Chicago Department of Water Management (DWM) takes a proactive approach to mitigating contaminants- including lead- in our water system.

DWM keeps our water clean by:

- Performing over 600,000 analyses per year of tap water at every step in the treatment process and adjusting treatment protocols as necessary;
- Using corrosion control in our water mains to minimize the risk of contaminants;
- Providing residents and businesses with complete instructions for flushing water through their plumbing whenever there is any water infrastructure work being done in the vicinity; and
- Offering residential water testing by a certified laboratory free of charge.

Every year, we issue this report so that you know what is in Chicago's drinking water. This report includes very detailed information on what the Illinois Environmental Protection Agency has detected in our water through testing. A complete definition of terms is included in the report so that you understand exactly what the findings mean.

Chicago is fortunate to have an exceptional water source in Lake Michigan – and we fight hard to defend it. In January 2018, the City of Chicago joined a lawsuit against U.S. Steel for dumping dangerous chemicals into the lake and we will continue to aggressively fight to ensure that the lake is protected.

Under my Building a New Chicago infrastructure initiative, DWM has tripled the miles of aging water mains replaced every year. In 2017, DWM replaced 90 miles of water mains to increase reliability and efficiency, protect the overall water system from contaminants and reduce precious water loss.

We also make it possible for homeowners to conserve water and save money at the same time. Through DWM's MeterSave program, single family and two-flat owners can receive a free water meter to monitor their water usage and earn substantial savings on their bills.

Residents who would like to request a free water meter or who are concerned about the quality of their water and would like to have it tested, should call 311.

A strong, efficient water system, the protection of Lake Michigan and safe, clean drinking water are all critical for Chicago's future. I remain committed to building on this legacy for generations of Chicagoans to come.

*Rahm Emanuel*



Would you like a free, easy way to slash your water bill? Single family homeowners save an average of 25% and two-flat owners can save even more with a water meter. The City of Chicago's MeterSave Program will install a **water meter completely free of charge** and you can begin saving water and money right away. Register for a meter at: [www.metersave.org](http://www.metersave.org) or call 311.

Schedule a free meter installation at: [www.metersave.org](http://www.metersave.org) or call 311

## EXAMPLE OF A SINGLE FAMILY WATER BILL



**BEFORE METERSAVE**  
AVG. 2016 MONTHLY BILL: **\$85.50**



**AFTER METERSAVE**  
AVG. 2016 MONTHLY BILL: **\$59.78**



Average annual savings of 30% with a water meter.

**BASED ON:**

- 23' wide building with 2 floors: \$181.08/6 months
- 50' house frontage: \$75.40/6 months
- Sewer: Is equal to 100% of water
- Senior Sewer Exemption: \$0

**BASED ON:**

- Water: \$3.81 per 1,000 gallons, assumes average of 7,845 gallons per month
- Sewer: Is equal to 100% of water
- Senior Sewer Exemption: \$0

[WWW.METERSAVE.COM](http://WWW.METERSAVE.COM)

### INFORMATION FROM AN ACTUAL CUSTOMER ACCOUNT

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



PRESORTED  
STANDARD  
U.S. POSTAGE  
PAID  
CHICAGO, IL  
PERMIT #412