



# 2017 Annual Water Quality Report

## For Lake Michigan Water during the period of January 1, 2017 - December 31, 2017

This year, as in years past, your tap water met all USEPA and state drinking water health standards. Our system vigilantly safeguards its water supply, and we are able to report that the department 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.

The City of Chicago Water Department treats Lake Michigan water at a water treatment plant in Chicago. After the water is treated, it is pumped to the Oak Lawn Water System. Oak Lawn pumps the treated water to a reservoir and pumping station in Palos Park. After additional treatment chlorine for disinfection and testing, the water is pumped to our customers. The treated water is entirely Lake Michigan water and is not mixed with any other surface or ground water.

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).

In order to ensure that tap water is safe to drink, EPA prescribes regulations which 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.

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. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the 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 groundwater wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, 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:

- 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 can 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 residual uses;
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff and septic systems.
- Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

### **Source Water Assessment**

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. Throughout history there have been extraordinary steps taken to assure a safe source of drinking water in the Chicagoland area. From the building of the offshore cribs and the introduction of interceptor sewers to the lock-and-dam system of Chicago's waterways and the city's Lakefront Zoning Ordinance. The city now looks to the Department of Water Management, Department of Environment and the MWRDGC to assure the safety of the city's water supply. Also, water supply officials from Chicago are active members of the West Shore Water Producers Association. Coordination of water quality situations (i.e. spills, tanker leaks, exotic species, etc.) and general lake conditions are frequently discussed during the association's quarterly meetings. Also, Lake Michigan has a variety of organizations and associations that are currently working to

either maintain or improve water quality. Finally, one of the best ways to ensure a safe source of drinking water is to develop a program designed to protect the source water against potential contamination on the local level. Since the predominant land use within Illinois' boundary of Lake Michigan watershed is urban, a majority of the watershed protection activities in this document are aimed at this purpose. Citizens should be aware that everyday activities in an urban setting might have a negative impact on their source water. Efforts should be made to improve awareness of storm water drains and their direct link to the lake within the identified local source water area. A proven best management practice (BMP) for this purpose has been the identification and stenciling of storm water drains within a watershed. Stenciling along with an educational component is necessary to keep the lake a safe and reliable source of drinking water. To view the Village's **Source Water Assessment** including: Importance of Source Water; Susceptibility to Contamination Determination; and documentation/recommendation of Source Water Protections Efforts, you may access the Illinois EPA website at (<http://www.epa.state.il.us/cgi-bin/wp/swap-fact-sheets.pl>).

In addition to the informal section of the Water Quality Report, we have included several tables for your review. These tables will give you a better picture of the contaminants that were detected in your water and the contaminants that were tested for but not detected.

The Village of Palos Park would like to invite you to call Daniel Foster, Utility Department Supervisor, 671-3722 with any questions you might have regarding this report. One of the main goals of the water department is to keep our valued customers informed about their water quality. Residents should feel free to attend Village council meetings on the 2<sup>nd</sup> and 4<sup>th</sup> Monday of each month at the Kaptur Admin Center at 7:30 pm. to provide any input they may have on improving water quality.

Sincerely,

Dan Foster

Dan Foster, Utility Department Supervisor

### **2017 Water Quality Data**

**Term Definitions:**

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

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

**Maximum residual disinfectant level or MRDL:** The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

**Maximum residual disinfectant level or 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.

**Highest Level Detected:** This column represents the highest single sample reading of a contaminant of all the samples collected in 2017.

**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.

**Action Level Goal (ALG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. ALG's allow for a margin of safety.

**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.

**Palos Park Regulated Contaminants**

<b>Lead and Copper</b>	Date Sampled	MCLG	Action Level (AL)	90 <sup>th</sup> Percentile	# Sites Over AL	Units	Violation	Likely Source of Contamination
Copper	7/28/2015	1.3	1.3	0.12	0	ppm	N	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.
Lead	7/28/2015	0	15	3.1	1	ppb	N	Corrosion of household plumbing systems; Erosion of natural deposits

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 Village of Palos Park is responsible for providing high quality drinking water, but cannot control the variety of material 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 water 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>).

Disinfectants and Disinfections By-Products	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Chlorine	12/31/2017	1.0	0.4 - 1.34	MRDLG=4	MRDL=4	ppm	No	Water additive used to control microbes.
Haloacetic Acids (HAA5)	2017	17	2.38 – 26.90	No goal for the total	60	ppb	No	By-product of drinking water disinfection.
Total Trihalomethanes (TTHm)	2017	45	22.4 – 52.7	No goal for the total	80	ppb	No	By-product of drinking water disinfection.

Not all sample results may have been used for calculating the Highest Level Detected because some results may be part of an evaluation to determine where compliance sampling should occur in the future.

***City of Chicago Water Table Footnotes***

***Definitions:***

**Turbidity**—Turbidity is a measure of the cloudiness of the 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.

**Fluoride**—Fluoride is added to the water supply to help promote strong teeth. The Illinois Department of Public Health recommends an optimal fluoride level of .7 mg/l with a range of 0.6 mg/l to .8/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.

**Unit of Measurement**

ppm-Parts per million, or milligrams per liter

ppb-Parts per billion, or micrograms per liter

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

%<0.5 NTU-Percent samples less than 0.5 NTU

pCi/l-Picocuries per liter, used to measure radioactivity

**Level 1 Assessment**—A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.

**Level 2 Assessment**—A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

**Mrem**— millirems per year (a measure of radiation absorbed by the body)

TT-Treatment Technique

N/A—Not Applicable

Avg: Regulatory compliance with some MCLs are based on running annual average of monthly samples.

**Chicago Department of Water Management-2017 Water Quality Data**

***Detected Contaminants (Provided by City of Chicago)***

\*TOC [TOTAL ORGANIC CARBON] The percentage of Total Organic Carbon (TOC) removal was measured each month and the system met all TOC removal requirements by IEPA.

Contaminant (unit of measurement) Typical Source of Contaminant	MCLG	MCL	Highest Level Detected	Range of Detection	Violation	Date of Sample
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**Turbidity Data**

TURBIDITY (%<0.3 NTU) Soil runoff	n/a	TT(Limit 0.3NTU)	Lowest Monthly % 100%	100% – 100.0%		
TURBIDITY (NTU/ Highest Single Measurement) Soil runoff	n/a	TT(1 NTU)	0.26	n/a		

**Inorganic Contaminants**

BARIUM (ppm) Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits	2	2	0.0193	0.0191– 0.0193		
NITRATE (AS NITROGEN) (ppm) Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits	10	10	0.36	0.32– 0.36		
TOTAL NITRATE & NITRATE (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 Organic Carbon</b>						
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 IEPA.						
<b>Unregulated Contaminants</b>						
SULFATE (ppm) Erosion of naturally occurring deposits.	N/A	N/A	26.3	26.2 – 26.3		
SODIUM (PPM) Erosion of naturally occurring deposits; Used as water softener	N/A	N/A	8.06	7.81 – 8.06		
<b>State Regulated Contaminants</b>						
FLUORIDE (ppm) Water additive which promotes strong teeth	4	4	.75	0.59 – 0.75		
<b>Radioactive Contaminants</b>						
Combined radium 226/228 (pCi/l) Decay of natural and man-made deposits.	0	5	.84	0.50-0.84		2/11/2014
GROSS ALPH excluding radon and uranium(pCi/L) Decay of natural and man-made deposits	0	15	6.6	6.1 – 6.6		2/11/2014

**UNREGULATED CONTAMINANT MONITORING RULE II (UCMRII):** Our water system was required to monitor for all contaminants required under the Unregulated Contaminant Monitoring Rule II (UCMRII). Started in 2009, monitoring under UCMRII was completed in 2011, with none of the contaminants detected. Results may be obtained by visiting the City of Chicago's website at:

[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)

### UCMR3 Compliance Reporting

In compliance with the Unregulated Contaminant Monitoring Rule 3 (UCMR3) as required by the EPA, the City of Chicago has monitored for 28 contaminants suspected to be present in drinking water, but that do not have health-based standards set under the Safe drinking Water Act. The monitoring results were reported to the EPA. The list of UCMR3 contaminants that we have monitored included volatile organic chemicals, metals, perfluorinated compounds, hormones, 1,4-dioxane and chlorate. The contaminants that were detected in this monitoring program are listed below.

Contaminant (unit of measurement) Typical Source of Contaminant	MCLG	MCL	Highest Level Detected	Range of Detection	Violation	Date of Sample
CHROMIUM (ppb) Naturally-occurring element; used in making steel and other alloys	100	100	0.3	0.3-0.3		
MOLYBDENUM (ppb) Naturally-occurring element found in ores and present in plants, animals and bacteria; commonly used form molybdenum trioxide	N/A	N/A	1.1	1.0-1.1		
STRONTIUM (ppb) Naturally-occurring element; has been used in cathode-ray tube TVs to block x-ray emissions	N/A	N/A	120	110-120		
VANADIUM (ppb) Naturally-occurring metal; vanadium pentoxide is used as a catalyst and a chemical intermediate	N/A	N/A	0.2	0.2 – 0.2		
CHROMIUM-6 or HEXAVALENT CHROMIUM (ppb) Naturally-occurring element; used in making steel and alloys	N/A	N/A	0.19	0.18-0.19		

### City of Chicago 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. Also, in compliance with the Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR) Round 2, the City of Chicago has continued the 24 months long monitoring program that was started in April 2015, collecting samples from its source water once per month to monitor for Cryptosporidium, Giardia, E. coli and turbidity, with no detections for Cryptosporidium and Giardia reported so far.

In 2017, CDWM 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)