



City of Markham  
16313 Kedzie Pkwy.  
Markham, IL 60428

# WATER QUALITY REPORT 2022

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## Definition of Terms • Unit of Measurement

**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 a 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 (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 disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

**Range of Detections:** This column represents a range of individuals 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.

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

**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.

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

**ND:** Contaminant not detected at or above the reporting or testing limit.

**N/A:** Not applicable

**Highest Level Detected:** This column represents the highest single sample reading of a contaminant of all the samples collected in 2022.

**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 the 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 recommended an optional fluoride range of 0.7 mg/L with a range of 0.6 mg/L to 0.8 mg/L.

**Sodium** – There is no state or federal MCL for sodium. Monitoring is required to provide information to consumers and health officials who have concerns 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.

### Unit of Measurement

ppb - Micrograms per liter or parts per billion - or one ounce in 7,350,000 gallons of water

ppm - Milligrams per liter or parts per million - or one ounce in 7,350 gallons of water

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

## Chicago Department of Water Management Detected Contaminants • 2022 Water Quality Data

Contaminant (unit of measurement)	MCLG	MCL	Highest Level Detected	Range of Detection	Violation	Date of Sample
<b>Turbidity Data</b>						
TURBIDITY (NTU/Lowest Monthly %≤0.3 NTU); Soil runoff	(Limit 95%≤0.3NTU) NA	(Lowest Monthly %) TT	100%	100%-100.0%		
TURBIDITY (NTU/Highest Single Measurement); Soil runoff	NA	TT	0.20	N/A		
<b>Inorganic Contaminants</b>						
BARIUM (ppm) Discharge of drilling wastes; Discharge from metal refineries; Erosion of Natural deposits.	2	(Limit 1 NTU) 2	0.0201	0.0193-0.0201		
NITRATE (AS NITROGEN) (ppm) Runoff from fertilizer use; Leaching from septic tanks, sewage: Erosion of natural deposits.	10	10	0.30	0.30-0.30		
TOTAL NITRATE & NITRATE (as NITROGEN) (ppm) Runoff from fertilizer use; Leaching from septic tanks, sewage: Erosion of natural deposits.	10	10	0.30	0.30-0.30		
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	27.1	25.8-27.1		
SODIUM (ppm) Erosion of naturally occurring deposits; Used as water softener.	N/A	N/A	9.08	8.56-9.08		
<b>State Regulated Contaminants</b>						
FLUORIDE (ppm). Water additive which promotes strong teeth.	4	4	0.76	0.63-0.76		
<b>Radioactive Contaminants</b>						
COMBINED RADIUM 226/228 (pCi/L) Decay of natural and man-made deposits.	0	5	0.95	0.83-0.95		2/04/2020
GROSS ALPHA excluding radon and uranium (pCi/L). Decay of natural and man-made deposits.	0	15	3.1	2.8-3.1		2/04/2020

### Unit of Measurement:

ppm - Parts per million or milligrams per liter

ppb - Parts per billion, 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

**MARKHAM ANNUAL DRINKING WATER QUALITY REPORT  
IL 0311770**

**Annual Water Quality Report for the period of January 1 to December 31, 2022.** This report is intended to provide you with important information about your drinking water and the efforts made by the water system to provide safe drinking water. The source of drinking water used by MARKHAM is Purchased Surface Water. For more information regarding this report contact: **Name:** Todd Clayton • **Phone:** 708-331-4905 Ext. 243  
Este informe contiene información muy importante sobre el agua que usted bebe. Tradúzcalo ó hable con alguien que lo entienda bien.

**Source of Drinking Water**

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

**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 residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products 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.

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 (800) 426-4791.

**City of Chicago, Dept. of Water Management Source Water Assessment Summary For the 2022 Consumer Confidence Report (CCR)**

**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 Sawyer 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.

**2022 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. No Cryptosporidium or Giardia was detected in source water samples collected in 2022. 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 main-

**City of Markham 2022 Regulated Contaminants Detected**

The following tables contain scientific terms and measurers, some of which may require explanation.

ppb - Micrograms per liter or parts per billion – or one ounce in 7,350,000 gallons of water.; avg: Regulatory compliance with some MCLs are based on running annual average of monthly samples.;

ppm: Milligrams per liter or parts per million - or one ounce in 7,350 gallons of water.; na: not applicable

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

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

Disinfectants & Disinfectant By-Products	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Chlorine	12/31/2022	1	0.8-1.2	MRDLG=4	MRDL=4	ppm	N	Water additive used to control microbes
Haloacetic Acids (HAA5)*	2022	16	6.73-16.8	No goal for total	60	ppb	N	By-product of drinking water disinfection
Total Trihalomethanes (Tthm)	2022	38	14.6-64.7	No goal for total	80	ppb	N	By-product of drinking water disinfection

Lead and Copper	Date Sampled	MCLG	Action Level (AL)	90th Percentile	# Sites Over AL	Units	Violation	Likely Source of Contamination
Lead	9/12/2020	0	15	2.61	0	ppb	N	Corrosion of household plumbing systems; Erosion of natural deposits.

**Chlorine**

**Violation Tables**

Some people who use water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine well in excess of the MRDL could experience stomach discomfort.

Violation Type	Violation Begin	Violation End	Violation Explanation
MONITORING, ROUTINE (DBP), MAJOR	4/1/2022	6/30/2022	We failed to test our drinking water for the contaminant and period indicated. Because of this failure, we cannot be sure of the quality of our drinking water during the period indicated. The City of Markham collected the necessary samples, had them tested and passed all EPA regulations.

**Revised Total Coliform Rule (RTCR)**

The Revised Total Coliform Rule (RTCR) seeks to prevent waterborne diseases caused by E. coli. E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches.

Violation Type	Violation Begin	Violation End	Violation Explanation
MONITORING, ROUTINE, MINOR (RTCR)	5/1/2022	5/31/2022	We failed to test our drinking water for the contaminant and period indicated. Because of this failure, we cannot be sure of the quality of our drinking water during the period indicated. The City of Markham collected the necessary samples, had them tested and passed all EPA regulations.

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.

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. We 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 and 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>.

**Source Water Assessment**

We want our valued customers to be informed about their water quality. If you would like to learn more, please feel welcome to attend any of our regularly scheduled meetings. The source water assessment for our supply has been completed by the Illinois EPA. If you would like a copy of this information, please stop by City Hall or call our water operator at 708-331-4905 Ext. 256. To view a summary version of the completed Source Water Assessments, including: Importance of Source Water; Susceptibility to Contamination Determination; and documentation/recommendation of Source Water Protection Efforts, you may access the Illinois EPA website at:

<http://www.epa.state.il.us/cgi-bin/wg/swap-fact-sheets.pl>

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.

**Source Water Information**

Source Water Name: CC 01-Main Pumping Station; FF IL 0316000 TP 01: Lake; Type of Water: SW

taining 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 2022, CDWM has also continued monitoring for hexavalent chromium, also known as chromium-6. USEP A 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 312-744-8190. 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\\_emerigincontaminantstudy.html](http://www.cityofchicago.org/city/en/depts/water/supp_info/water_quality_resultsandreports/city_of_chicago_emerigincontaminantstudy.html)

**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. Further information on our community water supply's Source Water Assessment Program is available by calling DWN at 312-742-2406 or by going online at <http://dataservices.epa.illinois.gov/swap/factsheet.aspx>.

For more information, please contact Andrea R.H. Cheng, Ph.D., P.E. Commissioner, 312-744-7001; Chicago Department of Water Management, 1000 East Ohio Street, Chicago, IL 60611, Attn: Andrea R.H. Cheng, Ph.D., P.E. Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.