



THE CITY OF
LAKE FOREST

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ANNUAL WATER QUALITY REPORT FOR CALENDAR YEAR 2018



Annual Water Quality Report for Calendar Year 2018

We are pleased to present a summary of the quality of the water provided to you during the calendar year 2018 (January 1 to December 31, 2018). The Safe Drinking Water Act (SDWA) requires that utilities issue an annual “Consumer Confidence Report” (CCR) to its customers, in addition to other notices that may be required by law. This report details where our water comes from, what it contains, and the risks our water testing and treatment are designed to prevent. We are committed to providing the safest and most reliable water supply. Informed consumers are our best allies in maintaining safe drinking water. The drinking water supplied by the Lake Forest Water Plant meets or surpasses all Federal and State drinking water standards. During the 2018 Calendar year, the Water Plant produced 1.262 billion gallons of water and completed the second and third phases of our membrane filtration system replacement project. The Water Plant is supplied by surface water from Lake Michigan drawn through 42-inch and 24-inch intake pipelines.



Overhead view of Lake Forest Water Treatment Plant

Sources 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.

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.

Required Additional Health Information

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.

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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 (800-426-4791).

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 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>.

Consumer Confidence Rule

The Consumer Confidence Rule requires community water systems to prepare and provide to their customers annual consumer confidence reports on the quality of the water delivered by the systems.

Violation Type: CCR ADEQUACY/AVAILABILITY/CONTENT

Violation Begin: 07/01/2017

Violation End: 07/03/2018

Violation Explanation:

We failed to provide to you, our drinking water customers, an annual report that adequately informed you about the quality of our drinking water and the risks from exposure to contaminants detected in our drinking water. Coliform results were not provided in the 2016 Water Quality Report.

2018 Monitoring Results

WATER QUALITY TABLE — LEAD AND COPPER (Testing completed once every three years)

Lead & Copper	Date Sampled	MCLG	Action Level (AL)	90th Percentile	# Sites Over AL	Units	Violation	Likely Source of Contamination
Copper	2017	1.3	1.3	0.19	0	ppm	N	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems
Lead	2017	0	15	6.5	0	ppb	N	Corrosion of household plumbing systems; Erosion of natural deposits

REGULATED CONTAMINANTS

Disinfectants & Disinfection By-Products	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Chlorine	12/31/2018	0.9	0.7 - 1.1	MRDLG = 4	MRDL = 4	ppm	N	Water additive used to control microbes
Haloacetic Acids (HAA5)	2018	19	13.7 - 26.8	No goal for the total	60	ppb	N	By-product of drinking water disinfection
Total Trihalomethanes (TTHM)	2018	51	26.6 - 62.9	No goal for the total	80	ppb	N	By-product of drinking water disinfection
Inorganic Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Barium	2018	0.021	0.021 - 0.021	2	2	ppm	N	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Fluoride	2018	0.6	0.609 - 0.609	4	4.0	ppm	N	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Iron	2018	0.012	0.012 - 0.012		1.0	ppm	N	This contaminant is not currently regulated by the USEPA. However, the state regulates. Erosion of natural deposits.
Nitrate [measured as Nitrogen]	2018	0.42	0.42 - 0.42	10	10	ppm	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Sodium	2018	14	14 - 14			ppm	N	Erosion from naturally occurring deposits. Used in water softener regeneration

TURBIDITY

	Limit (Treatment Technique)	Level Detected	Violation	Likely Source of Contamination
Highest single measurement	1 NTU	0.03	N	Soil runoff
Lowest monthly % meeting limit	0.3 NTU	100%	N	Soil runoff

Information Statement: Turbidity is a measurement 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.

TOTAL ORGANIC CARBON

The percentage of Total Organic Carbon (TOC) removal was measured each month and the system met all TOC removal requirements set, unless a TOC violation is noted in the violations section

COLIFORM BACTERIA

Maximum Contaminant Level Goal	Total Coliform Maximum Contaminant Level	Highest Number of Positive	Fecal Coliform or E.Coli Maximum Contaminant Level	Total No. of Positive E.Coli or Fecal Coliform Samples	Violation	Possible Source of Contamination
0	1 positive monthly sample	0	0	0	N	Naturally present in the environment

Definitions

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

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

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.

Maximum Contaminant Level or 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 Contaminant Level Goal or 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 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 goal 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.

na – not applicable.

mrem: – millirems per year (a measure of radiation absorbed by the body)

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.

Treatment Technique or TT – A required process intended to reduce the level of a contaminant in drinking water.



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Annual Water Quality Report

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, call our water operator at 847-810-4650. 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/wp/swap-fact-sheets.pl>.

Susceptibility is defined as the likelihood for the source water(s) of a public water system to be contaminated at concentrations that would pose a concern. 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 intakes with no protection only dilution, which is the reason for mandatory treatment for all surface water supplies in Illinois. Lake Forest's intakes are moderately sensitive to potential pollution, and although there are no potential sources within Lake Forest's critical assessment zone, there are several within the immediate source water area. The combination of the land use, potential sources and the proximity of storm sewer outfalls adds to the susceptibility of Lake Forest's intakes. However, it should be stressed that treatment employed by Lake Forest CWS is protective of their consumers, as noted by the facility's finished water history.

National Primary Drinking Water Regulation Compliance

The City of Lake Forest welcomes your questions about the Lake Forest Water Plant and water quality. Call Dan Martin, Superintendent of Public Works, at 847-810-3561 or John Gullledge, Chief Water Plant Operator, at 847-810-4650. We encourage public interest and participation in our community's decisions affecting drinking water. Regular City Council meetings occur on the first and third Mondays of each month at 6:30 p.m. at the Lake Forest City Hall (220 East Deerpath). Agendas for these meetings can be viewed at the bulletin boards located in the train depots, the Municipal Service Building (800 North Field Drive), City Hall, and on the web at www.cityoflakeforest.com.