



2019 Drinking Water Quality Report

CITY OF HIGHWOOD

Introduction

The City of Highwood is pleased to present its Annual Water Quality Report for the period of January 1 to December 31, 2018. This report, as required by Federal law, is designed to inform all water customers about the quality of water and services that are delivered each day by the City of Highwood. The City of Highwood is pleased to report that your drinking water has met all U.S. Environmental Protection Agency (USEPA) and state drinking water health standards. There were no water quality violations recorded during 2018. The City's continuing goal is to provide all of its consumers with a safe and dependable supply of drinking water. As part of this process, the City wants all customers to understand the efforts that are continually being made to improve the water treatment process and to protect our water resources. In short, the City of Highwood is committed to ensuring the quality of your water.

Source of Highwoods Drinking Water

The City of Highwood Water Plant uses surface water drawn from Lake Michigan through a 16" Intake Pipe located one half mile from shore in Lake Michigan. This Intake Pipe is situated at a depth of 20 feet below the lakes surface. All sources of drinking water are subject to potential contamination by constituents that are naturally occurring or are manmade. Those constituents can be microbes, organic or inorganic chemicals. 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 the 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).

Contaminants

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 can pick up substances resulting from the presence of animals or from 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 can be naturally occurring or result from urban storm-water runoff, industrial, or domestic wastewater discharges, oil and gas production, mining or framing;

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 byproducts of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff and septic systems;

Radioactive contaminants, Which may be naturally occurring or be the result of oil and gas production and mining activities.

Turbidity, Turbidity is a measure of the cloudiness of the water caused by suspended particulates and is monitored because it is a good indicator of water quality and the effectiveness of our filtration system and disinfectants.

Sodium, There is not a federal or state MCL for sodium. Monitoring is required information to consumers and health officials that are concerned about sodium intake due to dietary precautions. If the level is greater than 20 ppm, and you are on a sodium restricted diet, you should consult a physician.

Lead and Copper, The City of Highwood is in full compliance with all State and Federal regulations governing the control of lead and copper within public drinking water supplies. 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 City of Highwood 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>.

Please contact Chris Cizek, Responsible operator in charge; at 847.432.3730 or 847.613.9122 should you have any questions regarding this report.

Chris Cizek
ROINC
City of Highwood

Definitions

In the table hereafter you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:

Unit Descriptions

mg/L - **milligrams per liter** or the number of milligrams of substance in one liter of water.

ppm - **Parts per million** or Milligrams per liter (mg/L).

ppb - **Parts per billion** or Micrograms per liter ($\mu\text{g/L}$).

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

NA – not applicable

ND – not detected

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

MCL - **Maximum Contaminant Level** or 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.

MCLG - **Maximum Contaminant Level Goal** or 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.

AL - **Action Level** or the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

MRDLG - **Maximum Residual Disinfection Level Goal** or the level of a drinking water disinfectant below which there is no known or expected risk to health.

MRDL - **Maximum Residual Disinfectant Level** or the highest level of a disinfectant allow in drinking water.

MPL - **Maximum Permissible Level** that is state assigned

Additional Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immune or 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 microbiological contaminants are available from the USEPA's Safe Drinking Water Hotline (1-800-426-4791).

Highwood 2019 Annual Drinking Water Quality Report

HIGHWOOD IL0970550

Highwood is Surface water

For more information regarding this report contact:

Chris Cizek, ROINC

Phone: 847.432.1924

Este informe contiene información muy importante sobre el agua que usted bebe. Tradúzcalo ó hable con alguien que lo entienda bien.

Annual Water Quality Report for the period of January 1 to December 31, 2018

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. This report WILL NOT be mailed to water consumers but will however be available by the city for review upon request.

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. 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.
- 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.

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>.

Source Water Information

Source Water Name	Type of Water	Location
INTAKE 3 (20235) LAKE MICHIGAN	LAKE MICHIGAN WATER	SW
		3500 FEET NORTHEAST OF THE PLANT

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 at Highwood City Hall every Tuesday at 7:00p.m. Located at 17 Highwood Avenue, Highwood Illinois 60040. 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 (847)432-1924. 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>.

Source of Water: HIGHWOOD 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 a 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, which is the reason for mandatory treatment for all surface water supplies in Illinois. A workgroup from the Great Lakes States was organized to develop a protocol for assessing the Great Lakes. The mission of the Great Lakes Protocol was to develop a consistent procedure allowing the flexibility necessary to properly conduct source water assessments of the Great Lakes as a drinking water source. This flexibility takes into account the variability of these sources and site-specific concerns for determination of source sensitivity and susceptibility (Illinois EPA, 1999). Sensitivity is defined as the intrinsic ability of surface water to be isolated from contaminants by the physical attributes of the hydrologic or geologic setting. With this in mind, the degree of sensitivity becomes the prevailing factor in the susceptibility determination for intakes on the Great Lakes. Intakes located close to shore, or close to a major shipping lane will be more sensitive and thus more susceptible to potential contamination. Highwood's intake has a moderate sensitivity and therefore has greater protection from shoreline contaminants due to mixing and dilution. However, although there are no potential sources within Highwood's critical assessment zone, there are several within the immediate source water area. Shoreline contaminants in the vicinity of this intake such as the combination of the land use, the proximity of storm sewer outfalls and NSSD pumping stations are perceived as a threat and add to the susceptibility of this intake. However, it should be stressed that treatment employed by Highwood is protective of their consumers as noted by the facility's finished water history.

2018 Regulated Contaminants Detected

Coliform Bacteria

Maximum Contaminant Level Goal	Total Coliform Maximum Contaminant Level	Highest No. of Positive	Fecal Coliform or E. Coli Maximum Contaminant Level	Total No. of Positive E. Coli or Fecal Coliform Samples	Violation	Likely Source of Contamination
0	1 positive monthly sample	2	Fecal Coliform or E. Coli MCL: A routine sample and a repeat sample are total coliform positive, and one is also fecal coliform or E. coli positive.	2	N	Naturally present in the environment.

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments.

During the past year we were required to conduct (1) Level 1 assessment. (1) Level 1 assessment was completed. In addition, we were required to take (1) corrective action and we completed 1 of these actions.

Lead and Copper

Definitions:
 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.

Lead and Copper	Date Sampled	MCLG	Action Level (AL)	90 th Percentile	#Sites Over AL	Units	Violation	Likely Source of Contamination
Copper	2018	1.3	1.3	0.83	0	ppm	N	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.
Lead	2018	0	15	4.4	0	ppb	N	Corrosion of household plumbing systems; Erosion of natural deposits.

Water Quality Test Results

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.

Regulated Contaminants

Disinfectants and 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	0.6 - 2.8	MRDLG = 4	MRDL = 4	ppm	N	Water additive used to control microbes
Haloacetic Acids (HAA5)	2018	19	15.71-19	No goal for the total	60	ppb	N	By product of drinking water disinfection
Total Trihalomethanes (TTHN)	2018	49	32-49	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
Arsenic	2018	2	1.8-1.8	0	10	ppb	N	Erosion of natural deposits; Runoff from glass and electronics production wastes.
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	0.8	0.798-0.798	4	4.0	ppm	N	Erosion of natural deposits; Water additive, which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate (measured as Nitrogen)	2018	0.46	0.46-0.46	10	10	ppm	N	Runoff from fertilizer use; Leaching from septic tanks, sewage Erosion of natural deposits.
Selenium	2018	2	2-2	50	50	ppb	N	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines
Sodium	2018	8	8-8			ppm	N	Erosion from naturally occurring deposits, used in water softener regeneration.
Zinc	2018	0.02	0.02-0.02	5	5	ppm	N	This contaminant is not currently regulated by the USEPA. However, the state regulates. Naturally occurring; Discharge from metal.

Turbidity

	Limit (treatment Technique)	Level Detected	Violation	Likely Source of Contamination
Highest Single Measurement	1 NTU	0.09 NTU	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.
