

Northbrook Water Consumer Confidence Report

General Introduction to Water Supplies

This information is provided as required by United States Environmental Protection Agency (USEPA) and Illinois Environmental Protection Agency (IEPA). Northbrook tests its water routinely for more than 120 different contaminants. This report lists only those regulated substances showing some level of detection. All of these were within USEPA/IEPA water quality standards. If you have any questions or want to know where to find additional information about our water supply, contact Utilities Superintendent Joseph Rizzo at joseph.rizzo@northbrook.il.us or 847-664-4139.

Sources of Drinking Water

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. It also can pick up substances resulting from the presence of animals or from human activity.

Our water comes from Lake Michigan. Northbrook had no water quality violations during the past year. Please share this information with other people who drink this water, especially those who may not have received this notice directly (for instance, people in apartments, nursing homes, schools, or businesses). You can do so by posting this notice in a public place or distributing copies by hand or via US mail.

Contaminants That May be Present in Source Water:

- *Disinfectants and Disinfection By-Products (D/DBPs)*, including chlorine, total trihalomethanes (TTHMs) and haloacetic acids (HAA5s). HAA5s and TTHMs are by-products of chlorine and certain organic compounds present in raw water. The maximum contaminant levels for TTHM and HAA5 are 80 µg/l and 60 µg /l respectively. Some people who drink water containing DBPs in excess of the Maximum Contaminant Levels (MCL) over many years' may experience problems with their livers, kidneys, or central nervous system, and may have increased risk of developing cancer;
- *Lead*, if present in elevated levels, 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. Northbrook 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 two to three 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 (800-426-4791) or at www.epa.gov/safewater/lead Northbrook remains in compliance with the lead and copper regulations;
- *Pesticides and Herbicides*, which may come from a variety of sources such as agriculture, urban storm water runoff and residential uses;

- *Radioactive Contaminants*, including Alpha particles, Beta particles/Photon emitters, Radium 226 and 228, and Uranium, which can be naturally-occurring or be the result of oil and gas production and mining activities;
- *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;
- *Microbial Contaminants*, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife;
- *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;
- *Sodium*, which is not regulated by US Environmental Protection Agency (USEPA) or Illinois Environmental Protection Agency (IEPA), but for which monitoring is required to provide information about sodium uptake due to dietary precautions. If the level is greater than 20 mg/l and you are on a sodium restricted diet, you should consult a physician; and
- *Turbidity* which is a measure of the “cloudiness” of water. It is good indicator of water quality and the effectiveness of our filtration system and disinfection practices. Our water typically leaves the plant at 0.04 Nephelometric Turbidity Units (NTUs).

Other Facts about Drinking 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 Environmental Protection Agency's Safe Drinking Water Hotline at 800-426-4791. In order to ensure that tap water is safe to drink, EPA prescribes 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 Environmental Protection Agency'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. The Food and Drug Administration (FDA) establishes limits for contaminants in bottled water, which must provide the same protection for public health as tap water.

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, and 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 and Center for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other

microbial contaminants are available from the EPA Safe Drinking Water Hotline at 800-426-4791. No evidence of Cryptosporidium has ever been found in Northbrook's water.

Some Facts About Northbrook's Water

Northbrook is the only off-shore community in the Chicago area to draw water directly from Lake Michigan and process it at an inland water filtration plant. Since 1963, Northbrook has increased rated production capacity from 6 million gallons per day (MGD) to approximately 20 MGD.

Our water supply begins at our Lake Michigan intakes. Raw water flows through two intake lines to our Lake Front Pumping Station in Glencoe. The older (1963) 30-inch intake extends 2,550 feet from shore, ending in an intake structure with three cone-shaped "funnels" located 23+ feet under the surface of Lake Michigan. The newer (1993) primary intake, is 48 inches in diameter, 6,400 feet in length and 36+ feet under the surface with one large flared riser surrounded by a 35 foot square by 8 foot high wooden timber crib. Water flows by gravity into a 28 foot deep, 26,000 gallon "suction well" in the pump station at the shoreline. Seven various sized vertical turbine "low lift" pumps, controlled by Water Plant Operators at the Water Treatment Plant, pump the raw water through 2.9 miles of 24 and 30 inch Raw Water Transmission Mains to the Plant for processing. Water is filtered through anthracite/ sand media filters, chlorinated for disinfection, and fluoridated for prevention of tooth decay. The newest (1994) 8 MGD plant addition uses multi-media filters with additional anthracite and two gradations of crushed garnet.

After water is treated at the Plant, eight "high lift" pumps of various sizes send the processed water through a network of about 205 miles of water mains. Four additional system pumps are located at the West Side Reservoir. The Water Plant is staffed around-the-clock. Operators are required to obtain the highest competency (Class A) certificates from the Illinois EPA which requires passing a rigorous series of exams. Tap water is typically delivered in the 45 - 60 PSI pressure range throughout Northbrook.

In addition to redundant lake water intake mains and raw water transmission mains, Northbrook has invested heavily in emergency preparedness. The Lake Front Pump Station and Water Treatment Plant both have two electrical supplies from ComEd in addition to back-up generators. The West Side Reservoir also has an emergency generator. The Village has agreements and water main connections with Glencoe, Glenview, and Highland Park for emergency supplies of water. The water system includes a 2.5 million gallon (MG) clear well at the Treatment Plant, a 4.2 MG reservoir in the western portion of the Village, and two water towers with capacities of 0.5 and 1.0 MG.

Most recently Northbrook completed Phase 1 implementation of a two zone distribution system that utilizes the West Side Reservoir and the 1.0 MG tower to boost water pressures in certain areas of the northwestern area of the Village.

Periodically, water issues are addressed by the Village Board of Trustees. The Village Board normally meets on the second and fourth Tuesdays of each month at 7:30pm at the Village Hall, 1225 Cedar Lane. Exact times and dates can be verified by calling the Village Hall at 847-272-5050 or visit www.northbrook.il.us.

Source Water Assessment

The Illinois EPA considers all surface water sources to be susceptible to potential pollution. By nature surface water allows contaminants to migrate into the intakes with no protection except dilution. Thus, IEPA mandates treatment for all Illinois surface water supplies. A workgroup from the Great Lakes States organized to develop a protocol for assessing the Great Lakes. The mission of the Great Lakes Protocol workgroup was to develop a consistent procedure with the flexibility to properly conduct source water assessments of our Great Lakes drinking water sources. According to the IEPA, this flexibility takes into account source variability and site-specific concerns for determination of source sensitivity and susceptibility. Sensitivity is the intrinsic ability of surface water to be isolated from contaminants by the hydrologic or geologic attributes. According to the sensitivity analysis, Northbrook's two intakes are located far enough offshore that shoreline point sources are not a water quality factor.

However, at certain times of the year, the potential for contamination exists due to storm water runoff and wet weather flows from the North Shore Channel. If currents are flowing in a northerly direction, contaminants from these flows could migrate to Northbrook's intakes and compromise water quality. A correlation between Northbrook's rainfall data and coliform data, combined with North Shore Channel discharge dates, show the potential effect of these flows on Northbrook's water quality.

The best way to ensure a safe source of drinking water for a water supply is to develop a program designed to protect the source water against potential contamination on the local level. Since land use within the Illinois Lake Michigan watershed is mostly urban, most watershed protection activities in this document are aimed at this purpose. Citizens must be aware that activities around the house may have a negative impact on their source water.

The main efforts of the immediate community should be to promote an awareness of storm water drains and their direct link to Lake Michigan. A proven best management practice (BMP) for this purpose is the stenciling of a notice indicating the connection between storm water drains and the lake. Stenciling, along with education about proper storage, disposal and use of potential contaminants, is necessary to continue to keep Lake Michigan a safe reliable source of drinking water.

A source water assessment for our supply has been completed by the Illinois EPA. If you would like a copy of this information, call Joseph Rizzo at 847-664-4139. 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 www.northbrook.il.us/IllinoisEPA

Recent Concerns

Lead –

The United States Environmental Protection Agency (USEPA) has set the action level of lead in drinking water at 15 µg/l. However, any detectable lead makes it advisable to reduce lead levels as much as possible. Lake Michigan water is virtually lead free. Lead contamination, if it does occur, results from corrosion of the element from service lines and/or household plumbing. Homes in neighborhoods constructed before the early 1950s may have lead service lines and those built prior to 1987 may have plumbing fixtures containing significant amounts of lead.

As time passes, mineral deposits tend to form a coating on the inside of the pipes, which insulates the water from the lead. To enhance this process, the Village treats our water with poly-orthophosphate which reacts with lead, copper, calcium and magnesium to form an insoluble coating on pipe walls. This coating greatly limits dissolution of lead and copper into water. The USEPA has determined that sampling homes with lead service lines or those with lead based solder built between 1982 and 1986 is the best means of determining if water systems are in compliance with the Lead Copper Rule (LCR). This testing, which is performed every three years, will take place during the summer of 2020.

The Village replaces the public portion of lead service lines (main to B-box) encountered during water main replacement programs. **While this has a long term benefit, it may cause elevated levels of lead in an individual plumbing system for up to several months.** The Village will perform lead/copper tests prior to disruption of the service and again after the work is complete if the private portion of the homeowner's service line remains lead. All results are shared with the property owner. The Village requires replacement of lead lines for properties undergoing substantial remodeling or demolition.

The United States and Illinois Environmental Protection Agencies (USEPA and IEPA) have established lead/copper testing requirements for all water systems under its jurisdiction. The Village of Northbrook is obligated to collect water samples from its distribution system for lead and copper analysis every three years. We have been placed on a reduced monitoring schedule because the results of the past sampling rounds were in compliance with established limits.

This year Northbrook must again collect lead/copper water samples from 30 suitable residential sites. The IEPA has established that 15 sites must have lead service lines and 15 must have internal plumbing systems with copper pipes with lead solder constructed between 1982 and 1986. The sample procedure itself is simple and usually takes less than 5 minutes. The sample bottles will be dropped off with instructions and picked up the following day by Public Works personnel. They will be analyzed by a State certified laboratory with the results available in 3 to 4 weeks. Letters to past or potential qualifying participants will be going out this month. Residents do not need to be home when we deliver the sample bottles or pick them up. There is no charge for this.

Covid-19 -

The Center for Disease Control (CDC) advises that the virus that causes COVID-19 has not been detected in drinking water. Conventional water treatment methods that use filtration and disinfection, such as those in most municipal drinking water systems, should remove or inactivate the virus that causes COVID-19. The USEPA recommends that Americans continue to use and drink tap water as usual.

Following is a summary of water quality tests taken during (with a few exceptions) 2019 which indicated presence of regulated contaminants. It is important to remember that none of the substances were found to be in excess of USEPA and IEPA regulations

A summary of various terms commonly used for this kind of reporting is given below.

- AL (Action Level): Concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- ALG (Action Level Goal): Concentration of a contaminant below which there is no known or expected risk to health. ALGs allow for a margin of safety.
- D/DBP (Disinfectants & Disinfection By-Products): chlorine and by-products of chlorine and certain organic compounds present in raw water.
- HLD (Highest Level Detected): Highest concentration of a substance discovered during the sampling period.
- MCL (Maximum Contaminant Level): Highest level of a contaminant allowed in drinking water. MCLs are set as close to MCLGs as feasible using the best available treatment technology.
- MCLG (Maximum Contaminant Level Goal): 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.
- mg/l (milligrams per liter): equivalent to parts per million (ppm) or ounces per 7,350 gallons of water.
- µg/l (micrograms per liter): equivalent to parts per billion (ppb) or ounces per 7,350,000 gallons of water.
- MRDL (Maximum Residual Disinfectant Level): Highest level of disinfectant allowed in drinking water.
- MRDLG (Maximum Residual Disinfectant Level Goal): Level in drinking water below which there is no known or expected risk to health. MRDLGs allow for a margin of safety.
- n/a: (Not Applicable): Result or term not defined or available.
- ng/l (Nanograms per liter): equivalent to parts per trillion (ppt) or ounces per 7,350,000,000 gallons of water.
- NTU (Nephelometric Turbidity Units): a measurement of the clarity of water.
- pCi/L (picoCuries per liter): a measure of radioactivity One picoCurie of radioactivity is equivalent to 0.037 nuclear disintegrations per second.
- ppb (parts per billion or micrograms per liter (µg/l)): ounces per 7,350,000 gallons of water.
- ppm (parts per million or milligrams per liter (mg/l)): ounces per 7,350 gallons of water.
- ppt (parts per trillion or nanograms per liter): ounces per 7,350,000,000 gallons of water.
- TT (Treatment Technique): A required process intended to reduce the level of a contaminant in drinking water.

Substance	Type	Units	MCLG	MCL	Range of Levels	HDL	Comments
Arsenic	Inorganic	µg/l	0	10	1.1 – 1.1	1.1	Erosion of natural deposits; Runoff from orchards; glass, & electronics production wastes
Barium	Inorganic	mg/l	2	2	0.02 - 0.02	0.02	Drilling waste & metal refinery discharge, natural element
Chlorine	D/DBP	mg/l	MRGLG/MRDL = 4		1 - 1.2	1.2	Water Additive for disinfection.
Coliform (non-fecal)	Microbial	% present	0	<5% monthly positive	0 - 0	0	Naturally present in environment
Fluoride	Inorganic	mg/l	4	4	0.692 – 0.692	0.692	Fertilizer & aluminum factory discharge; decay preventative additive
Haleoacetic Acids (HAAS)	D/DBP	µg/l	n/a	60	8.9 – 23.3	23.3	Chlorination by-product
Lead	Inorganic	µg/l	0	AL = 15	90 th % =5.73	1 site > AL	Plumbing system & natural erosion
Nitrate (as N)	Inorganic	mg/l	10	10	0.273 - 0.273	0.273	Fertilizer & septic run-off, sewage
Radium Combined	Radioactive	pCi/l	0	5	1 - 1	1	Erosion of natural deposits
Selenium	Inorganic	µg/l	50	50	2 - 2	2	Petroleum and metal refinery, mine discharge, & natural deposit erosion.
Sodium	Inorganic	mg/l	n/a	n/a	9.4 – 9.4	9.4	Natural erosion, water softener
Total Trihalomethanes	D/DBP	µg/l	n/a	80	13.33 - 36	36	Chlorination by-product
Turbidity	Microbial	NTU			100% <0.3 NTU		Soil runoff
Turbidity	Microbial	NTU			Highest single result = 0.09		Soil runoff

Note: Test results completed in 2019, except for Lead Copper (2017), Nitrate (2018) and Radium (2011).

Note: The percentage of total organic carbon (TOC) was measured each month. Northbrook meets all IEPA requirements.