2023 ANNUAL WATER QUALITY REPORT

Reporting Year 2022

Presented By

City of Decatur

PWS ID#: IL 1150150

Introduction

The City of Decatur is proud to present our annual water quality report covering all testing performed between January 1 and December 31, 2022. We are dedicated to producing drinking water that meets or exceeds all state and federal standards, and we continually strive to adopt new methods for delivering the best-quality drinking water to you. As new challenges to drinking water safety emerge, we remain vigilant in meeting our goals of source water protection, water conservation, and community education.

How Is My Water Treated and Purified?

Raw water is pumped from Lake Decatur to the South Water Treatment Plant. Chlorine dioxide is added to destroy viruses, bacteria, and protozoa that may be in the raw water. The water then goes to mixing basins where aluminum sulfate and calcium hydroxide are added for softening. The addition of these substances causes small particles to adhere to one another, making them heavy enough to settle to the bottom of the mixing basins for mechanical removal. Powdered activated carbon is added for taste and odor control. The fine particles that still remain are removed in the filtration process as the water passes through layers of anthracite and sand. Chlorine is then added to maintain the disinfection process throughout the distribution system. Finally, a small amount of fluoride is added to prevent dental decay. Positive water pressure is continuously maintained in the distribution system to prevent the intrusion of any contaminants into our water mains.

Where Does My Water Come From?

The City of Decatur uses Lake Decatur as its source of drinking water. Lake Decatur is 2,880 surface acres and located entirely within the city limits of Decatur. The Sangamon River is the primary source of water for Lake Decatur, which has a drainage area of 926 square miles, 80 percent of which is used for growing corn and soybeans. When Lake Decatur water levels are low, the city uses a former sand-and-gravel pit near the South Water Treatment Plant and wells located in DeWitt County to supplement the water supply.

Lead in Home Plumbing

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 house plumbing. We are responsible for providing high-quality drinking water, but we cannot control the variety of materials used in house 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 two 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 at (800) 426-4791 or at www.epa.gov/safewater/lead.

PFAS Sampling Initiative

In 2021 the city's public water supply was sampled as part of the State of Illinois PFAS investigation. Results from this sampling indicated per- and polyfluoroalkyl substances (PFAS) were detected in our drinking water below the health advisory level established by Illinois EPA. Follow-up quarterly monitoring was conducted in 2021 and 2022. All samples were below the detection limits for PFAS. For more information about PFAS health advisories, please visit www2.illinois.gov/epa/topics/water-quality/pfas/Pages/pfas-healthadvisory.aspx.

Important Health Information

Nitrate in drinking water at levels above 10 parts per million (ppm) is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask advice from your health care provider.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791 or http://water.epa.gov/drink/hotline.

QUESTIONS? If you have any questions or concerns about your drinking water, please contact Keith Alexander, Water Production Manager, at (217) 424-2863 or kalexander@decaturil.gov, or Chaundra Smith, Water Production Operations Supervisor, at (217) 424-2833 or csmith@decaturil.gov.

Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk.

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, in some cases radioactive material, and substances resulting from the presence of animals or from human activity. Substances 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, or wildlife;

Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may result from urban stormwater 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 stormwater runoff, and residential uses;

Organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production and may also come from gas stations, urban stormwater runoff, and septic systems;

Radioactive Contaminants, which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

Source Water Assessment

The Illinois EPA has completed a source water assessment for Decatur, which is available at http://dataservices.epa.illinois.gov/swap/factsheet.aspx. The Illinois EPA considers all surface water sources of public water supply to be susceptible to potential pollution problems. This is the reason for the mandatory treatment of all public surface water supplies in Illinois. Mandatory treatment includes coagulation, sedimentation, filtration, and disinfection. Primary sources of pollution in Illinois lakes can include agricultural runoff, land disposal (septic systems), and shoreline erosion.

Due to the low geologic sensitivity and the monitoring results of the city's DeWitt County wells, the Illinois EPA does not consider these wells to be susceptible to volatile organic contaminants, synthetic organic contaminants, or inorganic contaminants. In accordance with Illinois EPA regulations, the wells each have a minimum protection zone of 200 feet.

Per the Federal Clean Water Act, the U.S. EPA provides grants to the Illinois EPA to finance nonpoint source (NPS) pollution solutions, including public awareness. The city recently received two NPS grants and has applied for a third. It also recently received a $9.9-million U.S. Department of Agriculture Regional Conservation Partnership Program grant. The city continues to work on a multiyear Lake Decatur Watershed Management Plan to significantly reduce the amount of sediment and nutrients entering the lake; this includes subwatershed plans and a water quality monitoring network. Soil and water conservation districts in the watershed also administer water quality improvement programs. More information is available at https://decaturil.gov/departments/water/lake-decatur-watershed-management-plan/.

Community Participation

City of Decatur Council meetings are open to the public. Regular session meetings are held at 5:30 p.m. on the first, third, and sometimes fifth Monday of the month on the third floor of the Decatur Civic Center. For further information, contact the city clerk's office at (217) 424-2708.

Test Results

Our water is monitored for many substances on a very strict sampling schedule to meet specific health standards required by the Illinois EPA. Here, we only show those substances that were detected in our water (a complete list of all our analytical results is available upon request). Remember that detecting a substance does not mean the water is unsafe to drink; our goal is to keep all detects below their respective maximum allowed levels. Compare the maximum contaminant level and amount detected columns in the tables to see how safe your water is.

The percentage of total organic carbon (TOC) removal was measured each month, and the system met all TOC removal requirements set by Illinois EPA.

The state recommends monitoring for certain substances less often than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Barium (ppm)	2022	2	2	0.0068	0.0068–0.0068	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chlorine (ppm)	2022	[4]	[4]	1.3	1.0–1.4	No	Water additive used to control microbes
Chlorite (ppm)	2022	1	0.8	0.54	0.4–0.54	No	By-product of drinking water disinfection
Fluoride (ppm)	2022	4	4	0.736	0.664–0.736	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAAs]–Stage 2 (ppb)	2022	60	NA	16.2	4.5–22.4	No	By-product of drinking water disinfection
Nitrate (ppm)	2022	10	10	5.8	ND–5.8	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Sodium (ppm)	2022	NA[1]	NA	12.0	12.0–12.0	No	Erosion of naturally occurring deposits; Used in water softener regeneration
Total Organic Carbon (removal ratio)	2022	TT[2]	NA	2.20	0.87–2.20	No	Naturally present in the environment
TTHMs [total trihalomethanes]–Stage 2 (ppb)	2022	80[3]	NA	64.2	11.2–89.9	No	By-product of drinking water disinfection
Turbidity[4] (NTU)	2022	TT	NA	0.13	0.02–0.13	No	Soil runoff
Turbidity (lowest monthly percent of samples meeting limit)	2022	TT = 95% of samples meet the limit	NA	100	NA	No	Soil runoff

Tap water samples were collected for lead and copper analyses from sample sites throughout the community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH %ILE)	SITES ABOVE AL/ TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2020	1.3	1.3	0.022	0/33	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2020	15	0	2.2	1/33	No	Lead service lines; Corrosion of household plumbing systems, including fittings and fixtures; Erosion of natural deposits

SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Chloride (ppm)	2022	250	NA	34	34–34	No	Runoff/leaching from natural deposits
Sulfate (ppm)	2022	250	NA	34	34–34	No	Runoff/leaching from natural deposits; Industrial wastes
Total Dissolved Solids [TDS] (ppm)	2022	500	NA	190	190–190	No	Runoff/leaching from natural deposits

UNREGULATED SUBSTANCES [5]

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Bromochloroacetic Acid (ppb)	2020	6.4	2.5–6.4	Disinfection by-product
Bromodichloroacetic Acid (ppb)	2020	1.5	0.63–1.5	Disinfection by-product
Chlorodibromoacetic Acid (ppb)	2020	0.86	ND–0.86	Disinfection by-product
Dibromoacetic Acid (ppb)	2020	1.6	0.93–1.6	Disinfection by-product
Dicamba (ppb)	2021	0.44	0.44–0.44	Runoff from herbicide use
Dichloroacetic Acid (ppb)	2020	16.0	6.3–16.0	Disinfection by-product
HAA5 (ppb)	2020	20.4	8.4–20.4	Disinfection by-product
HAA6Br (ppb)	2020	10.0	4.2–10.0	Disinfection by-product
HAA9 (ppb)	2020	33	12–33	Disinfection by-product
Monochloroacetic Acid (ppb)	2020	2.5	ND–2.5	Disinfection by-product
Perfluorohexanoic Acid (ppt)	01/19/2021	2.6	2.6–2.6	NA
Trichloroacetic Acid (ppb)	2020	4.3	1.1–4.3	Disinfection by-product

[1] Sodium is not currently regulated by the U.S. EPA. However, the state has set an MCL for this contaminant for supplies serving a population of 1,000 or more.

[2] The value reported under Amount Detected for TOC is the lowest ratio of percentage of TOC actually removed to percentage of TOC required to be removed. A value of greater than 1 indicates that the water system is in compliance with TOC removal requirements. A value of less than 1 indicates a violation of the TOC removal requirements.

[3] Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system and may have an increased risk of getting cancer.

[4] Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration system.

[5] No MCL or mandatory health effects language for these contaminants has been established by either state or federal regulations. The purpose of unregulated contaminant monitoring is to assist U.S. EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted.

Definitions

90th %ile: The levels reported for lead and copper represent the 90th percentile of the total number of sites tested. The 90th percentile is equal to or greater than 90% of our lead and copper detections.

AL (Action Level): The concentration of a contaminant that triggers treatment or other required actions by the water supply.

MCL (Maximum Contaminant Level): 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): 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.

MRDL (Maximum Residual Disinfectant Level): 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.

MRDLG (Maximum Residual Disinfectant Level Goal): 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.

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

ppt (parts per trillion): One part substance per trillion parts water (or nanograms per liter).

SMCL (Secondary Maximum Contaminant Level): These standards are developed to protect aesthetic qualities of drinking water and are not health based.

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