

A close-up photograph of water being poured from a glass pitcher into a clear glass. The water is captured in mid-pour, creating a dynamic splash and bubbles. The background is a blurred wooden surface.

ANNUAL WATER QUALITY REPORT

REPORTING YEAR 2018



Presented By
City of Decatur

Our Mission Continues

The City of Decatur is pleased to present our annual water quality report. As always, we are committed to producing the best-quality drinking water possible.

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.

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 and be mechanically removed. 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.

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 our 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.

Under the Clean Water Act, Section 319, the U.S. EPA provides grants for the Illinois EPA to finance projects that demonstrate cost-effective solutions to nonpoint source (NPS) problems and promote public knowledge and awareness of NPS pollution. Section 319 projects funded for the Lake Decatur watershed include the Big/Long Creek TMDL Plan Implementation, Friends Creek Watershed Plan and Piatt County Best Management Practices Implementation. The Macon, Piatt and Champaign County Soil and Water Conservation Districts also administer other water quality improvement projects in the watershed. The City is in the initial stages of creating a Lake Decatur Watershed Management Plan.

Important Health Information

Nitrate in drinking water at levels above 10 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>.





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 home plumbing. We are responsible for providing high-quality drinking water, but 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 at (800) 426-4791 or at www.epa.gov/safewater/lead.

Cryptosporidium

Cryptosporidium is a microbial parasite found in surface water throughout the world. Although filtration removes *cryptosporidium*, the most commonly used filtration methods cannot guarantee 100-percent removal. Our monitoring of source water indicated the presence of these organisms. Lake Decatur was sampled monthly from October 2015 to September 2017. There was one positive sample in 2017, with a result of 0.2 oocyst per liter. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immunocompromised people are at greater risk of developing life-threatening illness and are encouraged to consult their doctor. *Cryptosporidium* must be ingested to cause disease, and it may be spread through means other than drinking water.

We remain vigilant in delivering the best-quality drinking water

Where Does My Water Come From?

The City of Decatur uses Lake Decatur as its source of drinking water. Lake Decatur is 2,850 surface acres in size 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 925 square miles, 83 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.



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.

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.

Test Results

Our water is monitored for many different kinds of substances on a very strict sampling schedule, and the water we deliver must meet specific health standards. 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.

The state recommends monitoring for certain substances less 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.

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

REGULATED SUBSTANCES							
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Barium (ppm)	2018	2	2	0.00538	0.00538–0.00538	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chlorine (ppm)	2018	[4]	[4]	1.7	1.0–1.7	No	Water additive used to control microbes
Chlorite (ppm)	2018	1	0.8	0.53	0.32–0.53	No	By-product of drinking water disinfection
Fluoride (ppm)	2018	4	4	0.797	0.647–0.797	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAA] (ppb)	2018	60	NA	11.8	7.69–15.1	No	By-product of drinking water disinfection
Nitrate (ppm)	2018	10	10	5.89	ND–5.89	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
TTHMs [Total Trihalomethanes] (ppb)	2018	80	NA	55.3	14.53–83.3	No	By-product of drinking water disinfection
Total Organic Carbon¹ (ppm)	2018	TT	NA	3.06	1.51–3.06	No	Naturally present in the environment
Turbidity² (NTU)	2018	TT	NA	0.23	0.02–0.23	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2018	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)	2017	1.3	1.3	0.0232	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2017	15	0	ND	0/30	No	Lead service lines, corrosion of household plumbing systems, including fittings and fixtures; Erosion of natural deposits

STATE REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Sodium ³ (ppm)	2018	NA	NA	13.8	13.8–13.8	No	Erosion of naturally occurring deposits; Used in water softener regeneration

SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Chloride (ppm)	2018	250	NA	44.4	44.4–44.4	No	Runoff/leaching from natural deposits
Sulfate (ppm)	2018	250	NA	30.4	30.4–30.4	No	Runoff/leaching from natural deposits; Industrial wastes
Total Dissolved Solids [TDS] (ppm)	2018	500	NA	250	157–250	No	Runoff/leaching from natural deposits

¹The value reported under Amount Detected for TOC is the lowest ratio of percentage of TOC actually removed to the 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.

²Turbidity 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.

³Sodium 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.

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.

LRAA (Locational Running Annual Average): The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters. Amount Detected values for TTHMs and HAAs are reported as the highest LRAAs.

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).

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.