The background of the cover features a close-up of water splashing from a faucet, with a bowl of fresh fruit (raspberries, blackberries, and red grapes) in the lower-left corner. The overall color palette is dominated by blues and greens, with a dark teal curved shape framing the text on the right side.

ANNUAL WATER QUALITY REPORT

WATER TESTING
PERFORMED IN 2015



Presented By
City of Decatur

Meeting the Challenge

Once again we are proud to present our annual drinking water report, covering all drinking water testing performed between January 1 and December 31, 2015. We are dedicated to produce drinking water that consistently meets all state and federal standards, and continually strive to adopt new methods for delivering high quality drinking water to your homes and businesses. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals of source water protection, water conservation, and community education while continuing to serve the needs of all our water customers.

Please remember that we are always available to assist you, should you ever have any questions or concerns about your water.

Important Health Information

Nitrate in drinking water at levels above 10 ppm is a health risk for infants younger 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>.



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 is 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% of which is used for growing corn and soybeans. When Lake Decatur water levels are low, the city uses wells located in Piatt and DeWitt counties to supplement the water supply.

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.

How Is My Water Treated and Purified?

The treatment process consists of a series of steps. First, raw water is pumped from Lake Decatur to the South Water Treatment Plant. Chlorine dioxide is added to destroy 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 drop to the bottom of large settling 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, in which the water passes through layers of anthracite and sand. Chlorine is then added to maintain the disinfection process throughout the distribution system. Last, 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.

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 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 www.epa.gov/lead.

Testing For *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% removal. The monitoring of raw and finished water indicated the presence of these organisms only in the raw water. 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. We encourage immunocompromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. *Cryptosporidium* must be ingested to cause disease, and it may be spread through means other than drinking water.

Steps taken to reduce this organism from entering Lake Decatur are part of ongoing watershed management programs.

Community Participation

City of Decatur Council meetings are open to the public. For further information, contact the City Clerk's office at (217) 424-2708.

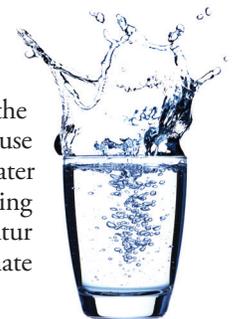
Failure in Flint

National news coverage of Flint, Michigan water quality has recently created a great deal of confusion and concern. The water there has been described as being corrosive.

Corrosive water can be defined as water capable of dissolving metals (iron, lead, copper, etc.) from in-house plumbing and/or water mains at an excessive rate. Usually corrosive water has a pH of less than 7. The lower the pH, the more acidic, or corrosive the water becomes. (By this definition, many natural waterways throughout the country can be described as corrosive.) While all plumbing and water mains can be impacted over time by flowing water, corrosive water impacts water quality much faster.

By itself, corrosive water is not a health concern; a glass of orange juice is considerably more corrosive than our lake water. What is of concern is that high levels of dissolved metals in drinking water, such as lead, are serious health issues.

The City is required to maintain a slight amount of calcium carbonate in our drinking water to bond to the interior of water mains and in-house plumbing, which prevents the water from becoming corrosive. Daily testing is performed to ensure that Decatur will not experience the unfortunate situation that occurred in Flint.



QUESTIONS?

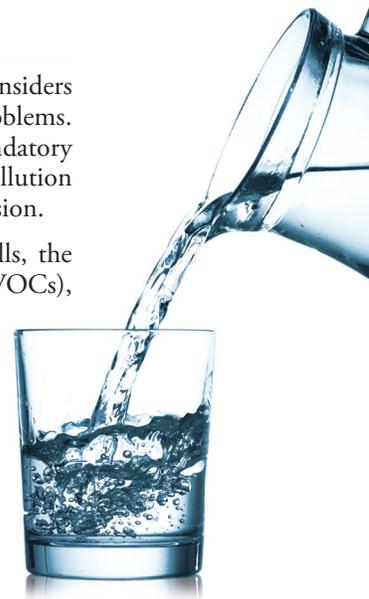
Contact Don Giger, Water Production Operations Supervisor, at (217) 424-2866 or dgiger@decaturil.gov.

Source Water Assessment

The Illinois EPA has completed a source water assessment for Decatur. 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.

Because of 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 (VOCs), synthetic organic contaminants (SOCs), or inorganic contaminants (IOCs). 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 Upper Sangamon River Basin Water Quality Improvement Project and the Nutrient Management Plan Implementation. The Macon County Soil and Water Conservation District and the Agricultural Watershed Institute also administer several water quality improvement projects in the watershed.



Sampling Results

During the past year, we have taken hundreds of water samples to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The table below shows only those contaminants that were detected in the water. The state requires us to monitor 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.

Note that the percentage of Total Organic Carbon (TOC) removal was measured each month and the system met all TOC removal requirements set by IEPA.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Arsenic (ppb)	2015	10	0	1.2	1.2–1.2	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Barium (ppm)	2015	2	2	0.0061	0.0061–0.0061	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chlorine (ppm)	2015	[4]	[4]	1.0	1.0–1.0	No	Water additive used to control microbes
Chlorite (ppm)	2015	1	0.8	0.41	0.16–0.41	No	By-product of drinking water disinfection
Fluoride (ppm)	2015	4	4	1.05	0.981–1.11	No	Erosion of natural deposits; Water additive that promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAA] (ppb)	2015	60	NA	13	1.6–18.3	No	By-product of drinking water disinfection
Nitrate (ppm)	2015	10	10	6.9	0.12–6.9	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
TTHMs [Total Trihalomethanes] (ppb)	2015	80	NA	48	13.7–68.9	No	By-product of drinking water disinfection
Total Organic Carbon (ppm)	2015	TT	NA	2.3	1.1–2.3	No	Naturally present in the environment
Turbidity¹ (NTU)	2015	TT	NA	0.24	0.12–0.24	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2015	TT = 95% of samples < or = 0.3 NTU	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%TILE)	SITES ABOVE AL/ TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2014	1.3	1.3	0.029	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2014	15	0	3.2	0/30	No	Corrosion of household plumbing systems; 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
Sodium² (ppm)	2015	NA	NA	15	15–15	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
Sulfate (ppm)	2015	250	NA	34	34–34	No	Runoff/leaching from natural deposits; Industrial wastes

¹Turbidity 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.

²Sodium 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. The purpose of unregulated contaminant monitoring is to assist USEPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted.

Definitions

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 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

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): SMCLs are established to regulate the aesthetics of drinking water like appearance, taste and odor.

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