

2012 Water Quality Report

Is my water safe?

In 2012, as in years past, your tap water produced by City, Water, Light and Power (CWLP) met all United States Environmental Protection Agency (USEPA) and State of Illinois drinking water health standards. The purification process is monitored 24 hours each day, and CWLP is pleased to report that the utility had **no violations** of a contaminant level or any other water quality standard in 2012. This report summarizes the quality of water that CWLP provided last year. Included are details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. This report and other utility information are also available on the CWLP website at www.cwlp.com.

Do I need to take special precautions?

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/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Water Drinking Hotline (800-426-4791).

Where does my water come from?

Lake Springfield is the surface water source of our drinking water. It contains 17.6 billion gallons when full and covers about 4,200 acres. Its 265-square-mile watershed, including the Sugar and Lick Creek drainage areas, is composed primarily of agricultural land. During times of low precipitation, water is pumped from the South Fork of the Sangamon River at its confluence with Horse Creek.

Source water assessment and its availability

A source water assessment for our supply has been completed by the IEPA. Information provided by this assessment indicates the vulnerability of our water supply to potential sources of contamination. Causes of pollution to the lake include nutrients, siltation, suspended solids, and organic enrichment. Primary sources of pollution include agricultural runoff, land disposal (septic systems), and shoreline erosion. If you would like a copy of the assessment, call the Water Purification Plant at (217) 757-8630.

Why are there contaminants in my 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 (EPA) Safe Drinking Water Hotline (800-426-4791).

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. Possible contaminants consist of:

- Microbial contaminants, such as viruses and bacteria, that 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.

In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Due to a favorable monitoring history, no variances or exemptions have been issued to CWLP Water Division by the USEPA or IEPA.

This Water Quality Report includes tables that will give you a better picture of the drinking water contaminants monitored by CWLP.

How can I get involved?

CWLP utility issues are discussed at City Council meetings at 5:30 p.m. on the first and third Tuesdays of each month and at the Council Committee of the Whole meetings also held at 5:30 p.m., on the Tuesday of each week prior to a City Council meeting. These meetings are open to the public and are held in the Springfield City Council chambers on the third floor of the Municipal Center West, 300 S. 7th Street.

Description of Water Treatment Process

To convert this raw water supply to drinking water, lake water is pumped through CWLP's Water Treatment Plant where chemical reactions are initiated to assist in the removal of algae, suspended solids, hardness, and many chemical constituents. The clarification basins remove the bulk of these materials and the final filter beds remove very small particles. Fluoride is added to prevent tooth decay; chlorine to disinfect the finished water; and ammonia to stabilize the chlorine in the distribution system.

Other Information

If you have any questions about this report or concerning your water system, please contact our Certified Water Operator, Bob West. He can be reached at 528-7624. 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. The Village of Grandview Board of Trustees meets the first and third Tuesday of each month, 5:30 P.M., at the Grandview Water Department Office at 2377 Reservoir.

Results of Cryptosporidium monitoring

Cryptosporidium is a microbial pathogen found in surface water throughout the U.S. Although filtration removes cryptosporidium, the most commonly-used filtration methods cannot guarantee 100 percent removal. Past monitoring has indicated the presence of these organisms in our source water. Cryptosporidium has never been detected in the finished drinking water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of cryptosporidium may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people are at greater risk of developing life-threatening illness. We encourage immuno-compromised 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.

Additional Information for Lead

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. City Water, Light and Power 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>.

Water Quality Data Table

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of contaminants in water provided by public water systems. The table below lists all of the drinking water contaminants that we detected during the calendar year of this report. Although many more contaminants were tested, only those substances listed below were found in your water. All sources of drinking water contain some naturally occurring contaminants. At low levels, these substances are generally not harmful in our drinking water. Removing all contaminants would be extremely expensive, and in most cases, would not provide increased protection of public health. A few naturally occurring minerals may actually improve the taste of drinking water and have nutritional value at low levels. Unless otherwise noted, the data presented in this table is from testing done in the calendar year of the report. The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. As such, some of our data, though representative, may be more than one year old. In this table you will find terms and abbreviations that might not be familiar to you. To help you better understand these terms, we have provided the definitions below the table.

<u>Contaminants</u>	<u>MCLG or MRDLG</u>	<u>MCL, TT, or MRDL</u>	<u>Your Water</u>	<u>Range</u> <u>Low</u> <u>High</u>		<u>Sample Date</u>	<u>Violation</u>	<u>Typical Source</u>
Disinfectants & Disinfectant By-Products								
(There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants)								
Haloacetic Acids (HAA5) (ppb)	NA	60	25	15.5	37.4	2012	No	By-product of drinking water chlorination
Chloramine (as Cl ₂) (mg/L)	4	4	1.9	1.6	2.1	2012	No	Water additive used to control microbes
TTHMs [Total Trihalomethanes] (ppb)	NA	80	45	33.5	55.6	2012	No	By-product of drinking water disinfection
Total Organic Carbon	NA	TT	NA	NA		2012	No	Naturally present in the environment
The percentage of TOC removal was measured each month and CWLP met all TOC removal requirements.								
Inorganic Contaminants								
Barium (ppm)	2	2	0.023	NA		2012	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Fluoride (ppm)	4	4	0.85	0.79	1	2012	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Nitrate [measured as Nitrogen] (ppm)	10	10	0.03	NA		2012	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Sodium (ppm)		MPL	13	NA		2012	No	Erosion of natural deposits; Leaching
There is no state or federal MCL for sodium. Monitoring is required to provide information to consumers and health officials who are concerned about sodium intake due to dietary precautions. If you are on a sodium-restricted diet, consult a physician about this level.								

Contaminants	MCLG	MCL,	Your	Range		Sample	Violation	Typical Source
	or	TT, or		Low	High			
	MRDLG	MRDL	Water			Date		
Microbiological Contaminants								
Fecal coliform/E. coli - in the distribution system (positive samples)	0	0	1	NA		2012	No	Human and animal fecal waste
A violation occurs when a routine sample and a repeat sample, in any given month, are total coliform positive, and one is also fecal coliform or E. coli positive.								
Total Coliform (% positive samples/month)	0	5	0.8	NA		2012	No	Naturally present in the environment
Turbidity (NTU)	NA	0.3	100	NA		2012	No	Soil runoff
100% of the samples were below the TT value of 0.3. A value less than 95% constitutes a TT violation. The highest single measurement was 0.24. Any measurement in excess of 1 is a violation unless otherwise approved by the state.								
Radioactive Contaminants								
Alpha emitters (pCi/L)	0	15	0.365	NA		2011	No	Erosion of natural deposits
Radium (combined 226/228) (pCi/L)	0	5	0.828	NA		2011	No	Erosion of natural deposits
Synthetic organic contaminants including pesticides and herbicides								
Atrazine (ppb)	3	3	0.57	ND	0.57	2012	No	Runoff from herbicide used on row crops

Contaminants	MCLG	AL	Your	Sample	# Samples	Exceeds	Typical Source
Inorganic Contaminants							
Copper - action level at consumer taps (ppm)	1.3	1.3	0.081	2010	0	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead - action level at consumer taps (ppb)	0	15	1.4	2010	0	No	Corrosion of household plumbing systems; Erosion of natural deposits

Additional Monitoring

As part of an on-going evaluation program the EPA has required us to monitor some additional contaminants/chemicals. Information collected through the monitoring of these contaminants/chemicals will help to ensure that future decisions on drinking water standards are based on sound science.

Name	Reported Level	Range		Typical Source
		Low	High	
Metolachlor ethane sulfonic acid (ESA) (ppb)	1.2	NA	1.2	Degradation product of metolachlor
N-nitroso-dimethylamine (NDMA) (ppb)	0.0048	0.0035	0.0048	By-product of drinking water disinfection

Unit Descriptions	
Term	Definition
mg/L	mg/L: Number of milligrams of substance in one liter of water
ppm	ppm: parts per million, or milligrams per liter (mg/L)
ppb	ppb: parts per billion, or micrograms per liter (µg/L)
pCi/L	pCi/L: picocuries per liter (a measure of radioactivity)
NTU	NTU: Nephelometric Turbidity Units. Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.
positive samples	positive samples/yr: The number of positive samples taken that year
% positive samples/month	% positive samples/month: Percent of samples taken monthly that were positive
NA	NA: not applicable
ND	ND: Not detected

Important Drinking Water Definitions	
Term	Definition
MCLG	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.
MCL	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.
TT	TT: Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.
AL	AL: Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
Variations and Exemptions	Variations and Exemptions: State or EPA permission not to meet an MCL or a treatment technique under certain conditions.
Your Water	Level found of sample result data collected during the calendar year. It may represent a single sample if only one sample was collected.
Range of Detections	Range of individual sample results, from lowest to highest, collected during the calendar year.
Date of Sample	If a date is provided, the Illinois EPA requires monitoring for this contaminant less than once per year because concentrations change infrequently. If no date appears, monitoring for this contaminant was conducted during the calendar year of this report.
MRDLG	MRDLG: Maximum residual disinfection 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.
MRDL	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.
MPL	MPL: State Assigned Maximum Permissible Level

2012 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.	4		0	Y	Naturally present in the environment.

Water Quality Test Results

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 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 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.

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.

Definitions: The following tables contain scientific terms and measures, some of which may require explanation.

ppb: micrograms per liter or parts per billion - or one ounce in 7,350,000 gallons of water.

na: not applicable.

Avg: Regulatory compliance with some MCLs are based on running annual average of monthly samples.

ppm: milligrams per liter or parts per million - or one ounce in 7,350 gallons of water.

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Regulated Contaminants

Disinfectants and Disinfection By-Products	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Chloramines	12/31/2012	1.9	1.35 - 2.04	MRDLG = 4	MRDL = 4	ppm	N	Water additive used to control microbes.
Halocetic Acids HAA5		21	14 - 27.8	No goal for the total	60	ppb	N	By-product of drinking water disinfection

Not all sample results may have been used for calculating the Highest Level Detected because some results may be part of an evaluation to determine where compliance sampling should occur in the future

Total Trihalomethanes (TTHM)		48	35.2 - 56.9	No goal for the total	80	ppb	N	By-product of drinking water disinfection
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Not all sample results may have been used for calculating the Highest Level Detected because some results may be part of an evaluation to determine where compliance sampling should occur in the future

Violations Table

Total Coliform			
Violation Type	Violation Begin	Violation End	Violation Explanation
Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.	04/01/2012	04/30/2012	Total coliform bacteria were found in our drinking water during the period indicated in enough samples to violate a standard.