

# **Annual Drinking Water Quality Report**

## **City of Quincy**

**For the period of January 1 to December 31, 2010**

This report is intended to provide you with important information about your drinking water and the efforts made by the City of Quincy to provide safe drinking water. The source of drinking water used by Quincy is surface water, supplied by the Mississippi River. For more information regarding this report, contact the City of Quincy Department of Utilities Director David Kent at 217-228-4580.

We want our valued customers to be informed about their water quality. If you would like to learn more, please feel welcome to attend City Council Meetings on Monday evenings at 7:30 p.m. at Quincy City Hall Council Chambers. The source water assessment for our supply has been completed by the Illinois EPA. If you would like a copy of this information, please contact the Department of Utilities. 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 <http://www.epa.state.il.us/cgi-bin/wp/swap-fact-sheets.pl>.

### **Source 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, and can pick up substances resulting from the presence of animals or from human activity.

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 EPA's Safe Drinking Water Hotline at (800) 426-4791.

### **Contaminants 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 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, which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Some people may be more vulnerable to contaminants in drinking water than the general population. Immune-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, peoples 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/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

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 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>.

Cryptosporidium is a microbial parasite found in surface water throughout the U.S. Although filtration removes cryptosporidium, the most commonly used filtration methods cannot guarantee 100 percent removal. Our monitoring of our source water indicates the presence of these organisms. Current test methods do not enable 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, immuno-compromised people are at greater risk of developing life-threatening illness. Immuno-compromised individuals are encouraged to consult their doctors regarding appropriate precautions to avoid infection. Cryptosporidium must be ingested to cause disease and it may be spread through means other than drinking water.

### **Source Water Assessment**

Illinois EPA considers all surface water sources of community water supply to be susceptible to potential pollution problems, hence, the reason for mandatory treatment for all surface water supplies in Illinois. Mandatory treatment includes coagulation, sedimentation, filtration, and disinfection. Within the Illinois portion of the Mississippi River Watershed, many commodities, including manufactured foods, petrochemicals, and pesticides are transported along the river system. The production, storage, and transportation of these commodities are a major concern, especially when occurring near surface water intakes. In addition, agricultural runoff within the Illinois portion of the Mississippi River Basin contributes to the susceptibility of the Quincy intakes. With high flow rates and long distances of travel on the Mississippi River, critical areas can be extensive. The critical area for the Quincy intake was determined using data from a joint U.S. Environmental Protection Agency/U.S. Geological Survey project. This project used a computer-modeling program (SPARROW) to determine travel times on major rivers in the United States.

Accidental spills of hazardous materials into navigable waterways are a major concern because of their frequency in the United States in recent years. Illinois has access to 1,116 miles of inland waterway that can handle commercial barge traffic. These include the Upper Mississippi River, Illinois River Waterway, and the Ohio River. Along these waterways are numerous facilities that load and unload hazardous materials. Analysis of reported spills indicates that between 1974 and 1989, 794 accidental spills of hazardous materials occurred along Illinois waterways. Approximately 92% of these spills occurred along the Mississippi and/or the Illinois River. Spills occurring in this critical area will travel to the intake in five hours or less, making contingency planning and spill reporting a major concern in this watershed. Further information concerning spill response planning on the Mississippi River may be found in U.S. EPA's website at [www.epa.gov/region5/oil](http://www.epa.gov/region5/oil) and at the U.S. Geological Survey's website at [ftp://ftp.umesc.er.usgs.gov/gis\\_data/oil\\_spill](ftp://ftp.umesc.er.usgs.gov/gis_data/oil_spill).

## 2010 Regulated Contaminants Detected (collected in 2010 unless noted)

### Lead and Copper (sampled 12/31/2008)

**Definitions:**

**Action Level (AL):** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

**Action Level Goal (ALG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. ALG's allow for a margin of safety.

Lead and Copper	Date Sampled	MCLG	Action Level (AL)	90th Percentile	# Sites Over AL	Units	Violation	Likely Source of Contamination
Copper	2008	1.3	1.3	0.056	0	ppm	No	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.
Lead	2008	0	15	0	0	ppm	No	Corrosion of household plumbing systems; Erosion of natural deposits.

### WATER QUALITY TEST RESULTS

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

**Maximum Contaminant Level (MCL):** The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the Maximum Contaminant Level Goal as feasible using the best available treatment technology.

**Maximum Contaminant Level Goal (MCLG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.

**mg/l:** milligrams per liter or parts per million (**ppm**)--or one ounce in 7,350 gallons of water

**ug/l:** micrograms per liter or parts per billion (**ppb**)--or one ounce in 73, 500 gallons of water

**na:** not applicable

**Avg:** Regulatory compliance with some MCL's are based on running annual average of monthly samples.

**Maximum Residual Disinfectant Level (MRDL):** The highest level of disinfectant allowed in drinking water.

**Maximum Residual Disinfectant Level Goal (MRDLG):** The level of disinfectant in drinking water below which there is no known or expected risk to health. MRDLG's allow for a margin of safety.

### REGULATED CONTAMINANTS

Disinfectants and Disinfectant By-Products	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Chloramines	2010	3.4	2.3245-3.5088	MRDLG=4	MRDL=4	ppm	No	Water additive used to control microbes
Haloacetic Acids (HAA5)*	2010	23	13.8-30.0	No goal for the total	60	ppb	No	By-product of drinking water chlorination
TTHM's (Total Trihalomethanes)*	2010	20	10-35	No goal for the total	80	ppb	No	By-product of drinking water chlorination

\* 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.

### CRYPTOSPORIDIUM

Cryptosporidium	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
	2010	2	0.0-2.0	NA	NA	oocysts	No	Commonly present in surface waters.

## REGULATED CONTAMINANTS cont'd

Inorganic Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Barium	1/13/2010	0.015	0.015-0.015	2	2	ppm	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Fluoride	1/13/2010	1.17	1.17-1.17	4	4	ppm	No	Erosion of natural deposits; Water additive which promotes strong teeth; Fertilizer discharge
Nitrate (as N)	4/13/2010	4.99	4.99-4.99	10	10	ppm	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Sodium*	1/13/2010	15.1	15.1-15.1	NA	NA	ppm	No	Erosion from natural occurring deposits; Used in water softener regeneration.

\* Sodium Note: There is not a state or federal MCL for sodium. Monitoring is required to provide information to consumers and health officials that are concerned about sodium intake due to dietary precautions. If you are on a sodium-restricted diet, you should consult a physician about this level of sodium in the water.

Radioactive Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Combined Radium 226/228	2/23/2005	0.5581	.5581-.5581	0	5	pCi/L	No	Erosion of natural deposits
Gross Alpha excluding Radon & Uranium	2/23/2005	0.185	0.185-0.185	0	15	pCi/L	No	Erosion of natural deposits

## TURBIDITY

	Limit (Treatment Technique)	Level Detected	Violation	Likely Source of Contamination
Lowest monthly % meeting limit	0.3 NTU	98.33%	No	Soil Runoff
Highest single measurement	1 NTU	0.41	No	Soil Runoff

Turbidity is a measurement of the cloudiness of the water caused by suspended particles. We monitor it because it is a good indicator of water quality and the effectiveness of our filtration system and disinfectants.

## Total Organic Carbon

The percentage of Total Organic Carbon (TOC) removal was measured each month and the system met all TOC removal requirements set by IEPA, unless a TOC violation is noted in the violations section.

**Characteristics of Water Delivered to the Distribution System for 2010\***

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	<u>Average</u>	<u>Minimum</u>	<u>Maximum</u>
<b>Odor Threshold No.</b>	<b>1.5</b>	<b>1.4</b>	<b>1.8</b>
<b>pH</b>	<b>9.06</b>	<b>8.60</b>	<b>9.5</b>
<b>Turbidity</b>	<b>0.16</b>	<b>0.11</b>	<b>0.24</b>
<b>Color</b>	<b>2.5</b>	<b>2.1</b>	<b>2.9</b>

(the following determinations are expressed in mg/l)

<b>Total Alkalinity (as CaCO<sub>3</sub>)</b>	<b>78</b>	<b>65</b>	<b>101</b>
<b>Phenolphthalein Alkalinity (as CaCO<sub>3</sub>)</b>	<b>13</b>	<b>4</b>	<b>26</b>
<b>Non-carbonated Hardness</b>	<b>76</b>	<b>54</b>	<b>104</b>
<b>Total Hardness (as CaCO<sub>3</sub>)</b>	<b>154</b>	<b>127</b>	<b>187</b>
<b>Calcium Hardness</b>	<b>95</b>	<b>75</b>	<b>120</b>
<b>Magnesium Hardness</b>	<b>59</b>	<b>36</b>	<b>90</b>
<b>Total Residual Chlorine</b>	<b>3.70</b>	<b>3.13</b>	<b>4.03</b>
<b>Fluoride</b>	<b>1.04</b>	<b>0.94</b>	<b>1.14</b>
<b>Sulfate</b>	<b>37</b>	<b>26</b>	<b>46</b>
<b>Chloride</b>	<b>31</b>	<b>25</b>	<b>40</b>

**\*Based on Daily Averages of Finished Water Parameters.**