

Water delivered by the Racine Water Utility (RWU) must be safe from microbes and chemical toxicity, and also safe from exposure to trace levels of chemicals over a lifetime of 80 years. Source water from the lake and from homes throughout the City and surrounding communities is monitored for over 90 regulated contaminants. Racine test results during 2012 are listed in the table on the other side of this brochure. Only the substances that were detected are listed in the table.

To ensure that tap water is safe, the Environmental Protection Agency (EPA) prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration guidelines establish limits for contaminants in bottled water that 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 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.

**Lead in Drinking Water**

Water that is too corrosive can dissolve lead and other contaminants from your home's plumbing and fixtures. Testing shows this is not happening in the vast majority of Racine homes. For the years of 2008-2011, the Racine Water Utility (RWU) remained in compliance with the lead action level of 15 parts per billion. In fact, the levels dropped significantly enough that the Wisconsin Department of Natural Resources (WDNR) deemed the Utility now reached optimal corrosion control. Because the lead levels decreased so much, the WDNR granted the Utility monitoring waivers for 2012 and 2013. The RWU is next scheduled to sample for lead and copper in 2014. Since 2008, the RWU has maintained lowered lead concentrations, with the 2012 lead action level of 7.5 parts per billion. Lead in drinking water is rarely the sole cause of lead poisoning, but it can add to a person's total lead exposure. All potential sources of lead in the household should be identified and removed, replaced, or reduced. It is possible that the lead levels in your home may be higher than at other homes in the area due to materials used in the construction of your home's plumbing system. If you are concerned about lead levels in your water (young children are more vulnerable to lead than adults), you may wish to have your water tested. Flushing your tap water for 30 seconds to 2 minutes prior to using the water is an effective method to reduce exposure to lead. Additional information is available from the Safe Drinking Water Hotline at (800) 426-4791.

## EPA and Wisconsin Requirements For Racine's Drinking Water

**Sources and Contaminants**

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. It can also pick up substances resulting from the presence of animals or humans. Substances that can be present in source water include:

**Microbial contaminants**, such as viruses and bacteria, which may come from wastewater treatment plants, septic systems, agricultural livestock operations, and wildlife

**Inorganic contaminants**, such as salts and metals, which can occur naturally or result from storm water runoff, industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff and septic systems

**Radioactive contaminants**, which occur naturally or result from oil and gas production and mining activities

Some people may be more vulnerable to contaminants found 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 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 guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants can be obtained by calling the EPA's Safe Drinking Water Hotline at (800) 426-4791.

## News from 2012

**Leak Detection Program**

The Racine Water Utility remains committed to find underground leaks in its water distribution system. With over 34,000 customers, 440 miles of mains, 6,000 hydrants, and 20,000 valves, leaks do occur. These leaks can be termed "lost water". The Utility spends money treating and pumping the water, but receives no revenue back because the water never reaches the customers' meters.

In 2012, the Racine Water Utility completed the second year of its formal leak detection program. In two years, the Utility found and repaired leaks on water mains, fire hydrant laterals and service lines to customer homes totaling over 229 million gallons of potentially lost water. This equates to 630,000 gallons of saved water per day, or approximately \$650,000 annually in reduced operating costs based on a current customer charge of \$2.83 per 1,000 gallons. The Public Service Commission, one of the State's regulatory agencies, urges all water utilities to reduce their unaccounted for water to a certain percentage of water production. The water saved in Racine calculates to approximately 3.4% of the two-year average daily production. The leak detection program is one of a number of programs the RWU implemented over the past four years to reduce annual operating costs by over \$1 million in an effort to keep water rates as low as possible.



WORKER USING ACOUSTIC LEAK DETECTOR



DISCOVERED WATER MAIN LEAK

## Internet Information Sources

In addition to the numbers listed in other sections of this report, there are many governmental and water industry websites available on the internet providing information on water quality, regulations, water treatment and public health. Provided below are a number of these sites and web site addresses:

Organization	Web Address
United States Environmental Protection Agency	www.epa.gov
Wisconsin Department of Natural Resources	www.dnr.state.wi.us
Wisconsin Public Service Commission	www.psc.wi.gov
American Water Works Association	www.awwa.org
Wisconsin Water Association	www.wiawwa.org
Rural Water Association	www.nrwa.org
National Sanitation Foundation	www.nsf.org

## Racine Water Utility Contact Numbers:

Water Quality Concerns or Complaints:  
**636-9441 or 636-9534**

Billing Questions: **636-9181**

Reporting Possible Water Main or Service Breaks: **636-9185**

Scheduling Service Appointments:  
**636-9185 or 636-9186**

Visit us online at  
[www.cityofracine.org/Water.aspx](http://www.cityofracine.org/Water.aspx)



Racine Water Utility  
100 Hubbard Street • Racine, WI 53402

## Welcome to Racine's Drinking Water Quality Report

This brochure is a snapshot of your home's water quality provided last year. Included are details about where your water comes from, what it contains, and how it compares to the Environmental Protection Agency (EPA) and State of Wisconsin standards. The Racine Water Utility's water quality meets or exceeds all Federal and State drinking water quality standards. We are committed to providing you with information, because informed customers are our best allies.

### Water Source Supply

Water delivered to Racine customers is treated and purified water drawn from Lake Michigan. The lake provides abundant, high quality water for many major cities along its shores.

In 2004, the Wisconsin Department of Natural Resources completed a source water assessment for the Racine Water Utility. The purpose of this assessment was to determine the relative susceptibility of Lake Michigan to contamination in the Racine area. Although the water treatment plant protects its customers from potentially adverse health effects due to contamination, the source water assessment provides a guide to implement preventative practices and limit contamination.

For more information go to: [www.epa.gov/safewater/protect/sources](http://www.epa.gov/safewater/protect/sources) or call the numbers listed in this report.

### 2011 Award Winner

In 2011, the Racine Water Utility won the "Best Tasting Water in America" award from the United States Conference of Mayors. The Racine Water Utility remains committed to improve water treatment and its knowledge base. In 2012, the RWU participated in two national Water Research Foundation projects; one looking at improved methods for monitoring lead and copper and the other for monitoring hexavalent chromium in Lake Michigan, throughout the Utility treatment process and in finished water. The goal is to help establish occurrence levels and treatment techniques for removal.



## Racine Water Utility 2012 Drinking Water Quality Report



# City of Racine Water Quality Table 2012

<b>Microbiological Results (Sampled in 2012)</b>					
Contaminant	MCLG	MCL	Highest Monthly	Violation	Major Source
Total Coliform Bacteria	0	< 5%/month	0.00%	No	Human and animal fecal waste
Viruses, Giardia	0	TT		No	Human and animal fecal waste
Legionella	0	TT		No	Found naturally in water, multiplies in heating systems
<b>Regulated Inorganic Results</b>					
Contaminant	MCLG	MCL	Results	Violation	Major Source
<b>Sampled in May 2011</b>					
Asbestos (million fibers per liter)		7	< 0.20	No	Erosion of natural deposits
<b>Sampled in May 2011</b>					
Antimony (ppb)	6	6	0.19	No	Discharge from petroleum refineries, fire retardants, ceramics, electronics, solder
Arsenic (ppb)	10	10	0.92	No	Erosion of natural deposits
Barium (ppm)	2000	2000	20	No	Erosion of natural deposits
Beryllium (ppb)		4	< 0.13	No	By-product of industrial processes
Cadmium (ppb)		5	< 0.10	No	By-product of industrial processes, erosion of natural deposits
Chromium (ppb)		100	< 0.18	No	Erosion of natural deposits
Cyanide (ppb)		200	31	No	By-product of industrial, mining, and metal finishing processes
Mercury (ppb)		2	< 0.067	No	Erosion of natural deposits
Nickel (ppb)		100	1.1	No	Erosion of natural deposits
Nitrite (ppm)	1	1	< 0.05	No	Runoff from fertilizer use, leaching from septic tanks, sewage
Selenium (ppb)		50	< 2.0	No	Erosion of natural deposits
Thallium (ppb)		2	< 0.10	No	Erosion of natural deposits
<b>Sampled in 2012</b>					
Fluoride (ppm)		4	Average: 0.78 Range: 0.65 - 0.90	No	Water additive which promotes strong teeth, erosion of natural deposits, discharge from fertilizer and aluminum factories
Nitrate (ppm)	10	10	0.25	No	Runoff from fertilizer use, leaching from septic tanks, sewage, erosion of natural deposits
<b>Organic Results (Sampled in 2012)</b>					
Contaminant	MCLG	MCL	Results	Violation	Major Source
TTHM (ppb) (Total trihalomethanes)	0	80	31.0 Range: 12.0-47.0	No	By-product of drinking water chlorination
HAA (ppb) (Haloacetic acids)	0	60	16.3 Range: 8.8-28.0	No	By-product of drinking water chlorination
<b>(Sampled in May and August 2011)</b>					
Volatile Organic Compounds (ppb)	37 compounds were tested with no detection of any of these chemicals			No	By-product of industrial processes, petroleum production, gas stations, urban storm run-off and residential uses
Synthetic Organic Compounds (ppb)	41 compounds were tested with no detection of any of these chemicals			No	By-product of industrial processes, petroleum production, gas stations, urban storm run-off and residential uses
<b>Lead and Copper Results (Sampled in 2011)</b>					
Results of Lead and Copper Sampling at Residential Water Taps					
Contaminant	No. of sites Exceeding A.L.	MCLG/ Action Level	Results	90% Level Violation	Major Source
Copper (ppm)	0 out of 52	1.3 / A.L. = 1.3	0.29	No	Corrosion of household plumbing systems, erosion of natural deposits
Lead (ppb)	2 out of 52	0 / A.L. = 15	7.5	No	Corrosion of household plumbing systems, erosion of natural deposits
<b>Particulate Results (Sampled in 2012)</b>					
Contaminant	MCLG	MCL	Results	Violation	Major Source
Turbidity (ntu)	na	TT Never > 1 95% of time < 0.5	Highest = 0.066 Average Daily Highest = 0.025	No	Soil runoff, suspended matter in source water
<b>Radiological Results (Sampled in 2009)</b>					
Contaminant	MCLG	MCL	Results	Violation	Major Source
Beta/photo Emitters (pCi/l)	0	50	1.52	No	Decay of natural and man-made deposits
Alpha Emitters (pCi/l)	0	15	-0.22	No	Erosion of natural deposits
Combined Radium (pCi/l)	0	5	0.22	No	Erosion of natural deposits
<b>Unregulated Contaminant Results (Sampled in 2012)</b>					
Contaminant	MCLG	MCL	Results	Violation	Major Source
Hexavalent Chromium (ppb)	na	na	0.22	No	Erosion of natural deposits
Sodium (ppm)	na	na	7.8	No	Erosion of natural deposits
Sulfate (ppm) (Sampled in 2008)	na	250	24	No	Erosion of natural deposits
Ortho-phosphate (ppm)	na	na	0.67	No	Erosion of natural deposits, addition of chemical in water treatment
Iron (ppm)	na	0.30	0.02	No	Erosion of natural deposits, addition of chemical in water treatment
Aluminum (ppm) (Sampled in 2011)	na	0.05-0.20	<0.019	No	Erosion of natural deposits, addition of chemical in water treatment
Total Organic Carbon (ppm)	na	na	1.5	No	Decay of natural and man-made deposits

For a more comprehensive water quality parameter list, please contact the Racine Water Utility or visit us online at [www.cityofracine.org/Water.aspx](http://www.cityofracine.org/Water.aspx)

## How to Read the Water Quality Table

Use the definitions here to understand what the scientific data means for your drinking water:

The **Compliance Level** may be a substance's highest level detected in the water, or an average concentration of all samples tested, depending on the regulation for the substance. If multiple samples were tested in 2012, the lowest and highest detected values are listed under **Range of Detections**.

Regulated substances have **Maximum Contaminant Levels (MCLs)** set by the EPA. This is the highest level of the substance legally allowed in drinking water. Some contaminants also have **Maximum Contaminant Level Goals (MCLGs)**. This is the level of a substance where there is no known or expected health risk. MCLGs allow for a margin of safety. MCLs are set as close to MCLGs as practical using the best available water treatment processes.

Monitoring for unregulated contaminants is also conducted. Although these are substances that do not have MCLs, the EPA evaluates them when assessing future drinking water regulations. The MCL for lead and copper is known as the **Action Level (AL)**. This is the concentration of a contaminant which, when exceeded, triggers treatment or other requirements which a water system must follow. For compliance, 90% of all samples tested must be below the Action Level.

**Turbidity** is a measure of water clarity used to evaluate the effectiveness of the filtration system. One criterion for enforcement of the turbidity regulation is a **Treatment Technique (TT)**. This is a water treatment process that is required by the EPA to reduce the level of turbidity in the water.

The **Units of Measurement** reported for each substance depend on the nature of the analytical measurement and the amount of the substance detected. Listed below are the abbreviations for these units:

**ppm:** parts per million or milligrams per liter  
**ppb:** parts per billion or micrograms per liter

**pCi/l:** pico curies per liter, a measure of radioactivity  
**ntu:** nephelometric turbidity units

## Racine Water Utility Water Quality Monitoring Program

The Racine Water Utility (RWU) conducts extensive testing of the Lake Michigan source water, treatment plant process waters, finished water, and distribution system taps on a daily basis. In 2012, RWU staff performed over 37,600 manual water quality tests, with over 10,200 of these being bacteriological analyses. Additionally, the Utility uses dozens of on-line water quality instruments which annually provide nearly 400,000 analytical results. Water Utility personnel use this data to monitor treatment effectiveness, safety of the water for consumption, and for reporting to the Wisconsin Department of Natural Resources (WDNR) and the U.S. Environmental Protection Agency (USEPA). The USEPA and WDNR require the Utility to monitor for over 120 different constituents and possible contaminants in our customers' drinking water.

Regarding their drinking water quality, our customers should know the following: 1) Lake Michigan is a high-quality source water, 2) the RWU staff is well trained and extremely competent (44 WDNR Certified Water Operators), and 3) the Utility employs state-of-the-art treatment (membrane filtration). These three facts allow the Utility to meet or exceed all water quality standards, now and into the future.