RWU Water Conservation Program

Racine Water Utility treats Lake Michigan water to provide abundant, clean, and safe water to our customers. Lake Michigan is an excellent source of water, and we are extremely fortunate to be able to use it for the many ways we use water. Did you know that the average person in the U.S. uses 50 gallons of potable water every day? Think of all the ways you use water: bathing, cooking, cleaning, washing, and watering lawns/plants. There are many easy and low-cost ways to conserve water. Small changes can add up to make a big difference. Here are some suggestions on ways you can conserve:

- Take short showers.
- Shut off water while brushing your teeth, washing your hair and shaving.
- Use water-efficient toilets, showerheads, and faucets.
- Fix leaky toilets and faucets.
- Run your clothes washer and dishwasher only when they are full.
- Water plants only when necessary.
- Adjust sprinklers so only your lawn is watered.
- Apply water only during the cooler parts of the day to reduce evaporation.
- Pass along water conservation practices to ensure a future generation that uses water wisely.
- Make it a family effort to reduce your next water bill!

RWU Leak Detection Program

The Racine Water Utility initiated its own in-house Leak Detection Program in the spring of 2011, surveying areas of its distribution system and has been performing leak detection and repairs since. As time permits throughout the year, the Utility Construction Department intermittently conducts leak detection, surveying roughly 15% of the distribution system annually. At this rate, the entire retail distribution system could be checked for leaks every 7 years.

Allowing leaks to continue worsens conditions and increases costs for labor, materials, and property restoration work. Finding these leaks also helps RWU save with water production, reducing the costs for electricity and chemicals the Utility would need to produce that leaking water. This proactive approach towards searching for and repairing leaks ultimately reduces costs to repair mains, hydrants, valves, and services. Leak detection not only helps the Utility keep the cost of treatment and distribution of the water down, it helps conserve Lake Michigan for all users of this valuable resource.

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

For an electronic version of this report go to:
http://www.cityofracine.org/water/2017CCR

RACINE ON THE LAKE
City of Racine, Wisconsin

Racine Water Utility
100 Hubbard Street • Racine, WI 53402

EPA and Wisconsin Requirements for Racine's Drinking Water

Water delivered by the 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 (Lake Michigan), treated finished water, distribution system water, and residential water throughout the city and surrounding communities are monitored for over 90 regulated contaminants. The Water Quality Table, found on the reverse side of this brochure, lists many substances tested by the RWU during 2017. Included in the table are the microbiological results for Cryptosporidium and Giardia for January - March 2017, ending a 2-year long monitoring program. To ensure that tap water is safe, the 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 fixtures. For the third consecutive year, the RWU lead results were significantly below the EPA established 15 part per billion (ppb) action level. For 2017, the 90th percentile lead result was 4.2 ppb, with none of the 53 lead samples exceeding the 15 ppb action level. In 25 years of sampling, only one sample ever exceeded the copper action level. To see more details regarding lead and copper results, please refer to the 2017 Water Quality Table on the reverse side of this pamphlet. 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.

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 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 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. 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 for 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.

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 (RWU) 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 (WDNR) completed a source water assessment for the RWU. 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** or call the numbers listed in this report.

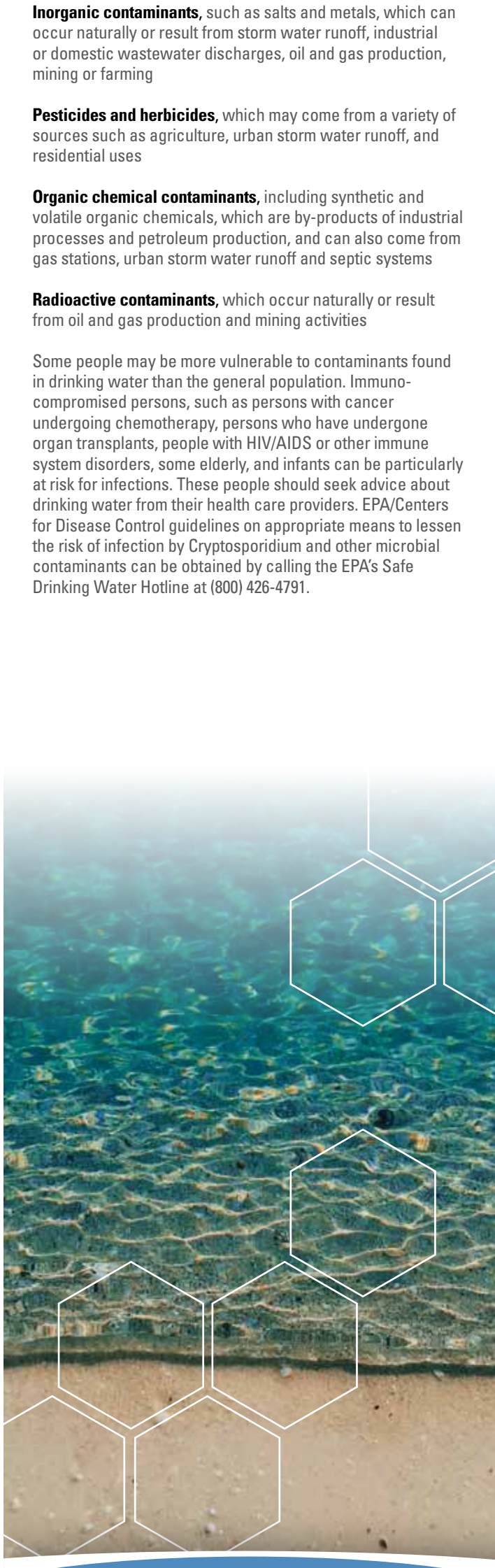
Public Invited

On the last Tuesday of each month, the Racine Water Utility holds its Waterworks Commission Meeting.
The public is welcome to attend.

Meetings begin at 4:00 PM at the location of:

The City Hall Annex
800 Center Street Room 227
Racine, Wisconsin 53403

United States Conference of Mayors
"2011 Best Tasting Water in America" Award Winner



Racine Water Utility
2017 Drinking Water Quality Report

RACINE ON THE LAKE
City of Racine, Wisconsin

Racine Waterworks 2017 Water Quality Table

MICROBIOLOGICAL RESULTS (SAMPLED IN 2017)

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			Human and animal fecal waste
Legionella	0	TT			Found naturally in water, multiplies in heating systems
Cryptosporidium (Lake Water)			0 oocysts/liter		Human and animal fecal waste
Giardia (Lake Water)			0 cysts/liter		Human and animal fecal waste

PRIMARY REGULATED INORGANIC RESULTS

Contaminant	MCLG	MCL	Results (Range)	Violation	Major Source
Sampled in May 2011					
Asbestos *(million fibers per liter)*		7	< 0.20	No	Erosion of natural deposits
Sampled in March 2017					
Antimony (ppb)	6	6	0.18	No	Discharge from petroleum refineries, fire retardants, ceramics, electronics, solder
Arsenic (ppb)	10	10	0.66	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	0.32	No	Erosion of natural deposits
Cyanide (ppb)		200	< 0.005	No	By-product of industrial, mining, and metal finishing processes
Mercury (ppb)		2	< 0.025	No	Erosion of natural deposits
Nickel (ppb)		100	0.64	No	Erosion of natural deposits
Nitrite (ppm)	1	1	< 0.050	No	Runoff from fertilizer use, leaching from septic tanks, sewage
Selenium (ppb)		50	< 2.0	No	Erosion of natural deposits
Silver (ppb) *(sampled in 2013)*		50	< 0.26	No	Erosion of natural deposits
Thallium (ppb)		2	< 0.10	No	Erosion of natural deposits
Fluoride (ppm)		4	0.71 (*0.57 - 0.81*)	No	Water additive which promotes strong teeth, erosion of natural deposits, discharge from fertilizer and aluminum factories
Nitrate (ppm)	10	10	0.34	No	Runoff from fertilizer use, leaching from septic tanks, sewage, erosion of natural deposits
pH		6.5 - 8.5	7.74 (*7.33 - 8.07*)	No	Erosion of natural deposits
Chlorine Residual (ppm)	4.0	4.0	1.25 (*1.09 - 1.50*)	No	Addition of chemical in water treatment

DISINFECTION BY-PRODUCTS - DISTRIBUTION (SAMPLED IN 2017)

DBP -Distribution	MCLG	MCL	Results	Violation	Major Source
TTHM (ppb) *(Total trihalomethanes)*	0	80	35.4 *Range: 18-60*	No	By-product of drinking water chlorination
HAA (ppb) *(Haloacetic acids)*	0	60	20.0 *Range: 9.1-31*	No	By-product of drinking water chlorination

ORGANIC COMPOUND RESULT (SAMPLED IN 2017)

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, detection of any of these chemicals 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, detection of any of these chemicals urban storm run-off and residential uses
Atrazine (ppb)	3	3	0.027, 0.034	No	Storm run-off from agriculture pesticide application

LEAD AND COPPER RESULTS (SAMPLED IN 2017) Results of Lead and Copper Sampling at Residential Water Taps

Contaminant	No. of sites Exceeding A.L.	MCLG	Action Level	90% Level/ Violation	Major Source
Copper (ppm)	0 out of 53	1.3	A.L.=1.3	0.32 / No	Corrosion of household plumbing systems, erosion of natural deposits
Lead (ppb)	0 out of 53	0	A.L.=15	4.2 / No	Corrosion of household plumbing systems, erosion of natural deposits

PARTICULATE RESULTS (SAMPLED IN 2017)

Contaminant	MCLG	MCL	Results	Violation	Major Source
Turbidity (ntu)	na	TT Never > 1 95% of time < 0.3	Highest = 0.056 Minimum = 0.010 Average Daily 0.021	No	Soil runoff, suspended matter in source water

RADIOLOGICAL RESULTS (SAMPLED IN 2014)

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	0.441	No	Erosion of natural deposits
Combined Radium (pCi/l)	0	5	0.492	No	Erosion of natural deposits

SECONDARY OR UNREGULATED CONTAMINANT RESULTS (SAMPLED IN 2017)

Contaminant	MCLG	MCL	Results (Range)	Violation	Major Source
Alkalinity (ppm)	na	na	108 (102 - 119)	No	Erosion of natural deposits
Sodium (ppm)	na	na	11	No	Erosion of natural deposits
Ortho-phosphate (ppm)	na	na	0.66 (0.47 - 0.85)	No	Addition of chemical in water treatment, erosion of natural deposits
Total Organic Carbon (ppm) *(LakeWater)*	na	na	1.7 (1.1 - 2.4)	No	Erosion of natural deposits, decay of vegetation, by-product of industrial processes
Water Temperature °F	Annual Average: 47.8		Annual Range: 32.6 - 71.2		

WATER QUALITY CORROSION PROGRAM MONITORING RESULTS (SAMPLED IN 2017)

Contaminant	MCLG	MCL	Results (Range)	Violation	Major Source
Calcium (ppm)	na	na	34 (33-36)	No	Erosion of natural deposits,
Hardness (ppm)	na	na	131 (130-140)	No	Erosion of natural deposits,
Chloride (ppm)		250	16 (15-16)	No	Erosion of natural deposits,
Manganese (ppm)		0.05	0.005 (<0.001-0.0093)	No	Erosion of natural deposits, addition of chemical in water treatment
Iron (ppm)	na	0.30	0.019 (<0.018-0.047)	No	Erosion of natural deposits,
Aluminum (ppm)		0.05 - 0.20	0.012 (0.006-0.071)	No	Erosion of natural deposits, addition of chemical in water treatment
Sulfate (ppm)	na	250	21 (20-25)	No	Erosion of natural deposits
Conductivity (umhos)	na	na	304 (295-318)	No	Erosion of natural 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**

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 2017, 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 to the right are the abbreviations for these units.

Racine Water Utility Water Quality Monitoring Program

- To meet USEPA and WDNR regulations, the RWU monitors over 120 different constituents and possible contaminants in our customers' drinking water.
- The RWU conducts extensive testing of Lake, process, finished, and distribution waters.
- RWU staff performed over 40,600 manual water quality tests in 2017.
- Chemists conducted over 10,300 bacteriological analyses in 2017.
- On-line instrumentation provided over 400,000 real time analytical results for monitoring treatment effectiveness, safety for consumption, and for reporting to regulatory agencies.
- The Utility employs 45 WDNR Certified Water Operators.
- The RWU uses membrane ultrafiltration, a state of the art technology which removes particles down to the size of bacteria and viruses.

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: nepholometric turbidity units