EPA and Wisconsin Requirements for Racine's Drinking Water

Water delivered by RWU must be safe from microbes and chemical toxicity, and also 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. In 2023, the Racine Water Utility conducted over 49,000 in-house water quality analyses, along with hundreds of tests by contracted laboratories. To ensure that tap water is safe, the EPA prescribes regulations that limit the trace amount of certain contaminants in the water provided by public water systems. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at (800) 426-4791.

PFAS in Drinking Water

Per- and Polyfluoroalkyl Substances (PFAS) are widely used, long lasting chemicals, components of which break down very slowly in the natural environment. Scientific studies have shown that exposure to some PFAS may be linked to harmful health effects in humans. In 2022, the State of Wisconsin revised safe drinking water code to include new standards for two PFAS compounds PFOA and PFOS, with a Maximum Contaminant Level (MCL) of 70 parts per trillion (ppt) individually or combined. Results for PFAS are located in the Water Quality Table on the reverse side. The U.S. EPA has proposed National Primary Drinking Water Regulations (NPDWR) for PFAS in 2023 and is in the process of finalizing that rule. RWU will continue to monitor emerging research on PFAS, along with any federal guidance and regulations of the contaminants.

Lead in Drinking Water

Water that is too corrosive can dissolve lead and other contaminants from your home's plumbing fixtures. RWU is currently transitioning our corrosion control inhibitor treatment technique, directed by the WDNR, with the goal to reduce our consumer's exposure to lead. Lead in drinking water is rarely the sole cause of lead poisoning, but it can add to the 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.

Private Lead Service Line Replacement Program: The Utility has been assisting homeowners with lead removal since the fall of 2016, when it first began its Private Lead Service Line (LSL) Replacement Program. The program has been funded by the Department of Natural Resources on an annual basis, and is used to replace lead services in targeted areas or in emergency situations paid through state grant funds. Homeowners had the option to participate to replace their private LSL in tandem with a RWU water main replacement project. However, both funding for this program and homeowner participation is changing in 2024, due to the revised LCR. In November 2023, the City approved a code revision to require coordination of homeowner replacement of lead services, typically at the same time that the RWU is replacing an area water main. As the optional LSL removal is now required, the City wanted to maintain no cost for homeowner LSL replacement when done as part of the RWU replacement program. RWU will now need to acquire Safe Drinking Water Loan funds to pay for both public and private LSL replacement with support from City financing. Funding is limited, so homeowners experiencing a leaking LSL may still need to pay for the cost of that replacement. For further information on your water service material type, size, and age, please access the Utility's public service inventory mapping system at: bit.ly/racinewater

Sources and Contaminants

Sources of drinking water include: rivers, lakes, streams, ponds, reservoirs, springs, aquifers, 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.

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 safe drinking water hotline (800-426-4791).

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 healthcare providers. EPA/Centers for Disease Control (CDC) 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.

Unregulated Contaminant Monitoring Rule

The U.S. EPA uses the Unregulated Contaminant Monitoring Rule (UCMR) to collect data for contaminants which currently do not have any health-based standards set under the Safe Drinking Water Act (SDWA). This testing program assists the EPA in determining occurrence of unregulated contaminants and whether future regulation is warranted. The UCMR program began in 2001, with RWU participating in every round due to being a large water system serving >100,000 people. Each round of UCMR monitors as many as 30 contaminants every 5 years. For more information visit the EPA website: https://www.epa.gov/dwucmr

UCMR5 Results: Sampled in 2023

Potential Contaminant Sampled For:	Results (ppt)	Source:
29 PFAS Compounds	Below minimum reporting levels (0.002-0.02)	PFAS are a group of synthetic chemicals used in a wide range of consumer products and industrial applications including: non-stick cookware, water-repellent clothing, stain-resistant fabrics and carpets, cosmetics, firefighting foams, electroplating, and products that resist grease, water, and oil. PFAS are found in the blood of people and animals and in water, air, fish, and soil at locations across the United States and the world.
Lithium	Below minimum reporting level (9.0)	Naturally occurring metal that may concentrate in brine waters; lithium salts are used as pharmaceuticals, used in electrochemical cells, batteries, and in organic syntheses.
Each quarter in 2023, Racine Water Utility's finished water was sampled for UCMR5 requirements. Results for all 29 PFAS compounds and lithium in each of the four quarters were below the minimum reporting level set by the U.S. EPA.		

UCMR4 Results: Sampled in 2018-2019

Potential Contaminant Sampled For:	Results (ppb) (Range):	Source:
Disinfection By-Products (9 halo-acetic acids)	25.2 (18.5-33.5)	By-product of disinfection process
Bromide	40 (34-54)	Erosion of natural deposits
Total Organic Carbon	1908 (1800-2080)	Erosion of natural deposits, vegetation decay, pollution
Manganese	2.38 (<0.4 - 2.38)	Erosion of natural deposits, drinking water additive, industrial by-product
In addition to the testing for the chemicals above: 8 cyanotoxins, 3 alcohols, 3 semi-volatile chemicals, 8 pesticides, and 2 metals (germanium and manganese) were also tested for. Except for manganese, none of these possible contaminants were detected. Cyanotoxins can be produced by algae, germanium and manganese from the erosion of natural deposits, with the others originating from pollution.		

For a complete list of these chemicals contact the Racine Water Utility at (262) 636-9534.

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 website addresses:

Organization	Web Address
United States Environmental Protection Agency	www.epa.gov
Wisconsin Department of Natural Resources	www.dnr.wi.gov
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:
(262) 636-9441 or (262) 636-9534

Billing Questions: (262) 636-9181

Reporting Possible Water Main or Service Breaks: (262) 636-9185

Scheduling Service Appointments:
(262) 636-9185 or (262) 636-9186

Visit us online at
www.cityofracine.org/Water

Para ayuda en español llame:
(262) 636-9181 de 8:00am-4:55pm

For an electronic version of this report go to:
http://www.cityofracine.org/water/2023CCR

Racine Water Utility
100 Hubbard Street • Racine, WI 53402

Welcome to Racine's Drinking Water Consumer Confidence Report

This brochure is a snapshot of your residence's water quality provided last year. Included are the 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.

Este informe contiene información importante acerca de su agua potable. Haga que alguien lo traduzca para usted, o hable con alguien que lo entienda.

Dlaim ntawv tshaabzu nuav muaj lug tseemceeb heev nyob rua huv kws has txug cov dlej mej haus. Kuas ib tug paab txhais rua koj, los nrug ib tug kws paub lug thaam.

The Racine Water Utility's (RWU) water quality meets or exceeds all Federal and State drinking water quality standards. The Racine Water Utility operates a surface water membrane ultra-filtration treatment plant and employs 33 state certified waterworks operators. The Utility pays close attention to emerging research and our concerns about drinking water are always focused on the health and safety of you and your family.

Source of Racine's Drinking Water

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. The Wisconsin Department of Natural Resources (WDNR) and EPA monitor source water protection across the state of Wisconsin, including Lake Michigan. As water flows over land surfaces and through rivers and lakes, natural and man-made substances can get into the water. These substances can be contaminants. Although the water treatment plant protects its customers from potentially adverse health effects due to contamination, the source water protection provides a first step guide for the community to implement preventative practices and limit contamination.

For more information go to: **www.epa.gov/sourcewaterprotection**

Public Invited

Racine Waterworks Commission Meetings are typically held the third Tuesday of the month, beginning at 4:00 PM. Meetings are held in-person at City Hall in Conference Room 207 A/B (unless notified otherwise). Please visit the City for Racine's Legislative Calendar for up to date information on the meetings, including agendas and minutes. (cityofracine.legistar.com/Calendar.aspx)

Meeting dates in 2024 are:

January 16th	July 16th
February 19th	August 20th
March 19th	September 17th
April 16th	October 15th
May 21st	November 19th
June - No Meeting	December - No Meeting

Racine Water Utility
2023 Drinking Water Consumer Confidence Report

Racine Waterworks 2023 Water Quality Table

Your water is tested for many contaminants every year. The following table lists all the detected and non-detected contaminants tested for in 2023. RWU is allowed to monitor for some contaminants less frequently than once per year. Those results are also found in the table below and must be reported for the previous 5 years if not tested in the preceding year.

MICROBIOLOGICAL RESULTS (SAMPLED IN 2023)

Contaminant	MCLG	MCL	Highest Monthly	Violation	Major Source
Total Coliform Bacteria	0	< 5%/month	0.00%	No	Human and animal fecal waste
Viruses and Legionella	0	TT			Found naturally in water, human and animal fecal waste, multiplies in heating systems

PRIMARY REGULATED INORGANIC RESULTS (SAMPLED IN 2023)

Contaminant	MCLG	MCL	Results (Range)	Violation	Major Source
Asbestos (million fibers per liter) (sampled in 2020)		7	<0.20	No	Decay of asbestos cement in water mains; erosion of natural deposits
Antimony (ppb)	6	6	<0.32	No	Discharge from petroleum refineries, fire retardants, ceramics, electronics, solder
Arsenic (ppb)	10	10	<1.1	No	Erosion of natural deposits
Barium (ppb)	2000	2000	23	No	Erosion of natural deposits
Beryllium (ppb)		4	< 0.06	No	By-product of industrial processes
Cadmium (ppb)		5	< 0.12	No	By-product of industrial processes, erosion of natural deposits
Chromium (ppb)		100	<1.1	No	Erosion of natural deposits
Cyanide (ppb)		200	<11	No	By-product of industrial, mining, and metal finishing processes
Mercury (ppb)		2	< 0.047	No	Erosion of natural deposits
Nickel (ppb)		100	<1.0	No	Erosion of natural deposits
Nitrate (ppm)	10	10	0.61	No	Runoff from fertilizer use, leaching from septic tanks, sewage. Erosion of natural deposits
Nitrite (ppm)	1	1	< 0.040	No	Runoff from fertilizer use, leaching from septic tanks, sewage
Selenium (ppb)		50	< 1.0	No	Erosion of natural deposits
Sulfate (ppm)		250	25	No	Runoff/ leaching from natural deposits, industrial wastes
Thallium (ppb)		2	< 0.76	No	Erosion of natural deposits
Fluoride (ppm)		4	Average: 0.74 Range 0.65 - 0.87	No	Water additive which promotes strong teeth, erosion of natural deposits, discharge from fertilizer and aluminum factories
pH		6.5 - 8.5	Average: 7.91 Range 7.68 - 8.11	No	Erosion of natural deposits
Chlorine Residual (ppm)	4.0	4.0	Average: 1.26 Range 1.09 - 1.61	No	Water additive for disinfection

DISINFECTION BY-PRODUCTS - DISTRIBUTION (SAMPLED 4 SITES IN 2023)

Contaminant	MCLG	MCL	Results	Violation	Major Source
TTHM (ppb) *(total trihalomethanes)*	0	80	36.3 (21 - 60)	No	By-product of drinking water chlorination
HAA (ppb) *(haloacetic acids)*	0	60	19.4 (12 - 29)	No	By-product of drinking water chlorination

ORGANIC COMPOUND RESULTS (SAMPLED IN 2023)

Volatile Organic Compounds	MCLG	MCL	Results		
Bromodichloromethane (ppb)	0	80	6.1	No	
Bromoform (ppb)	0	80	0.37	No	By-product of industrial processes and drinking water chlorination, petroleum production, gas stations, urban storm run-off and residential uses
Chloroform (ppb)	0	80	8.4	No	
Dibromochloromethane (ppb)	0	80	3.2	No	
37 other compounds were tested with no detection of any of these chemicals				No	
Synthetic Organic Compounds	**MCLG**	**MCL**	**Results**		
Atrazine (ppb)	3	3	0.024, 0.024	No	Storm run-off from agriculture pesticide application
Metolachlor (Dual) (ppb)	NA	NA	0.011, <0.0065	No	
41 other 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
PFAS (sampled in 2022 and 2023)	**MCL individually or combined**		**Results**		
Perfluorooctanic Acid-PFOA (ppt)	70		1.73, 2.0	No	By-product of industrial process, food packaging, commercial household products
Perfluorooctane Sulfonic Acid-PFOS (ppt)	70		1.64, 2.0	No	

LEAD AND COPPER RESULTS (SAMPLED IN 2022 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	0.20 / No	Corrosion of household plumbing systems, erosion of natural deposits
Lead (ppb)	0 out of 53	0	A.L.=15	5.7 / No	Corrosion of household plumbing systems, erosion of natural deposits

TURBIDITY AND PARTICULATE RESULTS (SAMPLED IN 2023)

Contaminant	MCLG	MCL	Results	Violation	Major Source
Turbidity (NTU)	na	TT Never > 1 NTU, *and* 95% of time < 0.3 NTU	Sand Filtration Max = 0.122 NTU TT Never >1	No	Soil runoff, suspended matter in source water
			Membrane Filtration Max = 0.048 NTU 100% time <0.3 NTU	No	

Next to disinfection of the water, the most important purification process is the removal of suspended particles. Particulate matter in the water may be disease causing micro-organisms or can provide hiding places for micro-organisms to escape disinfection chemicals. Turbidity is the measurement of water clarity. Water systems must meet clarity standards as listed in the above table. The RWU filters the treated water first through sand filters, and re-filters the water through membrane filters. The RWU's maximum turbidity for water leaving the treatment plant for 2023 was 0.122 NTU, well below the established maximum allowed levels, and the turbidity was below 0.3 NTU 100% of the time. In 2023, the daily average peak turbidity was 0.015 NTU for water leaving the treatment plant.

Cryptosporidium (Sampled 2015 -2017)	0	Treatment Technique	0 oocysts/liter	No	Human and animal feces
Giardia (Sampled 2015 – 2017)	0	Treatment Technique	0 cysts/liter	No	Human and animal feces

If turbidity maximum contaminant levels are met, the system is deemed in compliance in treating for cryptosporidium and giardia.

RADIOLOGICAL RESULTS (SAMPLED IN 2020)

Contaminant	MCLG	MCL	Results	Violation	Major Source
Gross Alpha Emitters (pCi/l)	0	15	0.494	No	Erosion of natural deposits
Combined Radium (pCi/l)	0	5	0.837	No	Erosion of natural deposits
Uranium (ppb)	0	30	0.347	No	Erosion of natural deposits

SECONDARY OR UNREGULATED CONTAMINANT RESULTS (SAMPLED IN 2023)

Contaminant	MCLG	MCL	Results (Range)	Violation	Major Source
Alkalinity (ppm)	na	na	110 (105 - 126)	No	Erosion of natural deposits
Sodium (ppm)	na	na	18	No	Erosion of natural deposits
Silica/Silicate (ppm) (Sampled in 2019)	na	na	2.7	No	Erosion of natural deposits
Ortho-phosphate (ppm)	na	na	0.72 (0.55 - 0.95)	No	Erosion of natural deposits, addition of chemical in water treatment
Total Organic Carbon (ppm) (Lake Water)	na	na	2.18 (1.8 - 2.8)	No	Decay of natural and man-made deposits
Water Temperature °F	Annual Average: 50.6			Annual Range: 32.7 - 71.7	

WATER QUALITY CORROSION PROGRAM MONITORING RESULTS (SAMPLED AT 26 SITES IN 2022)

Contaminant	MCLG	MCL	Results (Range)	Violation	Major Source
Calcium (ppm)	na	na	35 (34-37)	No	Erosion of natural deposits
Hardness (ppm)	na	na	140	No	Erosion of natural deposits
Chloride (ppm)		250	17 (17-18)	No	Erosion of natural deposits
Manganese (ppm)		0.05	<0.0020	No	Erosion of natural deposits, addition of chemical in water treatment
Iron (ppm)	na	0.30	<0.063	No	Erosion of natural deposits
Aluminum (ppm)		0.05 - 0.20	<0.024	No	Erosion of natural deposits, addition of chemical in water treatment
Sulfate (ppm)	na	250	21	No	Erosion of natural deposits
Conductivity (umho/cm)	na	na	315 (304-328)	No	Erosion of natural deposits

How to read the water quailty table: Use the definitions here to understand what the scientific data means for your drinking water. The Compliance Level may be the 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 2023, 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 a 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 a water system must follow. For compliance, 90% of all samples tested must be below the Action Level. Turbidity is a measurement of water clarity, used to evaluate the effectiveness of the filtration system. One criterion for enforcement of the turbidity regulation is 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 Unit of Measurement reported for each substance depends on the nature of 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
ppt: parts per trillion or nanograms per liter
pCi/l: picocuries per liter, a measure of radioactivity
NTU: nephelometric turbidity units
umho/cm: micromhos per centimeter

For a more comprehensive water quality parameter list, please contact the Racine Water Utility or visit us online at **www.cityofracine.org/Water.aspx**