



WATER QUALITY REPORT

2018

WHAT IS THIS REPORT?

This report is to let you - our customers - know that water produced by WaterOne meets or exceeds all standards for safe, high-quality water.

WaterOne is required by drinking water regulations to make this water quality report available to customers. It's like a nutritional label for the substance you probably consume the most - water!

This data and information can be complex, so we've tried to make it readable while also including the required language. Congress, the Environmental Protection Agency (EPA), and WaterOne want to be sure that consumers know what's in their drinking water.

WHAT DO WE TEST FOR?

WaterOne tests for over 100 regulated and unregulated contaminants in drinking water. Our state-of-the art water quality lab utilizes multiple monitoring systems, and our water is continuously checked every single day of the year to ensure the finest water reaches our customers' taps.

All data in this report is from 2017. If a known health-related contaminant is not listed in this report, WaterOne did not detect it in the water.

HOW MUCH WATER DOES WATERONE PRODUCE?

In 2017, WaterOne treated a total of 21.9 billion gallons of water - approximately 9.8 billion gallons of Kansas River water, 5.4 billion gallons of Missouri River water, 5.5 billion gallons from its Wolcott Collector Well (adjacent to the Missouri River), and 1.2 billion gallons of water from wells south of the Kansas River.

WaterOne customers consume between 50 - 130 million gallons per day (MGD), depending on the time of year. The most water consumed in one day was 157.5 MGD, set on July 23, 2012.

SETTING THE STANDARD FOR UTILITY EXCELLENCE

WaterOne is certified as a Platinum Level utility for excellence in utility management by the Association of Metropolitan Water Agencies. WaterOne continues to hold the Phase III Directors Award from the Partnership for Safe Drinking Water, which recognizes water system operations and encourages performance above and beyond even proposed regulatory levels. WaterOne has also been recognized with the "Best Tasting Water In Kansas" award by the Kansas Rural Water Association. We are proud to deliver great-tasting, high-quality water to your tap.



WATER AT A GLANCE

ALL DRINKING WATER, including bottled water, can 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.

In order to ensure that tap water is safe to drink, the EPA has regulations that limit the amount of certain contaminants in water provided by public water systems and require monitoring for these contaminants.

ENSURING SAFE, RELIABLE WATER

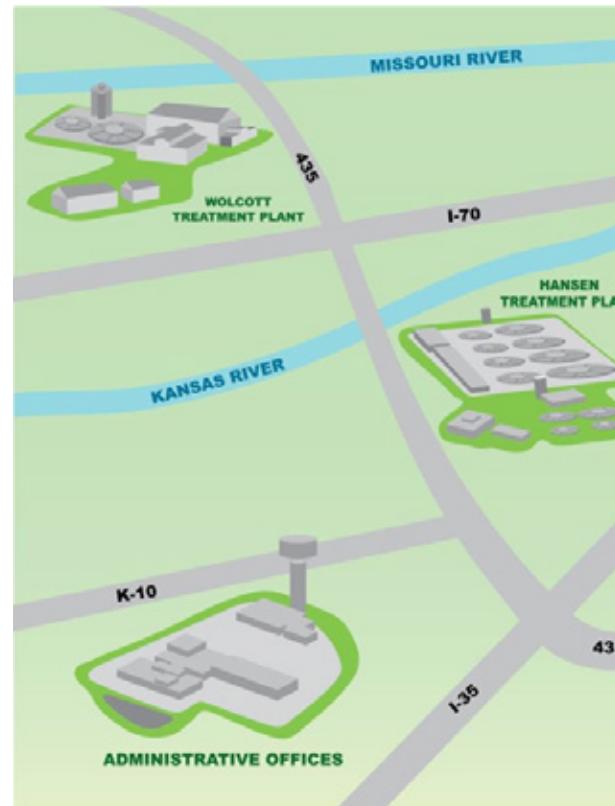
Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, persons with HIV/AIDS or other immune system disorders, some elderly people, and infants can be particularly at risk from infections.

These people should seek advice about drinking water from their health care providers. Guidelines from the EPA and Centers for Disease Control and Prevention (CDC) on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline at **800/426-4791**.

MORE ABOUT WATERONE

WHERE DOES YOUR WATER COME FROM?

WaterOne's drinking water comes from the Kansas and Missouri Rivers. With multiple water sources, we have less vulnerability during drought and an ample supply of fresh water year-round.



CUSTOMER SATISFACTION



We're proud to carry an average overall customer satisfaction score above 90%. Our customers consistently give us high marks for water quality, reliability, customer service, and the responsiveness of our friendly, professional staff.

GREAT VALUE

WaterOne customers enjoy some of the lowest rates for water service in the metro area.



Did you know?

A PENNY buys you **2** gallons of WaterOne.

Based on 2017 rates for average residential customers.



More information about contaminants and potential health effects can be found at the Environmental Protection Agency's Safe Drinking Water Hotline at **800/426-4791** or at www.epa.gov/safewater.

Lead

We are passionate about producing great water and we are committed to quality control above and beyond the testing required by state and federal regulation. Given recent reports of water quality issues in other communities, we are grateful to be able to affirm for our customers that they receive high-quality, reliable WaterOne water each day.

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 private service lines and home plumbing. WaterOne is responsible for providing high quality drinking water, but cannot control the variety of materials used in customers' plumbing components. We have no indication that lead is a concern in this service area; however, if water has been sitting in pipes for several hours, those who are worried about lead can reduce their potential for lead exposure by flushing their taps for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your drinking water, testing methods and steps you can take to minimize exposure are available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.

Additional information is available at www.waterone.org/Lead.

Ice flows down the Missouri River past WaterOne's intake facility in northern Wyandotte County.

WATER QUALITY DATA

TERMS, ABBREVIATIONS & SYMBOLS

Secondary Maximum Contaminant Level (SMCL): Secondary MCLs for various water quality indicators are established to protect public welfare.

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

µmhos/cm: Or micromhos/cm; a measure of the ability of a solution to carry an electric current.

Sources of Drinking Water

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.

Contaminants in drinking water sources may include:

- **Microbial contaminants**, such as viruses and bacteria, which may come from wildlife or septic systems.
- **Inorganic contaminants**, such as salts and metals, which can occur naturally or result from urban storm water runoff, industrial or domestic wastewater discharges or farming.
- **Pesticides and herbicides**, which may come from a variety of sources such as farming, urban storm water runoff and home or business use.
- **Organic chemical contaminants**, including synthetic and volatile organic chemicals, which are byproducts of industrial processes, and can also come from gas stations, urban storm water runoff and septic systems.
- **Radioactive contaminants**, which can occur naturally.

Some of the terms used in this report are unique to the water industry and might not be familiar to all customers. Explanations are provided below.

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

Maximum Contaminant Level (MCL): The highest level of a contaminant allowed in drinking water. MCLs are set as close to the MCLGs 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. MCLGs allow for a margin of safety.

Maximum Residual Disinfectant Level (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.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of 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.

Not Detected (ND): Not detected in the water.

Nephelometric Turbidity Units (NTU): A measure of the clarity of water. Picocuries per liter (pCi/L): A measure of radioactivity.

Parts per million (ppm): Or milligrams per liter.

Parts per billion (ppb): Or micrograms per liter.

Parts per trillion (ppt): Or nanograms per liter.

pH Units: A measure of acidity or basicity of the water.

Saturation Index (S.I.): Measure of corrosivity.

WATER QUALITY: WHAT IS IN THE WATER?

REGULATED PARAMETERS

Parameter	MCL	MCLG	WaterOne Result	WaterOne Range	Sample Data	Met Standard	Source
Inorganic Contaminants							
Antimony	6 ppb	6 ppb	1.0 ppb	ND (0.5) - 1.03 ppb	Quarterly	✓	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder.
Arsenic	10 ppb	0 ppb	1.9 ppb	ND (1.0) ppb - 1.9 ppb	Quarterly	✓	Erosion of natural deposits; run-off from orchards, glass and electronics production waste.
Barium	2 ppm	2 ppm	0.05 ppm	0.02 ppm - 0.05 ppm	Quarterly	✓	Discharge of drilling wastes; discharge from metal refineries, erosion of natural deposits.
Chromium	100 ppb	100 ppb	3.0 ppb	1.6 ppb - 3.0 ppb	Quarterly	✓	Discharge from steel and pulp mills, erosion of natural deposits.
Copper	AL=1.3 ppm	1.3 ppm	0.017 ppm ¹	0 samples exceeding; 2017	Annually	✓	Corrosion of household plumbing, erosion of natural deposits; leaching from wood preservatives.
Fluoride	4 ppm	4 ppm	0.91 ppm	0.38 ppm - 0.91 ppm	Monthly	✓	Erosion of natural deposits; water additive (oral health); discharge - fertilizer and aluminum factories.
Lead	AL=15 ppb	0 ppb	3.8 ppb ¹	0 samples exceeding; 2017	Annually	✓	Corrosion of household plumbing systems; erosion of natural deposits.
Nitrate	10 ppm	10 ppm	2.5 ppm	0.29 ppm - 2.5 ppm	Annually	✓	Fertilizer run-off; leaching from septic tanks, sewage; erosion of natural deposits.
Nitrite	1 ppm	1 ppm	0.05 ppm	ND (0.01) ppm - 0.05 ppm	Annually	✓	Fertilizer run-off; leaching from septic tanks, sewage; erosion of natural deposits.
Selenium	50 ppb	50 ppb	2.6 ppb	1.2 ppb - 2.6 ppb	Quarterly	✓	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines.
Synthetic Organic Contaminants							
Atrazine	3 ppb	3 ppb	0.2 ppb	ND (0.2) ppb - 0.7 ppb	Monthly	✓	Run-off from herbicide used on row crops.
Disinfectants/Disinfection By-Products							
Chloramines	MRDL=4 ppm	MRDLG=4 ppm	2.8 ppm ²	1.5 ppm - 4.0 ppm	Daily	✓	Water additive used to control microbes.
Chlorine Dioxide	MRDL=800 ppb	MRDLG=800 ppb	209 ppb	ND (50) ppb - 209 ppb	Monthly	✓	Water additive used to control microbes.
Chlorite	1 ppm	0.8 ppm	0.24 ppm	ND (0.020) ppm - 0.54 ppm	Monthly	✓	By-product of drinking water disinfection.
Haloacetic Acids (HAA)	60 ppb	n/a	24 ppb	8.5 ppb - 36.6 ppb	Monthly	✓	By-product of drinking water disinfection.
Total Trihalomethanes (THM)	80 ppb	n/a	31 ppb	9.5 ppb - 46.4 ppb	Monthly	✓	By-product of drinking water disinfection.
Microbiological Contaminants							
Total Coliforms	Presence in ≥ 5% of monthly samples	0(<1/100 mls)	1.3%	0 - 1.3% positive samples/month	Daily	✓	Naturally present in the environment.
Total Organic Carbon (TOC)	Removal ratio ³ (1.0 required)	TT	2.0	1.8 - 3.6 RAA Removal Ratio	Monthly	✓	Naturally present in the environment.
Turbidity	TT NTU	TT NTU	0.25 NTU ⁴	100% lowest monthly % meeting 0.3 NTU	Daily	✓	Soil run-off.
Radiological Contaminants							
Beta Particle & Photon Radioactivity	50 pCi/L	0 pCi/L	9.7 pCi/L	3.6 pCi/L - 9.7 pCi/L ⁵	Annually	✓	Decay of natural and man-made deposits.
Gross Alpha Particles	15 pCi/L	0 pCi/L	2.7 pCi/L	ND (1.2) pCi/L - 2.7 pCi/L	Annually	✓	Erosion of natural deposits
Radium - 226	5 pCi/L	0 pCi/L	0.1 pCi/L	ND (0.1) pCi/L - 0.1 pCi/L	Annually	✓	Erosion of natural deposits.
Radium - 228	5 pCi/L	0 pCi/L	0.9 pCi/L	ND (0.9) pCi/L - 0.9 pCi/L	Annually	✓	Erosion of natural deposits.

1. Data from 2017 annual monitoring. This value is the 90th percentile result. The 95th percentile value for lead is 4.4 ppb; the 95th percentile value for copper is 0.020 ppm.

2. WaterOne is required to maintain a minimum residual of 1.0 ppm throughout its distribution system by the Kansas Dept. of Health & Environment as a means to provide some measure of protection against microbiological contamination. Maximum residual compliance is based on monthly averages.

3. Monthly TOC removal ratio is calculated as the ratio between the actual TOC removal achieved and the TOC rule removal requirements.

4. This is the highest turbidity measurement for 2017. Compliance is based on 95% of monthly samples being less than 0.3 NTU. The average turbidity was less than 0.10 NTU. Turbidity is measured as an indicator of the effectiveness of the water treatment process. The lower the turbidity, the more effective the treatment process.

5. EPA considers 50 pCi/L to be the level of concern for beta particles.

UNREGULATED PARAMETERS

WaterOne conducted testing according to the EPA guidelines for the following Unregulated Parameters.

Parameter	Federal Level Recommended	Goal	WaterOne Results (Ave.)	Range
Alkalinity, Total*	300 ppm	> 40 ppm	62 ppm	45 ppm - 92 ppm
Bromodichloromethane	n/a	0 ppb	4.3 ppb	2.6 ppb - 9.5 ppb
Calcium	n/a	n/a	36 ppm	25 ppm - 43 ppm
Carbon, Dissolved Organic	n/a	n/a	2.4 ppm	1.5 ppm - 3.0 ppm
Carbon, Total Organic (TOC)	10,000 ppm	n/a	2.4 ppm	1.6 ppm - 3.0 ppm
Chlorate	n/a	n/a	201 ppb	ND (62.5) ppb - 410 ppb
Chlorodibromomethane	n/a	60 ppb	1.1 ppb	ND (1.0) ppb - 2.7 ppb
Chloroform	n/a	70 ppb	14 ppb	6.8 ppb - 35 ppb
Conductivity	1,500 μ mhos/cm	n/a	618 μ mhos/cm	399 - 805 μ mhos/cm
Dichloroacetic acid**	n/a	0 ppm	13 ppb	7.3 ppb - 27 ppb
Calcium*	200 ppm	> 60 ppm	101 ppm	68 ppm - 152 ppm
Hardness, Total*	400 ppm	200 ppm	143 ppm	112 ppm - 289 ppm
Manganese	50 ppb	50 ppb	1.1 ppb	ND (1.0) - 3.3 ppb
Monochloroacetic acid	n/a ppb	70 ppb	1.1 ppb	ND (1.0) ppb - 3.1 ppb
pH	8.5 pH units	> 9.0 pH units	9.5 pH units	8.8 - 9.8 pH units
Phosphorus, Total	n/a	n/a	0.09 ppm	ND (0.05) - 0.21 ppm
Potassium	100 ppm	20 ppm	7.6 ppm	6.0 ppm - 9.5 ppm
Radon	n/a ppm	n/a ppm	21 ppm	7 - 42 pCi/L
Silica	50 ppm	n/a	10 ppm	5 ppm - 17 ppm
Sodium	100 ppm	20 ppm	69 ppm	57 ppm - 76 ppm
Trichloroacetic acid	20 ppb	20 ppb	1.9 ppb	1.1 ppb - 7.0 ppb

* As CaCO_3

** The MCLG for Dichloroacetic acid is listed as zero (in ppm) in the Regulatory Statutes.

CONSTITUENTS HAVING SECONDARY MCL'S

Monitored in the interest of consumers and to assist regulators in developing future regulations.

Parameter	Federal Level Recommended (SMCL)	WaterOne Results (Avg.)	Range (Low - High)
Chloride	250 ppm	52 ppm	22 ppm - 105 ppm
Corrosivity*	0 S.I.	0.7 S.I.	0 - 1.4 S.I.
Fluoride	2.0 ppm	0.65 ppm	0.38 ppm - 0.91 ppm
Odor-Threshold (T.O.N.)	3 T.O.N.	1 T.O.N.	1 T.O.N. - 5 T.O.N.
Sulfate	250 ppm	142 ppm	63 ppm - 199 ppm
Total Dissolved Solids (TDS)	500 ppm	307 ppm	200 ppm - 403 ppm
Zinc	5000 ppb	6 ppb	ND (5) ppb - 10 ppb

*Positive values indicate tendency of water to be non-corrosive. Non-corrosive water reduces the likelihood of lead or copper leaching into the water from plumbing.

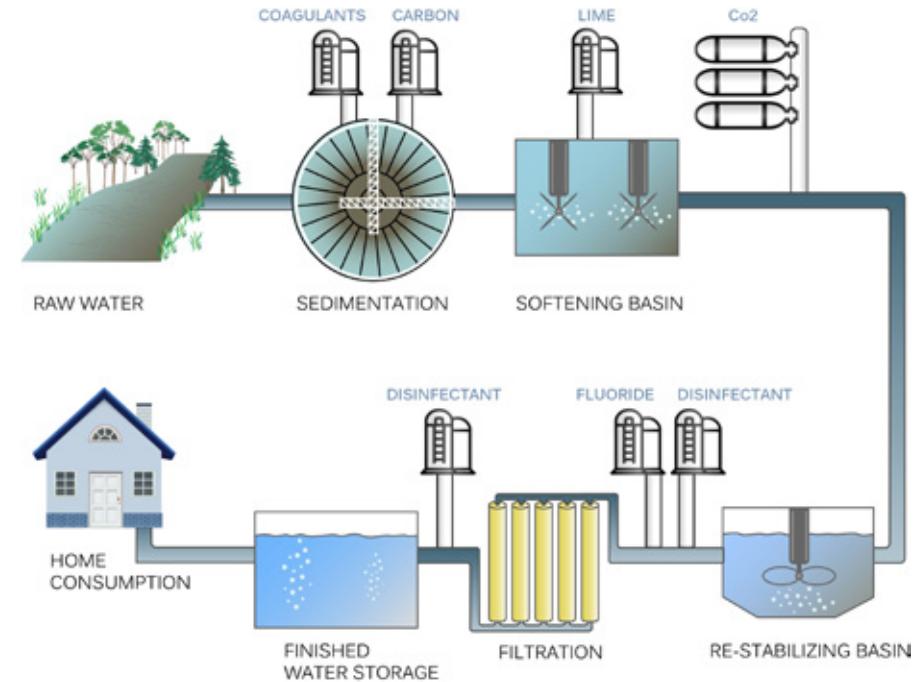
Radon: a courtesy message from the EPA

Radon is a radioactive gas that you cannot see, taste, or smell. It is found throughout the U.S. Radon can move up through the ground and into a home through cracks and holes in the foundation. Radon can build up to high levels in all types of homes. Radon can also get into indoor air when released from tap water from showering, washing dishes, and other household activities. Compared to radon entering the home through soil, radon entering the home through tap water will in most cases be a small source of radon in indoor air. Radon is a known human carcinogen. Breathing air containing radon can lead to lung cancer. Drinking water containing radon may also cause increased risk of stomach cancer. If you are concerned about radon in your home, test the air in your home. Testing is inexpensive and easy. (You should pursue radon removal for your home if the level of radon in your air is 4 picocuries per liter of air (pCi/L) or higher. There are simple ways to fix a radon problem that are not too costly. For additional information, call your state radon program or call EPA's Radon Hotline (800-SOS-RADON).



Water spills over the cofferdam weir near WaterOne's Kansas River Intake

OUR TREATMENT PROCESS



Raw water is drawn from our fresh water sources - the Kansas and Missouri Rivers and adjacent collector wells - and collects in our pre-sedimentation holding basins. Water then goes through the following stages as part of the treatment process.

- **Coagulation/Flocculation** - Water is transferred to mixing basins at our treatment plants where we add alum, lime, and polymer. This process causes small organic particles to clump together, forming larger particles (flocculation).
- **Sedimentation** - Over time, the now-larger particles become heavy, settle to the bottom, and get strained out. Depending on the profile of the raw water at the time, we add lime and possibly soda ash to counteract calcium and magnesium, softening the water. Water is then transferred to a second clarifier where we add carbon dioxide to balance pH and treat it again to flocculate and strain sediment clumps.
- **Filtration** - Water filters through layers of fine, granular materials—anthracite coal and sand filters—or membrane filters. As smaller, suspended particles are removed, cloudiness diminishes and clear water emerges.
- **Disinfection** - To protect against bacteria and other microbes, chloramines are added before the water flows into the distribution system - clean, fresh, and delicious. Fluoride occurs naturally in our water but is also supplemented in the treated water.

All data is for January 1 to December 31, 2017, except as noted.

WATER IS LIFE

INVESTING IN YOUR INFRASTRUCTURE OZONE TREATMENT COMING SOON TO WATERONE



Imagine the crisp aroma that hangs in the air during a thunderstorm. That's ozone you're smelling!

Ozone, a powerful oxidant, is a safe, effective, and natural method for treating water. WaterOne is upgrading its facilities to utilize ozone as part of our water treatment process. Construction is expected to be complete by summer 2020.

WHAT IS OZONE?

Ozone forms naturally when electricity causes oxygen molecules to bond together as O_3 . As an oxidant, ozone is very effective at destroying viruses and bacteria and breaking down taste and odor compounds in our source waters.

WHY ARE WE UPGRADING?

The health and safety of our customers is our top priority. Ozone is one of the strongest treatment methods available, and will allow us to proactively meet or exceed future drinking water regulations. The plant will also treat water more efficiently, saving WaterOne's ratepayers money.

LEARN MORE AT
waterone.org/ozone

Water touches everything we care about. WaterOne is an independent public utility. We've been proudly serving the Johnson County, Kansas area since 1957. Every day, approximately 435,000 customers rely on WaterOne to provide fresh, clean water on demand. It's a responsibility we deliver on.

HOW CAN I GET WATER ALERTS?

Sign-up for water alerts at www.NotifyJoCo.org. Customize your contact info, alert preferences, and tag your locations - home, work, school, etc. You'll automatically get a phone call, text, or email if we need to take water down for maintenance or emergency repair as well as important water quality or water use alerts.

NotifyJoCo is made possible by a partnership of local governments and public utilities in Johnson County.

Learn more at www.NotifyJoCo.org.

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Water District No. 1 of Johnson County

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