



2018 ANNUAL WATER QUALITY REPORT

ABOUT THIS REPORT

The City of Missoula is pleased to present this year's Annual Water Quality Report (Consumer Confidence Report) as required by the Safe Drinking Water Act (SDWA).

This report is designed to provide details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. This report is a snapshot of last year's water quality. We are committed to providing you with information because informed customers are our best resources to aid in maintaining and improving water quality.

Where does my water come from? Is my water treated?

The water provided to the Missoula Valley comes from 40 ground water wells that draw water from the valley's ground water aquifer. This aquifer is recharged by runoff from precipitation and snowmelt.

In an effort to provide the customer with the safest possible product, we disinfect the water at each well with chlorine. A small amount of excess chlorine remains in the water to protect it from contamination as it travels through water mains and to the customer. Missoula Water does not add fluoride to the water.

Do I need to take special precautions?

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised people such as people with cancer undergoing chemotherapy, people 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. The Environmental Protection Agency (EPA) and Centers for Disease Control (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).

Source Water Assessment and its Availability

As required by the EPA in 2003, Missoula Water (then Mountain Water) completed a Source Water Delineation and Assessment report and submitted it to the Department of Environmental Quality and the EPA. This report was last revised in May 2015 available to the public by contacting our office.

GETTING INVOLVED

- ❖ Attend a City Council meeting on the first four Mondays of each month (excluding holidays) at 7:00 pm in City Council chambers at 140 W. Pine
- ❖ Visit our website:

www.ci.missoula.mt.us/water

Visit our Facebook page:

facebook.com/missoulawater

Contact Missoula Water

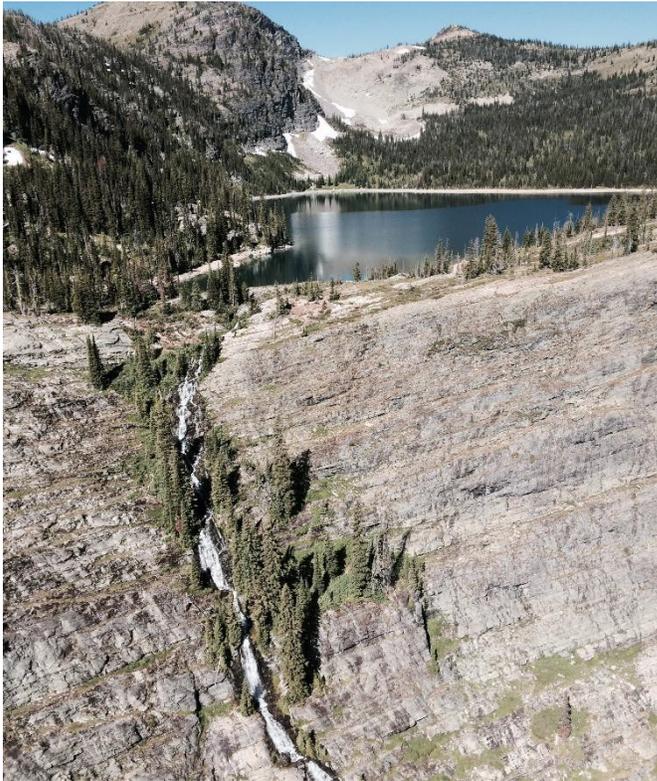
406-552-6700

For more information



Photo above: South Reservoir Pump House

Photo Below: Sanders Lake



Why are there contaminants in my drinking water?

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 (800-426-4791).

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:

- **Microbial contaminants**, such as viruses and bacteria that 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.

Additional Information on lead in drinking water

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. Missoula Water is responsible for providing high-quality drinking water but 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 two 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 www.epa.gov/safewater/lead.

Monitoring and reporting of compliance data violations

Our water system failed to conduct monitoring for Diethylhexylphthalate, Synthetic Organic Compounds and Radionuclides in accordance with our 2017 sampling schedule. We were required to sample quarterly starting the first quarter of the year. Due to an oversight, we took the first quarter samples and did not take the second quarter samples. Therefore, we cannot be sure of the quality of the water during that time. Due to this occurrence, the Department of Environmental Quality has allowed us to restart our quarterly monitoring schedule for the above contaminants effective July 1, 2017. The samples are being collected quarterly as required.



Photo above: Operation of system valve

If you are a landlord, property manager, or know someone who is billed directly, please share this report with your tenants and friends.

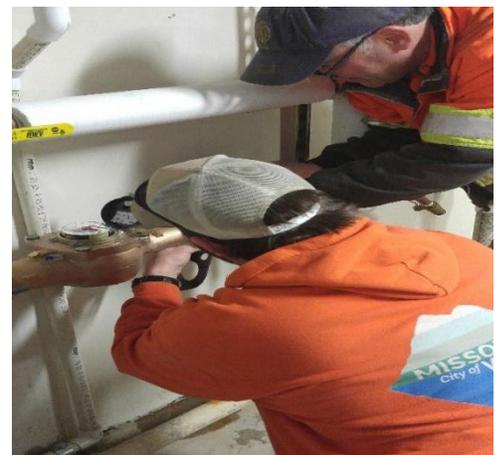


Photo above: Installation of a residential water meter

WATER QUALITY DATA TABLE

To ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of contaminants in water provided by public water systems. The table below lists all of the drinking water contaminants that we detected during the calendar year of this report. Although many more contaminants were tested, only those substances listed below were found in your water. All sources of drinking water contain some naturally occurring contaminants. At low levels, these substances are generally not harmful in our drinking water. Removing all contaminants would be extremely expensive, and in most cases, would not provide increased protection of public health. A few naturally occurring minerals may actually improve the taste of drinking water and have nutritional value at low levels. Unless otherwise noted, the data presented in this table are from testing done in the calendar year of the report. The EPA or the State of Montana requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. As such, some of our data, though representative, may be more than one year old. In this table you will find terms and abbreviations that might not be familiar to you. To help you better understand these terms, we have provided the definitions below the table.

Contaminants	Violation	Sample Date	Your Water's Average (a)	Your Water Range Low	Your Water Range High	MCL	MCLG	Typical Source
Distribution System								
(There is convincing evidence that the addition of a disinfectant is necessary for control of microbial contaminants)								
Chlorine (as Cl ₂) (ppm)	No	2017	0.43	0.20	0.91	4	4	Water additive used to control microbes
Total Coliform % positive samples	No	2017	0.41	NA	NA	5	0	Naturally present in the environment
TTHMs [Total Trihalomethanes] (ppb)	No	2017	2.68	1.6	3.8	80	NS	By-product of drinking water disinfection
HAA5 [Haloacetic Acids] (ppb)	No	2017	0.60	0.48	0.71	60	NS	By-product of drinking water disinfection
Primary Standards -Inorganic								
Arsenic (ppb)	No	2017	0.4	ND	2	10	0	Erosion of natural deposits; historical mining and smelting
Barium (ppm)	No	2017	0.26	0.18	0.54	2	2	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Fluoride (ppm)	No	2017	0.16	ND	0.2	4	4	Erosion of natural deposits; Discharge from fertilizer and aluminum factories
Nitrate [measured as Nitrogen] (ppm)	No	2017	0.83	0.38	2.96	10	10	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Radionuclides								
Alpha emitters (pCi/L)	No	2014-2017	2.84	ND	6.1	15	0	Erosion of natural deposits
Radium 226 (pCi/L)	No	2014-2017	0.18	ND	0.4	5	0	Erosion of natural deposits
Radium 228 (pCi/L)	No	2014-2017	0.76	ND	2.0	5	0	Erosion of natural deposits
Radium (combined 226/228) (pCi/L)	No	2014-2017	1.025	0.4	2.2	5	0	Erosion of natural deposits
Uranium (ug/L)	No	2014-2017	0.001	ND	0.002	30	0	Erosion of natural deposits
Lead and Copper Monitoring Rule								
(Tap water samples were collected for lead and copper from sites throughout the community)								
Metals	Violation	Amount Detected at 90 th Percentile	Sample Date	Number of Samples collected	Action Level	Typical Source		
Lead (ppb)	No	2	March 2017	60	15	Corrosion of household plumbing systems; Erosion of natural deposits; Discharge from industrial manufactures		
		2	October 2017					
Copper (ppm)	No	0.248	March 2017	60	1.3	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives		
		0.256	October 2017					

Contaminants	Violation	Sample Date	Your Water Range		MCL	MCLG	Typical Source
			Low	High			
Additional Quarterly Monitoring							
(Primary Standard – Organic)							
Di(2-ethylhexyl)phthalate (ppb)	No	3 rd /4 th quarter 2017	ND	0.92	6	0	Discharge from rubber and chemical factories

Contaminants	Violation	Sample Date	Your Water's Average (a)	Your Water Range		MCL	MCLG	Noticeable Effects
				Low	High			
Secondary Standards								
(Aesthetic, Cosmetic and Technical, Non-Health Related)								
Calcium (ppm)	No	2017	46.6	38	57	NS	NS	Hardness; deposits
Chloride (ppm)	No	2017	12.4	3	22	250	NS	Salty taste
Iron (ppm)	No	2017	0	ND	ND	0.3	NS	Rusty color; sediment; metallic taste; reddish or orange staining
Magnesium (ppm)	No	2017	12.8	10	22	NS	NS	NA
Manganese (ppm)	No	2017	0	ND	0.001	0.05	NS	Black to brown color; black staining; bitter metallic taste
Odor (TON)	No	2017	1.5	ND	2	3	NS	"Rotten-egg", musty or chemical smell
pH	No	2017	7.8	7.6	7.9	6.5-8.5	NS	Hydrogen ion concentration
Potassium (ppm)	No	2017	1.9	1	2	NS	NS	NA
Sodium (ppm)	No	2017	7.7	5	12	NS	NS	NA
Sulfate (ppm)	No	2017	17.3	8	22	250	NS	Salty taste
Total Dissolved Solids (ppm)	No	2017	203	164	259	500	NS	Hardness; deposits; colored water; staining; salty taste
Zinc (ppm)	No	2017	0	ND	0.01	5	NS	Metallic taste

Additional Unregulated Parameters							
	Sample Date	Your Water's Average (a)	Your Water Range		MCL	MCLG	Definitions
			Low	High			
Aggressiveness Index (b) unitless	2017	12.0	11.7	12.2	NS	NS	A general indicator of the tendency for corrosion to occur
Alkalinity (as CA CO3) ppm	2017	156.4	130	200	NS	NS	A measurement of the water's ability to neutralize acids
Corrosivity (Langlier Index) (c) Positive/Negative	2017	+0.2	-0.1	+0.4	NS	NS	A gauge of whether a water will precipitate or dissolve calcium carbonate
Hardness (as Ca CO3) ppm	2017	170.1	137	216	NS	NS	Total Hardness

Definitions, Abbreviations and Footnotes

MCL: Maximum Contaminant Level: The highest level of a contaminant that is allowed in drinking water.

MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

MCLG: Maximum Contaminant Level Goal: 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.

MRDL: Maximum Residual Disinfectant Level: 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.

MRDLG: Maximum Residual Disinfection Level Goal: The level of a 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.

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

ppm: parts per million, or milligrams per liter (mg/L)

ppb: parts per billion, or micrograms per liter (ug/L)

pCi/L: picocuries per liter (a measure of radioactivity)

NTU: nephelometric turbidity unit

TON: threshold odor number (calculation)

NA: not applicable

ND: not detected

NS: no standard

- (a) The average is weighted according to the individual contribution in pumping by each well to the total (active wells only).
- (b) Aggressive Index (AI): A general indicator of the tendency for corrosion to occur. AI of 12 or above indicated nonaggressive (not corrosive) water. AI values of 10-11.9 suggest that the water is moderately aggressive. AI values below 10 indicate extremely aggressive (corrosive) water.
- (c) Langlier Index (LI): Is a gauge of whether water will precipitate or dissolve calcium carbonate. If the LI is a positive number the water will tend to be nonaggressive; a negative number will tend to be an aggressive water.

How can I get involved?

As your water utility it is our responsibility to provide the highest available quality of water and to meet all of the requirements and standards set forth by the State of Montana. If you as a consumer have any questions or concerns, we are here to help and provide information to you.

Water Conservation Tips

Did you know that the average U.S. household uses approximately 400 gallons of water per day or 100 gallons per person per day? Luckily, there are many low-cost and no-cost ways to conserve water. Small changes can make a big difference—**try one today, and soon it will become second nature!**

- ✓ Take short showers—a 5-minute shower uses 4 to 5 gallons of water compared to 50 gallons for a bath.
- ✓ Shut off water while brushing your teeth, washing your hair and shaving and save up to 500 gallons a month!
- ✓ Use a water-efficient showerhead. They are inexpensive, easy to install, and can save you up to 750 gallons a month.
- ✓ Run your clothes washer and dishwasher only when they are full. You can save up to 1,000 gallons a month!
- ✓ Water plants only when necessary.
- ✓ Fix leaky toilets and faucets. Faucet washers are inexpensive and take only a few minutes to replace. To check your toilet for a leak, place a few drops of food coloring in the tank and wait. If it seeps into the toilet bowl without flushing, you have a leak. Fixing it or replacing it with a new, more efficient model can save up to 1,000 gallons a month.
- ✓ Adjust sprinklers so only your lawn is watered. Apply water only as fast as the soil can absorb it and during the cooler parts of the day to reduce evaporation.
- ✓ Teach your kids about water conservation to ensure a future generation that uses water wisely. Make it a family effort to reduce next month's water bill!
- ✓ Visit www.epa.gov/watersense for more information.



Missoulian photo

Play your part, be water smart!

Wise Water Use



Save it, or do without it!