

A close-up photograph of water being poured from a glass pitcher into a clear glass. The water is captured mid-pour, creating a dynamic splash and bubbles. The background is a blurred wooden surface.

ANNUAL
WATER
QUALITY
REPORT
REPORTING YEAR 2018



Presented By
Rapid City Water Division

Our Mission Continues

We are once again pleased to present our annual water quality report covering all testing performed between January 1 and December 31, 2018. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal standards. We continually strive to adopt new methods for delivering the best-quality drinking water to you. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals of source water protection, water conservation, and community education while continuing to serve the needs of all our water users.

Please remember that we are always available should you ever have any questions or concerns about your water.

Community Participation

You are invited to attend any of the regularly scheduled Rapid City Council meetings, which are held on the first and third Mondays of each month at 6:30 p.m. in the Council Chambers at the Rapid City/School Administration Building located at 300 Sixth Street. If you would like to attend the Council Public Works meetings, these are held on the Tuesday afternoons prior to the Monday council meetings in the Council Chambers at 12:30 p.m.



Jackson Springs Water Treatment Plant

Important Health Information

Some people may be more vulnerable to contaminants 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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines 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 or <http://water.epa.gov/drink/hotline>.



Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water, which 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 these contaminants does not necessarily indicate that the water poses a health risk.

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, in some cases, radioactive material, and substances resulting from the presence of animals or from human activity. Substances that may be present in source water include:

Microbial Contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, or wildlife;

Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may result from urban stormwater 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 stormwater runoff, and residential uses;

Organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production and may also come from gas stations, urban stormwater runoff, and septic systems;

Radioactive Contaminants, which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.



Sedimentation Basin at the Jackson Springs WTP. This is one step in the conventional water treatment process.

Lead in Home Plumbing

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. We are responsible for providing high-quality drinking water, but we 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 2 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 at (800) 426-4791 or at www.epa.gov/safewater/lead.

Where Does My Water Come From?

Rapid City uses a number of sources for our water system. Included in our sources are two infiltration galleries located along the Rapid Creek alluvium. These are the Jackson Springs Gallery and the Girl Scouts Gallery. We utilize eight wells that draw water from the Minnelusa and Madison Aquifers. We also utilize surface water from Rapid Creek, which originates in the Rapid Creek drainage area west of Rapid City. This source includes the Deerfield and Pactola Reservoirs. These reservoirs supply water to the Mountain View and Jackson Springs surface water treatment plants for municipal use as well as downstream irrigation use. The Deerfield and Pactola Dams are operated and maintained by the Rapid City Water Division under a contract with the U.S. Bureau of Reclamation.



Pactola Reservoir

Source Water Assessment

A source water assessment has been completed for our system. The purpose of the assessment is to determine the susceptibility of each drinking water source to potential contaminant sources. The state has performed an assessment of our source water and determined that the relative susceptibility rating for the Rapid City public water supply system is moderate. Information on this assessment can be obtained by calling the State Department of Environment and Natural Resources at (605) 773-3296 or by visiting the following website: http://denr.sd.gov/des/gw/Sourcewater/Source_Water_Protection.aspx.



Mountain View Water Treatment Plant

Water Conservation Tips

You can play a role in conserving water and saving yourself money in the process by becoming conscious of the amount of water your household is using and by looking for ways to use less whenever you can. It is not hard to conserve water. Here are a few tips:

- Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded. So get a run for your money and load it to capacity.
- Turn off the tap when brushing your teeth.
- Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it and you can save almost 6,000 gallons per year.
- Check your toilets for leaks by putting a few drops of food coloring in the tank. Watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from an invisible toilet leak. Fix it and you save more than 30,000 gallons a year.
- Use your water meter to detect hidden leaks. Simply turn off all taps and water-using appliances. Then check the meter after 15 minutes. If it moved, you have a leak.

QUESTIONS?

For more information about this report, or for any questions relating to your drinking water, please call Jeff Crockett, Water Superintendent, or Jim Ackerman, Water Production Supervisor, at (605) 394-4162.

Test Results

We are pleased to report that your drinking water meets or exceeds all federal and state requirements.

Our water is monitored for many different kinds of substances on a very strict sampling schedule, and the water we deliver must meet specific health standards. Here, we only show those substances that were detected in our water (a complete list of all our analytical results is available upon request). Remember that detecting a substance does not mean the water is unsafe to drink; our goal is to keep all detects below their respective maximum allowed levels.

The state recommends monitoring for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

We participated in the fourth stage of the U.S. EPA's Unregulated Contaminant Monitoring Rule (UCMR4) program by performing additional tests on our drinking water. UCMR4 sampling benefits the environment and public health by providing the U.S. EPA with data on the occurrence of contaminants suspected to be in drinking water, in order to determine if U.S. EPA needs to introduce new regulatory standards to improve drinking water quality. Unregulated contaminant monitoring data are available to the public, so please feel free to contact us if you are interested in obtaining that information. If you would like more information on the U.S. EPA's Unregulated Contaminants Monitoring Rule, please call the Safe Drinking Water Hotline at (800) 426-4791.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Alpha Emitters (pCi/L)	2018	15	0	7.32	0.451–7.32	No	Erosion of natural deposits
Barium (ppm)	2018	2	2	0.099	NA	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chlorine (ppm)	2018	[4]	[4]	1.8	NA	No	Water additive used to control microbes
Combined Radium (pCi/L)	2018	5	0	2.58	NA	No	Erosion of natural deposits
Fluoride (ppm)	2018	4	4	1.05	0.54–1.05	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Nitrate (ppm)	2018	10	10	1.08	<0.5–1.08	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
TTHMs [Total Trihalomethanes] ¹ (ppb)	2018	80	NA	12.29	5.68–12.29	No	By-product of drinking water disinfection
Total Organic Carbon ² (removal ratio)	2018	TT	NA	1.0	NA	No	Naturally present in the environment
Turbidity ³ (NTU)	2018	TT	NA	0.09	0.01–0.09	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2018	TT = 95% of samples meet the limit	NA	100	NA	No	Soil runoff

Tap water samples were collected for lead and copper analyses from sample sites throughout the community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH %ILE)	SITES ABOVE AL/ TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2018	1.3	1.3	0.243	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2018	15	0	4	0/30	No	Lead service lines, corrosion of household plumbing systems, including fittings and fixtures; Erosion of natural deposits

SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2018	1.0	NA	0.243	<0.005–0.243	No	Corrosion of household plumbing systems; Erosion of natural deposits
pH (Units)	2018	6.5–8.5	NA	8.04	7.35–8.04	No	Naturally occurring

UNREGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Bromodichloromethane (ppb)	2018	4.71	0.691–4.71	By-product of drinking water disinfection
Bromoform (ppb)	2018	0.929	<0.5–0.929	By-product of drinking water disinfection
Chlorodibromomethane (ppb)	2018	4.13	0.676–4.13	By-product of drinking water disinfection
Chloroform (ppb)	2018	3.30	<0.5–3.30	By-product of drinking water disinfection

UNREGULATED CONTAMINANT MONITORING RULE - PART 4 (UCMR4)

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH
Bromide (ppb)	2018	28.7	<20–28.7
Total Organic Carbon [TOC] (ppb)	2018	1,560	<1,000–1,560

¹The Amount Detected value is the highest locational running annual average.

²Results are from Jackson Springs WTP only; Mountain View WTP was off-line in 2018. The value reported under Amount Detected for TOC is the lowest ratio of percentage of TOC actually removed to the percentage of TOC required to be removed. A value of greater than 1 indicates that the water system is in compliance with TOC removal requirements. A value of less than 1 indicates a violation of the TOC removal requirements.

³Results are from the Jackson Springs WTP; Mountain View WTP was off-line in 2018. Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration system.

Definitions

90th %ile: The levels reported for lead and copper represent the 90th percentile of the total number of sites tested. The 90th percentile is equal to or greater than 90% of our lead and copper detections.

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

LRAA (Locational Running Annual Average): The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters. Amount Detected value for TTHMs is reported as the highest LRAA.

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 Disinfectant 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.

NA: Not applicable

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

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

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

removal ratio: A ratio between the percentage of a substance actually removed to the percentage of the substance required to be removed.

SMCL (Secondary Maximum Contaminant Level): These standards are developed to protect aesthetic qualities of drinking water and are not health based.

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



BY THE NUMBERS

The number of Olympic-sized swimming pools it would take to fill up all of Earth's water.

800
TRILLION

1
CENT

The average cost for about 5 gallons of water supplied to a home in the U.S.

The amount of Earth's water that is salty or otherwise undrinkable, or locked away and unavailable in ice caps and glaciers.

99%

50
GALLONS

The average daily number of gallons of total home water use for each person in the U.S.

The amount of Earth's surface that's covered by water.

71%

330
MILLION

The amount of water on Earth in cubic miles.

The amount of Earth's water that is available for all of humanity's needs.

1%

75%

The amount of the human brain that contains water.