

TOWN OF BIG SANDY

Montana Public Water Supply ID number 00150

2022 Water Quality Report

In a continuing effort to keep you informed about the quality of water and services we provide to you each day, we're pleased to once again provide you with our Annual Water Quality Report. This report is a snapshot of the quality of water we provided you last year. It includes details regarding the source of your water, what your water contains and how it compares to EPA and the State of Montana standards.

Our water comes from three wells. The North well is 148 feet deep, the South well is 147 feet deep, and our third well is 138 feet deep. To ensure its purity, we treat our water with a small amount of chlorine. We have 407 service connections and we added no new connections last year. A sanitary survey inspection of our water system was conducted in September of last year. No significant deficiencies that may affect the quality of our drinking water were noted.

We want you, our valued customers, to be informed about your water system. If you want to learn more, please attend any of our regularly scheduled meetings held on the first Thursday of each month at 7:00 p.m. at City Hall. We are pleased to report that our drinking water is safe and meets all federal and state requirements. If you have any questions about this report or concerning your water system, please contact Tim LaBuda at (406) 390-0816. Tim is our certified operator with 11 years of experience. He attends periodic training sessions to meet continuing education requirements.

DID YOU KNOW? The sources of drinking water (both tap and bottled water) include rivers, lakes, streams, ponds, reservoirs, and wells. As water travels over the surface of land or through the ground, it dissolves naturally occurring minerals and in some cases radioactive elements. Water can also pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in water include:

- 1) Microbial contaminants such as viruses and bacteria which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
- 2) Inorganic contaminants, such as salts and metals which can be naturally occurring or result from urban storm water runoff, industrial or domestic waste water discharges, oil and gas production, mining and farming.
- 3) Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
- 4) Volatile organic chemicals, which are byproducts of industrial processes, petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.
- 5) Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water which must provide the same protection for public health. The Town of Big Sandy routinely monitors for contaminants in your drinking water according to Federal and State laws. We take all of our water samples to Montana Environmental Laboratory in Kalispell (406-755-2131). They are a private laboratory that is certified by the State of Montana and the EPA to analyze drinking water.

Our sampling frequency complies with EPA and state drinking water regulations. The following tests were performed to identify possible contaminants in our system during the period of January 1 to December 31, 2022:

- 12 coliform bacteria tests – all were coliform-free.
- One nitrate plus nitrite test – result was within EPA guidelines.
- 10 tests on the water from our customers' homes to determine the possible presence of lead and copper leaching out of the faucets and fixtures – results were within EPA guidelines.
- Tests to determine the possible presence of 61 organic contaminants – none were detected.
- Tests to determine the possible presence of 40 pesticides & herbicides – none were detected.
- Tests to determine the possible presence of cyanide, PCB's, and 27 EPA regulated organic contaminants to renew a state monitoring waiver – none were detected.
- Tests to determine the possible presence of radium 226 and 228 – none was detected.
- Tests to determine the possible presence of 10 disinfection byproducts – results were within EPA standards.

Due to the purity of our water, we have applied for and been issued a monitoring waiver for six inorganic contaminants: barium, cadmium, chromium, fluoride, mercury, and selenium. This waiver allows our system to sample only once every nine years for these contaminants. Past sampling has shown that these contaminants are either not present in our water or occur in such small amounts that they do not warrant a health hazard. This waiver covers the period from 2020 to 2028.

The Montana Department of Environmental Quality requires that we test for asbestos in our drinking water. As our distribution system contains no asbestos cement pipe, we have applied for and been granted a monitoring waiver for asbestos. This waiver allows our system to not test for this contaminant. This waiver covers the period from 2020 to 2028.

The following tables outline any contaminants detected during recent testing. Some of the data in the tables is more than a year old, since certain chemical contaminants are monitored less than once a year.

Regulated Contaminants

CONTAMINANT	VIOLATION Y/N	SAMPLE DATE	HIGHEST LEVEL DETECTED	UNIT MEASURE-MENT	MCLG	MCL	LIKELY SOURCE OF CONTAMINATION
Alpha Emitters (Adjusted)	N	2-6-19	1.3 +/- 1	pCi/L	0	15	Erosion of natural deposits
Arsenic	N	11-24-20	4	ppb	10	10	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium	N	11-24-20	0.05	ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Chlorine	N	2022	0.2 (0.2 – 0.2)	ppm	MRDLG 4	MRDL 4	Water additive used to control microbes
Copper	N	8-15-22	90th % is 0.63	ppm	1.3	AL=1. 3	Corrosion of Household plumbing / naturally occurring
Fluoride	N	11-24-20	0.54	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth
Nitrate + Nitrite	N	2-7-22	0.01	ppm	10	10	Naturally occurring at this level
Total Haloacetic Acids (HAA's)	N	8-22-22	2.0	ppb	0	60	By product of drinking water chlorination
Total Trihalomethanes (TTHM)	N	8-22-22	0.26	ppb	0	80	By product of drinking water chlorination
Uranium	N	2-6-19	3.3	ppb	0	30	Erosion of natural deposits

DEFINITIONS:

MCL - Maximum Contaminant Level - The MCL is 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 "MCL Goal" is 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.

PPM - Parts per million or Milligrams per liter (mg/l) - one part per million corresponds to one minute in two years or a single penny in \$10,000.

PPB - Parts per billion or Micrograms per liter - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

AL - Action Level - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

pCi/L - Pico Curies per Liter - a very small unit of measurement of radioactivity.

What does this table tell us?

As you can see our system had no MCL violations. MCL's are set at very stringent levels. To understand the possible health effects of exceeding the MCL, a person would have to drink two liters of water every day at the MCL for a lifetime to have a one in a million chance of having any adverse health effects. Although we have learned through our monitoring and testing that some constituents have been detected, the EPA has determined that your water IS SAFE at these levels.

To ensure its purity, we disinfect our water with chlorine. The Montana Department of Environmental Quality (MTDEQ) requires we record the level of chlorine daily. Every month we are required to submit a copy of the daily chlorine log to MTDEQ. Due to an administrative oversight we did not submit our chlorine log to MTDEQ for June of 2022. We received a failure to monitor violation for that month. We submitted our log to MTDEQ and returned to compliance on September 1st. We are taking steps to ensure that the chlorine level is recorded daily and the report is submitted to MTDEQ by the 10th of each month to avoid further violations.

All sources of drinking water are subject to potential contamination by constituents that are naturally occurring or manmade. Those constituents can be microbes, organic or inorganic chemicals, or radioactive materials. All 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 the 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 at 1-800-426-4791 or online at www.epa.gov/safewater.

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, 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. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline, or online at www.epa.gov/safewater.

Lead in drinking water comes primarily from materials and components of the service lines and home plumbing systems. It is possible that lead levels at your home may be higher than other homes in the community as a result of materials used in your home's plumbing. Our water system is responsible for providing high quality drinking water, but we cannot control the variety of materials used in private home plumbing systems. If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested by a certified laboratory like the one we send our samples to (Montana Environmental Laboratory, 406-755-2131). When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap until the water temperature has stabilized (usually for 30 seconds to 2 minutes) before you use the water for drinking or cooking. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure to lead is available from the Safe Drinking Water Hotline 1-800-426-4791, or online at www.epa.gov/safewater/lead.

In September of 2006, the Montana Department of Environmental Quality conducted a source water assessment of our system. This report provides additional information on the potential vulnerability of our wells to contamination. This report is available to you for review online at <https://deq.mt.gov/water/programs/dw#accordion1-collapse2>. The report can be summarized in the following table:

Significant Potential Contaminant Sources

Source	Contaminant	Hazard	Hazard Rating	Barriers	Susceptibility	Management
<i>Inventory Region</i>						
Agricultural Crop Land (12%)	Nitrate and SOCs from fertilizer, pesticides and herbicides. Pathogens (if grazing occurs)	Contaminants leaching into groundwater	Low	- Clay layers overlie the aquifer near the wells - Aquifer depth >100 feet	Very Low Susceptibility	Encourage use of agricultural best management practices (BMPs) in the inventory and recharge region
Occasional vehicle traffic and livestock in the control zone	Petroleum products, nitrates and pathogens.	Contaminants leaching into groundwater	Low	- Clay layers overlie the aquifer near the wells - Aquifer depth >100 feet	Very Low Susceptibility	Ensure that potential sources of contamination are excluded from the control zone and that positive drainage away from each well casing is maintained.
<i>Recharge Region</i>						
Agricultural Crop Land (33%)	Nitrate and SOCs. Pathogens (if grazing occurs)	Contaminants leaching into groundwater	Moderate	- Clay layers overlie the aquifer near the wells - Aquifer depth >100 feet	Not Rated - outside the inventory region	Encourage use of agricultural best management practices (BMPs)
Oil and Gas Test Wells	Total dissolved solids and petroleum hydrocarbons	Improperly sealed or abandoned wells may facilitate contaminant transport to aquifers	Low	- Drilling locations appear to be test holes with no production. - Number of oil and gas test holes does not appear to be large. - Aquifer depth >100 feet	Not Rated - outside the inventory region	Encourage monitoring of drilling activities and oil field development.
Big Sandy Airport area septic systems	VOCs, SOCs metals, pathogens, nitrates, other	Ongoing or catastrophic leakage of sewage into groundwater	Low	- Distance from the PWS well(s) - Clay layers overlie the aquifer near the wells - Aquifer depth >100 feet	Not Rated - outside the inventory region	Maintenance, rehabilitation, or replacement of existing sewer mains, use of sewer main liners, rapid response planning for leaks or ruptures.
Big Sandy Airport Triangle Aviation Robertson Oil Ezzie's Wholesale (active and non-active USTs, leaking UST, agricultural chemical and other chemical use, storage, and handling)	Pesticides, herbicides, VOCs, petroleum products	Leaks, spills and improper handling of pesticides, fertilizers and petroleum products may impact drinking water source.	Low	- Most handle only small volumes of potential contaminants - Clay layers overlie the aquifer - Aquifer depth >100 feet	Not Rated - outside the inventory region	For USTs: Review permit status for USTs and ensure proper operation and maintenance. Tank and line integrity testing, soil testing to evaluate potential impact from historic spills or leaks. Encourage proper removal of USTs if out-of-service. For Agricultural chemical and other chemical use areas: Pollution prevention education; training in waste reduction, handling and recycling; regulatory oversight; promotion of good housekeeping. Emergency planning, training of local emergency planning, training of local emergency response personnel.

Our water system is committed to providing our customers with safe, pure water and we are pleased that our water meets or exceeds all established state and federal standards. Thank you for reviewing this report.