

## *2009 Annual Drinking Water Quality Report*

### *Butte - Silver Bow Department of Public Works Water Utility Division*

We are pleased to present you with this year's Annual Drinking Water Quality Report. This report is designed to inform you about the quality of the water and of the services we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. Through this report we hope to make you understand the efforts we undertake to continually improve the water treatment processes and to protect our precious water resources.

The water sources serving Butte-Silver Bow are (1) The Big Hole River / South Fork Reservoir, (2) Moulton Reservoir, and (3) Basin Creek Reservoir System. These are all surface water sources that, in 2008, supplied 12,450 homes and businesses with 2.69 billion gallons of potable water, with a peak day of 14.95 million gallons. Water from each source can be diverted and utilized at any location within the community. A total of 12,099 ft. of water mains were renewed in 2008 and renewal from 1992 through 2008 totals 365,392 ft. The annual Basin Creek watershed inspection was completed on October 9, 2008 with a representative from the Montana Dept. of Environmental Quality.

The Big Hole Water Treatment Plant began operations in December of 1994 and has the capability to treat 16 million gallons of water per day. The plant is located southwest of Butte. Water from this source primarily serves the south side of Butte and between Galena St. and Aluminum St. The Moulton Water Treatment Plant is located north of Walkerville, and is a 2.5 million gallon per day water treatment facility. It began operating in March of 1995. Water from this source primarily serves the Walkerville community and the upper northwest side of Butte. The water treatment plants are operated by a well trained and state certified staff in accordance with all state and federal government regulations.

The Basin Creek Reservoir, an unfiltered water source, is located south of Butte and has a storage capacity of 364 million gallons. Water from this source primarily serves the southeast side of Butte. The Water Utility Division operates this water source under a variance that exempts this water supply from filtration. On December 31, 1991, the Montana Department of Health and Environmental Sciences made the determination that filtration of the Basin Creek Reservoir water supply was not required. The decision not to require filtration followed a review of the water quality and of the protected status of the Basin Creek watershed. The Department determined that the microbiological quality and the turbidity of the water met the standards for filtration avoidance, and that the watershed was sufficiently protected from contamination. The Water Utility Division has a source water protection plan, available for review at our office that provides more information such as potential sources of contamination for the Basin Creek Reservoir system.

If you have any questions about this report or about your water utility, please contact Marty Hovan at the Big Hole Water Treatment Plant; phone (406) 723-9429.

We want our valued customers to be informed about their water and their water utility. If you wish to learn more, please plan to attend our scheduled informational meeting. This meeting will be held on July 10, 2009, 10 AM, at 126 W. Granite Street, third floor conference room.

The Butte-Silver Bow Water Utility Division routinely monitors for constituents in the

drinking water. This monitoring is conducted in accordance with Federal and State law. The following table shows the results of our monitoring for the period of January 1<sup>st</sup> to December 31<sup>st</sup>, 2008.

Some of the data in the tables is more than one year old, since certain chemical contaminants are monitored less than once a year. A written request to MT DEQ for certain chemical monitoring waivers was given on May 7, 2002. Based upon satisfactory analytical results of three rounds of monitoring between 1993 and 2002, with one monitoring event on Feb. 28, 2002, some inorganic chemicals are eligible for a waiver for reduced monitoring frequency. This waiver is effective through 2010. Our sampling frequency complies with EPA and State drinking water regulations.

In this table you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:

- Non-Detects (ND)* - laboratory analysis indicates that the constituent is not present.
- Parts per million (ppm) or Milligrams per liter (mg/l)* - one part per million corresponds to one minute in two years or a single penny in \$10,000.
- Parts per billion (ppb) or Micrograms per liter* - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.
- Parts per trillion (ppt) or Nanograms per liter (nanograms/l)* - one part per trillion corresponds to one minute in 2,000,000 years, or a single penny in \$10,000,000,000.
- Parts per quadrillion (ppq) or Picograms per liter (picograms/l)* - one part per quadrillion corresponds to one minute in 2,000,000,000 years or one penny in \$10,000,000,000,000.
- Picocuries per liter (pCi/L)* - picocuries per liter is a measure of the radioactivity in water.
- Millirems per year (mrem/yr)* - measure of radiation absorbed by the body.
- Million Fibers per Liter (MFL)* - million fibers per liter is a measure of the presence of asbestos fibers that are longer than 10 micrometers.
- Nephelometric Turbidity Unit (NTU)* - nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.
- Variances & Exemptions (V&E)* - State or EPA permission not to meet an MCL or a treatment technique under certain conditions.
- Action Level* - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- Treatment Technique (TT)* - (mandatory language) A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.
- Maximum Contaminant Level* - (mandatory language) The "Maximum Allowed" (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.
- Maximum Contaminant Level Goal* - (mandatory language) The "Goal"(MCLG) 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.
- Maximum Residual Disinfection Level – MRDL*
- *Maximum Residual Disinfection Level Goal – MRDLG*

## BIG HOLE WATER TREATMENT PLANT TEST RESULTS

Contaminant	Violation Y/N	Sample Date	Highest Level Detected	Range Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
<b>Microbiological Contaminants</b>								
3. Total Organic Carbon	N	Mnthly 2008	8.80	2.00-8.80	ppm	N/A	TT	Naturally present in the environment
4. Turbidity*	N	Hourly 2008	0.163	.034 -.163	NTU's	N/A	TT	Soil runoff
<b>Radioactive Contaminants</b>								
8. Uranium effective Dec. 8, 2003	N	3/6/02	0.0009	N/A	ppm	0	0.03 Effective Dec. 8, 2003	Erosion of natural deposits
<b>Inorganic Contaminants</b>								
*Distribution system sample								
18. Fluoride	N	Qtrly 2008	0.172	0.064-.172	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
<b>Volatile Organic Contaminants</b>								
*Distribution system sample								
*59. Chlorine	N	Daily 2008	1.88	0.20-1.88	ppm	MRDLG= 4	MRDL = 4	Water additive used to control microbes
<b>Unregulated Inorganic Contaminants</b>								
Sodium	N	Qtrly. 2008	7.13	3.36-7.13	ppm	NA	NA	Sodium is an unregulated compound that is not required to be tested for.

## MOULTON WATER TREATMENT PLANT TEST RESULTS

Contaminant	Violation Y/N	Sample Date	Highest Level Detected	Range Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
<b>Microbiological Contaminants</b>								
3. Total Organic Carbon	N	Mnthly 2008	6.10	2.20-6.10	ppm	N/A	TT	Naturally present in the environment
4. Turbidity*	N	Hourly 2008	0.180	.063 -.180	NTU's	N/A	TT	Soil runoff
<b>Inorganic Contaminants</b>								
*Distribution system sample								
10. Arsenic	N	2/28/08	0.002	N/A	ppm	N/A	0.010 Effective Jan. 23,2006	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
18. Fluoride	N	Qtrly 2008	0.135	.064-.135	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
21. Nitrate + Nitrite (as Nitrogen)	N	2/28/08	0.06	N/A	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
<b>Volatile Organic Contaminants</b>								
*Distribution system sample								
*59. Chlorine	N	Daily 2008	1.38	0.21-1.38	ppm	MRDLG= 4	MRDL = 4	Water additive used to control microbes
<b>Unregulated Inorganic Contaminants</b>								
Sodium	N	Qtrly 2008	7.13	4.03-7.13	ppm	NA	NA	Sodium is an unregulated compound that is not required to be tested for.

## BASIN CREEK RESERVOIR SYSTEM TEST RESULTS

Contaminant	Violation Y/N	Sample Date	Highest Level Detected	Range Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
<b>Microbiological Contaminants</b>								
2. Fecal coliform and E.coli (raw source water sample)	N	Daily	N/A	<1/100 in all samples	Colony forming units	0	Less than or equal to 20/100 mL in at least 90% of previous six months measurements	Human and animal fecal waste
3. Total Organic Carbon	N	Mnthly 2008	5.80	1.20-5.80	ppm	N/A	TT	Naturally present in the environment
4. Turbidity*	N	Hourly 2008	4.25	1.23-4.25	NTU's	N/A	TT	Soil runoff
<b>Radioactive Contaminants</b>								
8. Uranium effective Dec. 8, 2003	N	3/6/02	0.0011	N/A	ppm	0	0.03 Effective Dec. 8, 2003	Erosion of natural deposits
<b>Inorganic Contaminants</b>								
*Distribution system sample								
10. Arsenic	N	2/28/08	0.002	N/A	ppm	N/A	0.010 Effective Jan. 23,2006	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
18. Fluoride	N	Qtrly 2008	0.147	.078-.147	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
<b>Volatile Organic Contaminants</b>								
*Distribution system sample								
*59. Chlorine	N	Daily 2008	1.68	0.23-1.68	ppm	MRDLG= 4	MRDL = 4	Water additive used to control microbes
<b>Unregulated Inorganic Contaminants</b>								
Sodium	N	Qtrly 2008	4.38	3.82-4.38	ppm	NA	NA	Sodium is an unregulated compound that is not required to be tested for.
<b>Distribution System</b>								
* Inorganic Contaminant and **Volatile Organic Contaminant sample results are reported combined for the three sources of water, not as separate water sources								
*16. Copper	N	Annual June-Sept.	No sampling required	Reduced monitoring	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
19. Lead**	N	Annual June-Sept.	No sampling required	Reduced monitoring	ppb	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
**70. Haloacetic Acids (HAA)	N	Qtrly 2008	Running Annual Avg. -55	Qtr.Avg. 30-76	ppb	N/A	60	Byproduct of drinking water disinfection
**77. TTHM [Total trihalomethanes]	N	Qtrly. 2008	Running Annual Avg. -37	Qtr.Avg. 21-59	ppb	N/A	80	By-product of drinking water chlorination

\*Turbidity is a measure of the cloudy appearance of water caused by the presence of suspended and colloidal matter. We monitor turbidity because it is a good indicator of water quality. High turbidity can hinder the effectiveness of disinfectants. Our specified limit is 0.5 NTU for our filtered sources and 5 NTU for our unfiltered water and our NTU's were less than this 100% of the time.

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. Butte-Silver Bow Water Utilities is responsible for providing high quality drinking water, but cannot control the variety of materials used in the

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 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: <http://www.epa.gov/safewater/lead>

A Source Water Delineation and Assessment Report for the Butte-Silver Bow Water Utility Div. was prepared by a Water Quality Specialist with the Source Water Protection Program of the Montana Dept. of Environmental Quality (DEQ). This report is intended to meet the technical requirements for the completion of the source water delineation and assessment report required by the Montana Source Water Protection Program (DEQ, 1999) and the federal Safe Drinking Water Act (SDWA) Amendments of 1996. A copy of this report can be obtained at the Butte-Silver Bow Water Utility Div. office, located at 124 W. Granite St. or is available to the public via the Internet at <http://nris.state.mt.us/wis/swap/swaplist.asp>

As you can see by the tables, our system has had no violations during this monitoring period. We're proud that your drinking water meets or exceeds all Federal and State water quality requirements. All sources of drinking water are subject to potential contamination by constituents that are naturally occurring or are man made. Those constituents can be microbes, organic or inorganic chemicals, or radioactive materials. We have learned through our monitoring and testing that some constituents have been detected, but the EPA has determined that your water IS SAFE at these levels.

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.

MCL's are set at very low levels. To better understand the potential for health effects for many regulated constituents consider the following:

A person would have to drink 2 liters of water every day for a lifetime, water that contained the contaminant at the MCL level, to have a one-in-a-million chance of having a particular health effect.

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 (800-426-4791).

Please call our office if you have questions. We at the Butte-Silver Bow Department of Public Works, Water Utility Division work around the clock to provide top quality water to all consumers. We ask that all our customers help us protect our water sources, which are the heart of our community, our way of life and our children's future.

This full version of the 2008 Consumer Confidence Report with a complete listing of the contaminants, for which tests were conducted, can be found on Butte-Silver Bow's website at [www.bsb.mt.gov](http://www.bsb.mt.gov)