

## *2011 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 2010, supplied 12,283 homes and businesses with 2.39 billion gallons of potable water, with a peak day of 13.62 million gallons. Water from each source can be diverted and utilized at any location within the community. A total of 20,532 ft. of water mains were renewed in 2010 and renewal from 1992 through 2010 totals 398,973 ft. The annual Basin Creek watershed inspection was not completed in 2010.

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. As of August 18, 2010 the filtration avoidance status has been rescinded by the MDEQ. 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. The Basin Creek Reservoir System has been temporarily taken off line & out of service since October 27, 2010.

If you have any questions about this report or about your water utility, please contact Doug Finnicum 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 11, 2011, 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>, 2010.

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>								
1. Total Coliform Bacteria	N	Weekly	<1/100	N/A	1/100 ml	0	presence of coliform bacteria in 5% of monthly samples	Naturally present in the environment
2. Fecal coliform and E.coli	N	N/A	N/A	N/A	N/A	0	a routine sample and repeat sample are total coliform positive, and one is also fecal coliform or <i>E. coli</i> positive	Human and animal fecal waste
3. Total Organic Carbon	N	Mnthly 2010	8.80	1.80-8.80	Ppm	N/A	TT	Naturally present in the environment
4. Turbidity*	N	Hourly 2010	0.187	.032-.187	NTU's	N/A	TT	Soil runoff
<b>Radioactive Contaminants</b>								
5. Beta/photon emitters	N/A	N/A	N/A	N/A	mrem/yr	0	4	Decay of natural and man-made deposits
6. Gross Alpha particles	N	3/6/02	ND	N/A	pCi/l	0	15	Erosion of natural deposits
7. Combined radium	N	3/6/02	ND	N/A	pCi/l	0	5	Erosion of natural deposits
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								
9. Antimony	N	2/28/02	ND	N/A	Ppb	6	6	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
10. Arsenic	N	2/23/10	ND	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
11. Asbestos	N	N/A	N/A	N/A	MFL	7	7	Decay of asbestos cement water mains; erosion of natural deposits
12. Barium	N	2/28/02	ND	N/A	ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
13. Beryllium	N	2/28/02	ND	N/A	ppb	4	4	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries
14. Cadmium	N	2/28/02	ND	N/A	ppb	5	5	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints
15. Chromium	N	2/28/02	ND	N/A	ppb	100	100	Discharge from steel and pulp mills; erosion of natural deposits
*16. Copper	N	Annual June-Sept.	At 90 <sup>th</sup> Percentile 1.22	2 samples Exceeded AL	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives

## BIG HOLE WATER TREATMENT PLANT TEST RESULTS con't

Contaminant	Violation Y/N	Sample Date	Highest Level Detected	Range Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
17. Cyanide	N/A	N/A	N/A	N/A	ppb	200	200	Discharge from steel/metal factories; discharge from plastic and fertilizer factories
18. Fluoride	N	Qtrly 2010	0.153	0.060-0.153	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
19. Lead*	N	Annual June-Sept.	At 90 <sup>th</sup> Percentile 10.5	3 samples Exceeded AL	ppb	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
20. Mercury (inorganic)	N	2/28/02	ND	N/A	ppb	2	2	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland
21. Nitrate + Nitrite (as Nitrogen)	N	2/23/10	0.02	N/A	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
22. Nitrite (as Nitrogen)	N	2/23/10	ND	N/A	ppm	1	1	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
23. Selenium	N	2/28/02	ND	N/A	ppb	50	50	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
24. Thallium	N	2/28/02	ND	N/A	ppb	0.5	2	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories
<b>Synthetic Organic Contaminants including Pesticides and Herbicides</b>								
25. 2,4-D	N	2/28/08	ND	N/A	ppb	70	70	Runoff from herbicide used on row crops
26. 2,4,5-TP (Silvex)	N	2/28/08	ND	N/A	ppb	50	50	Residue of banned herbicide
27. Acrylamide	N/A	N/A	N/A	N/A	N/A	0	TT	Added to water during sewage/wastewater treatment
28. Alachlor	N	2/28/08	ND	N/A	ppb	0	2	Runoff from herbicide used on row crops
29. Atrazine	N	2/28/08	ND	N/A	ppb	3	3	Runoff from herbicide used on row crops
30. Benzo(a)pyrene (PAH)	N	2/28/08	ND	N/A	Nanograms/l	0	200	Leaching from linings of water storage tanks and distribution lines
31. Carbofuran	N	2/28/08	ND	N/A	ppb	40	40	Leaching of soil fumigant used on rice and alfalfa
32. Chlordane	N	2/28/08	ND	N/A	ppb	0	2	Residue of banned termiticide
33. Dalapon	N	2/28/08	ND	N/A	ppb	200	200	Runoff from herbicide used on rights of way
34. Di(2-ethylhexyl) adipate	N	2/28/08	ND	N/A	ppb	400	400	Discharge from chemical factories
35. Di(2-ethylhexyl) phthalate	N	2/28/08	ND	N/A	ppb	0	6	Discharge from rubber and chemical factories
36. Dibromochloropropane	N/A	N/A	N/A	N/A	nanograms/l	0	200	Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards
37. Dinoseb	N	2/28/08	ND	N/A	ppb	7	7	Runoff from herbicide used on soybeans and vegetables
38. Diquat	N/A	N/A	N/A	N/A	ppb	20	20	Runoff from herbicide use
39. Dioxin [2,3,7,8-TCDD]	N/A	N/A	N/A	N/A	picograms/l	0	30	Emissions from waste incineration and other combustion; discharge from chemical factories
40. Endothall	N/A	N/A	N/A	N/A	ppb	100	100	Runoff from herbicide use

## BIG HOLE WATER TREATMENT PLANT TEST RESULTS con't

Contaminant	Violation Y/N	Sample Date	Highest Level Detected	Range Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
41. Endrin	N	2/28/08	ND	N/A	ppb	2	2	Residue of banned insecticide
42. Epichlorohydrin	N/A	N/A	N/A	N/A	N/A	0	TT	Discharge from industrial chemical factories; an impurity of some water treatment chemicals
43. Ethylene dibromide	N/A	N/A	N/A	N/A	nanograms/l	0	50	Discharge from petroleum refineries
44. Glyphosate	N/A	N/A	N/A	N/A	ppb	700	700	Runoff from herbicide use
45. Heptachlor	N	2/28/08	ND	N/A	nanograms/l	0	400	Residue of banned termiticide
46. Heptachlor epoxide	N	2/28/08	ND	N/A	nanograms/l	0	200	Breakdown of heptachlor
47. Hexachlorobenzene	N	2/28/08	ND	N/A	ppb	0	1	Discharge from metal refineries and agricultural chemical factories
48. Hexachlorocyclopentadiene	N	2/28/08	ND	N/A	ppb	50	50	Discharge from chemical factories No detects found in the source water. Contaminant caused by chemical reaction between chlorine and distribution compounds.
49. Lindane (gamma-BHC)	N	2/28/08	ND	N/A	nanograms/l	200	200	Runoff/leaching from insecticide used on cattle, lumber, gardens
50. Methoxychlor	N	2/28/08	ND	N/A	ppb	40	40	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock
51. Oxamyl [Vydate]	N	2/28/08	ND	N/A	ppb	200	200	Runoff/leaching from insecticide used on apples, potatoes and tomatoes
52. PCBs [Polychlorinated biphenyls]	N Waived	5/7/98	ND	N/A	nanograms/l	0	500	Runoff from landfills; discharge of waste chemicals
53. Pentachlorophenol	N	2/28/08	ND	N/A	ppb	0	1	Discharge from wood preserving factories
54. Picloram	N	2/28/08	ND	N/A	ppb	500	500	Herbicide runoff
55. Simazine	N	2/28/08	ND	N/A	ppb	4	4	Herbicide runoff
56. Toxaphene	N	2/28/08	ND	N/A	ppb	0	3	Runoff/leaching from insecticide used on cotton and cattle
<b>Volatile Organic Contaminants</b>								
*Distribution system sample								
57. Benzene	N	2/23/10	ND	N/A	ppb	0	5	Discharge from factories; leaching from gas storage tanks and landfills
58. Carbon tetrachloride	N	2/23/10	ND	N/A	ppb	0	5	Discharge from chemical plants and other industrial activities
*59. Chlorine	N	Daily 2010	2.00	0.05-2.00	ppm	MRDLG = 4	MRDL = 4	Water additive used to control microbes
60. Chlorobenzene	N	2/23/10	ND	N/A	ppb	100	100	Discharge from chemical and agricultural chemical factories
61. o-Dichlorobenzene	N	2/23/10	ND	N/A	ppb	600	600	Discharge from industrial chemical factories
62. p-Dichlorobenzene	N	2/23/10	ND	N/A	ppb	75	75	Discharge from industrial chemical factories
63. 1,2 – Dichloroethane	N	2/23/10	ND	N/A	ppb	0	5	Discharge from industrial chemical factories
64. 1,1 – Dichloroethylene	N	2/23/10	ND	N/A	ppb	7	7	Discharge from industrial chemical factories
65. cis-1,2-Dichloroethylene	N	2/23/10	ND	N/A	ppb	70	70	Discharge from industrial chemical factories
66. trans - 1,2 – Dichloroethylene	N	2/23/10	ND	N/A	ppb	100	100	Discharge from industrial chemical factories
67. Dichloromethane	N	2/23/10	ND	N/A	ppb	0	5	Discharge from pharmaceutical and chemical factories

## BIG HOLE WATER TREATMENT PLANT TEST RESULTS con't

Contaminant	Violation Y/N	Sample Date	Highest Level Detected	Range Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
68. 1,2-Dichloropropane	N	2/23/10	ND	N/A	ppb	0	5	Discharge from industrial chemical factories
69. Ethylbenzene	N	2/23/10	ND	N/A	ppb	700	700	Discharge from petroleum refineries
*70. Haloacetic Acids (HAA)	Y	Qtrly 2010	Running Annual Avg. - 58	Qtr. Avgs. 39-100	ppb	N/A	60	Byproduct of drinking water disinfection
71. Styrene	N	2/23/10	ND	N/A	ppb	100	100	Discharge from rubber and plastic factories; leaching from landfills
72. Tetrachloroethylene	N	2/23/10	ND	N/A	ppb	0	5	Leaching from PVC pipes; discharge from factories and dry cleaners
73. 1,2,4 -Trichlorobenzene	N	2/23/10	ND	N/A	ppb	70	70	Discharge from textile-finishing factories
74. 1,1,1 - Trichloroethane	N	2/23/10	ND	N/A	ppb	200	200	Discharge from metal degreasing sites and other factories
75. 1,1,2 -Trichloroethane	N	2/23/10	ND	N/A	ppb	3	5	Discharge from industrial chemical factories
76. Trichloroethylene	N	2/23/10	ND	N/A	ppb	0	5	Discharge from metal degreasing sites and other factories
*77. TTHM [Total trihalomethanes]	N	Qtrly. 2010	Running Annual Avg. - 41	Qtr. Avgs. 31-60	ppb	N/A	80	By-product of drinking water chlorination
78. Toluene	N	2/23/10	ND	N/A	ppm	1	1	Discharge from petroleum factories
79. Vinyl Chloride	N	2/23/10	ND	N/A	ppb	0	2	Leaching from PVC piping; discharge from plastics factories
80. Xylenes, Total	N	2/23/10	ND	N/A	ppm	10	10	Discharge from petroleum factories; discharge from chemical factories
<b>Unregulated Inorganic Contaminants</b>								
Sulfate	N	5/7/98	27	N/A	ppm	NA	NA	Sulfate is an unregulated compound that is not required to be tested for.
Sodium	N	Qtrly. 2010	7.22	2.74-7.22	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>								
1. Total Coliform Bacteria	N	Weekly	<1/100	N/A	1/100 ml	0	presence of coliform bacteria in 5% of monthly samples	Naturally present in the environment
2. Fecal coliform and E.coli	N	N/A	N/A	N/A	N/A	0	a routine sample and repeat sample are total coliform positive, and one is also fecal coliform or <i>E. coli</i> positive	Human and animal fecal waste
3. Total Organic Carbon	N	Mnthly 2010	6.30	3.90-6.30	ppm	N/A	TT	Naturally present in the environment
4. Turbidity*	N	Hourly 2010	0.250	.036 -.250	NTU's	N/A	TT	Soil runoff
<b>Radioactive Contaminants</b>								
5. Beta/photon emitters	N/A	N/A	N/A	N/A	mrem/yr	0	4	Decay of natural and man-made deposits
6. Gross Alpha particles	N	3/6/02	ND	N/A	pCi/1	0	15	Erosion of natural deposits
7. Combined radium	N	3/6/02	ND	N/A	pCi/1	0	5	Erosion of natural deposits
8. Uranium effective Dec. 8, 2003	N	3/6/02	ND	N/A	ppm	0	0.03 Effective Dec. 8, 2003	Erosion of natural deposits
<b>Inorganic Contaminants</b>								
*Distribution system sample								
9. Antimony	N	2/28/02	ND	N/A	ppb	6	6	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
10. Arsenic	N	2/23/10	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
11. Asbestos	N	N/A	N/A	N/A	MFL	7	7	Decay of asbestos cement water mains; erosion of natural deposits
12. Barium	N	2/28/02	ND	N/A	ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
13. Beryllium	N	2/28/02	ND	N/A	ppb	4	4	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries
14. Cadmium	N	2/28/02	ND	N/A	ppb	5	5	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints
15. Chromium	N	2/28/02	ND	N/A	ppb	100	100	Discharge from steel and pulp mills; erosion of natural deposits
*16. Copper	N	Annual June-Sept.	At 90 <sup>th</sup> Percentile 1.22	2 samples Exceeded AL	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
17. Cyanide	N/A	N/A	N/A	N/A	ppb	200	200	Discharge from steel/metal factories; discharge from plastic and fertilizer factories
18. Fluoride	N	Qtrly 2010	0.101	.054-.101	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories

## MOULTON WATER TREATMENT PLANT TEST RESULTS con't

Contaminant	Violation Y/N	Sample Date	Highest Level Detected	Range Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
19. Lead*	N	Annual June-Sept.	At 90 <sup>th</sup> Percentile 10.5	3 samples Exceeded AL	ppb	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
20. Mercury (inorganic)	N	2/28/02	ND	N/A	ppb	2	2	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland
21. Nitrate + Nitrite (as Nitrogen)	N	2/23/10	0.16	N/A	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
22. Nitrite (as Nitrogen)	N	2/23/10	ND	N/A	ppm	1	1	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
23. Selenium	N	2/28/02	ND	N/A	ppb	50	50	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
24. Thallium	N	2/28/02	ND	N/A	ppb	0.5	2	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories

### Synthetic Organic Contaminants including Pesticides and Herbicides

25. 2,4-D	N	2/28/08	ND	N/A	ppb	70	70	Runoff from herbicide used on row crops
26. 2,4,5-TP (Silvex)	N	2/28/08	ND	N/A	ppb	50	50	Residue of banned herbicide
27. Acrylamide	N/A	N/A	N/A	N/A	N/A	0	TT	Added to water during sewage/wastewater treatment
28. Alachlor	N	2/28/08	ND	N/A	ppb	0	2	Runoff from herbicide used on row crops
29. Atrazine	N	2/28/08	ND	N/A	ppb	3	3	Runoff from herbicide used on row crops
30. Benzo(a)pyrene (PAH)	N	2/28/08	ND	N/A	Nanograms/l	0	200	Leaching from linings of water storage tanks and distribution lines
31. Carbofuran	N	2/28/08	ND	N/A	ppb	40	40	Leaching of soil fumigant used on rice and alfalfa
32. Chlordane	N	2/28/08	ND	N/A	ppb	0	2	Residue of banned termiticide
33. Dalapon	N	2/28/08	ND	N/A	ppb	200	200	Runoff from herbicide used on rights of way
34. Di(2-ethylhexyl) adipate	N	2/28/08	ND	N/A	ppb	400	400	Discharge from chemical factories
35. Di(2-ethylhexyl) phthalate	N	2/28/08	ND	N/A	ppb	0	6	Discharge from rubber and chemical factories
36. Dibromochloropropane	N/A	N/A	N/A	N/A	nanograms/l	0	200	Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards
37. Dinoseb	N	2/28/08	ND	N/A	ppb	7	7	Runoff from herbicide used on soybeans and vegetables
38. Diquat	N/A	N/A	N/A	N/A	ppb	20	20	Runoff from herbicide use
39. Dioxin [2,3,7,8-TCDD]	N/A	N/A	N/A	N/A	picograms/l	0	30	Emissions from waste incineration and other combustion; discharge from chemical factories
40. Endothall	N/A	N/A	N/A	N/A	ppb	100	100	Runoff from herbicide use
41. Endrin	N	2/28/08	ND	N/A	ppb	2	2	Residue of banned insecticide
42. Epichlorohydrin	N/A	N/A	N/A	N/A	N/A	0	TT	Discharge from industrial chemical factories; an impurity of some water treatment chemicals
43. Ethylene dibromide	N/A	N/A	N/A	N/A	nanograms/l	0	50	Discharge from petroleum refineries

## MOULTON WATER TREATMENT PLANT TEST RESULTS con't

Contaminant	Violation Y/N	Sample Date	Highest Level Detected	Range Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
44. Glyphosate	N/A	N/A	N/A	N/A	ppb	700	700	Runoff from herbicide use
45. Heptachlor	N	2/28/08	ND	N/A	nanograms/l	0	400	Residue of banned termiticide
46. Heptachlor epoxide	N	2/28/08	ND	N/A	nanograms/l	0	200	Breakdown of heptachlor
47. Hexachlorobenzene	N	2/28/08	ND	N/A	ppb	0	1	Discharge from metal refineries and agricultural chemical factories
48. Hexachlorocyclopentadiene	N	2/28/08	ND	N/A	ppb	50	50	Discharge from chemical factories No detects found in the source water. Contaminant caused by chemical reaction between chlorine and distribution compounds.
49. Lindane (gamma-BHC)	N	2/28/08	ND	N/A	nanograms/l	200	200	Runoff/leaching from insecticide used on cattle, lumber, gardens
50. Methoxychlor	N	2/28/08	ND	N/A	ppb	40	40	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock
51. Oxamyl [Vydate]	N	2/28/08	ND	N/A	ppb	200	200	Runoff/leaching from insecticide used on apples, potatoes and tomatoes
52. PCBs [Polychlorinated biphenyls]	N Waived	5/7/98	ND	N/A	nanograms/l	0	500	Runoff from landfills; discharge of waste chemicals
53. Pentachlorophenol	N	2/28/08	ND	N/A	ppb	0	1	Discharge from wood preserving factories
54. Picloram	N	2/28/08	ND	N/A	ppb	500	500	Herbicide runoff
55. Simazine	N	2/28/08	ND	N/A	ppb	4	4	Herbicide runoff
56. Toxaphene	N	2/28/08	ND	N/A	ppb	0	3	Runoff/leaching from insecticide used on cotton and cattle
<b>Volatile Organic Contaminants</b>								
*Distribution system sample								
57. Benzene	N	2/23/10	ND	N/A	ppb	0	5	Discharge from factories; leaching from gas storage tanks and landfills
58. Carbon tetrachloride	N	2/23/10	ND	N/A	ppb	0	5	Discharge from chemical plants and other industrial activities
*59. Chlorine	N	Daily 2010	1.02	0.21-1.02	ppm	MRDLG = 4	MRDL = 4	Water additive used to control microbes
60. Chlorobenzene	N	2/23/10	ND	N/A	ppb	100	100	Discharge from chemical and agricultural chemical factories
61. o-Dichlorobenzene	N	2/23/10	ND	N/A	ppb	600	600	Discharge from industrial chemical factories
62. p-Dichlorobenzene	N	2/23/10	ND	N/A	ppb	75	75	Discharge from industrial chemical factories
63. 1,2 – Dichloroethane	N	2/23/10	ND	N/A	ppb	0	5	Discharge from industrial chemical factories
64. 1,1 – Dichloroethylene	N	2/23/10	ND	N/A	ppb	7	7	Discharge from industrial chemical factories
65. cis-1,2-Dichloroethylene	N	2/23/10	ND	N/A	ppb	70	70	Discharge from industrial chemical Factories
66. trans - 1,2 – Dichloroethylene	N	2/23/10	ND	N/A	ppb	100	100	Discharge from industrial chemical factories
67. Dichloromethane	N	2/23/10	ND	N/A	ppb	0	5	Discharge from pharmaceutical and chemical factories
68. 1,2-Dichloropropane	N	2/23/10	ND	N/A	ppb	0	5	Discharge from industrial chemical factories
69. Ethylbenzene	N	2/23/10	ND	N/A	ppb	700	700	Discharge from petroleum refineries

## MOULTON WATER TREATMENT PLANT TEST RESULTS con't

Contaminant	Violation Y/N	Sample Date	Highest Level Detected	Range Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
*70. Haloacetic Acids (HAA)	Y	Qtrly 2010	Running Annual Avg. -58	Qtr.Avg. 39-100	ppb	N/A	60	Byproduct of drinking water disinfection
71. Styrene	N	2/23/10	ND	N/A	ppb	100	100	Discharge from rubber and plastic factories; leaching from landfills
72. Tetrachloroethylene	N	2/23/10	ND	N/A	ppb	0	5	Leaching from PVC pipes; discharge from factories and dry cleaners
73. 1,2,4 -Trichlorobenzene	N	2/23/10	ND	N/A	ppb	70	70	Discharge from textile-finishing factories
74. 1,1,1 - Trichloroethane	N	2/23/10	ND	N/A	ppb	200	200	Discharge from metal degreasing sites and other factories
75. 1,1,2 -Trichloroethane	N	2/23/10	ND	N/A	ppb	3	5	Discharge from industrial chemical factories
76. Trichloroethylene	N	2/23/10	ND	N/A	ppb	0	5	Discharge from metal degreasing sites and other factories
*77. TTHM [Total trihalomethanes]	N	Qtrly. 2010	Running Annual Avg. - 41	Qtr.Avg. 31-60	ppb	N/A	80	By-product of drinking water chlorination
78. Toluene	N	2/23/10	ND	N/A	ppm	1	1	Discharge from petroleum factories
79. Vinyl Chloride	N	2/23/10	ND	N/A	ppb	0	2	Leaching from PVC piping; discharge from plastics factories
80. Xylenes	N	2/23/10	ND	N/A	ppm	10	10	Discharge from petroleum factories; discharge from chemical factories
<b>Unregulated Inorganic Contaminants</b>								
Sulfate	N	5/7/98	30	N/A	ppm	NA	NA	Sulfate is an unregulated compound that is not required to be tested for.
Sodium	N	Qtrly 2010	7.38	6.75-7.38	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>								
1. Total Coliform Bacteria	N	Weekly	<1/100	N/A	1/100 ml	0	presence of coliform bacteria in 5% of monthly samples	Naturally present in the environment
2. Fecal coliform and E.coli (raw source water sample)	N	Daily	10/100	<1/100-10/100	Colony forming units	0	Less than or equal to 20/100 mL in at least 90% of six previous months measurements	Human and animal fecal waste
3. Total Organic Carbon	N	Mnthly 2010	6.10	2.20-6.10	ppm	N/A	TT	Naturally present in the environment
4. Turbidity*	N	Hourly 2010	1.45	0.45-1.45	NTU's	N/A	TT	Soil runoff
<b>Radioactive Contaminants</b>								
5. Beta/photon emitters	N/A	N/A	N/A	N/A	mrem/yr	0	4	Decay of natural and man-made deposits
6. Gross Alpha particles	N	3/6/02	ND	N/A	pCi/1	0	15	Erosion of natural deposits
7. Combined radium	N	3/6/02	ND	N/A	pCi/1	0	5	Erosion of natural deposits
8. Uranium effective Dec. 8, 2003	N	3/6/02	ND	N/A	ppm	0	0.03 Effective Dec. 8, 2003	Erosion of natural deposits
<b>Inorganic Contaminants</b>								
*Distribution system sample								
9. Antimony	N	2/28/02	ND	N/A	ppb	6	6	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
10. Arsenic	N	2/23/09	0.001	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
11. Asbestos	N	N/A	N/A	N/A	MFL	7	7	Decay of asbestos cement water mains; erosion of natural deposits
12. Barium	N	2/28/02	ND	N/A	ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
13. Beryllium	N	2/28/02	ND	N/A	ppb	4	4	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries
14. Cadmium	N	2/28/02	ND	N/A	ppb	5	5	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints
15. Chromium	N	2/28/02	ND	N/A	ppb	100	100	Discharge from steel and pulp mills; erosion of natural deposits
*16. Copper	N	Annual June-Sept.	At 90 <sup>th</sup> Percentile 1.22	2 samples Exceeded AL	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
17. Cyanide	N/A	N/A	N/A	N/A	ppb	200	200	Discharge from steel/metal factories; discharge from plastic and fertilizer factories
18. Fluoride	N	Qtrly 2010	0.118	.082-0.118	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories

## BASIN CREEK RESERVOIR SYSTEM TEST RESULTS con't

Contaminant	Violation Y/N	Sample Date	Highest Level Detected	Range Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
19. Lead*	N	Annual June-Sept.	At 90 <sup>th</sup> Percentile 10.5	3 samples Exceeded AL	ppb	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
20. Mercury (inorganic)	N	2/28/02	ND	N/A	ppb	2	2	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland
21. Nitrate + Nitrite (as Nitrogen)	N	2/23/10	0.06	N/A	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
22. Nitrite (as Nitrogen)	N	2/23/10	ND	N/A	ppm	1	1	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
23. Selenium	N	2/28/02	ND	N/A	ppb	50	50	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
24. Thallium	N	2/28/02	ND	N/A	ppb	0.5	2	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories
<b>Synthetic Organic Contaminants including Pesticides and Herbicides</b>								
25. 2,4-D	N	2/28/08	ND	N/A	ppb	70	70	Runoff from herbicide used on row crops
26. 2,4,5-TP (Silvex)	N	2/28/08	ND	N/A	ppb	50	50	Residue of banned herbicide
27. Acrylamide	N/A	N/A	N/A	N/A	N/A	0	TT	Added to water during sewage/wastewater treatment
28. Alachlor	N	2/28/08	ND	N/A	ppb	0	2	Runoff from herbicide used on row crops
29. Atrazine	N	2/28/08	ND	N/A	ppb	3	3	Runoff from herbicide used on row crops
30. Benzo(a)pyrene (PAH)	N	2/28/08	ND	N/A	Nanograms/l	0	200	Leaching from linings of water storage tanks and distribution lines
31. Carbofuran	N	2/28/08	ND	N/A	ppb	40	40	Leaching of soil fumigant used on rice and alfalfa
32. Chlordane	N	2/28/08	ND	N/A	ppb	0	2	Residue of banned termiticide
33. Dalapon	N	2/28/08	ND	N/A	ppb	200	200	Runoff from herbicide used on rights of way
34. Di(2-ethylhexyl) adipate	N	2/28/08	ND	N/A	ppb	400	400	Discharge from chemical factories
35. Di(2-ethylhexyl) phthalate	N	2/28/08	ND	N/A	ppb	0	6	Discharge from rubber and chemical factories
36. Dibromochloropropane	N/A	N/A	N/A	N/A	nanograms/l	0	200	Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards
37. Dinoseb	N	2/28/08	ND	N/A	ppb	7	7	Runoff from herbicide used on soybeans and vegetables
38. Diquat	N/A	N/A	N/A	N/A	ppb	20	20	Runoff from herbicide use
39. Dioxin [2,3,7,8-TCDD]	N/A	N/A	N/A	N/A	picograms/l	0	30	Emissions from waste incineration and other combustion; discharge from chemical factories
40. Endothall	N/A	N/A	N/A	N/A	ppb	100	100	Runoff from herbicide use
41. Endrin	N	2/28/08	ND	N/A	ppb	2	2	Residue of banned insecticide
42. Epichlorohydrin	N/A	N/A	N/A	N/A	N/A	0	TT	Discharge from industrial chemical factories; an impurity of some water treatment chemicals
43. Ethylene dibromide	N/A	N/A	N/A	N/A	nanograms/l	0	50	Discharge from petroleum refineries

## BASIN CREEK RESERVOIR SYSTEM TEST RESULTS con't

Contaminant	Violation Y/N	Sample Date	Highest Level Detected	Range Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
44. Glyphosate	N/A	N/A	N/A	N/A	ppb	700	700	Runoff from herbicide use
45. Heptachlor	N	2/28/08	ND	N/A	nanograms/l	0	400	Residue of banned termiticide
46. Heptachlor epoxide	N	2/28/08	ND	N/A	nanograms/l	0	200	Breakdown of heptachlor
47. Hexachlorobenzene	N	2/28/08	ND	N/A	ppb	0	1	Discharge from metal refineries and agricultural chemical factories
48. Hexachlorocyclopentadiene	N	2/28/08	ND	N/A	ppb	50	50	Discharge from chemical factories No detects found in the source water. Contaminant caused by chemical reaction between chlorine and distribution compounds.
49. Lindane (gamma-BHC)	N	2/28/08	ND	N/A	nanograms/l	200	200	Runoff/leaching from insecticide used on cattle, lumber, gardens
50. Methoxychlor	N	2/28/08	ND	N/A	ppb	40	40	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock
51. Oxamyl [Vydate]	N	2/28/08	ND	N/A	ppb	200	200	Runoff/leaching from insecticide used on apples, potatoes and tomatoes
52. PCBs [Polychlorinated biphenyls]	N Waived	5/7/98	ND	N/A	nanograms/l	0	500	Runoff from landfills; discharge of waste chemicals
53. Pentachlorophenol	N	2/28/08	ND	N/A	ppb	0	1	Discharge from wood preserving factories
54. Picloram	N	2/28/08	ND	N/A	ppb	500	500	Herbicide runoff
55. Simazine	N	2/28/08	ND	N/A	ppb	4	4	Herbicide runoff
56. Toxaphene	N	2/28/08	ND	N/A	ppb	0	3	Runoff/leaching from insecticide used on cotton and cattle

### Volatile Organic Contaminants

\*Distribution system sample

57. Benzene	N	2/23/10	ND	N/A	ppb	0	5	Discharge from factories; leaching from gas storage tanks and landfills
58. Carbon tetrachloride	N	2/23/10	ND	N/A	ppb	0	5	Discharge from chemical plants and other industrial activities
59. Chlorine*	N	Daily 2010	2.18	0.07-2.18	ppm	MRDLG = 4	MRDL = 4	Water additive used to control microbes
60. Chlorobenzene	N	2/23/10	ND	N/A	ppb	100	100	Discharge from chemical and agricultural chemical factories
61. o-Dichlorobenzene	N	2/23/10	ND	N/A	ppb	600	600	Discharge from industrial chemical factories
62. p-Dichlorobenzene	N	2/23/10	ND	N/A	ppb	75	75	Discharge from industrial chemical factories
63. 1,2 – Dichloroethane	N	2/23/10	ND	N/A	ppb	0	5	Discharge from industrial chemical factories
64. 1,1 – Dichloroethylene	N	2/23/10	ND	N/A	ppb	7	7	Discharge from industrial chemical factories
65. cis-1,2-Dichloroethylene	N	2/23/10	ND	N/A	ppb	70	70	Discharge from industrial chemical factories
66. trans - 1,2 – Dichloroethylene	N	2/23/10	ND	N/A	ppb	100	100	Discharge from industrial chemical factories
67. Dichloromethane	N	2/23/10	ND	N/A	ppb	0	5	Discharge from pharmaceutical and chemical factories
68. 1,2-Dichloropropane	N	2/23/10	ND	N/A	ppb	0	5	Discharge from industrial chemical factories
69. Ethylbenzene	N	2/23/10	ND	N/A	ppb	700	700	Discharge from petroleum refineries

## BASIN CREEK RESERVOIR SYSTEM TEST RESULTS con't

Contaminant	Violation Y/N	Sample Date	Highest Level Detected	Range Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
70. Haloacetic Acids (HAA)	Y	Qtrly 2009	Running Annual Avg. -58	Qtr.Avg. 39-100	ppb	N/A	60	Byproduct of drinking water disinfection
71. Styrene	N	2/23/10	ND	N/A	ppb	100	100	Discharge from rubber and plastic factories; leaching from landfills
72. Tetrachloroethylene	N	2/23/10	ND	N/A	ppb	0	5	Leaching from PVC pipes; discharge from factories and dry cleaners
73. 1,2,4 -Trichlorobenzene	N	2/23/10	ND	N/A	ppb	70	70	Discharge from textile-finishing factories
74. 1,1,1 - Trichloroethane	N	2/23/10	ND	N/A	ppb	200	200	Discharge from metal degreasing sites and other factories
75. 1,1,2 -Trichloroethane	N	2/23/10	ND	N/A	ppb	3	5	Discharge from industrial chemical factories
76. Trichloroethylene	N	2/23/10	ND	N/A	ppb	0	5	Discharge from metal degreasing sites and other factories
*77. TTHM [Total trihalomethanes]	N	Qtrly. 2010	Running Annual Avg. - 41	Qtr.Avg. 31-60	ppb	N/A	80	By-product of drinking water chlorination
78. Toluene	N	2/23/10	ND	N/A	ppm	1	1	Discharge from petroleum factories
79. Vinyl Chloride	N	2/23/10	ND	N/A	ppb	0	2	Leaching from PVC piping; discharge from plastics factories
80. Xylenes	N	2/23/10	ND	N/A	ppm	10	10	Discharge from petroleum factories; discharge from chemical factories
<b>Unregulated Inorganic Contaminants</b>								
Sulfate	N	5/7/98	30	N/A	ppm	NA	NA	Sulfate is an unregulated compound that is not required to be tested for.
Sodium	N	Qtrly 2010	6.22	4.01 -6.22	ppm	NA	NA	Sodium is an unregulated compound that is not required to be tested for.

\*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 water was 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 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: <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>

#### Health Effects Language

##### *Microbiological Contaminants:*

- (1) Total Coliform. Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.
- (2) Fecal coliform/E.Coli. Fecal coliforms and E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, and people with severely compromised immune systems.
- (3) Total Organic Carbon. Total Organic Carbon (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these byproducts in excess of the MCL may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may lead to an increased risk of getting cancer.
- (4) Turbidity. Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

##### *Radioactive Contaminants:*

- (5) Beta/photon emitters. Certain minerals are radioactive and may emit forms of radiation known as photons and beta radiation. Some people who drink water containing beta and photon emitters in excess of the MCL over many years may have an increased risk of getting cancer.
- (6) Alpha emitters. Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.
- (7) Combined Radium 226/228. Some people who drink water containing radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer.
- (8) Uranium. Some people who drink water containing uranium in excess of the MCL over many years may have an increased risk of getting cancer and kidney toxicity.

##### *Inorganic Contaminants:*

- (9) Antimony. Some people who drink water containing antimony well in excess of the MCL over many years could experience increases in blood cholesterol and decreases in blood sugar.
- (10) Arsenic. Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.
- (11) Asbestos. Some people who drink water containing asbestos in excess of the MCL over many years may have an increased risk of developing benign intestinal polyps.
- (12) Barium. Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.

- (13) Beryllium. Some people who drink water containing beryllium well in excess of the MCL over many years could develop intestinal lesions.
- (14) Cadmium. Some people who drink water containing cadmium in excess of the MCL over many years could experience kidney damage.
- (15) Chromium. Some people who use water containing chromium well in excess of the MCL over many years could experience allergic dermatitis.
- (16) Copper. Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.
- (17) Cyanide. Some people who drink water containing cyanide well in excess of the MCL over many years could experience nerve damage or problems with their thyroid.
- (18) Fluoride. Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Children may get mottled teeth.
- (19) Lead. Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.
- (20) Mercury (inorganic). Some people who drink water containing inorganic mercury well in excess of the MCL over many years could experience kidney damage.
- (21) Nitrate. Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue-baby syndrome.
- (22) Nitrite. Infants below the age of six months who drink water containing nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue-baby syndrome.
- (23) Selenium. Selenium is an essential nutrient. However, some people who drink water containing selenium in excess of the MCL over many years could experience hair or fingernail losses, numbness in fingers or toes, or problems with their circulation.
- (24) Thallium. Some people who drink water containing thallium in excess of the MCL over many years could experience hair loss, changes in their blood, or problems with their kidneys, intestines, or liver.
- Synthetic organic contaminants including pesticides and herbicides:*
- (25) 2,4-D. Some people who drink water containing the weed killer 2,4-D well in excess of the MCL over many years could experience problems with their kidneys, liver, or adrenal glands.
- (26) 2,4,5-TP (Silvex). Some people who drink water containing silvex in excess of the MCL over many years could experience liver problems.
- (27) Acrylamide. Some people who drink water containing high levels of acrylamide over a long period of time could have problems with their nervous system or blood, and may have an increased risk of getting cancer.
- (28) Alachlor. Some people who drink water containing alachlor in excess of the MCL over many years could have problems with their eyes, liver, kidneys, or spleen, or experience anemia, and may have an increased risk of getting cancer.
- (29) Atrazine. Some people who drink water containing atrazine well in excess of the MCL over many years could experience problems with their cardiovascular system or reproductive difficulties.
- (30) Benzo(a)pyrene [PAH]. Some people who drink water containing benzo(a)pyrene in excess of the MCL over many years may experience reproductive difficulties and may have an increased risk of getting cancer.
- (31) Carbofuran. Some people who drink water containing carbofuran in excess of the MCL over many years could experience problems with their blood, or nervous or reproductive systems.
- (32) Chlordane. Some people who drink water containing chlordane in excess of the MCL over many years could experience problems with their liver or nervous system, and may have an increased risk of getting cancer.
- (33) Dalapon. Some people who drink water containing dalapon well in excess of the MCL over many years could experience minor kidney changes.
- (34) Di (2-ethylhexyl) adipate. Some people who drink water containing di (2-ethylhexyl) adipate well in excess of the MCL over many years could experience general toxic effects or reproductive difficulties.
- (35) Di (2-ethylhexyl) phthalate. Some people who drink water containing di (2-ethylhexyl) phthalate in excess of the MCL over many years may have problems with their liver, or experience reproductive difficulties, and may have an increased risk of getting cancer.
- (36) Dibromochloropropane (DBCP). Some people who drink water containing DBCP in excess of the MCL over many years could experience reproductive difficulties and may have an increased risk of getting cancer.
- (37) Dinoseb. Some people who drink water containing dinoseb well in excess of the MCL over many years could experience reproductive difficulties.
- (38) Dioxin (2,3,7,8-TCDD). Some people who drink water containing dioxin in excess of the MCL over many years could experience reproductive difficulties and may have an increased risk of getting cancer.

- (39) Diquat. Some people who drink water containing diquat in excess of the MCL over many years could get cataracts.
- (40) Endothall. Some people who drink water containing endothall in excess of the MCL over many years could experience problems with their stomach or intestines.
- (41) Endrin. Some people who drink water containing endrin in excess of the MCL over many years could experience liver problems.
- (42) Epichlorohydrin. Some people who drink water containing high levels of epichlorohydrin over a long period of time could experience stomach problems, and may have an increased risk of getting cancer.
- (43) Ethylene dibromide. Some people who drink water containing ethylene dibromide in excess of the MCL over many years could experience problems with their liver, stomach, reproductive system, or kidneys, and may have an increased risk of getting cancer.
- (44) Glyphosate. Some people who drink water containing glyphosate in excess of the MCL over many years could experience problems with their kidneys or reproductive difficulties.
- (45) Heptachlor. Some people who drink water containing heptachlor in excess of the MCL over many years could experience liver damage and may have an increased risk of getting cancer.
- (46) Heptachlor epoxide. Some people who drink water containing heptachlor epoxide in excess of the MCL over many years could experience liver damage, and may have an increased risk of getting cancer.
- (47) Hexachlorobenzene. Some people who drink water containing hexachlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys, or adverse reproductive effects, and may have an increased risk of getting cancer.
- (48) Hexachlorocyclopentadiene. Some people who drink water containing hexachlorocyclopentadiene well in excess of the MCL over many years could experience problems with their kidneys or stomach.
- (49) Lindane. Some people who drink water containing lindane in excess of the MCL over many years could experience problems with their kidneys or liver.
- (50) Methoxychlor. Some people who drink water containing methoxychlor in excess of the MCL over many years could experience reproductive difficulties.
- (51) Oxamyl [Vydate]. Some people who drink water containing oxamyl in excess of the MCL over many years could experience slight nervous system effects.
- (52) PCBs [Polychlorinated biphenyls]. Some people who drink water containing PCBs in excess of the MCL over many years could experience changes in their skin, problems with their thymus gland, immune deficiencies, or reproductive or nervous system difficulties, and may have an increased risk of getting cancer.
- (53) Pentachlorophenol. Some people who drink water containing pentachlorophenol in excess of the MCL over many years could experience problems with their liver or kidneys, and may have an increased risk of getting cancer.
- (54) Picloram. Some people who drink water containing picloram in excess of the MCL over many years could experience problems with their liver.
- (55) Simazine. Some people who drink water containing simazine in excess of the MCL over many years could experience problems with their blood.
- (56) Toxaphene. Some people who drink water containing toxaphene in excess of the MCL over many years could have problems with their kidneys, liver, or thyroid, and may have an increased risk of getting cancer.
- Volatile Organic Contaminants:*
- (57) Benzene. Some people who drink water containing benzene in excess of the MCL over many years could experience anemia or a decrease in blood platelets, and may have an increased risk of getting cancer.
- (58) Carbon Tetrachloride. Some people who drink water containing carbon tetrachloride in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.
- (59) Chlorine. Some people who use water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine well in excess of the MRDL could experience stomach discomfort.
- (60) Chlorobenzene. Some people who drink water containing chlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys.
- (61) o-Dichlorobenzene. Some people who drink water containing o-dichlorobenzene well in excess of the MCL over many years could experience problems with their liver, kidneys, or circulatory systems.
- (62) p-Dichlorobenzene. Some people who drink water containing p-dichlorobenzene in excess of the MCL over many years could experience anemia, damage to their liver, kidneys, or spleen, or changes in their blood.
- (63) 1,2-Dichloroethane. Some people who drink water containing 1,2-dichloroethane in excess of the MCL over many years may have an increased risk of getting cancer.
- (64) 1,1-Dichloroethylene. Some people who drink water containing 1,1-dichloroethylene in excess of the MCL over many years could experience problems with their liver.
- (65) cis-1,2-Dichloroethylene. Some people who drink water containing cis-1,2-dichloroethylene in excess of the MCL over many years could experience problems with their liver.

- (66) trans-1,2-Dichloroethylene. Some people who drink water containing trans-1,2-dichloroethylene well in excess of the MCL over many years could experience problems with their liver.
- (67) Dichloromethane. Some people who drink water containing dichloromethane in excess of the MCL over many years could have liver problems and may have an increased risk of getting cancer.
- (68) 1,2-Dichloropropane. Some people who drink water containing 1,2-dichloropropane in excess of the MCL over many years may have an increased risk of getting cancer.
- (69) Ethylbenzene. Some people who drink water containing ethylbenzene well in excess of the MCL over many years could experience problems with their liver or kidneys.
- (70) Haloacetic Acids. Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.
- (71) Styrene. Some people who drink water containing styrene well in excess of the MCL over many years could have problems with their liver, kidneys, or circulatory system.
- (72) Tetrachloroethylene. Some people who drink water containing tetrachloroethylene in excess of the MCL over many years could have problems with their liver, and may have an increased risk of getting cancer.
- (73) 1,2,4-Trichlorobenzene. Some people who drink water containing 1,2,4-trichlorobenzene well in excess of the MCL over many years could experience changes in their adrenal glands.
- (74) 1,1,1-Trichloroethane. Some people who drink water containing 1,1,1-trichloroethane in excess of the MCL over many years could experience problems with their liver, nervous system, or circulatory system.
- (75) 1,1,2-Trichloroethane. Some people who drink water containing 1,1,2-trichloroethane well in excess of the MCL over many years could have problems with their liver, kidneys, or immune systems.
- (76) Trichloroethylene. Some people who drink water containing trichloroethylene in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.
- (77) TTHMs [Total Trihalomethanes]. Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.
- (78) Toluene. Some people who drink water containing toluene well in excess of the MCL over many years could have problems with their nervous system, kidneys, or liver.
- (79) Vinyl Chloride. Some people who drink water containing vinyl chloride in excess of the MCL over many years may have an increased risk of getting cancer.
- (80) Xylenes. Some people who drink water containing xylenes in excess of the MCL over many years could experience damage to their nervous system.

As you can see by the tables, our system has had one violation 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 2011 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)

