



# Mountain Water Company

## Consumer Confidence Report

### 2006/2007 Annual Water Quality Report

## WHAT KIND OF CONTAMINANTS MIGHT BE FOUND IN DRINKING WATER?

In 1996, the Safe Drinking Water Act was amended to require all community water systems to deliver an annual water quality report to their customers. This year's report includes information on your source water, the levels of any detected contaminants, compliance with drinking water rules, and informational articles relating to our source water assessment and the Missoula Aquifer Study.

In order to ensure that tap water is safe to drink, the United States Environmental Protection Agency (EPA) and the Montana Department of Environmental Quality (DEQ) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The federal Food and Drug Administration and DEQ regulations also establish limits for contaminants in bottled water, which must provide the same protection for public health. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, that can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.
- Radioactive contaminants, that can be naturally occurring or be the result of oil and gas productions and mining activities.

This report describes those contaminants that have been detected in our analysis of nearly 100 potential contaminants which are regulated by the EPA and the DEQ.

**Mountain Water Company (MWC) is proud to tell you that there have been no contaminants detected in our water that exceed any federal or state drinking water standards.** All primary (health related) and secondary (aesthetic) drinking water standards are being met.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (1-800-426-4791).

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 can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

Because there have been no confirmed findings of synthetic organic chemicals (pesticides and herbicides) in MWC wells, DEQ has allowed us to reduce the level of monitoring for these chemicals. This waiver has resulted in a significant reduction in monitoring costs. This monitoring waiver is reviewed every three years by DEQ.

This report is intended to provide information for all water users. If received by an absentee landlord, a business, or a school, please share the information with tenants, employees or students. We will be happy to make additional copies of this report available. Complete records of water quality analyses are open for inspection by the public upon request.

**You may also access this report on the Mountain Water Company web page at [www.mtnwater.com](http://www.mtnwater.com).**

**If you would like more information about water quality, please call: Brad Hafar or Arvid Hiller at (406) 721-5570.**

# Mountain Water Company

## 2006/2007 Annual Water Quality Results

### Water Quality Parameters Detected in Mountain Water Company Sources

| PRIMARY STANDARDS<br>-- Health-related | Federal<br>MCL | MCLG | Units<br>of<br>Measurement | MWC Range<br>(including<br>highest value) | Average for<br>MWC<br>Wells (a) | Date of Last<br>Measurement<br>MWC (b) | Potential Sources<br>of<br>Contamination |
|--|----------------|------|----------------------------|---|---------------------------------|--|--|
|--|----------------|------|----------------------------|---|---------------------------------|--|--|

#### INORGANIC CHEMICALS

|          |    |    |     |           |      |            |  |
|----------|----|----|-----|-----------|------|------------|--|
| Arsenic  | 10 | 0  | ppb | ND-3      | 1    | 2004/05/06 | Erosion of natural deposits; historical mining and smelting.   |
| Barium   | 2  | 2  | ppm | 0.2 - 0.5 | 0.24 | 2004/05/06 | Erosion of natural deposits; discharge from metal refineries; discharge from oil drilling wastes.  |
| Cadmium  | 5  | 5  | ppb | ND - 1    | ND   | 2004/05/06 | Internal corrosion of galvanized pipes; erosion of natural deposits; discharge from electroplating and industrial chemical factories, and from metal refineries; runoff from waste batteries and paints. |
| Fluoride | 4  | 4  | ppm | 0.11-0.22 | 0.18 | 2004/05/06 | Erosion of natural deposits; discharge from fertilizer factories.  |
| Nitrate  | 10 | 10 | ppm | 0.39-2.76 | 0.97 | 2006       | Erosion of natural deposits; runoff and leaching from fertilizer use; leaching from septic tanks and sewers.   |

#### RADIONUCLIDES

|  |    |   |       |          |    |      |                              |
|--|----|---|-------|----------|----|------|------------------------------|
| Gross Alpha                                  | 15 | 0 | pCi/L | ND - 2.0 | ND | 2002 | Erosion of natural deposits. |
| Combined Radium<br>(Radium 226 + Radium 228) | 5  | 0 | pCi/L | ND - 3.6 | ND | 2002 | Erosion of natural deposits. |

| LEAD AND COPPER<br>RULE MONITORING | Federal<br>Action | Number<br>of<br>Samples | Units<br>of<br>Measurement | MWC Range<br>(including<br>highest value) | Amount<br>Detected at<br>90th<br>Percentile* | Date of Last<br>Measurement<br>MWC (b) | Potential Sources<br>of<br>Contamination   |
|------------------------------------|-------------------|-------------------------|----------------------------|---|--|--|--|
| Copper                             | 1.3               | 30                      | ppm                        | 0.07 - 0.68                               | 0.6  | 2004                                   | Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.         |
| Lead                               | 15                | 30                      | ppb                        | ND - 12                                   | 8  | 2004                                   | Internal corrosion of household plumbing systems; discharges from industrial manufacturers; erosion of natural deposits. |

| DISTRIBUTION SYSTEM            |          |           |        |           |      |      | Potential Sources<br>of<br>Contamination  |
|--------------------------------|----------|-----------|--------|-----------|------|------|---|
| Asbestos                       | 7 MFL    | 7 MFL     | fibers | ND - 0.96 | NA   | 2002 | Internal corrosion of asbestos-cement water mains; erosion of natural deposits. |
| Chlorine Residual              | MRDL = 4 | MRDLG = 4 | ppm    | 0.17-0.7  | 0.37 | 2006 | Added for disinfection purposes.  |
| Total Trihalomethanes (TTHM's) | 80       | NS        | ppb    | ND - 6.1  | 2.4  | 2006 | By-product of drinking water disinfection.                                      |
| Haloacetic Acids (HAA-5)       | 60       | NS        | ppb    | 0-0.72    | 0.28 | 2006 | By-product of drinking water disinfection.                                      |

| SECONDARY STANDARDS<br>--Aesthetic, non-health standards | Federal<br>MCL | MCLG | Units<br>of<br>Measurement | MWC Range<br>(including<br>highest value) | Average for<br>MWC<br>Wells (a) | Date of Last<br>Measurement<br>MWC (b) | Potential Sources<br>of<br>Contamination                  |
|--|----------------|------|----------------------------|---|---------------------------------|--|---|
| Aluminum   | 1              | NS   | ppm                        | ND - 0.1                                  | ND                              | 2004/05/06                             | Erosion of natural deposits.                              |
| Chloride   | 250            | NS   | ppm                        | 4 - 28                                    | 8                               | 2004/05/06                             | Runoff/leaching from natural deposits.                    |
| Iron   | 300            | NS   | ppb                        | ND - 30                                   | ND                              | 2004/05/06                             | Leaching from natural deposits; industrial waste.         |
| Sulfate  | 250            | NS   | ppm                        | 9 - 21                                    | 17                              | 2004/05/06                             | Runoff/leaching from natural deposits; industrial wastes. |
| Total Dissolved Solids (TDS)                             | 500            | NS   | ppm                        | 161-261                                   | 208                             | 2004/05/06                             | Runoff/leaching from natural deposits.                    |
| Zinc   | 5,000          | NS   | ppb                        | ND - 20                                   | ND                              | 2004/05/06                             | Runoff/leaching from natural deposits; industrial wastes. |

#### PHYSICAL PARAMETERS

|                     |           |    |       |            |      |            |   |
|---------------------|-----------|----|-------|------------|------|------------|---|
| pH                  | 6.5 - 8.5 | NS | units | 7.2 - 7.9  | 7.7  | 2004/05/06 | Hydrogen ion concentration. Value greater than 7 is basic (non-acidic). |
| Turbidity / clarity | 5.0       | NS | NTU   | 0.06 - 1.5 | 0.41 | 2004/05/06 | Soil runoff.  |

# Mountain Water Company

## 2006/2007 Annual Water Quality Results

Detected Unregulated Chemicals That May Be of Interest to Consumers\*\*

| ADDITIONAL PARAMETERS<br>Unregulated | Federal<br>MCL | MCLG | Units<br>of<br>Measurement | MWC Range<br>(including highest<br>value) | Average for MWC<br>Wells (a) | MWC Date of Last<br>Measurement (b) |
|--------------------------------------|----------------|------|----------------------------|---|------------------------------|-------------------------------------|
| Aggressiveness Index ( c )           | NS             | NS   | units                      | 11.4 - 12.3                               | 12.0                         | 2004/05/06                          |
| Alkalinity (as Ca CO <sub>3</sub> )  | NS             | NS   | ppm                        | 143-214                                   | 164                          | 2004/05/06                          |
| Calcium                              | NS             | NS   | ppm                        | 41-56                                     | 48                           | 2004/05/06                          |
| Corrosivity (Langlier Index) ( d )   | NS             | NS   | positive/negative          | ( - 0.4 ) - ( + 0.4 )                     | + .16                        | 2004/05/06                          |
| Hardness (Ca CO <sub>3</sub> )       | NS             | NS   | ppm                        | 150-211                                   | 175                          | 2004/05/06                          |
| Hardness                             | NS             | NS   | grains                     | 8.8-12.3                                  | 10.2                         | 2004/05/06                          |
| Magnesium                            | NS             | NS   | ppm                        | 11-21                                     | 13                           | 2004/05/06                          |
| Potassium                            | NS             | NS   | ppm                        | 1 - 2                                     | 2.0                          | 2004/05/06                          |
| Sodium                               | NS             | NS   | ppm                        | 5 - 18                                    | 6.9                          | 2004/05/06                          |
| Specific Conductance                 | NS             | NS   | micromho/cm                | 315 - 467                                 | 362                          | 2004/05/06                          |

### KEY TO ABBREVIATIONS AND FOOTNOTES

AL = Action Level  
MCL = Maximum Contaminant Level  
MFL = Million Fibers per Liter  
NA = Not applicable at this time or not required to analyze  
ND = Not detected  
NS = No standard  
NTU = Nephelometric Turbidity Units. This is a measure of the suspended material in water.

\* = Action Levels are measured at the 90th percentile sample (third highest reading out of thirty samples for lead and copper).

\*\* = Unregulated contaminant monitoring helps USEPA determine where certain contaminants occur and whether the contaminants need to be regulated.

ppm = parts per million  
ppb = parts per billion  
pCi/L = picoCuries per liter

- ( a ) = The average is weighted according to the individual contribution in pumping by each well to the total (active wells only).  
( b ) = The state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants in groundwater sources do not change frequently. Some of our data, though representative, are more than one year old.  
( c ) = An Aggressiveness Index of 11 or greater indicates that the water is not aggressive (noncorrosive).  
( d ) = A positive number Langlier Index indicates that the water is noncorrosive.

### DEFINITIONS

#### Maximum Contaminant Level (MCL):

The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.

#### Maximum Contaminant Level Goal (MCLG):

The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.

#### Action Level (AL):

The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

#### Maximum Residual Disinfectant Level (MRDL):

The level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap.

#### Maximum Residual Disinfectant Level Goal (MRDLG):

The level of a disinfectant added for water treatment below which there is no known or expected risk to health.



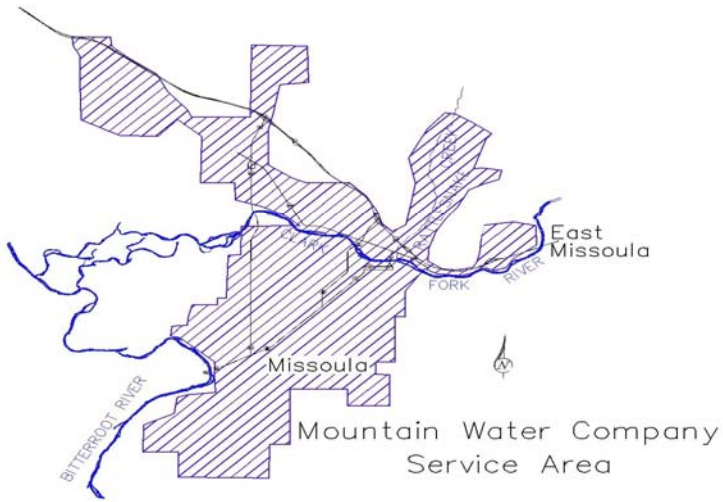
Providing quality water and dependable service to the Missoula community at a reasonable price.

#### Mountain Water Company

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# WHERE DOES YOUR WATER COME FROM?



Mountain Water Company serves the greater Missoula area. The Missoula aquifer is currently the only active source of public drinking water for Missoula Valley residents. MWC utilizes 34 active wells to pump water from this aquifer. The only treatment performed by MWC is low-level disinfection with chlorine.

Rattlesnake Creek lies just north of Missoula and, under the guidance of the DEQ, serves as an alternative source available for use in special situations. Rattlesnake Creek is a surface water supply originating in the Rattlesnake Wilderness area and emptying in the Clark Fork River. Strict environmental conditions are maintained in the watershed to preserve the quality of this source.

## Source Water Delineation and Assessment

As required by the EPA in 2003, a Source Water Delineation and Assessment report was completed for MWC and submitted to the DEQ and the EPA. We utilized this report as an opportunity to update our Wellhead Protection Program with the latest information and technologies in modeling and mapping with linked databases. This assessment resulted in an updated list of possible contaminant sources to our aquifer, some of those being underground storage tanks, public and private sumps, leaking pipelines, spills along railroad tracks and highways, sewer lift stations and septic systems. This has resulted in a very useful tool for protection of our valuable drinking water supply. This report is available to the public at the DEQ, the Missoula City/County Health Department and at our office.

## The Missoula Aquifer Subject of UM Study

The Missoula Aquifer has been designated a Sole Source Aquifer by the Environmental Protection Agency (EPA). Urban storm water channeled through Class V injection wells for disposal has been identified as a significant threat to the water quality of the underlying unconfined aquifer.

Mountain Water Company has teamed with the American Water Works Research Foundation and the University of Montana to sponsor a project titled "Quantifying the Capacity of Coarse-Grained Vadose Zones to Treat Class V Well Injected Storm Water that Recharges Aquifers Managed for Water Supply". This study will be conducted by Dr. William Woessner and James E. Swierc Ph.D. Candidate at the University of Montana and will document and quantify the pathways and rates of migration of storm water through the vadose zone. The monitoring will focus on metals and selected EPA priority contaminants at six sites. Results of the study will be used to support Source Water Protection Planning programs and to estimate the long term attenuation/treatment capacity of coarse grained vadose zones.

