



Missouri River Comes to Mitchell

In November of 2003, water drawn from the Missouri River south of Tabor, and treated at the B-Y Water Treatment Plant began to flow to Mitchell.

The cost was \$17 million dollars. This was the total cost to engineer, construct, acquire easements, and administer the project including 66 miles of pipeline, 2 million gallon reservoir, pump and meter stations. Mitchell's share was \$14 million dollars.

Mitchell's portion was funded by the:
US EPA grant for \$4,750,000
SD state revolving fund load for \$3,000,000
Local cash and bond issue for \$6,250,000

Benefits of the project include Mitchell's daily capacity of water went from just over 6 million gallons per day to 9 million gallons per day (combined plant plus B-Y water), and better tasting water for our customers.

We have a true backup water supply; if Mitchell's water plant goes down due to power or other failure, we can still get water to our system. Likewise, if B-Y plant goes down, we still have water.

Softer water means cleaner clothes and less soap use.

Stormwater Management

Stormwater management is an important component of maintaining a safe drinking water supply. As an area develops, land that once allowed rain to soak into the ground is covered with impervious surfaces such as pavement and roofs. Running over these surfaces, water warms up, picks up pollutants, and reaches streams quickly, causing thermal and chemical pollution as well as erosion and sedimentation.

Please be aware **our storm drains lead water directly into our freshwater.** Therefore, we must all make efforts to keep pollutants out of our storm drains.

Pollutants washed into streams, ponds and lakes can quickly infiltrate underground aquifers—that's why managing stormwater effectively helps keep our drinking water free from pollutants.

Water Quality Certificate

The City of Mitchell water system and certified operators have been awarded a Drinking Water Certificate of Achievement Award by the South Dakota Department of Environmental and Natural Resources. The award is for outstanding water system operations and environmental compliance with state drinking water standards for the past year. (Source; the Daily Republic, 2009).

The City of Mitchell Water Department is a member of the American Water Works Association, a scientific and educational society dedicated to the improvement of drinking water quality and supply.



Important Source Water and Health Information from the EPA

The sources of drinking water (both tap and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals, 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, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.



Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.



Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.



Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.



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

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 Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

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 microbial contaminants can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

City of Mitchell 2008 Drinking Water Report

Producing Safe, Soft, Affordable Water

West Side
Water Tower

B-Y Rural
Water Pipe
in Water
Treatment
Plant



Mitchell Lake & Spillway



Water Treatment Plant



High Service
Pumps used to
pump water to
Water Towers



Local law enforcement helps water plant staff keep the facility secure from intentional harm.



Clean, safe,
and soft
water is
delivered to
your home.

Last year we monitored your drinking water for more than 80 possible contaminants. This brochure provides a snapshot of the quality of the water that we provided last year. Included are details about where your water comes from, what it contains, and how it compares to Environmental Protection Agency (EPA) and state standards. We are committed to providing you with information because informed customers are our best allies.

We serve more than 15,000 customers an average of 1,956,800 gallons of water per day. We get our water from surface water sources. The state has performed an assessment of our source water and they have determined that the relative susceptibility rating for the Mitchell public water supply system is medium. The water that was consumed in 2008 was 99% B-Y Rural water (Missouri River).

For more information about your water and information on opportunities to participate in public meetings, call 605-995-8449 and ask for the Water Superintendent Richard Pollreis.

Mitchell Water Department
2800 North Main St.
Mitchell, SD 57301

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Key to Terms and Abbreviations in the Table

In order to ensure that tap water is safe to drink, the U.S. Environmental Agency (EPA) prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

The attached table lists all the drinking water contaminants that we detected during the 2008 calendar year. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in this table is from testing done January 1-December 31, 2008.

The state requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, are more than one year old. Water is also purchased from Bon Homme-Yankton RWS. Information on detected contaminants is listed in this table.

Lead

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. City of Mitchell public water system is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing the 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>

The **Level Found** can be the highest amount found in the water or the average of all samples analyzed, depending on the regulation. If multiple samples were tested in 2008, the lowest and highest detected values are listed under **Range of Detections**.

The highest level of a substance allowed in drinking water is the Maximum Contaminant Level (**MCL**), which is set by the EPA. Some contaminants also have MCL goals (**MCLGs**). This is the level of a substance where there is no known or expected health risk. MCLGs allow for a margin of safety. MCLs are set as close to MCLGs as feasible using the best available water treatment processes.

The MCL for lead and copper is known as the **Action Level (AL)**. This is the concentration which, if exceeded, triggers treatment or other requirement a water system must follow. Ninety percent of all samples tested must be below this concentration. During 2008, no samples from the Mitchell system tested above the action level for either copper or lead. No monitoring for lead or copper was done in 2006 or 2007, but was done in 2008.

Turbidity is a measure of water clarity monitored at the Mitchell Water Treatment Plant. Certain **'treatment techniques' (TT)** are required to reduce the level in the drinking water. Regulations require turbidity to be <0.3 NTU 95% of the time and <1.0 NTU 100% of the time. During 2008, no samples exceeded the 0.3 NTU benchmark at the Mitchell Water Treatment Plant.

Water Treatment: The Key to Great Water

The City of Mitchell uses a surface water source for the community's supply. Surface water sources can provide more water volume than localized groundwater wells, and surface water is a renewable resource when compared to groundwater. Surface water quality, however, is variable--highly dependent on weather and other environmental conditions. For this reason, more rigorous water treatment processes are required for surface water sources.

The chemical and physical processes used at the Mitchell Water Plant convert a source water with variable characteristics into a consistently safe, soft, and good-tasting drinking water.

Water from Lake Mitchell is hard, and the water treatment process centers around softening the water. The water softening process reduces hardness from an average level of 34 grains per gallon to 22 grains per gallon. B-Y water hardness ranges from 6.5 to 10.5 grains per gallon. Some residual hardness in the finished water is beneficial--this prevents the water from becoming too corrosive.

After softening, the water is filtered, disinfected, and fluoridated before being pumped into the distribution system. All chemicals used in the water treatment process are closely monitored so that safe, precise amounts are always used.

Lawn Watering Techniques

*Water in the early morning; it is the best time to water for all plants. Avoid watering during the afternoon, which is the hottest period of the day and when evaporation is greatest.

*Water only when your lawn needs it. If you step on the grass and it springs back, it doesn't need watering. An established lawn needs only one inch of water per week.

*Deep-soak your lawn. When you do water, do it long enough for the moisture to soak to the roots where it will be most beneficial. A light sprinkling can evaporate quickly and tends to encourage shallow root systems.

*Position your sprinklers so the water lands on the lawn or garden, not on paved areas.

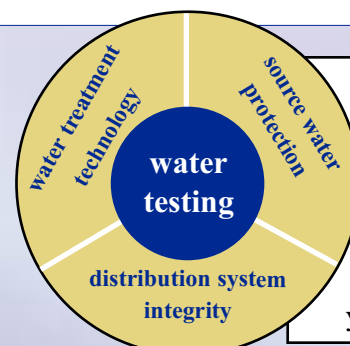
*Plant drought resistant trees and plants. Add mulch around them to slow evaporation of moisture and discourage weed growth.



Drinking Water Quality Table for 2008

Detected Substance <i>Units of Measurement</i>	Test Date	MCL: highest amount allowed	MCLG: No health risk	Level Found in Mitchell Water	Mitchell's Range of Detections	Test Date	Level Found in B-Y Water	B-Y Range of Detections	Typical Source of Substance in Drinking Water
Alpha Emitters pCi/L	—	15	0	—	—	2004	0.7	—	Erosion of natural deposits.
Barium ppm	2004	2.0	2.0	0.011	—	2008	0.010	—	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
Copper ppm	2008	AL=1.3	0	90% of samples < 0.1	# Sites>1.3 AL=0	2007	0.0	# Sites >1.3 AL=0	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.
Fluoride ppm	—	4	4	—	—	2008	1.40	1.01-1.40	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer factories.
Haloacetic Acids ppb	—	60	0	—	—	2008	28	3.06 - 28.0	By-product of drinking water disinfection.
Lead ppb	2008	90% of samples must be below 15 ppb (AL)	0	90% of samples < 2.0	# Sites >15 AL=0	2007	1.0	# Sites >15 AL=0	Corrosion of household plumbing systems; erosion of natural deposits.
Selenium ppb	2004	50	50	2.0	—	2008	2.0	—	Discharge from petroleum and metal refineries; erosion of natural deposits, discharge from mines.
Total Trihalomethanes ppb	—	80	0	—	—	2008	43.5	23.8-43.5	By-product of drinking water chlorination.
Turbidity NTU	—	TT	—	—	—	2008	0.20	100% samples below 0.3	Soil runoff. Turbidity is a measurement of the clarity of the water.
Antimony ppb	—	6	6	—	—	2008	0.1	—	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder.
Chromium ppb	—	100	100	—	—	2008	1.3	—	Discharge from steel and pulp mills; erosion of natural deposits.

Other Definitions:
ppb: parts per billion
ppm: parts per million
pCi/L: picoCuries per liter, a measure of radioactivity
NTU: Nephelometric Turbidity Units



Our Role in Drinking Water Safety

The Mitchell Water Treatment Plant uses a multiple barrier approach to ensure delivery of high quality water. A series of checks and balances protect the supply from the source to the faucet. This holistic approach is considered the best practice within the water utility profession to ensure public health protection.

You can help protect Mitchell's water supply by disposing of household wastes properly. Remember, what you put down the drain and on the ground eventually makes its way into the lake or underground aquifers.