

ANNUAL WATER QUALITY REPORT

Water testing performed in 2007



Presented By:

City of
Moberly!

PWS ID#: 2010533

Meeting the Challenge

We are once again proud to present to you our annual water quality report. This edition covers all testing completed from January 1 through December 31, 2007. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal drinking water standards. We continually strive to adopt new and better methods for delivering the best quality drinking water to you. As new challenges to drinking water safety emerge, we remain vigilant in meeting the challenges of source water protection, water conservation, and community education while continuing to serve the needs of all our water users.

Please share with us your thoughts about the information in this report. After all, well-informed customers are our best allies.

Where Does My Water Come From?

The City of Moberly Water Treatment Plant draws water from Sugar Creek Reservoir, a lake covering approximately 365 acres. The Moberly Water Treatment Plant was constructed in 1972. Our treatment facility provides roughly 475 million gallons of clean drinking water every year.

Tap vs. Bottled

Thanks in part to aggressive marketing, the bottled water industry has successfully convinced us all that water purchased in bottles is a healthier alternative to tap water. However, according to a four-year study conducted by the Natural Resources Defense Council, bottled water is not necessarily cleaner or safer than most tap water. In fact, about 25% of bottled water is actually just bottled tap water (40% according to government estimates).

The Food and Drug Administration is responsible for regulating bottled water, but these rules allow for less rigorous testing and purity standards than those required by the U.S. EPA for community tap water. For instance, the high mineral content of some bottled waters makes them unsuitable for babies and young children. Further, the FDA completely exempts bottled water that's packaged and sold within the same state, which accounts for about 70% of all bottled water sold in the United States.

People spend 10,000 times more per gallon for bottled water than they typically do for tap water. If you get your recommended eight glasses a day from bottled water, you could spend up to \$1,400 annually. The same amount of tap water would cost about 49 cents. Even if you installed a filter device on your tap, your annual expenditure would be far less than what you'd pay for bottled water.

For a detailed discussion on the NRDC study results, check out their Web site at www.nrdc.org/water/drinking/bw/exesum.asp.

Community Participation

You are invited to participate in our public forum and to voice your concerns about your drinking water. We meet the first and third Monday of each month beginning at 7:00 p.m. at City Hall, 101 West Reed Street, Moberly, Missouri.

Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk.

The sources of drinking water (both tap water 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, in some cases, radioactive material and substances resulting from the presence of animals or from human activity. Substances 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, or wildlife;

Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may 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 may also come from gas stations, urban stormwater runoff, and septic systems;

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

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

Important Health Information

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

Water Treatment Process

The treatment process consists of a series of steps. First, raw water is drawn from our water source and sent to an up-flow basin, where chemicals are added. The addition of these substances causes small particles to adhere to one another (called floc), making them heavy enough to settle into a basin from which sediment is removed. Chlorine is then added for disinfection, and fluoride is added to prevent tooth decay. At this point, the water is filtered through layers of silicate sand. As smaller, suspended particles are removed, turbidity disappears, and clear water emerges. Chlorine is added again as precaution against any bacteria that may still be present. (We carefully monitor the amount of chlorine, adding the lowest quantity necessary to protect the safety of your water without compromising taste.) Finally, the water flows to underground reservoirs where it is stored until it is pumped to water towers and into your home or business.

Questions?

For more information about this report, or for any questions relating to your drinking water, please call Keith Phipps, Director of Public Utilities, at (660) 269-8705, ext. 2046.

Q & A

Is it Safe to Drink Water From a Garden Hose?

Substances used in vinyl garden hoses to keep them flexible can get into the water as it passes through the hose. These chemicals are not good for you nor are they good for your pets. Allow the water to run for a short time in order to flush the hose before drinking or filling your pets' drinking containers. There are hoses made with "food-grade" plastic that will not contaminate the water. Check your local hardware store for this type of hose.



How Long Can I Store Drinking Water?

The disinfectant in drinking water will eventually dissipate even in a closed container. If that container housed bacteria prior to filling up with the tap water the bacteria may continue to grow once the disinfectant has dissipated. Some experts believe that water could be stored up to six months before needing to be replaced. Refrigeration will help slow the bacterial growth.

How Much Water is Lost to a Dripping Faucet?

Dripping faucets waste a precious resource and it costs you money. As an example, if you have a faucet that drips 60 times a minute, this adds up to over 3 gallons each day or 1,225 gallons each year.

Lead and Drinking Water



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. The City of Moberly 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 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 www.epa.gov/safewater/lead.

Water Conservation

You can play a role in conserving water and saving yourself money in the process by becoming conscious of the amount of water your household is using and by looking for ways to use less whenever you can. It is not hard to conserve water. Here are a few tips:

- Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded. So get a run for your money and load it to capacity.
- Turn off the tap when brushing your teeth.
- Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it and you can save almost 6,000 gallons per year.
- Check your toilets for leaks by putting a few drops of food coloring in the tank. Watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from an invisible toilet leak. Fix it and you save more than 30,000 gallons a year.
- Use your water meter to detect hidden leaks. Simply turn off all taps and water using appliances. Then check the meter after 15 minutes. If it moved, you have a leak.



Sampling Results

During the past year we have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic or synthetic organic contaminants. The table below shows only those contaminants that were detected in the water. Although all of the substances listed here are under the Maximum Contaminant Level (MCL), we feel it is important that you know exactly what was detected and how much of the substance was present in the water.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Barium (ppm)	2007	2	2	0.0321	0.0321–0.0321	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Fluoride (ppm)	2007	4	4	1.36	0.84–1.36	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAA] (ppb)	2007	60	NA	54.92932	19.5–114	No	By-product of drinking water disinfection
Nitrate (ppm)	2007	10	10	0.1	0.1–0.1	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Radium, Combined [226,228] (pCi/L)	2007	5	0	0.1	0.1–0.1	No	Erosion of natural deposits
Radium-226 (pCi/L)	2007	5	0	0.1	0.1–0.1	No	Erosion of natural deposits
TTHMs [Total Trihalomethanes] (ppb)	2007	80	NA	51.94164	15.7–102	No	By-product of drinking water chlorination
Total Organic Carbon (ppm)	2007	TT	NA	6.16	2.38–6.16	No	Naturally present in the environment
Turbidity ¹ (NTU)	2007	TT	NA	0.24	0.05–0.24	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2007	TT	NA	100	NA	No	Soil runoff

Tap water samples were collected from 30 sample sites throughout the community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	ACTION LEVEL	MCLG	AMOUNT DETECTED (90TH%TILE)	SITES ABOVE ACTION LEVEL	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2007	1.3	1.3	0.299	0	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead (ppb)	2007	15	0	6.7	1	No	Corrosion of household plumbing systems; Erosion of natural deposits

SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Aluminum (ppb)	2007	50	NA	57.3	57.3–57.3	No	Erosion of natural deposits; Residual from some surface water treatment processes
Chloride (ppm)	2007	250	NA	13.4	13.4–13.4	No	Runoff/leaching from natural deposits
Manganese (ppb)	2007	50	NA	2.68	2.68–2.68	No	Leaching from natural deposits
pH (Units)	2007	6.5-8.5	NA	7.97	7.97–7.97	No	Naturally occurring
Sulfate (ppm)	2007	250	NA	44.4	44.4–44.4	No	Runoff/leaching from natural deposits; Industrial wastes
Total Dissolved Solids [TDS] (ppm)	2007	500	NA	170	170–170	No	Runoff/leaching from natural deposits

¹Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration system.

Definitions

AL (Action Level): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

MCL (Maximum Contaminant Level): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

MCLG (Maximum Contaminant Level Goal): The 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.

MRDL (Maximum Residual Disinfectant Level): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

MRDLG (Maximum Residual Disinfectant Level Goal): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

NA: Not applicable

NTU (Nephelometric Turbidity Units):

Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

pCi/L (picocuries per liter): A measure of radioactivity.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

TT (Treatment Technique): A required process intended to reduce the level of a contaminant in drinking water.