



# 2016 Annual Water Quality Report

University of Missouri Public Water System Identification Number: MO-3069001

This Annual Water Quality (Consumer Confidence) Report is intended to make available to you important information about your drinking water and the efforts made to provide safe drinking water.

## Water Source Information

### Is our water system meeting rules that govern our operations?

In order to ensure that tap water is safe to drink, the Missouri Department of Natural Resources (MDNR) and the Environmental Protection Agency (EPA) prescribe regulations which limit the amount of certain contaminants in drinking water provided by public water systems. The MDNR regulates the water system at University of Missouri (MU) and requires MU to conduct drinking water tests on a regular basis to ensure its safety. The drinking water at MU meets or exceeds all standards of quality set by the EPA and MDNR. MDNR has assigned the identification #MO-3069001 to the MU system for purposes of tracking test results. In 2016, MU tested for a variety of contaminants. Of the hundreds of tests conducted, all contaminants were either non-detectable or within acceptable limits set by the MDNR. The detectable results of tested regulated contaminants are listed below. This report lists only those regulated substances found in measurable quantities. Not listed are contaminants for which none were detected when analyzed. There were no violations of state requirements or standards. (Missouri Department of Health regulations establish limits for contaminants in bottled water which must provide the same protection for public health.)

The MDNR conducted a source water assessment to determine the susceptibility of MU's water source to potential contaminants. This process involved the establishment of source water area delineations for each well and then a contaminant inventory was performed within those delineated areas to assess potential threats to each source. The Source Water Inventory Project maps and information sheets provide a foundation upon which a more comprehensive source water protection plan can be developed.

### What is the source of my water?

The sources of drinking water (both tap and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and groundwater wells. As water travels over the surface of the land or through the ground, it may dissolve naturally-occurring minerals, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or human activity.

The source for drinking water at MU is groundwater. MU's water is pumped from five deep water wells located on the campus. The average well depth is 1,370 feet below ground surface. Collectively, the wells are capable of drawing more than 5 million gallons per day of high quality groundwater from a Cambrian-Ordovician dolomite aquifer. An aquifer is an underground layer of earth gravel or porous rock that yields water. Dolomite is a magnesia-rich sedimentary rock resembling limestone.

### Why are there contaminants in my water?

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. Information about contaminants and potential health effects can be obtained by calling the EPA Safe Drinking Water Hotline at 800-426-4791. According to MDNR, 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 gasoline 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.

### Do I need to take special precautions?

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. Centers for Disease Control and Prevention (CDC) guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbial contaminants are available through the EPA Safe Drinking Water Hotline.

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 building plumbing. MU is responsible for providing high quality drinking water and limits the exposure to lead by approving only pipe construction materials that meet minimum standards for lead content. If you are concerned about lead in your water when the water has been sitting for several hours, you can minimize the potential for exposure by flushing your tap for 1/2 to 2 minutes before using water for drinking or cooking. You may wish to have your water tested. Information on lead in drinking water, testing methods, and steps to take to minimize exposure is available from the EPA Safe Drinking Water Hotline or at <http://water.epa.gov/drink/info/lead/index.cfm>.

### How might I become actively involved?

If you have any further questions or comments regarding your water quality report, the contaminants that were monitored for, the individual analytical results, or the drinking water supply source, information can be obtained from the MU Environmental, Health and Safety (EHS) Department at 573-882-7018, or the MDNR at 573-751-1300. This report can also be found online at <http://www.cf.missouri.edu/cf/sites/cf/files/pdf/ccr.pdf>.

## Water Analysis

### Definitions/abbreviations

**Population:** 35,000. This is the equivalent residential population served including non-bill paying customers.

**90th percentile:** For lead and copper testing, 10% of test results are above this level and 90% are below this level.

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

**Highest:** The highest detected level of all test results for a particular contaminant.

**LRAA (Locational Running Annual Average):** The average analytical results taken at a particular monitoring location during the previous four calendar quarters.

**TTHM:** Total Trihalomethanes (chloroform, bromodichloromethane, dibromochloromethane, and bromoform) as a group.

**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, allows for a margin of safety.

**pCi/L:** Picocuries per liter.

**ppb:** Parts per billion or micrograms per liter.

**ppm:** Parts per million or milligrams per liter.

**SMCL (Secondary Maximum Contaminant Level):** The secondary standards that are non-enforceable guidelines for contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor or color) in drinking water. EPA recommends these standards but does not require water systems to comply.

**Range of Results:** Shows the lowest and highest levels found during a testing period. If only one sample was taken, then this number equals the highest value.

**n/a:** not applicable.

\*: The MDNR has reduced monitoring requirements for certain contaminants to less than once per year because the low concentrations of these contaminants are not expected to vary significantly from year to year. Records with a sample more than one year old (\*) are still considered representative.

### Contaminants

INORGANIC	UNITS	MCL	MCLG	HIGHEST	RANGE	VIOLATION	TYPICAL SOURCES
Barium*	ppb	2000	2000	7.01	3.07 – 7.01	No	Discharge from drilling wastes and metal refineries. Erosion of natural deposits.
Chromium*	ppb	100	100	2.81	1.11 – 2.81	No	Discharge from steel and pulp mills.
Fluoride*	ppm	4	4	1.21	0.83 – 1.21	No	Natural deposits. Water additive that promotes strong teeth.
Nitrate – Nitrite	ppb	10000	10000	21	11 – 21	No	Runoff from fertilizer use; septic tank leaching, sewage; erosion of natural deposits.
DISINFECTION BYPRODUCTS	UNITS	MCL	MCLG	HIGHEST	RANGE	VIOLATION	TYPICAL SOURCES
TTHM	ppb	80	0	5.11	5.11	No	Byproduct of drinking water disinfection
LEAD/COPPER	UNITS	AL	90 <sup>th</sup> PERCENTILE	SITES > AL	RANGE	VIOLATION	TYPICAL SOURCES
Copper*	ppm	1.3	0.158	0	0.0308 – 0.564	No	Corrosion of building plumbing systems.
Lead*	ppb	15	2.86	0	1.2 – 7.92	No	Corrosion of building plumbing systems.
RADIONUCLIDE	UNITS	MCL	MCLG	HIGHEST	RANGE	VIOLATION	TYPICAL SOURCES
Combined Radium (-226 & -228)	pCi/L	5	n/a	1.3	1.3	No	Erosion of natural deposits.
Gross Alpha Particles	pCi/L	n/a	n/a	6.5	6.5	No	Erosion of natural deposits.
Radium-226	pCi/L	5	0	1.3	1.3	No	Erosion of natural deposits.
UNREGULATED CONTAMINANT	UNITS	SMCL	MCLG	HIGHEST	RANGE	VIOLATION	TYPICAL SOURCES
Hexavalent Chromium*	ppb	n/a	n/a	0.29	0 – 0.29	No	Discharge from steel and pulp mills.
Strontium*	ppb	n/a	n/a	984	934 – 984	No	Erosion of natural deposits.

During the period in which this report covers 2016 calendar year, there were **no MCL, monitoring, or treatment technique violations, nor were there any health effect notices or violations issued.** This report has been prepared in accordance with the format as prescribed by the MDNR.