

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. MMU 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 <http://www.epa.gov/safewater/lead>.

UNREGULATED CONTAMINANTS

Some contaminants do not have Maximum Contaminant Levels established for them. These “unregulated contaminants” are assessed using state standards known as health risk limits to determine if they pose a threat to human health. If unacceptable levels of unregulated contaminants are found, the response is the same as if an MCL has been exceeded; the water system must inform its customers and take other corrective actions. The following table reflects the unregulated contaminants that were detected:

Contaminant (units)	Range found	Average per Result	Typical Source of Contaminant
Sodium (ppm) (2014)	NA	58.9	Erosion of natural deposits.
Sulfate (ppm) (2016)	NA	550	Erosion of natural deposits.

HARDNESS OF MARSHALL WATER

“Hardness” in drinking water is caused by two harmless chemicals (usually called minerals) - calcium and magnesium. Water with little calcium or magnesium is “soft” water. Marshall’s water leaves our treatment facility at approximately 533 milligrams/liter, or 31 grains per gallon expressed as carbonate hardness.

COMPLIANCE WITH NATIONAL PRIMARY DRINKING WATER REGULATIONS

Marshall’s municipal water supply comes entirely from groundwater sources (wells) and meets the Safe Drinking Water Act standards as described in this brochure. However, throughout the state and nation, 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, 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, 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.

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection 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.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants doesn’t necessarily indicate that water poses 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 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 for 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 are available from the Safe Drinking Water Hotline at 800-426-4791.

CONSUMER CONFIDENCE REPORT

Marshall, MN 2016 Drinking Water Report

Marshall Municipal Utilities (MMU) is issuing the results of monitoring done on its drinking water for the period from January 1, 2016 to December 31, 2016.

The purpose of this report is to advance consumers’ understanding of drinking water and heighten awareness of the need to protect precious water resources. This report is a mandatory requirement of the US Environmental Protection Agency.

SOURCE OF WATER

MMU provides drinking water to the residents of Marshall from underground water sources-17 wells ranging from 69 to 255 feet deep, that draw water from the Marshall, Dudley and Sandnes Artesian aquifers.

The water provided to customers may meet drinking water standards, but the Minnesota Department of Health has determined that one or more of the sources of water is potentially susceptible to contamination. If you wish to obtain the entire source water assessment regarding your drinking water, please call 651-201-4700 or 1-800-818-9318 (and press 5) during normal business hours. You may also view it online at www.health.state.mn.us/divs/eh/water/swp/swa.

Call 507-537-7005 if you have any questions about Marshall’s drinking water or would like information about opportunities for public participation in decisions that may affect the quality of the water.

RESULTS OF MONITORING

The following tables show all the contaminants that were detected last year in Marshall's water. No contaminants were detected at levels that violated federal drinking water standards; however, some of the contaminants were detected in trace amounts that were below legal limits. The table that follows shows the contaminants that were detected in trace amounts last year. (Some contaminants are sampled less frequently than once a year; as a result, not all contaminants were sampled for in 2016). If any of these contaminants were detected the last time they were sampled for, they are included in the table along with the date that the detection occurred.

KEY TO ABBREVIATIONS

MCLG – Maximum Contaminant Level Goal: The level of contaminant in drinking water below which there is no known or expected risk to health. **MCLG's** allow for a margin of safety.

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

MRDL– Maximum Residual Disinfectant Level.

MRDLG – Maximum Residual Disinfectant Level Goal.

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

ppb – Parts per billion, which can also be expressed as micrograms per liter (ug/l).

ppm – Parts per million, which can also be expressed as milligrams per liter (mg/l).

NA — Not applicable (does not apply)

90th Percentile —This value is obtained after disregarding 10% of the samples taken that had the highest levels. (For example, in a situation in which 10 samples were taken, the 90th percentile level is determined by disregarding the highest result, which represents 10% of the samples). Note: in situations in which only 5 samples are taken, the average of the two with the highest levels is taken to determine the 90th percentile level.

Contaminants (units)	MCLG	MCL	Range-Found 2013	Average/Result Found*	MMU's water	Typical Source of Contaminant
Arsenic (ppb)	0	10	N/A	3.18	Marshall water meets this standard	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes.
Nitrate (as Nitrogen) (ppm)	10.4	10.4	N/A	.19	Marshall water meets this standard	Runoff from fertilizer use; Leaching from septic tanks, Sewage; Erosion of natural deposits.
THM (total trihalomethanes) (ppb)	0	80	N/A	.6	Marshall water meets this standard	By-product of drinking water disinfection.

Contaminants (units)	MCLG	MCL	Range Found 2013	Average/Result Found*	MMU's water	Typical Source of Contaminant
Haloacetic Acids (HAA5) (ppb)	0	60	1.1-2.4	2.4	Marshall water meets this standard	By-product of drinking water disinfection.
Fluoride (ppm)	4	4	.52-.6	.56	Marshall water meets this standard	State of Minnesota requires all municipal water systems to add fluoride to the drinking water to promote strong teeth; Erosion of natural deposits; Discharge from fertilizer and aluminum factories.

* This is the value used to determine compliance with federal standards. It sometimes is the highest value detected and sometimes is an average of all the detected values. If it is an average, it may contain sampling results from the previous year.

Contaminants (units)	MCLG	AL	90% Level	# sites over AL	MMU's water	Typical Source of Contaminant
Lead (ppb) (June 2015)	0	15	2.6	1 out of 30	Marshall water meets this standard	Corrosion of household plumbing systems; Erosion of natural deposits.
Copper (ppm) (June 2015)	1.3	1.3	.5	0 out of 30	Marshall water meets this standard	Corrosion of household plumbing systems; Erosion of natural deposits.

Contaminants (units)	MRDLG	MRLD	****	*****	MMU's water	Typical Source of Contaminant
Chlorine (ppm)	4	4	.5-2.5	1.01	Marshall water meets this standard	Water additive used to control microbes

**** Highest and Lowest Monthly Average

***** Highest Quarterly Average