



Water & Wastewater Board of the City of Madison 2017 Drinking Water Quality Report

We are pleased to present our annual Drinking Water Quality Report. We designed this report to inform you about the quality of the drinking water delivered to you every day. Our goal is to provide you with a safe dependable supply of drinking water.

If you have questions about the report, please contact Jason Leggett at 256-772-0253 ext. 119 between the hours of 8:00 a.m. to 4:00 p.m. Monday through Friday. If you want more information you may visit our web site at www.madisonutilities.org. Our Board meetings are on the first and third Monday (unless otherwise posted) of each month at 5:30 p.m. in the conference room of Madison Utilities located at 101 Ray Sanderson Drive.

Health information about your water

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 radioactive material, and it can pick up substances resulting from the presence of animals or from human activity.

To ensure that tap water is safe to drink, the Environmental Protection Agency (EPA) prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) establishes limits for contaminants in bottled water.

Consumers should be aware that all drinking water, including bottled water, might 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. People who are immunocompromised such as cancer patients undergoing chemotherapy, organ transplant recipients, HIV/AIDS positive or other immune system disorders, some elderly, and infants can be particularly at risk from infections. People at risk 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 microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

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. Madison Utilities 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>.

The Water & Wastewater Board routinely monitors for contaminants in your drinking water in accordance with Federal and State regulations. The tables included in this report detail the results of our monitoring for the period of January 1 - December 31, 2017 or the data as of the latest testing done in accordance with applicable regulations. All data presented is in the highest levels detected unless otherwise noted. Based on a study conducted by the Alabama Department of Environmental Management (ADEM) with the approval of the EPA, a statewide waiver for the monitoring of asbestos and dioxin was issued. Thus, monitoring for any of these contaminants was not required.

Este informe contiene información importante sobre la calidad de su agua potable. Por favor lea este informe o comuníquese con alguien que pueda traducir la información.

Primary Drinking Water Contaminants

Contaminant	Units	MCL	MD	Contaminant	Units	MCL	MD
Bacteriological Contaminants				Organic Contaminants (cont.)			
Total Coliform Bacteria		<5%	0	Carbofuran	ppb	40	ND
Turbidity	NTU	TT	0.62	Carbon tetrachloride	ppb	5	ND
Fecal coliform and <i>E. coli</i>		0	0	Chlorobenzene	ppb	100	ND
Fecal Indicators (enterococci or coliphage)		TT	0	2,4-D	ppb	70	ND
Disinfections and Disinfection Byproducts				Organic Contaminants (cont.)			
Chlorine	ppm	MRDL=4	2.48	Dalapon	ppb	200	ND
Total Trihalomethanes (TTHM)	ppb	80	25.7	1,2-Dichloroethane	ppb	5	ND
Haloacetic Acids (HAA5)	ppb	60	14.3	1,2-Dichloropropane	ppb	5	ND
Inorganic Contaminants				Organic Contaminants (cont.)			
Antimony	ppb	6	ND	Dinoseb	ppb	7	ND
Arsenic	ppb	10	ND	Endrin	ppb	2	ND
Barium	ppm	2	0.0245	Ethylbenzene	ppb	700	ND
Beryllium	ppb	4	ND	Heptachlor	ppt	400	ND
Cadmium	ppb	5	ND	Heptachlor Epoxide	ppt	200	ND
Chromium	ppb	100	ND	Hexachlorobenzene	ppb	1	ND
Copper	ppm	AL=1.3	0.526	Hexachlorocyclopentadiene	ppb	50	ND
Cyanide	ppb	200	ND	Lindane	ppt	200	ND
Fluoride	ppm	4	0.536	Methoxychlor	ppb	40	ND
Lead	ppb	AL=15	ND	Oxamyl (Vydate)	ppb	200	ND
Mercury	ppb	2	ND	Pentachlorophenol	ppb	1	ND
Nitrate	ppm	10	3.31	Picloram	ppb	500	ND
Nitrite	ppm	1	ND	Simazine	ppb	4	ND
Nitrate-Nitrite (Total)	ppm	10	2.67	Styrene	ppb	100	ND
Selenium	ppb	50	ND	Toluene	ppb	1000	ND
Thallium	ppb	2	ND	TOC (Total Organic Carbon)	ppm	TT	0.814
Organic Contaminants				Organic Contaminants (cont.)			
Alachlor	ppb	2	ND	2,4,5-TP (Silvex)	ppb	50	ND
Atrazine	ppb	3	ND	1,2,4-Trichlorobenzene	ppb	70	ND
Benzene	ppb	5	ND	1,1,1-Trichloroethane	ppb	200	ND
Benzo(a)pyrene (PAHs)	ppt	200	ND	1,1,2-Trichloroethane	ppb	5	ND
				Vinyl chloride	ppb	2	ND
				Xylenes, Total	ppb	10000	ND

Secondary Contaminants

Contaminant	Units	MCL	MD	Contaminant	Units	MCL	MD	Contaminant	Units	MCL	MD
Aluminum	ppm	0.05-0.2	ND	Iron	ppm	0.3	ND	Silver	ppb	0.1	ND
Chloride	ppm	250	10.8	Manganese	ppm	0.05	ND	Sulfate	ppm	250	17.3
Color	pcu	15	1	Odor	TON	3	1	Zinc	ppm	5	ND
Dissolved Solids	ppm	500	188	pH	su	6.5-8.5	7.5				

KEY TO TABLES

ppm - parts per million

ppb - parts per billion,

ppt - parts per trillion, **pcu** - color units,

pCi/l - picocuries per liter, **su** - standard unit,

NTU - nephelometric turbidity unit,

TON - threshold odor number

MD - Maximum Detected, **ND** - Not Detected

AL (Action Level) - The concentration of a contaminant that triggers treatment or other requirement a water system shall follow.

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

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.

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.

Unregulated Contaminants

Contaminant	Units	MD	Contaminant	Units	MD	Contaminant	Units	MD
Aldicarb	ppb	ND	Chloromethane	ppb	ND	p-Isopropyltoluene	ppb	ND
Aldicarb Sulfone	ppb	ND	2-Chlorotoluene	ppb	ND	Magnesium	ppm	6.43
Aldicarb Sulfoxide	ppb	ND	4-Chlorotoluene	ppb	ND	MBAS	ppb	ND
Aldrin	ppb	ND	Dibromoacetic Acid	ppb	2.08	Methomyl	ppb	ND
Alkalinity	ppm	145	Dibromomethane	ppb	ND	Methyl tert-butyl ether	ppb	ND
Bis(2-ethylhexyl)adipate	ppb	ND	Dicamba	ppb	ND	Methylene chloride	ppb	ND
Bis(2-ethylhexyl)phthalate	ppb	ND	Dichloroacetic Acid	ppb	7.46	Metolachlor	ppb	ND
Bromoacetic Acid	ppb	ND	1,2-Dichlorobenzene	ppb	ND	Metribuzin	ppb	ND
Bromobenzene	ppb	ND	1,3-Dichlorobenzene	ppb	ND	Naphthalene	ppb	ND
Bromochloromethane	ppb	ND	1,4-Dichlorobenzene	ppb	ND	Nickel	ppm	ND
Bromodichloromethane	ppb	7.19	1,2-Dichlorobenzene-d4	% Rec	81.6	Propachlor	ppb	ND
4-Bromofluorobenzene	% Rec	83.8	Dichlorodifluoromethane	ppb	ND	n-Propylbenzene	ppb	ND
Bromoform	ppb	ND	1,1-Dichloroethane	ppb	ND	Specific Conductance	umhos/cm	355
Bromomethane	ppb	ND	1,1-Dichloroethene	ppb	ND	Sodium	ppm	17.5
Butachlor	ppb	ND	cis-1,2-Dichloroethene	ppb	ND	1,1,1,2-Tetrachloroethane	ppb	ND
n-Butylbenzene	ppb	ND	trans-1,2-Dichloroethene	ppb	ND	1,1,2,2-Tetrachloroethane	ppb	ND
sec-Butylbenzene	ppb	ND	1,3-Dichloropropane	ppb	ND	Tetrachloroethene	ppb	ND
tert-Butylbenzene	ppb	ND	2,2-Dichloropropane	ppb	ND	Trichloroacetic Acid	ppb	4.85
Calcium	ppm	59.5	1,1-Dichloropropene	ppb	ND	1,2,3-Trichlorobenzene	ppb	ND
Carbaryl	ppb	ND	1,3-Dichloropropene	ppb	ND	Trichloroethene	ppb	3.68
Free Carbon Dioxide	ppm	20.2	Dieldrin	ppb	ND	Trichlorofluoromethane	ppb	ND
Chloroacetic Acid	ppb	ND	Hardness	ppm	167	1,2,3-Trichloropropane	ppb	ND
Chlorodibromomethane	ppb	3.4	Hexachloro-1,3-butadiene	ppb	ND	1,2,4-Trimethylbenzene	ppb	ND
Chloroethane	ppb	ND	3-Hydroxycarbofuran	ppb	ND	1,3,5-Trimethylbenzene	ppb	ND
Chloroform	ppb	15.3	Isopropylbenzene	ppb	ND			

Table of Detected Contaminants

Contaminant	Units	Year	Violation	MCLG	MCL	Max	Min	Major Sources
Barium	ppm	2017	No	2	2	0.02	0.01	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Combined Radium	pCi/l	2012	No	0	5	1.61	1.25	Erosion of natural deposits
Copper	ppm	2017	No	1.3	AL=1.3	0.53	<0.01	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Fluoride	ppm	2017	No	4	4	0.54	<0.1	Water additive which promotes strong teeth; Erosion of natural deposits; Discharge from fertilizer and aluminum factories
Lead	ppb	2016	No	0	AL=15	12.5	<1	Corrosion of household plumbing systems
Nitrate	ppm	2017	No	10	10	3.31	1.84	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Res. Chlorine (On Site)	ppm	2017	No	MRDLG=4	MRDL=4	2.48	2	Water additive used to control microbes
TOC (Total Organic Carbon)	ppm	2017	No	N/A	TT	0.81	<0.5	Naturally present in the environment
Total Haloacetic Acids (HAA5)	ppb	2017	No	N/A	60	14.3	<1	By-product of drinking water disinfection
Total Trihalomethanes (TTHM)	ppb	2017	No	N/A	80	25.7	3	By-product of drinking water chlorination
Turbidity	NTU	2017	No	N/A	5	0.62	0.018	Soil runoff

Contaminant	Units	Year	Max	Min	Avg	Contaminant	Units	Year	Max	Min	Avg
Alkalinity	ppm	2017	151	82.5	118.2	Dissolved Solids	ppm	2017	188	121	155
Bromodichloromethane	ppb	2017	7.19	0.59	3.35	Free Carbon Dioxide	ppm	2017	20.2	<20	20
4-Bromofluorobenzene	% Rec	2017	83.8	81.9	82.85	Hardness, Total (ppm as CaCO3)	ppm	2017	167	78.3	121
Calcium	ppm	2017	59.7	23.4	50.87	Magnesium	ppm	2017	6.43	4.98	5.54
Chloride	ppm	2017	10.9	8.04	9.47	pH (On Site)	su	2017	7.5	7	7.25
Chloroacetic Acid	ppb	2015	3.54	<2	3.34	Sodium	ppm	2017	17.5	6.73	10.2
Chlorodibromomethane	ppb	2017	3.4	<0.5	2.13	Specific Conductance	umhos/cm	2017	355	216	290
Chloroform	ppb	2017	15.3	1.87	5.44	Sulfate	ppm	2017	7.13	<5.0	5.64
Dibromoacetic Acid	ppb	2017	2.08	<1	1.39	Trichloroacetic Acid	ppb	2017	4.85	<1	2.02
Dichloroacetic Acid	ppb	2017	7.46	<1	2.97	Trichloroethene	ppb	2017	3.68	<0.5	2.09
1,2-Dichlorobenzene-d4	% Rec	2017	81.6	81.1	81.35						

WATER SOURCE INFORMATION

Madison Utilities utilized ten groundwater sources in the Tuscumbia/Fort Payne Aquifer in 2017. The water from the Collier, Drake, Murphy, Rowe, and Triana wells is treated at the Quarry Water Treatment Plant using aeration, coagulation, filtration, disinfection and the addition of fluoride. The water from the Fiorentino, McCrary, New Gillespie, Nickelson, and Williams wells is treated at the Keene Water Treatment Plant using coagulation, filtration, pH adjustment, disinfection, and fluoridation.

We have completed our Source Water Assessment Plan and Susceptibility Analysis, and have an established Wellhead Protection Plan. These documents are available for public review at our office located at 101 Ray Sanderson Drive.

MOVING FORWARD

As of March 2018 the Terris Tatum Tennessee River Intake Facility began pumping water to the Quarry Water Treatment Plant for treatment. This will allow MU to continue providing an abundant supply of high quality drinking water to our customers. As a result, you may notice a difference in mineral content such as a reduction in total hardness.

MADISON UTILITIES WORD SEARCH

T	V	C	O	N	S	E	R	V	E	Q
S	R	V	X	F	T	A	O	Q	M	J
Y	X	E	B	I	A	Q	H	H	A	B
S	Z	L	A	L	N	U	Y	L	D	Y
L	Q	R	L	T	K	I	D	B	I	V
F	U	W	H	E	M	F	R	X	S	A
H	A	A	A	R	T	E	A	Q	O	L
T	L	D	H	T	L	R	N	K	N	V
A	I	E	R	W	E	H	T	T	W	E
U	T	M	J	Y	A	R	X	M	R	E
U	Y	H	G	O	K	H	S	Z	T	H

ADEM
AQUIFER
CONSERVE
FILTER
HYDRANT
LEAK
MADISON
QUALITY
TANK
TREATMENT
VALVE
WATER

WHY FIXING LEAKS AROUND YOUR HOME IS IMPORTANT

Even small leaks can have a large impact on your wallet!

- ◆ A dripping faucet can lose hundreds of gallons a month
- ◆ A running toilet can use anywhere from 10,000 to 100,000 gallons of water in 30 days. Customers are often shocked to see their bill increase by hundreds of dollars simply because of a leaky toilet.

Be proactive and try these leak tests!

- ◆ Add coloring to a toilet's tank and wait 15 minutes. If color appears in the bowl, there's a leak. We offer free blue tablets to all customers!
- ◆ Turn off all water-using appliances around your home, read the number on your meter, and check back in 30 minutes. If there is a change, you may have a leak.

WAYS TO CONSERVE WATER AT HOME

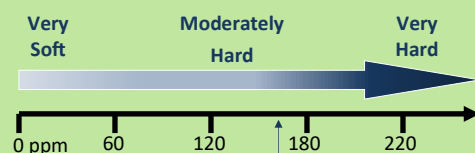
Conserving water is good for the environment AND saves you money! Here are a few ways you can start saving today:

- ◆ Water your lawn and garden when the sun is down to avoid evaporation
- ◆ Install water-efficient devices
- ◆ Only run your washing machine and dishwasher with a full load
- ◆ Look for leaks and repair them as soon as possible
- ◆ Don't waste water by flushing trash

Want more conservation tips? Visit:
madisonutilities.org/customer-service/water-conservation

HOW HARD IS YOUR WATER?

If substantial amounts of Calcium or Magnesium, both nontoxic minerals, are present in drinking water, the water is said to be hard. Hard water does not dissolve soap readily making lather for washing and cleaning difficult. Water containing little Calcium or Magnesium is called soft water. The water in Madison is moderately hard due to limestone rock formations in this area.



YOUR WATER UTILITY BY THE NUMBERS

Your water utility is comprised of wells, mains, valves, and other equipment, that are maintained to protect water quality and ensure water is available every time you turn on your faucet. From the wells that pump water out of underground aquifers to the valves that isolate sections of the water system and help limit service interruptions during line maintenance and repairs, your water utility is a sophisticated mix of hardware and dedicated employees who keep your water clean, reliable, and affordable.

- ◆ Employees: 57
- ◆ Water Reservoirs: 4
- ◆ Water Valves: 4410
- ◆ Production Wells: 10
- ◆ Waterlines: 335 mi
- ◆ Fire Hydrants: 2515



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