



2013 Annual Drinking Water Quality Report

Water & Wastewater Board of the City of Madison

(dba Madison Utilities)

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. We are also happy to announce two awards that we received in the past year, which reinforce our commitment to excellence.

Two Year Optimized Plant Award for our Bressette-Quarry Water Treatment Plant (by the Alabama Department of Environmental Management)

Water Fluoridation Quality Award (by the Centers for Disease Control (CDC) and the U.S. Department of Health and Human Resources)

As you read the information listed below, if you have questions, please contact Alex Beck at 256-772-0253 ext. 115 between the hours of 8:00 a.m. to 4:00 p.m. Monday through Friday. If you want to learn more about your water utility operations, you may attend any of our regularly scheduled Board meetings or 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.

Rainfall for 2013 was close to normal historical averages. Water supply was ample to supply the area needs, and our system performed well. While we do not expect water shortages this summer, we do encourage wise use of our limited resources.

2014 will be a busy time. We will be expanding our wastewater treatment plant and one of our water treatment plants to ensure we meet seasonal demands. We are also continuing the permit process that will allow us to withdraw water from the Tennessee River.

We thank you for allowing us to be your service provider. We will continue to work hard to earn your trust and loyalty in the days ahead. We are always available to discuss any concerns or questions that may arise.

Sincerely,

A handwritten signature in black ink that reads 'Emory DeBord'.

Emory DeBord
General Manager

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In these tables you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:
 Maximum Contaminant Level Goal (MCLG) - 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.
 Maximum Contaminant Level (MCL) - 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.
 Maximum Residual Disinfectant Level Goal (MRDLG) - 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.
 Maximum Residual Disinfectant Level or MRDL - 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.
 Treatment Technique - A required process intended to reduce the level of a contaminant in drinking water.
 Action Level - The concentration of a contaminant that triggers treatment or other requirement a water system shall follow.
 RAA - Running Annual Average

Table of Primary Drinking Water Contaminants

Contaminant	Bacteriological		Detected	Contaminant	Organic Chemicals	
	MCL	Detected			MCL	Detected
Total Coliform Bacteria	< 5%	0.0		Di (2-ethylhexyl)phthalates	6 ppb	<0.1
Turbidity	TT	0.37		Dinoseb	7 ppb	<0.1
Fecal Coliform and E. coli	0	0.0		Diquat	20 ppb	<0.4
Fecal Indicators (enterococci or coliphage)	TT	0.0		Dioxin (2,3,7,8-TCDD)	30 ppq	N/A
				HAA5	60 ppb	14.4
				Endothall	100 ppb	<9.0
				Endrin	2 ppb	<0.01
				Epichlorohydrin	TT	N/A
				Glyphosate	700 ppb	<6.0
				1,2,4-Trichlorobenzene	70 ppb	<0.5
				Heptachlor	400 ppt	<4.0
				Heptachlor epoxide	200 ppt	<0.2
				Hexachlorobenzene	1 ppb	<0.1
				Hexachlorocyclopentadiene	50 ppm	<0.1
				Lindane	200 ppt	<0.2
				Methoxychlor	40 ppb	<0.1
				Oxamyl (Vydate)	200 ppb	<1.0
				PCBs	500 ppt	<2.0
				Pentachlorophenol	1 ppb	0.0
				Picloram	500 ppb	<0.1
				Simazine	4 ppb	0.0
				Toxaphene	3 ppb	<1.0
				Benzene	5 ppb	<0.5
				Carbon tetrachloride	5 ppb	<0.5
				Chlorobenzene	100 ppb	<0.5
				Dibromochloropropane	200 ppt	0.0
				o-Dichlorobenzene	600 ppb	<0.5
				p-Dichlorobenzene	75 ppb	<0.2
				1,2-Dichloroethane	5 ppb	<0.5
				1,1-Dichloroethylene	7 ppb	<0.5
				cis-1,2-Dichloroethylene	70 ppb	<0.5
				trans-1,2-Dichloroethylene	100 ppb	<0.5
				Dichloromethane	5 ppb	<0.5
				1,2-Dichloropropane	5 ppb	<0.5
				Ethylbenzene	700 ppb	<0.5
				Ethylene dibromide	50 ppt	<0.5
				Styrene	100 ppb	0.0
				Tetrachloroethylene	5 ppb	<0.5
				1,1,1-Trichloroethane	200 ppb	<0.5
				1,1,2-Trichloroethane	5 ppb	<0.5
				Trichloroethylene	5 ppb	<0.5
				THM	80 ppb	<0.5
				Toluene	1	0.0
				Vinyl Chloride	2 ppb	<0.5
				Xylenes	10 ppm	0.0
				TOC	TT	1.2
				Atrazine	3 ppb	<0.1

Contaminant	Radiological		Detected
	MCL	Detected	
Beta photon emitters (mrem/yr)	4	N/A	
Alpha emitters (pCi/l)	15	2.95	
Combined radium (pCi/l)	5	1.61	
Uranium	30 pCi/L	N/A	

Contaminant	Inorganic Chemicals		Detected
	MCL	Detected	
Antimony	6 ppb	0.0	
Arsenic	10 ppb	N/A	
Asbestos (MFL)	7	N/A	
Barium	2 ppm	0.02	
Beryllium	4 ppb	<1.0	
Bromate	10 ppb	0.0	
Cadmium	5 ppb	<0.5	
Chloramines	4 ppm	N/A	
Chlorine	4 ppm	2.6	
Chlorine dioxide	800 ppb	N/A	
Chlorite	1 ppm	N/A	
Chromium	100 ppb	<1.0	
Copper	AL= 1.3 ppm	0.22	90 th percentile
Cyanide	200 ppb	<5.0	
Fluoride	4 ppm	0.72	
Lead	AL= 15 ppb	0.01	90 th percentile
Mercury	2 ppb	<0.2	
Nitrate	10 ppm	3.93	
Nitrite	1 ppm	0.00	
Total Nitrate and Nitrite	10 ppm	3.0	
Selenium	50 ppb	<1.0	
Thallium	2 ppb	<1.0	

Contaminant	Organic Chemicals		Detected
	MCL	Detected	
2,4-D	70 ppb	<0.1	
2,4,5-TP (Silvex)	50 ppb	<0.1	
Acrylamide	TT	N/A	
Alachlor	2 ppb	<0.1	
Benzo(a)pyrene (PAHs)	200 ppt	<0.2	
Carbofuran	40 ppb	<0.9	
Chlordane	2 ppb	<0.1	
Dalapon	200 ppb	<0.1	
Di (2-ethylhexyl)adipate	400 ppb	<0.1	

Table of Detected Contaminants

Contaminants (units of measure)	Year	Violation Y/N	Highest Level			Range	Major Sources
			MCLG	MCL	Detected		
Barium (ppm)	2012	N	2	2	0.02	0.02 - 0.024	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Fluoride (ppm)	2013	N	4	4	0.8	0.7 - 0.8	Water additive which promotes strong teeth; Erosion of natural deposits; Discharge from fertilizer and aluminum factories
Alpha emitters (pCi/l)	2012	N	0	15	2.95	2.3 - 3.6	Erosion of natural deposits
Combined Radium (pCi/l)	2012	N	0	5	1.61	1.25 - 1.61	Erosion of natural deposits
Nitrate (ppm)	2013	N	10	10	6.8	2.1 - 6.8	Runoff from fertilizer use; Leaching septic tanks, sewage; Erosion of natural deposits
THM (ppb)	2012	N	0	80	22.2	6 - 22.2	By-product of drinking water chlorination
Haloacetic Acids (HAA5) (ppb)	2012	N	N/A	60	14.4	1 - 14.4	By-product of drinking water disinfection
Turbidity (NTU) Surface Water	2012	N	N/A	TT	0.10	N/A	Soil runoff
Turbidity (NTU) Groundwater	2013	N	N/A	5	0.37	N/A	Soil runoff
Lead (ppb)	2013	N	0	AL= 15	0.01 (90 th percentile)	0.001 - 0.02	Corrosion of household plumbing systems; One sample site exceeded the action level but a retest of that site was 2 erosion of natural deposits
Copper (ppm)	2013	N	1.3	AL=1.3	0.22 (90 th percentile)	0.017 - 0.42	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Chlorine (ppm)	2013	N	MRDLG=4	MRDL=4	1.6	1.0 - 1.6	Water additive used to control microbes
Trichloroethylene (ppb)	2012	N	0	5	1.1 (Annual Average)	0.0 - 2.9	Discharge from metal degreasing sites and other factories
Total Organic Carbon	2012	N	N/A	TT	1.3	0.0 - 1.3	Naturally present in the environment

Table of Detected Contaminants

Contaminants	Date	Range	Average	Contaminants	Date	Range	Average
Alkalinity (ppm)	2013	110 - 150	132.5	Specific Conductance (umhos/cm)	2013	280 - 350	317.5
Calcium (ppm)	2013	32 - 61	47.75	Sulfate (ppm)	2013	6.8 - 9.4	8.1
Chloride (ppm)	2012	6.2 - 6.8	6.5	Carbon dioxide (ppm)	2012	BDL	BDL
Dissolved Solids (ppm)	2012	160 - 190	175	Chloroform (ppb)	2013	0.001 - 0.008	0.004
Hardness (ppm)	2013	100 - 190	147.5	Bromodichloromethane (ppb)	2013	0.001 - 0.004	0.002
Magnesium (ppm)	2013	4.8 - 6.9	5.87	Chlorodibromomethane (ppb)	2013	0.001 - 0.002	0.002
pH (su)	2013	7.0 - 7.76	7.44	Manganese (ppb)	2012	BDL	BDL
Sodium (ppm)	2013	4.6 - 23	10.6	Color (units)	2012	0 - 10	5

Microbiological Contaminants	Violation Y/N	Highest Level Detected	Unit of Measure	MCLG	MCL	Likely source of Contamination
Total Coliform Bacteria (including fecal coliform and E. Coli) 2008	N	0	N/A	0	Presence of coliform bacteria in =5% of monthly samples or if a routine sample and a follow up repeat sample are total coliform positive and one is also fecal Coliform or E. coli positive	Human and animal fecal waste

Key

AL = Action Level

TT = Treatment Technique

MCL = Maximum Contaminant Level

MCLG = Maximum Contaminant Level Goal

mg/l = milligrams per liter, or parts per million

mrem/year = millirems per year (a measure of radiation absorbed by the body)

pCi/l = picocuries per liter (a measure of radioactivity)

ppb = parts per billion or micrograms per liter

ppm = parts per million or milligrams per liter

ppq = parts per quadrillion or picograms per liter

ppt = parts per trillion or nanograms per liter

MFL = million fibers per liter

Monitoring Non-Compliance Notice

Madison Utilities is required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not your drinking water meets health standards. During 2011 thru 2013, we did not complete all monitoring for inorganic chemicals, and therefore cannot be sure of the quality of your drinking water during that time.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

While we tested for inorganic chemicals at our Quarry Water Treatment Plant, we did not sample for all inorganic chemicals at our Keene Water Treatment Plant during the specified time. However, testing was performed in mid May 2014 and the results showed all inorganic chemicals to be under the required MCL.

Should you have any questions concerning this non-compliance or monitoring requirements, please contact: Jason Leggett at (256) 772-0253 ext. 119, or by mail at 101 Ray Sanderson Dr, Madison, AL, 35758.

Frequently Asked Questions

What are our sources of water?

We utilized eleven groundwater sources in 2013. They are the Fiorentino, Drake, New Gillespie, Collier, McCrary, Williams, Hardiman, Nickelson, Rowe, Triana and Murphy wells, which are in the Tusculmbia/Fort Payne Aquifer.

How is our water treated?

The water from the Drake, Rowe, Triana, Collier, and Murphy wells is treated at the Quarry Water Treatment Plant using aeration, coagulation, filtration, disinfection and the addition of fluoride. The water from the Fiorentino, New Gillespie, McCrary, Williams, Hardiman, and Nickelson wells is treated at the Keene Water Treatment Plant using coagulation, filtration, pH adjustment, disinfection, and fluoridation.

Does all water include some contaminants?

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). 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, 2009 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.

Who regulates our drinking 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.

Are some people more susceptible than others to contaminants?

Some people may be more vulnerable to contaminants in drinking water than the general population. People who are immuno-compromised 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).

What information do you have about lead in the 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. 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>.

Do you have a Source Water Assessment Plan?

Yes. We have completed our Source Water Assessment Plan and Susceptibility Analysis. We also have an established Wellhead Protection Plan. These documents are very extensive and cannot be included within this report but these documents are available for public review at our office located at 101 Ray Sanderson Drive.



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Committed to Excellence

Madison Utilities

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