2019 Annual Water Quality Report
(Testing Performed January through December 2018)

WETUMPKA WATER WORKS AND SEWER BOARD

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We are pleased to present to you this year's Annual Water Quality Report, covering water quality data from January through December 2018. Our drinking water supply met or surpassed the strict regulations of the Alabama Department of Environmental Management (ADEM) and the U. S. Environmental Protection Agency (EPA), which requires all public water suppliers to prepare and distribute reports like this once every year.

Surface Water Sources	Central Elmore Water Authority (Lake Martin)	Five Star Water Supply District (Lake Jordan)	Montgomery Water Works * (Tallapoosa River)
Treatment	Filtration and chlorination for disinfection		
Storage	Two tanks with a total capacity of 2,750,000 gallons		
Customers	Approximately 3200		
Employees	Ronnie Windham, General Manager	**Water Board Members**	John Strickland, Chairman
	Michael Digmon, Water Supt.		Jason Mattox, Vice-Chairman
	Chris Bowar, Wastewater Supt.		Robert Hankins, Treasurer
	Sharon Lewis, Office Mgr/Board Sec.		

***** Did not purchase from Montgomery Water Works (MWW) in 2018; therefore, MWW data not required for this report.

Source Water Assessment

In compliance with the Alabama Department of Environmental Management (ADEM), Source Water Assessment Plans have been developed by each of the water systems that supply your drinking water. These plans assist in protecting our water sources. The plans provide additional information such as potential sources of contamination and a Susceptibility Analysis, which classifies potential contaminants as high, moderate, or non-susceptible to contaminating the water source. Please call our office to find out how to review a copy of any of these Plans, or you may obtain a copy for a minimal reproduction fee.

Please help us make this effort worthwhile by protecting our source waters. Carefully follow instructions on pesticides and herbicides you use for your lawn and garden, and properly dispose of household chemicals, paints and waste oil.

Important Information about Lead

Lead in drinking water is rarely found in source water but is primarily from materials and components associated with service lines and home plumbing. Your water system is responsible for providing high quality drinking water but cannot control the variety of materials used in plumbing components.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Use *only* water from the cold-water tap for drinking, cooking, and *especially for making baby formula*. Hot water is more likely to cause leaching of lead from plumbing materials. 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. These recommended actions are very important to the health of your family. Lead levels in your drinking water are likely to be higher if:

- Your home or water system has lead pipes, or
- Your home has faucets or fittings made of brass which contains some lead, or
- Your home has copper pipes with lead solder and you have naturally soft water, and
- Water often sits in the pipes for several hours.

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.

Questions?

If you have any questions about this report or concerning your water utility, please contact Ronnie Windham, General Manager, at 334-567-8404. We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled meetings. They are held on **the fourth Tuesday of each month at 1:00 p.m. in the Water Works Office at 2909 Elmore Road.**

More information about contaminants to drinking water and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at (1-800-426-4791).

General Information

All drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. MCL's, defined in a List of Definitions in this report, are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

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. 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. *Cryptosporidium* and *Giardia* are microscopic organisms that are relatively widespread in the environment. Surface waters, such as lakes and rivers that contain a high amount of sewage contamination or animal wastes are more susceptible to increased numbers of these parasites. Your water system(s) is taking steps to make sure these organisms do not pose a problem in your drinking water. Current protection measures include chlorination, filtration, and monitoring turbidity levels and particle sizes. Additionally, routine back-washing of the filters helps to eliminate the chances of finding these organisms in treated water. Occasionally, these organisms have been found in the raw (untreated) water, but neither *Cryptosporidium* nor *Giardia* have been found in the finished (treated) water.
Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm water run-off, 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, storm water run-off, 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 storm water runoff, and septic systems.
Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

Our source water is also tested for pathogens, such as *Cryptosporidium* and *Giardia*. These pathogens can enter the water from animal or human waste. This language does *not* indicate the presence of cryptosporidium in our drinking water. All test results were well within state and federal standards.

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).

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water.

Monitoring Schedule

Wetumpka Water Works and Sewer Board and your source water systems monitor for contaminants according to a schedule assigned by the Alabama Department of Environmental Management (ADEM), using EPA approved methods and a state certified laboratory. The Alabama Department of Environmental Management (ADEM) allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently.

Based on a study conducted by ADEM with the approval of the EPA a statewide waiver for the monitoring of asbestos and dioxin was issued. Thus, monitoring for these contaminants was not required.

Constituent Monitored	Wetumpka	Central Elmore	Five Star
Inorganic Contaminants	--	2018	2018
Microbiological Contaminants	monthly	monthly	2016
Lead and Copper	2016	2016	current
Nitrates	--	2018	2018
Radiological Contaminants	--	2016	2016
Synthetic Organic Contaminants (including pesticides and herbicides)	--	2016	2016
Volatile Organic Contaminants	--	2018	2016
Disinfection By-products	2018	2018	2018
Cryptosporidium and Giardia	--	2017	2017
UCMR4 Contaminants	2018	2018	--

Detected Contaminants:
Wetumpka Water Works and Sewer Board

During the past year we have taken all the required samples in order to determine the presence of contaminants in your drinking water. The table below shows only those contaminants that were detected. We are pleased to report that our drinking water meets federal and state requirements, and we had no violations last year.

Table of Detected Drinking Water Contaminants						
Wetumpka Water Works and Sewer Board						
Contaminants	**Violation**	**Level Detected**	**Msmt**	**MCLG**	**MCL**	**Likely Source of Contamination**
Copper	NO	0.054 *	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Total trihalomethanes (TTHM)	NO	75.0-77.7	ppb	0	80	By-product of drinking water chlorination
Total haloacetic acids (HAA5)	NO	24.1-36.1	ppb	0	60	By-product of drinking water chlorination

* Level Detected = 90th percentile and number of sites above the Action Level (AL) = 0

UCMR 4 Contaminants										
Contaminant	**Unit Msmt**	**Level Detected**		**Contaminant**	**Unit Msmt**	**Level Detected**		**Haloacetic Acids**	**Unit Msmt**	**Level Detected**
Germanium	ppb	ND		Tribufos	ppb	ND		HAA5	ppb	8.2-77.1
Manganese	ppb	0.61-6.4		1-butanol	ppb	ND		HAA6Br	ppb	2.7-6.62
Alpha-hexachlorocyclohexane	ppb	ND		2-methoxyethanol	ppb	ND		HAA9	ppb	11.0-83.5
Chlorpyrifos	ppb	ND		2-propen-1-ol	ppb	ND				
Dimethipin	ppb	ND		Butylated hydroxyanisole	ppb	ND				
Ethoprop	ppb	ND		O-toluidine	ppb	ND				
Oxyfluorfen	ppb	ND		Quinoline	ppb	ND				
Profenofos	ppb	ND		Total organic carbon (TOC)	ppb	ND				
Tebuconazole	ppb	ND		Bromide	ppb	ND				
Total permethrin (cis- & trans-)	ppb	ND								

Wetumpka Water Works and Sewer Board
OEL Exceedance October 2018

Wetumpka Water Works and Sewer Board exceeded the Stage 2 Disinfection Byproduct (DBP) Operational Evaluation Level (OEL) of 0.080 mg/L for total trihalomethanes (TTHM) at two sampling sites in two consecutive quarters during 2018. OEL calculation results for both quarters are shown below:

- 3rd quarter 2018: 0.090 mg/L and 0.093 mg/L
- 4th quarter 2018: 0.095 mg/L and 0.099mg/L

An OEL exceedance is *not* a MCL violation, but rather, it is a *prediction* or *early warning* that the MCL for disinfection byproducts *may* be exceeded in the future. The purpose of the calculation is to alert of potential problems so that preventative measures may be taken.

Upon receiving notice of an OEL exceedance, we performed an OEL evaluation report as required. The evaluation report included information about TTHM levels in the source water we are purchasing, storage and distribution system practices, including any changes that may have affected DBP levels. The report also identified steps we take currently or that we plan to take to reduce disinfection byproduct levels. Wetumpka WWSB is a purchase only water system. There is no additional treatment at our master meter purchase points. To help keep fresh water flowing, Wetumpka WWSB flushes water mains regularly at eight locations, flushing from 5% to 15% of total water purchased. We will continue to monitor and amend our flushing program as needed.

Since we began sampling and testing at the purchase meter points, it has become clear that source water purchased is a primary cause of high TTHMs. Both of our primary suppliers are looking into additional treatment at the Treatment Plants to reduce DBPs. Five Star Water is looking at several options, focusing on Ozone. Central Elmore Water has already begun upgrades to the treatment process, including Chlorine Dioxide and corrosion inhibitor. Suppliers have informed us that significant reductions in TTHM can be expected, from 30 to 40%. Excess water storage in tanks has been reduced to help lower water age, while maintaining sufficient water for the distribution system.

If you have questions about the OEL exceedances, please contact Ronnie Windham, General Manager, at 334-567-8404.

Detected Contaminants:
Central Elmore Water Authority & Five Star Water Supply District

Table of Detected Drinking Water Contaminants							
		Central Elmore	Five Star	Unit of			
Contaminants	Violation	Level Detected		Msmt	MCLG	MCL	Likely Source of Contamination
Turbidity	NO	0.117 100%<0.5	0. 12 100%<0.5	NTU	none	TT	Soil runoff (Measure of the cloudiness of the water)
Total Organic Carbon	NO	1.15	0.90-2.30	ppm	none	TT	Soil runoff
Alpha Emitters	NO	ND	2.69	PCi/l	0	15	Erosion of natural deposits
Antimony	NO	0.30	0.33	ppb	6	6	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
Arsenic	NO	0.30	0.37	ppb	none	50	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium	NO	0.01	0.027	ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
1,1-Dichloroethylene	NO	ND	ND	ppb	7	7	Discharge from industrial chemical factories
Fluoride	NO	0.74	Max 0.8	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; factory discharge
Nitrate (as Nitrogen)	NO	0.09	0.18	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Total trihalomethanes (TTHM)	NO	66.0	LRAA Range 38.3-46.4	ppb	0	80	By-product of drinking water chlorination
Total haloacetic acids (HAA5)	NO	41.0	LRAA Range 7.50-16.1	ppb	0	60	By-product of drinking water chlorination
Unregulated Contaminants							
Chloroform	NO	45.0	14.1-54.4	ppb	70	none	Naturally occurring in the environment or as a result of industrial discharge or runoff
Bromodichloromethane	NO	5.00	3.65-12.9	ppb	none	none	Naturally occurring in the environment or as a result of industrial discharge or runoff
Chlorodibromomethane	NO	0.50	0.03-1.84	ppb	60	none	Naturally occurring in the environment or as a result of industrial discharge or agricultural runoff
Secondary Contaminants					(Secondary Standards)		
Aluminum	NO	ND	0.04	ppm	none	0.2	Erosion of natural deposits or from water treatment
Chloride	NO	8.50	6.00	ppm	none	250	Naturally occurring or from runoff
Color	NO	ND	6	color units	none	15	Naturally occurring in the environment or as a result of treatment with water additives
Hardness	NO	16.3	75.3	ppm	none	none	Naturally occurring or from water treatment
Magnesium	NO	1.18	NR	ppm	none	none	Naturally occurring or from dissolved minerals
Manganese	NO	0.02	NR	ppm	none	0.05	Erosion of natural deposits; leaching from pipes
pH	NO	8.70	7.2-8.0	S.U.	none	8.5	Naturally occurring or from water treatment
Sodium	NO	13.4	4.03	ppm	none	none	Naturally occurring in the environment
Sulfate	NO	ND	ND	ppm	none	250	Naturally occurring in the environment; erosion
Total Dissolved Solids	NO	73.0	101	ppm	none	500	Naturally occurring or from runoff

Table of UCMR4 Cyanotoxins Monitored					
Central Elmore Water Authority 2018					
Cyanotoxins	Unit Msmt	Level Detected	Cyanotoxins	Unit Msmt	Level Detected
Anatoxin-A	ppb	ND	Microcystin-LY	ppb	ND
Cylindrospermopsin	ppb	ND	Microcystin-RR	ppb	ND
Microcystin-LA	ppb	ND	Microcystin-YR	ppb	ND
Microcystin-LF	ppb	ND	Nodularin	ppb	ND
Microcystin-LR	ppb	ND	Total Microcystins	ppb	ND

Definitions

Action Level- the concentration of a contaminant that, if exceeded, triggers treatment or other requirements.
Coliform Absent (ca)- Laboratory analysis indicates that the contaminant is not present.
Disinfection byproducts (DBPs)- are formed when disinfectants react with bromide and/or natural organic matter (i.e., decaying vegetation) present in the source water.
Distribution System Evaluation (DSE)-a one-time study conducted by water systems to identify distribution system locations with high concentrations of THMs and HAAs.
Level 1 Assessment-a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.
Level 2 Assessment-a very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.
Maximum Contaminant Level-(mandatory language) The Maximum Allowed (MCL) is 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 Contaminant Level Goal-(mandatory language) The Goal (MCLG) is 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 Residual Disinfectant Level (MRDL)-the highest level of a disinfectant allowed in drinking water
Micrograms per liter (ug/L) – Equivalent to parts per billion (ppb) since one liter of water is equal in weight to one billion micrograms.
Milligrams per liter (mg/L) – Equivalent to parts per million
Millirems per year (mrem/yr)-measure of radiation absorbed by the body.
Nephelometric Turbidity Unit (NTU)-a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.
Not Detected (ND)- laboratory analysis indicates that the constituent is not present above detection limits of lab equipment.
Parts per billion (ppb) or Micrograms per liter (µg/l)-one part per billion corresponds to one minute in 2,000 years, or a single penny in $10,000,000.
Parts per million (ppm) or Milligrams per liter (mg/l)-one part per million corresponds to one minute in two years or a single penny in $10,000.
Parts per quadrillion (ppq) or Picograms per liter (picograms/l)-one part per quadrillion corresponds to one minute in 2,000,000,000 years, or a single penny in $10,000,000,000,000.
Parts per trillion (ppt) or Nanograms per liter (nanograms/l)-one part per trillion corresponds to one minute in 2,000,000 years, or a single penny in $10,000,000,000.
Picocuries per liter (pCi/L)-picocuries per liter is a measure of the radioactivity in water.
Running Annual Average (RAA)-yearly average of all the DPB results at each specific sampling site in the distribution system. The RAA, along with a range, is reported in the Table of Detected Contaminants.
Standard Units (S.U.)-pH of water measures the water's balances of acids and bases and is affected by temperature and carbon dioxide gas. Water with less than 6.5 could be acidic, soft, and corrosive. A pH greater than 8.5 could indicate that the water is hard.
Treatment Technique (TT)- a required process intended to reduce the level of a contaminant in drinking water.
Variances & Exemptions (V&E)-State or EPA permission not to meet an MCL or a treatment technique under certain conditions.

The following table is a list of *Primary Drinking Water Contaminants*, *Unregulated Contaminants,* and *Secondary Contaminants* for which our water system routinely monitors according to our regulatory schedule. These contaminants were *not* detected in your drinking water unless they are listed in the *Table of Detected Drinking Water Contaminants.*

STANDARD LIST OF PRIMARY DRINKING WATER CONTAMINANTS					
Contaminant	**MCL**	**Unit of Msmt**	**Contaminant**	**MCL**	**Unit of Msmt**
Bacteriological Contaminants			trans-1,2-Dichloroethylene	100	ppb
Total Coliform Bacteria	<5%	present/absent	Dichloromethane	5	ppb
Fecal Coliform and E. coli	0	present/absent	1,2-Dichloropropane	5	ppb
Fecal Indicators	0	present/absent	Di (2-ethylhexyl)adipate	400	ppb
Turbidity	TT	NTU	Di (2-ethylhexyl)phthalate	6	ppb
Cryptosporidium	TT	Calc.organisms/l	Dinoseb	7	ppb
Radiological Contaminants			Dioxin [2,3,7,8-TCDD]	30	ppq
Beta/photon emitters	4	mrem/yr	Diquat	20	ppb
Alpha emitters	15	pCi/l	Endothall	100	ppb
Combined radium	5	pCi/l	Endrin	2	ppb
Uranium	30	pCi/l	Epichlorohydrin	TT	TT
Inorganic Chemicals			Ethylbenzene	700	ppb
Antimony	6	ppb	Ethylene dibromide	50	ppt
Arsenic	10	ppb	Glyphosate	700	ppb
Asbestos	7	MFL	Heptachlor	400	ppt
Barium	2	ppm	Heptachlor epoxide	200	ppt
Beryllium	4	ppb	Hexachlorobenzene	1	ppb
Cadmium	5	ppb	Hexachlorocyclopentadiene	50	ppb
Chromium	100	ppb	Lindane	200	ppt
Copper	AL=1.3	ppm	Methoxychlor	40	ppb
Cyanide	200	ppb	Oxamyl [Vydate]	200	ppb
Fluoride	4	ppm	Polychlorinated biphenyls	0.5	ppb
Lead	AL=15	ppb	Pentachlorophenol	1	ppb
Mercury	2	ppb	Picloram	500	ppb
Nitrate	10	ppm	Simazine	4	ppb
Nitrite	1	ppm	Styrene	100	ppb
Selenium	.05	ppm	Tetrachloroethylene	5	ppb
Thallium	.002	ppm	Toluene	1	ppm
Organic Contaminants			Toxaphene	3	ppb
2,4-D	70	ppb	2,4,5-TP(Silvex)	50	ppb
Acrylamide	TT	TT	1,2,4-Trichlorobenzene	.07	ppm
Alachlor	2	ppb	1,1,1-Trichloroethane	200	ppb
Benzene	5	ppb	1,1,2-Trichloroethane	5	ppb
Benzo(a)pyrene [PAHs]	200	ppt	Trichloroethylene	5	ppb
Carbofuran	40	ppb	Vinyl Chloride	2	ppb
Carbon tetrachloride	5	ppb	Xylenes	10	ppm
Chlordane	2	ppb	**Disinfectants & Disinfection Byproducts**		
Chlorobenzene	100	ppb	Chlorine	4	ppm
Dalapon	200	ppb	Chlorine Dioxide	800	ppb
Dibromochloropropane	200	ppt	Chloramines	4	ppm
o-Dichlorobenzene	600	ppb	Bromate	10	ppb
p-Dichlorobenzene	75	ppb	Chlorite	1	ppm
1,2-Dichloroethane	5	ppb	HAA5 [Total haloacetic acids]	60	ppb
1,1-Dichloroethylene	7	ppb	TTHM [Total trihalomethanes]	80	ppb
cis-1,2-Dichloroethylene	70	ppb			

UNREGULATED CONTAMINANTS			
1,1 – Dichloropropene	Aldicarb	Chloroform	Metolachlor
1,1,1,2-Tetrachloroethane	Aldicarb Sulfone	Chloromethane	Metribuzin
1,1,2,2-Tetrachloroethane	Aldicarb Sulfoxide	Dibromochloromethane	N - Butylbenzene
1,1-Dichloroethane	Aldrin	Dibromomethane	Naphthalene
1,2,3 - Trichlorobenzene	Bromobenzene	Dicamba	N-Propylbenzene
1,2,3 - Trichloropropane	Bromochloromethane	Dichlorodifluoromethane	O-Chlorotoluene
1,2,4 - Trimethylbenzene	Bromodichloromethane	Dieldrin	P-Chlorotoluene
1,3 – Dichloropropane	Bromoform	Hexachlorobutadiene	P-Isopropyltoluene
1,3 – Dichloropropene	Bromomethane	Isoprpylbenzene	Propachlor
1,3,5 - Trimethylbenzene	Butachlor	M-Dichlorobenzene	Sec - Butylbenzene
2,2 – Dichloropropane	Carbaryl	Methomyl	Tert - Butylbenzene
3-Hydroxycarbofuran	Chloroethane	MTBE	Trichlorfluoromethane

SECONDARY CONTAMINANTS			
Alkalinity, Total (as CA, Co_3)	Copper	Magnesium	Silver
Aluminum	Corrosivity	Manganese	Sodium
Calcium, as Ca	Foaming agents (MBAS)	Odor	Sulfate
Chloride	Hardness	Nickel	Total Dissolved Solids
Color	Iron	pH	Zinc