



## DEFINITIONS

**Action Level (AL)** - the concentration of a contaminant that, if exceeded, triggers treatment or other requirements which a water system must follow.

**Coliform Absent (ca)**- Laboratory analysis indicates that the contaminant is not present.

**Disinfection byproducts (DBPs)**- are formed when disinfectants used in water treatment plants react with bromide and/or natural organic matter (i.e., decaying vegetation) present in the source water. Different disinfectants produce different types or amounts of disinfection byproducts. Disinfection byproducts for which regulations have been established include trihalomethanes (THM), haloacetic acids (HAA5), bromate, and chlorite.

**Locational Running Annual Average (LRAA)** - yearly average of all the DPB results at each specific sampling site in the distribution system.

**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 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 Residual Disinfectant Level (MRDL)** -the highest level of a disinfectant allowed in drinking water

**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.

**Non-Detect (ND)**- laboratory analysis indicates that the constituent is not present above detection limits of lab equipment.

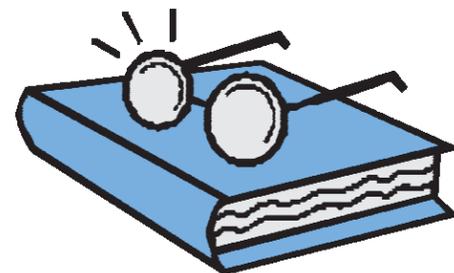
**Not Reported (NR)**-laboratory analysis, usually Secondary Contaminants, not reported by water system. EPA recommends secondary standards to water systems but does not require systems to comply.

**Parts per billion (ppb)** or Micrograms per liter ( $\mu\text{g/l}$ )-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 ( $\text{mg/l}$ )-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.

**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.

**Variations & Exemptions (V&E)**-State or EPA permission not to meet an MCL or a treatment technique under certain conditions.

Dear Customer,

We are pleased to present to you this year's Annual Water Quality Report. This report provides information concerning the source of your drinking water, what tests we perform, the test results, as well as an explanation of the numbers and terms in it.

Butler County Water Authority works diligently to provide high quality water that meets or exceeds State and Federal drinking water standards. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources.

## BUTLER COUNTY WATER AUTHORITY

### WATER SOURCES

- Four groundwater wells producing from the Ripley aquifer
- Purchased water from Fort Deposit, Georgiana, and McKenzie (Ripley and Nanafalia aquifers)

### INTERCONNECTIONS

- Sell water to Wilcox County Water Authority and to South Crenshaw Water Authority.
- Emergency connection with Pineapple Water Works and with Quint-mar Water Authority.

### WATER TREATMENT

Chlorination for disinfection

### STORAGE CAPACITY

Seven tanks: total capacity 3.2 million gallons

### NUMBER OF CUSTOMERS

Approximately 4600

### WATER BOARD

Thelma Mixon, Chairman  
Jan Black, Vice-Chairman  
Dan Driscoll, Secretary-Treasurer  
Tommie Hamilton, Director  
Janice McCraney, Director  
Patricia Griffin, Director

### QUESTIONS

If you have any questions about this report or concerning your water utility, please contact Wesley Bass at 334-382-4281 or at the water office at 1204 E. Commerce Street, Greenville, Alabama.

We want our valued customers to be informed about their water utility. If you want to learn more, please attend one of our regularly scheduled board meetings held on the 4th Mondays of each month at 9:30 a.m. at the Greenville Library.

EPA's Safe Drinking Water Hotline  
1-800-426-4791

# 2016 Annual Water Quality Report

(Testing Performed January - December 2015)

## **BUTLER COUNTY WATER AUTHORITY, PWSID AL0001507**

Mailing address: P. O. Box 547 • Greenville, AL 36037

Street address: 1204 E. Commerce Street • Greenville, AL 36037

### WATER QUALITY PROTECTION

Protecting the water supply at its source is the first step in achieving our goal of providing safe drinking water to its customers. In compliance with the Alabama Department of Environmental Management (ADEM), Butler County Water Authority has developed a Source Water Assessment plan that will assist in protecting our water sources. It includes a susceptibility analysis, which classifies potential contaminants as high, moderate, or non-susceptible to contaminating the water source. The assessment was performed, public notification was completed, and the plan was approved by ADEM. A copy of the report is available in the utilities office for review during regular business hours.

Butler County Water Authority routinely monitors our facilities. We regularly complete a water storage facility inspection, and we utilize a Bacteriological Monitoring Plan. Chlorine residual is routinely tested by our technicians, and results show that the required minimum free chlorine residual level of 0.2 mg/L is maintained. To further ensure safe drinking water for our customers, we have also established a Cross-Connection Policy.

Please help us make these efforts worthwhile by protecting our source water. Carefully follow instructions on pesticides and herbicides you use for your lawn and garden, and properly dispose of household chemicals, paints, and waste oil. We ask that all our customers help us protect our valuable water sources, which are the heart of our community, our way of life, and our children's futures.

### 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. 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). 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.
- 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.

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. 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.

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. 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).

### INFORMATION ABOUT LEAD

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. Your water system 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 [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).

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).

## MONITORING RESULTS

Our water system monitors for contaminants according to a schedule assigned to us by the Alabama Department of Environmental Management (ADEM), using EPA approved methods and a State certified laboratory. This report contains results from the most recent monitoring which was performed in accordance with the State and Federal regulatory schedule. Note: ADEM allows us to monitor for some contaminants *less than once per year* because the concentrations of these contaminants do not change frequently.



Constituent Monitored	Butler Co.	Ft. Deposit	Georgiana	McKenzie
Inorganic Contaminants	2013	2013	2015	2013
Lead/Copper	2013	2014	2014	2013
Microbiological Contaminants	current	current	current	current
Nitrates	2015	2015	2015	2015
Radioactive Contaminants	2010	2010	2003	2010
Synthetic Organic Contaminants	2013	2015	2013	2013
Volatile Organic Contaminants	2013	2015	2013	2013
Disinfection By-products	2015	2015	2015	2015
Unregulated Contaminant Monitoring Rule 3 (UCMR3) Contaminants	2015	NA	NA	NA

We have learned through our monitoring and testing that some constituents have been detected. The presence of contaminants in the water does not necessarily indicate that the water poses a health risk. Maximum Contaminant Levels (MCL) are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink two liters of water every day at the MCL for a lifetime to have a one-in-a-million chance of having an adverse health effect.

TABLE OF DETECTED DRINKING WATER CONTAMINANTS									
Contaminants	Violation	Butler County	Fort Deposit	Georgiana	McKenzie	Unit Msmt	MCLG	MCL	Likely Source of Contamination
Total Coliform Bacteria	NO	3 positive samples in 2016 *	ND	ND	ND	Present or Absent	0	presence in 5% of samples	Naturally present in the environment
Alpha emitters	NO	1.7 ± 1.6	2.1 ± 1.3	0.6 ± 1.4	<1.5 ± 1.1	PCi/l	0	15	Erosion of natural deposits
Combined radium	NO	ND	ND	0.2 ± 0.7	ND	PCi/l	0	5	Erosion of natural deposits
Barium	NO	ND	ND	0.029	ND	ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Carbon Tetrachloride	NO	ND	ND-0.58	ND	ND	ppb	0	5	Discharge from chemical plants and other industrial activities
Copper	NO	0.106 ** 0 > AL	0.403 ** 0 > AL	0.106 ** 0 > AL	0.005 ** 0 > AL	ppm	1.3	AL=1.3	Plumbing corrosion; erosion of natural deposits; leaching from wood preservatives
Fluoride	NO	0.40-0.65	0.27	1.17-1.44	0.33-0.58	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; factory discharge
Nitrate (as Nitrogen)	NO	ND-0.18	0.26	0.06	0.18-0.19	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
TTHM [Total trihalomethanes]	NO	RAA 24.3 10.0-45.9	8.64-32.2	33.4	3.21-5.09	ppb	0	80	By-product of drinking water chlorination
HAA5 [Total haloacetic acids]	NO	RAA 3.31 2.28-4.92	ND-4.24	9.26	ND	ppb	0	60	By-product of drinking water chlorination
<b>Unregulated Contaminants</b>									
Bromodichloromethane	NO	ND	0.51	ND	ND	ppb	n/a	n/a	Naturally occurring or from runoff
Chlorodibromomethane	NO	ND-1.09	ND	ND	ND	ppb	n/a	n/a	Naturally occurring or from runoff
Bromoform	NO	ND-3.63	ND	ND	ND	ppb	n/a	n/a	Naturally occurring or from runoff
<b>Secondary Contaminants</b>									
Aluminum	NO	ND	ND	ND-0.14	ND	ppm	n/a	0.2	Erosion of natural deposits or from treatment
Chloride	NO	53.1-89.0	19.4	67.5-79.5	7.89-9.99	ppm	n/a	250	Naturally occurring or from runoff
Hardness	NO	3.37-9.20	149	ND-8.06	33.7-48.3	ppm	n/a	n/a	Naturally occurring or from treatment
Iron	NO	ND	ND	ND	0.08	ppm	n/a	0.30	Naturally occurring; erosion; leaching from pipes
Manganese	NO	ND	ND	ND	ND-0.02	ppm	n/a	0.05	Erosion of natural deposits; leaching from pipes
pH	NO	8.20-8.50	7.47	8.06-8.36	6.01-8.05	S.U.	n/a	n/a	Naturally occurring or from treatment
Sulfate	NO	28.0-38.2	105	22.2-30.5	ND-39.0	ppm	n/a	250	Naturally occurring in the environment; erosion
Total Dissolved Solids	NO	252-504	444	421-475	336-376	ppm	n/a	500	Naturally occurring or from runoff

\* Three positive samples occurred in January 2016. All repeat samples were negative for coliform bacteria.

\*\* Amount shown is 90<sup>th</sup> percentile and # of sites above action level (1.3 ppm) = 0

UNREGULATED MONITORING RULE 3 (UCMR3) CONTAMINANTS Butler County 2014-2015			
Contaminants	Level Detected	Unit Msmt	Likely Source of Contamination
Strontium	170-270	ppb	Naturally occurring in the environment or as a result of discharge
Chromium, Hexavalent	ND-0.03	ppb	Naturally occurring in the environment or as a result of discharge

STANDARD LIST OF PRIMARY DRINKING WATER CONTAMINANTS					
Contaminant	MCL	Unit of Msmt	Contaminant	MCL	Unit of Msmt
<b>Bacteriological Contaminants</b>			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
<b>Radiological Contaminants</b>			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
<b>Inorganic Chemicals</b>			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
<b>Organic Contaminants</b>			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	<b>Disinfectants &amp; Disinfection Byproducts</b>		
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			

## LEVEL ONE ASSESSMENT PERFORMED JANUARY 2016

We routinely monitor your drinking water for total coliform bacteria. On January 13, 2016, three monthly samples showed the presence of coliform bacteria. We took the required repeat samples on the next business day, and we are pleased that all of our repeat samples came back negative. The Level One Assessment was required because two of the positive samples were on the water sourced from Well 1. We completed the Level One Assessment and submitted it to ADEM as required. The positive samples did *not* trigger a compliance violation.

A positive coliform bacteria sample is not an immediate health concern but requires further investigation. Coliform bacteria are naturally present in the environment but *not* naturally present in groundwater; therefore, positive results usually occur because of environmental factors or can occur due to a mistake in sampling methods.

The method of collecting water samples is very sensitive. Outdoor open air faucets may be vulnerable to environmental contamination by bacteria. Several factors could cause a positive sample, especially at an outdoor open air faucet: failure to sterilize the sample site adequately, mishandling of bottle, bottle cap, and/or sample, or an outdated sample bottle. A dirty faucet, rainwater, or even airborne particles can contaminate an otherwise clean water sample with coliform bacteria.

Because of the sensitive nature of sample collection, we installed dedicated sample stations at 45 routine monthly sample sites so that sampling at outdoor open air faucets is no longer necessary. We also installed continuous chlorine monitors at each of our wells. This will allow chlorine to be monitored constantly to ensure a more consistent level of disinfection throughout the water system.

We are pleased that all repeat samples came back negative when we sampled the same sites at the new sample station. We believe that utilization of the dedicated sample stations will assist us in obtaining clean samples in the future. We performed routine sampling again in the following month and in the months since and are pleased to say we are in compliance. We will continue to monitor for coliform bacteria as required. Butler County Water Authority is committed to provide you, our customers, with safe and clean water. If you have any questions concerning the Level One Assessment or other monitoring requirements, please call Wesley Bass at 334-382-4281.