

2017 Annual Water Quality Report (Testing Performed January - December 2016)

CITY OF LINDEN UTILITY BOARD

211 North Main Street Linden,

AL 36748

Phone 334-295-5051

Fax 334-295-0224

We are pleased to present to you this year's Annual Water Quality Report. This report is designed to inform you about the quality water and services we deliver to you every day. We are committed to ensuring the quality of your water.

Water Source	One groundwater well in Dayton producing from the Gordo aquifer	
	Purchased water from Hale County Water Authority	
	Purchased water from Uniontown Utilities Board	
Water Treatment	Chlorination	
Storage Capacity	Three tanks with a total capacity of 800,000 gallons	
Number of Customers	Approximately 1715 service connections	
Board Members	Byron Vice, Chairman	Mike Smith
	Garry Williams, Vice-Chairman	Jan Cannon
	Dorothy Gamble	William Bryant
	Billy Sheffield	
Employees	Charles Moore, Administrator/Mayor } Brenton Barkley, Operator	
	Ashley Drake, Clerk	

Water Quality Protection

In compliance with the Alabama Department of Environmental Management (ADEM), **City of Linden Utility Board** has developed a Source Water Assessment plan that will assist in protecting our water sources. The assessment has been performed, public notification has been completed, and the plan has been approved by ADEM. There were 10 potential contaminants identified within our assessment area, and all were considered non-susceptible to contaminating our water source. The report has been completed and approved by ADEM. A copy of the report is available in our office for review during regular business hours, or you may purchase a copy upon request for a nominal reproduction fee.

City of Linden Utility Board routinely completes a water storage facility inspection plan and utilizes a Bacteriological Monitoring Plan. The required chlorine residual is maintained throughout our distribution system to protect your drinking water from possible outside contaminants. We have also established a Cross-Connection Policy to insure safe drinking water for our customers.

As you can see, we have put a great deal of effort into protecting our water supply. 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.

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.
- 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.

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. 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.

Questions?

If you have any questions about this report or concerning your water utility, please contact **Brenton Barkley, Operator**. 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 **third Tuesday of each month at 5:00 p.m. at the Linden City Hall**. More information about contaminants to drinking water and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at (1800-426-4791).

Monitoring Schedule

City of Linden Utility routinely monitors for contaminants in your drinking water according to Federal and State laws, 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	Linden	Uniontown	Hale Co.
Inorganic Contaminants	2016	2016	2016
Lead/Copper	2014	2016	2015
Microbiological Contaminants	current	current	current
Nitrates	2016	2016	2016
Radioactive Contaminants	2011	2010	2011
Synthetic Organic Contaminants (including pesticides and herbicides)	2015	2015	2015
Volatile Organic Contaminants	2016	2015	2016
Disinfection By-products	2016	2016	2016

As you can see by the table below, our water system had no violations. The table below shows only those contaminants that had some level of detection. We are pleased to report that our drinking water meets federal and state requirements. This report shows our water quality and what it means.

TABLE OF DETECTED DRINKING WATER CONTAMINANTS								
Contaminants	Violation Y/N	Detected Linden	Detected Uniontown	Detected Hale Co.	Unit Msmt	MCLG	MCL	
Alpha emitters	NO	ND	1.7 ± 0.7	2.9 ± 0.7	PCI/l	0	15	Erosion of natural deposits
Barium	NO	ND	ND	ND - 0.17	ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Copper	NO	0.089 **			ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion; leaching from preservatives
Fluoride	NO	0.28	ND	ND	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from factories

TTHM [Total trihalomethanes]	NO	4.04-7.79	3.02-5.72	ND-5.78	ppb	0	80	By-product of drinking water chlorination
HAA5 [Total haloacetic acids]	NO	1.13-2.74	1.21-1.69	ND-3.29	ppb	0	60	By-product of drinking water chlorination
Unregulated Contaminants								
Chloroform	NO	ND	ND	ND-0.75	ppb	n/a	n/a	Naturally occurring in the environment or as a result of industrial discharge or agricultural runoff
Secondary Contaminants								
Chloride	NO	4.37	1.52-1.53	2.83-5.49	ppm	n/a	250	Naturally occurring in the environment or as a result of industrial discharge or agricultural runoff
Hardness	NO	ND	4.18-4.97	2.11-54.1	ppm	n/a	n/a	Naturally occurring in the environment or as a result of treatment with water additives
Manganese	NO	0.03	ND-0.02	ND	ppm	n/a	0.05	Erosion of natural deposits; leaching from pipes
pH	NO	7.60	8.08-8.34	6.57-8.17	S.U.	n/a	n/a	Naturally occurring in the environment or as a result of treatment with water additives
Sodium	NO	37.3	39.2-47.8	1.12-44.6	ppm	n/a	n/a	Naturally occurring in the environment
Sulfate	NO	4.26	5.52-5.83	0.94-4.05	ppm	n/a	250	Naturally occurring in the environment or as a result of industrial discharge or agricultural runoff
Total Dissolved Solids	NO	104	112-144	24.0-136	ppm	n/a	500	Naturally occurring in the environment or as a result of industrial discharge or agricultural runoff

Abbreviations and Definitions

AL (Action Level): the concentration of a contaminant that, if exceeded, triggers treatment or other requirements.

CA (Coliform Absent): Laboratory analysis indicates that the contaminant is not present.

DBP (Disinfection Byproducts): 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.

IDSE (Initial Distribution System Evaluation): a study conducted by water systems to identify distribution system locations with high concentrations of TTHM and HAA5.

LRAA (Locational Running Annual Average): yearly average of all the DPB results at each specific sampling site

MCL (Maximum Contaminant Level): 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.

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

mrem/yr (Millirems per year): measure of radiation absorbed by the body.

n/a (not applicable)

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

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

NTU (Nephelometric Turbidity Unit): a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

ppb (parts per billion) or **µg/l** (micrograms per liter): one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

ppm (parts per million) or **mg/l** (milligrams per liter): one part per million corresponds to one minute in two years or a single penny in \$10,000.

ppq (parts per quadrillion) or **picograms/l** (Picograms per liter): one part per quadrillion corresponds to one minute in 2,000,000,000 years, or a single penny in \$10,000,000,000,000.

ppt (parts per trillion) or **nanograms/l** (nanograms per liter): one part per trillion corresponds to one minute in 2,000,000 years, or a single penny in \$10,000,000,000.

pCi/L (Picocuries per liter): picocuries per liter is a measure of the radioactivity in water.

RAA (running annual average): average of DBP results in the water system

S.U. (Standard Units): pH of water measures the water's balances of acids and bases. 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.

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

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

At the end of this report a list of *Primary Drinking Water Contaminants* and a list of *Unregulated Contaminants* for which our water system routinely monitors. 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	MC	Unit of Msmt
Bacteriological Contaminants			trans-1,2-Dichloroethylene	100	ppb
Total Coliform Bacteria	<5%	present or absent	Dichloromethane	5	ppb
Fecal Coliform and E. coli	0	present or absent	1,2-Dichloropropane	5	ppb
Turbidity	TT	NTU	Di (2-ethylhexyl)adipate	400	ppb
Cryptosporidium	TT	TT	Di (2-ethylhexyl)phthalate	6	ppb
Radiological Contaminants			Dinoseb	7	ppb
Beta/phon emitters	4	mrem/yr	Dioxin [2,3,7,8-TCDD]	30	Picograms/l
Alpha emitters	15	pCi/l	Diquat	20	ppb
Combined radium	5	pCi/l	Endothall	100	ppb
Uranium	30	pCi/l	Endrin	2	ppb
Inorganic Chemicals			Epichlorohydrin	TT	
Antimony	6	ppb	Ethylbenzene	700	ppb
Arsenic	10	ppb	Ethylene dibromide	50	ppt
Asbestos	7	MFL	Glyphosate	700	ppb
Barium	2	ppm	Heptachlor	400	Nanograms/l
Beryllium	4	ppb	Heptachlor epoxide	200	Nanograms/l
Cadmium	5	ppb	Hexachlorobenzene	1	ppb
Chromium	100	ppb	Hexachlorocyclopentadiene	50	ppb
Copper	AL=1.3	ppm	Lindane	200	Nanograms/l
Cyanide	200	ppb	Methoxychlor	40	ppb
Fluoride	4	ppm	Oxamyl [Vydate]	200	ppb
Lead	AL=15	ppb	Polychlorinated biphenyls (PCBs)	0.5	ppb
Mercury	2	ppb	Pentachlorophenol	1	ppb
Nitrate	10	ppm	Picloram	500	ppb
Nitrite	1	ppm	Simazine	4	ppb
Selenium	.05	ppm	Styrene	100	ppb
Thallium	.002	ppm	Tetrachloroethylene	5	ppb
Organic Contaminants			Toluene	1	ppm
2,4-D	70	ppb	Toxaphene	3	ppb
Acrylamide	TT		2,4,5-TP(Silvex)	50	ppb
Alachlor	2	ppb	1,2,4-Trichlorobenzene	.07	ppm
Benzene	5	ppb	1,1,1-Trichloroethane	200	ppb
Benzo(a)pyrene [PAHs]	200	ppt	1,1,2-Trichloroethane	5	ppb
Carbofuran	40	ppb	Trichloroethylene	5	ppb
Carbon tetrachloride	5	ppb	Vinyl Chloride	2	ppb
Chlordane	2	ppb	Xylenes	10	ppm
Chlorobenzene	100	ppb	Disinfectants & Disinfection Byproducts		
Dalapon	200	ppb	Chlorine	4	ppm
Dibromochloropropane	200	ppt	Chlorine Dioxide	800	ppb
o-Dichlorobenzene	600	ppb	Chloramines	4	ppm
p-Dichlorobenzene	75	ppb	Bromate	10	ppb
1,2-Dichloroethane	5	ppb	Chlorite	1	ppm
1,1-Dichloroethylene	7	ppb	HAA5 [Total haloacetic acids]	60	ppb
cis-1,2-Dichloroethylene	70	ppb	TTHM [Total trihalomethanes]	80	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	Isopropylbenzene	Propachlor		
1,3,5 - Trimethylbenzene	Butachlor	M-Dichlorobenzene	Sec - Butylbenzene		
2,2 - Dichloropropane	Carbaryl	Methomyl	Tert - Butylbenzene		
3-Hydroxycarbofuran	Chloroethane	MTBE	Trichlorofluoromethane		