City of Troy Annual Drinking Water Quality Report

January – December 2016

We're pleased to present to you this year's Annual Quality Water Report. This report is designed to inform you about the quality water and services we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. The City of Troy's has a Source Water Assessment which provides more information such as potential sources of contamination. Also, we have a Well Head Protection Plan that provides addition information. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water. Our water source is 6 deep wells. Our wells draw from the Tuscaloosa and Ripley Aquifers. The water we provide to our customers requires a treatment of chlorine for disinfection purposes and fluoride to assist in preventing dental diseases

If you have any questions about this report or concerning your water utility, please contact Jeremy Hagler at 344-8963. We want our valued customers to be informed about their water utility. If you want to learn more, please attend our regularly scheduled meetings held on the 2nd and 4th Tuesday of each month at 5:00 p.m. at City Hall in Troy, AL.

City of Troy Council Members:

- Jason A. Reeves, Mayor
- Stephanie Baker – Council– District 4
- Robert Jones– District 1
- Greg Meeks – District 2
- Marcus Paramore Council, President– District 3
- Wanda Moultry – District 5

The City of Troy routinely monitors for contaminants in your drinking water according to Federal and State laws. This table shows the results of our monitoring for the period of January 1st to December 31st, 2016**.** All drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some contaminants. It's important to remember that the presence of these contaminants does not necessarily pose a health risk.

PLAIN LANGUAGE DEFINITION

- *Not Required* (**NR**) – Laboratory analysis not required due to waiver granted by the Environmental Protection Agency for the State of Alabama.
- *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 billion (**ppb**) or Micrograms per liter* - one part per billion corresponds to one minute in 2,000 years, or a single penny in $10,000,000.
- *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.
- *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 one penny in $10,000,000,000,000.
- *Picocuries per liter (**pCi/L**)* - picocuries per liter is a measure of the radioactivity in water.
- *Millirems per year (**mrem/yr**)* - measure of radiation absorbed by the body.
- *Non-Detects (**ND**)* - Levels below method detection limits
- *Nephelometric Turbidity Unit (**NTU**)* - nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.
- *Variances & Exemptions (**V&E**)* - State or EPA permission not to meet an MCL or a treatment technique under certain conditions.
- *Action Level – (AL)* the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- *Treatment Technique (**TT**)* - (mandatory language) A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.
- Threshold Odor Number (T.O.N.)- The greatest dilution of a sample with odor-free water that still yields a just-detectable odor.
- *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 Goal or 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.

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 run-off, and septic systems.
- *Radioactive contaminants,* which can be naturally occurring or be the result of oil and gas production and mining activities.

Table of Primary Drinking Water Contaminants

At high levels some primary contaminants are known to pose a health risks to humans. This table provides a quick glance of any primary contaminant detections.

CONTAMINANT	**MCL**	**AMOUNT DETECTED**	CONTAMINANT	MCL	AMOUNT DETECTED
Bacteriological			Chlorite (ppm)	1	ND
Total Coliform Bacteria	< 5%	ND	Endothall (ppb)	100	ND
Turbidity (NTU)	TT	0.11 0.51	Endrin (ppb)	2	ND
Fecal Coliform & E. coli	0	ND	Epichlorohydrin (ppb)	TT	ND
Fecal Indiators (enterococci or coliphage)	TT	ND	Glyphosate (ppb)	700	ND
Radiological			Heptachlor (ppt)	400	ND
Beta particle and photon (mrem/yr)	4	ND	Heptachlor Epoxide (ppt)	200	ND
Gross Alpha particle (pCi/L)	15	ND	Hexachlorobenzene (ppb)	1	ND
Combined radium 226 & 228 (pCi/L)	5	ND	Hexachlorocyclopentadiene (ppb)	50	ND

Uranium (ppb)	30	ND		Lindane (ppt)	200	ND
Inorganic				Methoxychlor (ppb)	40	ND
Antimony (ppb)	6	0.2	0.52	Oxamyl [Vydate] (ppb)	200	ND
Arsenic (ppb)	10	ND	0.28	Polychlorinated Biphenyls (PCBs)(ppt)	500	ND
Asbestos (MFL)	7	ND		Pentachlorophenol (ppb)	1	ND
Barium (ppm)	2	.00083	.012	Picloram (ppb)	500	ND
Beryllium (ppb)	4	ND		Simazine (ppb)	4	ND
Cadmium (ppb)	5	ND		Toxaphene (ppb)	3	ND
Chromium (ppb)	100	0.26	0.95	Benzene (ppb)	5	ND
Copper (ppm) 90th percentile 10 results	AL=1.3	0.105		Carbon Tetrachloride (ppb)	5	ND
Cyanide (ppb)	200	ND		Monochlorobenzene (ppb)	100	ND
Fluoride (ppm)	4	0.160	0.950	Dibromochloropropane (ppt)	200	ND
Lead (ppb) 90th percentile 10 results	AL=15	1.1		0-Dichlorobenzene (ppb)	600	ND
Mercury (ppb)	2	ND		Para-dichlorobenzene (ppb)	75	ND
Nickel (ppb)	100	ND	0.94	1,2-Dichloroethane (ppb)	5	ND
Nitrate (as N)(ppm)	10	ND	0.042	1,1-Dichloroethylene (ppb)	7	ND
Nitrite (as N)(ppm)	1	ND		Cis-1,2-Dichloroethylene (ppb)	70	ND
Total Nitrate/Nitrite (ppm)	10	ND		Trans-1,2-Dichloroethylene (ppb)	100	ND
Selenium (ppb)	50	ND	0.32	Dichloromethane (ppb)	5	ND
Sulfate (ppm)	500	14.8	47.7	1,2-Dichloropropane (ppb)	5	ND
Thallium (ppb)	2	ND		Ethylbenzene (ppb)	700	ND
Organic Chemicals				Ethylene Dibromide (EDB)(ppt)	50	ND
2,4-D (ppb)	70	ND		Styrene (ppb)	100	ND
2,4,5-TP (Silvex) (ppb)	50	ND		Tetrachloroethylene (ppb)	5	ND
Acrylamide (ppm)	TT	ND		1,2,4-Trichlorobenzene (ppb)	70	ND 0.35
Alachlor (ppb)	2	ND		1,1,1-Trichloroethane (ppb)	200	ND
Atrazine (ppb)	3	ND		1,1,2-Trichloroethane (ppb)	5	ND
Benzo(a)pyrene[PHAs] (ppt)	200	ND		Trichloroethylene (TCE)(ppb)	5	ND
Carbofuran (ppb)	40	ND		Total trihalomethanes (TTHM)(ppb)	80	0.32 9.77
Chlordane (ppb)	2	ND		Toluene (ppm)	1	ND
Dalapon (ppb)	200	ND		Vinyl Chloride (ppb)	2	ND
Di-(2-ethylhexyl)adipate (ppb)	400	ND		Chlorine (ppm)	4	.21 2.2
Di(2-ethylhexyl)phthlates (ppb)	6	ND		Chlorine dioxide (ppb)	800	ND
Dinoseb (ppb)	7	ND		Bromate (ppb)	10	ND
Diquat (ppb)	20	ND		Total Organic Carbon (TOC)	TT	ND
Dioxin[2,3,7,8-TCDD] (ppq)	30	ND		Xylenes (Total)(ppm)	10	ND
Chloramines (ppm)	4	ND		Haloacetic Acids (HAA5)(ppb)	60	ND 2.09

Table of Detected Contaminants

CONTAMINANT	MCLG	MCL	Range			Amount Detected		Likely Source of Contamination
Bacteriological								
Turbidity	0	TT	0.11	-	0.51	0.51	NTU	Soil runoff
Inorganic	**January – December 2016**							
Chlorine	MRDLG 4	MRDL 4	.21	-	2.2	2.2	ppm	Water additive used to control microbes
Nitrates	10	10	ND	-	0.042	0.042	ppm	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Antimony	6	6	0.20	-	0.52	0.52	ppb	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
Haloacetic Acids (Stage 2)	N/A	60	ND	-	2.09	2.09	ppb	By-product of drinking water chlorination
TTHM (Stage 2)	0	80	0.32	-	9.77	9.77	ppb	By-product of drinking water chlorination
Sulfate	N/A	500	14.8	-	47.7	47.7	ppm	Naturally occurring in the environment
Fluoride	4	4	0.160	-	0.950	0.950	ppm	Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories
Barium	2	2	.00083	-	.012	.012	ppm	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
1,2,4-Trichlorobenzene (ppb)	70	70	ND		0.35	0.35	ppb	Discharge from textile-finishing factories
Chromium	100	100	0.26	-	0.95	0.95	ppb	Discharge from steel and pulp mills; erosion of natural deposits
Selenium	50	50	ND	-	0.32	0.32	ppb	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines

Arsenic	10	10	ND	-	0.28	0.28	ppb	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Nickel	100	100	ND	-	0.94	0.94	ppb	A metal found in natural deposits as ores containing other elements.
Copper (90th percentile test results)	1.3	AL=1.3	0.105			0.105	ppm	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead ((90th percentile test results)	0	15	1.1			1.1	ppb	Corrosion of household plumbing systems, erosion of natural deposits.
Table of Detected Secondary Contaminants 2016								
Chloride	N/A	250	5.0	-	14.0	14.0	ppm	Naturally occurring in the environment or as a result of agricultural runoff
Manganese	N/A	0.05	0.0016	-	0.0055	0.0055	ppm	Erosion of natural deposits
Total Dissolved Solids	N/A	500	184	-	282	282	ppm	Erosion of natural deposits
Zinc	N/A	5	ND	-	0.0138	0.0138	ppm	Erosion of natural deposits
Copper	N/A	1.0	ND	-	0.0161	0.0161	ppm	Erosion of natural deposits; leaching from pipes
Aluminum	N/A	0.2	ND	-	0.0308	0.0308	ppm	Erosion of natural deposits or as a result of treatment with water additives
Lead	N/A	.015	ND	-	ND	0.0002	ppb	Corrosion of household plumbing systems, erosion of natural deposits.
Table of Detected Special Contaminants 2016								
Carbon Dioxide	0	N/A	0.129	-	0.173	0.173	ppm	Naturally occurring in the environment
pH	0	N/A	6.9	-	8.7	8.7	SU	Naturally occurring in the environment or as a result of treatment with water additives
Sodium	0	N/A	60.0	-	119.98	119.98	ppm	Naturally occurring in the environment
Total Alkalinity	0	N/A	0.147	-	0.199	0.199	ppm	Naturally occurring in the environment
Calcium	N/A	N/A	0.4	-	10.2	10.2	ppm	Erosion of natural deposits
Magnesium	N/A	N/A	ND	-	2.57	2.57	ppm	Erosion of natural deposits
Specific Conductance	N/A	<500	0.344	-	0.523	0.523	umhos	Naturally occurring in the environment or as a result of treatment with water additives
Hardness	N/A	N/A	ND	-	0.0448	0.0448	ppm	Naturally occurring in the environment or as a result of treatment with water additives
Table of Detected Unregulated Contaminants 2016								
Chloroform	N/A	N/A	ND	-	0.81	0.81	ppm	Naturally occurring in the environment or as a result of industrial discharge or agricultural runoff; by-product of chlorination
Unregulated Contaminants Monitoring Rule 3 (UCMR3) 2016								
Strontium	N/A	N/A	8.5	-	270	270	ppb	Naturally occurring in the environment

Secondary Drinking Water Standards are guidelines regulating contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water. ADEM has Secondary Drinking Water Standards established in state regulations applicable to water systems required to monitor for the various components

Table of Secondary Contaminants

Contaminants	Range		MCL	Contaminants	Range		MCL
Aluminum	ND 0.0308	PPM	0.2	Manganese	0.0016 0.005	PPM	0.05
Chloride	5.0 14.0	PPM	250	Silver	ND	PPM	0.1
Iron	ND	PPM	0.3	Total Dissolved Solids	184 282	PPM	500
Color	ND	PPM	15.0	Zinc	ND 0.0138	PPM	5
Foaming Agents	ND	PPB	500	Copper	ND 0.016	PPM	1
Odor	ND	T.O.N.	3	Lead	ND 0.0002	PPB	.015

Table of Special Contaminants

Contaminants	Range		MCL	Contaminants	Range		MCL
Calcium	0.4 10.2	PPM	N/A	Sodium	60.0 119.98	PPM	N/A
Carbon Dioxide	0.129 0.173	PPM	N/A	Sulfate		PPM	250
Magnesium	ND 2.57	PPM	N/A	Specific, Conductance	0.344 0.523	PPM	N/A

pH	6.9 8.7	PPM	N/A	Total Hardness (as CaCO3)	ND 0.0448	PPM	N/A
Total Alkalinity	0.147 0.199	PPM	N/A	Temperture		ºC	N/A

Table of Unregulated Drinking Water Contaminants

CONTAMINANT	AVERAGE	CONTAMINANT	AVERAGE	CONTAMINANT	AVERAGE
1,1 - Dichloropropene	ND	Chloroform	ND-0.81	1,2,4-Trichlorobenzene	ND
Chloromethane	ND	1,1,2,2-Tetrachloroethane	ND	Chlorodibromomethane	ND
1,1-Dichloroethane	ND	Dibromomethane	ND	1,2,3 - Trichlorobenzene	ND
Dicamba	ND	1,2,3 - Trichloropropane	ND	Dichlorodifluoromethane	ND
1,2,4 - Trimethylbenzene	ND	Dieldrin	ND	1,3 - Dichloropropane	ND
Hexachlorobutadiene	ND	1,3 - Dichloropropene	ND	Isopropylbenzene	ND
1,3,5 - Trimethylbenzene	ND	M-Dichlorobenzene	ND	2,2 - Dichloropropane	ND
Methomyl	ND	3-Hydroxycarbofuran	ND	MTBE	ND
Aldicarb	ND	Aldicarb Sulfone	ND	Aldicarb Sulfoxide	ND
Aldrin	ND	Bromobenzene	ND	Dibromochloromethane	ND
Bromodichloromethane	ND	Bromoform	ND	Bromomethane	ND
Butachlor	ND	Carbaryl	ND	Chloroethane	ND
Metolachlor	ND	Metribuzin	ND	N-Propylbenzene	ND
N - Butylbenzene	ND	Naphthalene	ND	O-Chlorotoluene	ND
P-Chlorotoluene	ND	P-Isopropyltoluene	ND	Propachlor	ND
Sec - Butylbenzene	ND	Tert - Butylbenzene	ND	Fluorotrichloromethane	ND

GENERAL INFORMATION

The City of Troy is pleased to announce that we meet all the required limits for the Stage 2 Disinfection By Products monitoring. One set of samples were taken one week later than specified in our Stage 2 DBP plan; however, the sample's results meet all the required limits.

We're proud that your drinking water meets or exceeds all Federal and State requirements. We have learned through our monitoring and testing that some contaminants have been detected. The EPA has determined that your water IS SAFE at these levels.

The Total Coliform Rule requires water systems to meet a stricter limit for coliform bacteria. Coliform bacteria are usually harmless, but their presence in water can be an indication of disease-causing bacteria. When coliform bacteria are found, special follow-up tests are done to determine if harmful bacteria are present in the water supply. If this limit is exceeded, the water supplier must notify the public by newspaper, television or radio. To comply with the stricter regulation, we have increased the average amount of chlorine in the distribution system.

All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the 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 at 1-800-426-4791.

MCL's 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.

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. Troy 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.

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. These people 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).

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

We at the City of Troy work around the clock to provide top quality water to every tap. We ask that all our customers help us protect our water sources, which are the heart of our community, our way of life, and our children's future.