# City of Troy Annual Drinking Water Quality Report

**January – December 2017**

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 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. The City of Troy's water distribution system is supplied by six deep wells.

If you have any questions about this report or concerning your water utility, please contact Jeremy Hagler at 334-344-8963. 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
- Robert Jones—District 1
- Greg Meeks—District 2
- Marcus Paramore—President—District 3
- Stephanie Baker—District 4
- 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, 2017. 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 Indicators (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 | 0.20 1.97 | 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 0.20 | 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 0.20 | 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 | ND 16.6 |
| 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 | 0.24 2.53 |
| 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 3.64 |

## 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 2017** | | | | | | | |
| Antimony | 6 | 6 | 0.20 | - | 0.52 | 0.52 | ppb | Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder |
| Sulfate | N/A | 500 | 14.8 | - | 47.7 | 47.7 | ppm | Naturally occurring in the environment |
| Fluoride | 4 | 4 | 0.20 | - | 1.97 | 1.97 | 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. |
| **Inorganic** | **January – December 2017** | | | | | | | |
| Chlorine | MRDLG 4 | MRDL 4 | 0.24 | - | 2.53 | 2.53 | ppm | Water additive used to control microbes |
| Nitrates | 10 | 10 | ND | - | 0.20 | 0.20 | ppm | Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits |
| Haloacetic Acids (Stage 2) | N/A | 60 | 0 | - | 3.64 | 3.64 | ppb | By-product of drinking water chlorination |
| TTHM (Stage 2) | 0 | 80 | 0 | - | 16.56 | 16.56 | ppb | By-product of drinking water chlorination |
| **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 | ND | 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 | Temperature | ND | °C | 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

It is the goal of the City of Troy that your drinking water meets all necessary health standards. To ensure the safety of the drinking water, the City of Troy must regularly monitor your drinking water for specific contaminants.

During the second quarter of 2017, the City of Troy did not monitor for disinfection byproducts during the required time period. The contracted lab responsible for picking up and analyzing the samples did not notify the City of Troy of the missing samples. Additionally, in November 2017, the City's contracted lab did not pick up or analyze one set of samples the City of Troy collected for total coliform bacteria, nor did they notify the City that they had not done so. Although the City cannot guarantee the samples mentioned above were absent of these analytes, we can guarantee that the samples taken for the same containments during previous and subsequent sampling periods met all State and Federal requirements. In an effort to ensure sampling oversights are not made in the future, The City of Troy has implemented additional redundant record keeping procedures. These new procedures include improvements to the existing process done by the contracted lab as well as implementing an internal chain of custody.

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.