

Safe Water
- from the source all
the way to the tap!



Fort Smith Utility
2017
Water Quality Report

Fort Smith Utility Department
3900 Kelley Highway - Fort Smith, AR 72904
Phone: 479-784-2231
Deputy Director of Operations - Lance McAvoy
Treatment Program Manager - Steve Floyd
Environmental Quality Program Manager - Don Clover

We're pleased to present to you this year's Annual Drinking Water Quality Report. This report is designed to inform you about the quality of your water, what it means and services we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand, and be involved in 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.

This report contains important information about your drinking water. Translate it, or speak with someone who understands it.

Spanish: Este documento contiene información importante acerca del agua potable que usted consume. Si no puede leer este informe, por favor pida a alguien que le ayude a entenderlo.

Laotian:

Vietnamese: **Chi tiết này thật quan trọng.**
Xin nhờ người dịch cho quý vị.

ລາຍງານນີ້ມີຂໍ້ມູນສໍາຄັນກ່ຽວກັບນໍ້າປະປາຂອງທ່ານ. ຈົ່ງໃຫ້ຄົນອື່ນຊ່ວຍອ່ານ, ຫລືໃຫ້ບຶກສາກັບຄົນໃດຄົນໜຶ່ງທີ່ເຂົ້າໃຈເລື້ອງ.

The United States Congress has directed the Environmental Protection Agency (EPA) to require public water systems to report annually on the quality of drinking water they provide. The City of Fort Smith Utilities supports this regulation and is providing this report to all customers in our service area. This report is about your drinking water sources and quality; regulations that protect your health; programs that protect the high quality of our supply sources; and the treatment processes that assure our drinking water meets or surpasses all federal and state standards. Congress passed the Safe Drinking Water Act in 1974, delegating to the U.S. Environmental Protection Agency (EPA) the authority to regulate public water systems to protect public health. In order to assure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations established limits for contaminants in bottled water which must provide the same protection for public health.

Where Does Our Drinking Water Come From?

Fort Smith has two independent water sources. Our primary water source is the Frog Bayou watershed, a 74 square mile forested valley located in the Boston Mountains, 2 miles north of Mountainburg, AR. The Frog Bayou supply comes from rain (43-56" of rain per year), and stream runoff flowing down the slopes of the watershed. The water is stored in **Lake Fort Smith** (approximately 1,400 surface acres) and is treated at Fort Smith's Lake Fort Smith Water Treatment Plant. Fort Smith's other water supply is the Lee Creek watershed, a 439 square mile area located in both the States of Arkansas and Oklahoma. The Lee Creek supply also comes from rain (43-56" of rain per year), and stream runoff flowing down the slopes of the watershed. The water from this watershed is stored in the **Lee Creek Reservoir** (approximately 634 surface acres) and is treated at Fort Smith's Lee Creek Water Treatment Plant.

How Safe Is The Source Of Our Drinking Water?

The Arkansas Department of Health completed a Source Water Vulnerability Assessment for Fort Smith Water Utilities. The assessment summarizes the potential for contamination of our source(s) of drinking water and can be used as a basis for developing a source water protection plan. Based on the various criteria of the assessment, our water sources have been determined to have a low to medium susceptibility to contamination. You may request a summary of the Source Water Vulnerability Assessment from our office.

Fresh clean drinking water is yours to use whenever you need it. But not to waste. It's too valuable. Remember that a little effort and a little common sense will make a big difference.

Use Water . . . And Use it Wisely



Water Meter Modernization Underway

The City of Fort Smith, Arkansas will modernize its water infrastructure over the next two years. New meters equipped with advanced water communication modules to read the meter electronically will be deployed to replace the City of Fort Smith's aging water meters, nearly half of which have exceeded the normal life expectancy of ten years. The city will gain access to daily and hourly interval data for increased billing accuracy, decreased operational expense and enhanced customer service. This data will also help city personnel determine if there is a leak on the customers plumbing.

The new water meters and communication modules will improve meter reading efficiency and lower operational costs. The conversion to the new meters has been completed in the Fianna Hills area. When the meters in this area were read manually, it took four meter readers two days to read the meters. With the new system, it takes two meter readers four hours to complete the reads. The data collected, when the meters are read, gives the utility access to detailed meter data to gain better visibility into water consumption. The electronically read meters also give Fort Smith the flexibility to completely automate meter reading in the future.

"With the new electronic meter reading system, we will be able to streamline operational processes, reduce costs and enhance water usage visibility with detailed meter data," said Danny Kelley, supervisor of metering at the City of Fort Smith.

Currently there are 29,641 manual read meters and 7,529 electronic read meters. City crews are installing approximately 100 electronic read meters per day.



Why are Contaminants in My Water?

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 in some cases, can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

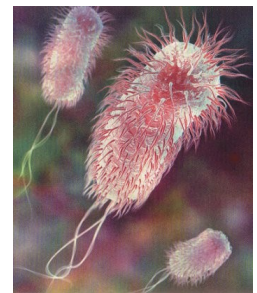
* **Microbial contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

* **Inorganic contaminants**, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, 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, urban stormwater runoff, and residential uses.

* **Organic chemical contaminants**, including synthetic and volatile organics, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff and septic systems.

* **Radioactive materials**, which can be naturally occurring or be the result of oil and gas production and mining activities.



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.

Terms and abbreviations used in this report

We routinely monitor for constituents in your drinking water according to Federal and State laws. The test results table shows the results of our monitoring for the period of January 1, 2016 to December 31, 2016 (unless otherwise stated). In the table you might find terms and abbreviations you are not familiar with. To help you better understand these terms we've provided the following definitions:

Action level (AL)-The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Finished water: Water leaving the treatment plant and entering 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) - unenforceable public health 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.

Maximum Residual Disinfectant Level (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.

Maximum Residual Disinfectant Level Goal (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.

Minimum detection limits: Many contaminants cannot be detected by current testing procedures. That can mean either there is no contaminant present, or that it is present at levels too low for modern laboratory equipment to detect.

Nephelometric Turbidity Unit (NTU) - a unit of measurement for the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

Parts Per Billion (ppb)- a unit of measurement for the detection levels of contaminants in drinking water. One part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

Parts Per Million (ppm)- a unit of measurement for the detection levels of contaminants in drinking water. One part per million corresponds to one minute in two (2) years, or a single penny in \$10,000.

Secondary Maximum Contaminant Level (SMCL) - These are non-mandatory water quality standards established as aesthetic guidelines.

Treatment technique (TT)- A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

Unregulated contaminants: The EPA has not established a maximum contaminant level for every contaminant that might be found in drinking water. If no value is entered for the maximum contaminant level goal, the contaminant is not currently regulated or is not considered to pose a health risk.

Key to Water Quality Tables

AL	Action Level
TT	Treatment Technique
MCL	Maximum Contaminant Level
MCLG	Maximum Contaminant Level Goal
NTU	Nephelometric Turbidity Unit
MRDL	Maximum Residual Disinfectant Level
MRDLG	Maximum Residual Disinfection Level Goal
WTP	Water Treatment Plant
NA	Not Applicable



Water Quality Data Tables

Turbidity

Contaminant	Violation (Y/N)	Level Detected	Unit	MCLG (Public Health Goal)	MCL (Allowable Level)	Major Sources in Drinking Water
Turbidity* (Both WTPs)	N	<u>Highest yearly sample result: 0.29</u> Lowest monthly % of samples meeting the turbidity limit: 100%	NTU	NA	Any measurement in excess of 1 NTU <u>constitutes a violation</u> A value less than 95% of samples meeting the limit of 0.3 NTU constitutes a violation	Soil runoff

Note: * Turbidity is a measurement of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

Inorganic Contaminants

Contaminant	Violation (Y/N)	Level Detected	Unit	MCLG (Public Health Goal)	MCL (Allowable Level)	Major Sources in Drinking Water
Fluoride (Lake Fort Smith WTP)	N	<u>Average: 0.58</u> Range: 0.37 - 0.73	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Fluoride (Lee Creek WTP)	N	<u>Average: 0.78</u> Range: 0.32 - 1.19	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate [as Nitrogen] (Mountainburg WTP)	N	0.28	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nitrate [as Nitrogen] (Lee Creek WTP)	N	0.12	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits

Lead and Copper Tap Monitoring

Contaminant/(Site)	Number of sites over Action Level	90% percentile result	Unit	Action Level	Major Sources in Drinking Water
Lead (Pb) (Distribution System)	0	<0.001	ppm	0.015	Corrosion of household plumbing systems; erosion of natural deposits
Copper (Cu) (Distribution System)	0	<0.02	ppm	1.3	Corrosion of household plumbing systems; erosion of natural deposits

Fort Smith is on a reduced monitoring schedule for sampling for lead and copper at the customers' taps. The results above are from our last monitoring period in 2016. Our next scheduled monitoring period is the year 2019.

Total Organic Carbon

The percentage of Total Organic Carbon (TOC) removal was routinely monitored in 2017, at both the Lake Fort Smith and Lee Creek WTPs, and all TOC removal requirements set by USEPA were met for both of our sources. TOC has no health effects. However, Total Organic Carbon provides a medium for the formation of disinfection by-products. These by-products include trihalomethanes (THMs) and haloacetic acids (HAAs).

Regulated Disinfectants

Disinfectant	Violation Y/N	Level Detected	Unit	MRDLG (Public Health Goal)	MRDL (Allowable Level)	Major Sources in Drinking Water
Chlorine	N	<u>Average: 1.09</u> Range: 0.53 - 1.5	ppm	4	4	Water additive used to control microbes.

Water Quality Data Tables

By-Products of Drinking Water Disinfection					
Contaminant	Violation Y/N	Level Detected	Unit	MCLG (Public Health Goal)	MCL (Allowable Level)
HAA5 [Haloacetic Acids]	N	Highest running 12 month average: 19 Range: 9.6– 25.4	ppb	0	60
TTHM [Total Trihalomethanes]	N	Highest running 12 month average: 60 Range: 22.6 - 83.1	ppb	NA	80

• While only the upper end of the TTHM range exceeded the MCL, it should be noted that some people who drink water containing Trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

Unregulated Contaminants				
Contaminant	Level Detected	Unit	MCLG (Public Health Goal)	Major Sources in Drinking Water
Chloroform (Mountainburg WTP)	8.99	ppb	70	By-products of drinking water disinfection
Chloroform (Lee Creek WTP)	17.1	ppb	70	
Bromodichloromethane (Both WTPs)	2.88	ppb	0	
Bromodichloromethane (Both WTPs)	5.45	ppb	0	
Dibromochloromethane (Both WTPs)	2.17	ppb	60	

Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. MCLs (Maximum Contaminant Levels) and MCLGs (Maximum Contaminant Level Goals) have not been established for all unregulated contaminants.

Violations — Ft. Smith			
TYPE: Disinfection Protocol	FROM:	TO:	CORRECTIVE ACTION:
Failed to meet Contact Time criteria (Failed to maintain pH in the appropriate range)	8/1/2017	8/31/2017	Adjust plant operation so that pH I was in the correct range and contact time was appropriate for pH measured.

*Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites, which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

Secondary Standards - Standards Recommended by U.S. EPA and ADH				
Inorganic Chemicals	Unit	Secondary MCL	Level Detected in Lake Fort Smith Finished Water	Level Detected in Lee Creek Finished Water
Aluminum	ppm	0.05 - 0.2	0.06	0.20
Chloride	ppm	250	4.5	10.5
Fluoride	ppm	4	0.70	0.58
Iron	ppm	0.3	< 0.05	< 0.05
Manganese	ppm	0.05	5.3	< 1.0
Sulfate	ppm	250	3.5	3.2
Zinc	ppm	NA	< 0.05	< 0.05

Additional Water Quality Parameters Monitored by ADH/City of Fort Smith					
Analytes	Unit	Levels Detected Finished Water	Analytes	Unit	Levels Detected Finished Water
Alkalinity (Total)	ppm as CaCO3	22 - 30	Magnesium	ppm	1.48 - 1.98
Calcium	ppm as CaCO3	5.31 - 9.64	Potassium	ppm	1.15 - 2.24
Carbonate Hardness	ppm as CaCO3	19 - 22	Sodium	ppm	2.74 - 6.85
Hardness (Total)	ppm as CaCO3	19 - 32	Sediment	ppm	< 0.5 - < 0.5

Lead and Drinking Water

Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. 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. Lead in drinking water is rarely the sole cause of lead poisoning, but it can add to a person's total lead exposure. All potential sources of lead in the household should be identified and removed, replaced or reduced.

The City of Fort Smith 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 (800-426-4791) or at <http://www.epa.gov/safewater/lead>.

Do I Need to Take Special Precautions?

Important Health Information for Immuno-compromised persons. 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 small amounts of contamination.

These people should seek advice about drinking water from their health care providers. In addition, EPA/CDC guidelines on appropriate means to lessen the risk of infection by microbiological contaminants are also available from the Safe Drinking Water Hotline (800-426-4791).

Cryptosporidium

Cryptosporidium is a microbial pathogen found in surface water throughout the U.S. It lives and reproduces only with the host. In the environment, Cryptosporidium exists as a thick walled oocyst, containing four organisms. Monitoring by Ft. Smith Water Utilities in May 2016 indicated the presence of one of these organisms in the Lake Fort Smith water source. It is important to know that although filtration removes Cryptosporidium, the most commonly used filtration methods cannot guarantee 100 percent removal. Ingestion of Cryptosporidium may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people are at greater risk of developing life threatening illness. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water.

Drinking Water Standards

Primary standards protect public health. Primary standards include maximum contaminant levels, maximum contaminant level goals, action levels and treatment techniques. These standards are established by the EPA to protect human health.

Secondary standards relate to aesthetics. These guidelines are designed to assure good aesthetic quality of water. Secondary standards apply to contaminants that affect the taste, odor or color of water, stain sinks or bathtubs, or interfere with treatment processes. Secondary contaminants are not considered to present a risk to human health at the SMCL.



Is Our Water System Meeting the Rules that Govern Our Operations?

As you can see in the Water Quality tables, our system had no violations during 2016. We're proud that your drinking water meets or exceeds all Federal and State requirements. We at the Fort Smith Water Utility work around the clock to provide top quality water to every tap.

2016 Water Quality Report
Fort Smith Utility Department
3900 Kelley Hwy.
Fort Smith, AR 72904

PRSRT-STD
U.S. POSTAGE PAID
FORT SMITH, AR
PERMIT NO.2



Water, Use It Wisely!

How Can I Get Involved?

We want our valued customers to be informed about their water utility.

If you have any questions about this report or concerning your water utility, please contact Environmental Quality Program Manager, Don Clover at 479-784-2337, or visit our web site at www.fortsmithwater.org.

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 first and third Tuesday of each month. Meeting times and locations vary. Please call the City Clerk's Office at 479-784-2208 for specific times and locations. Agendas and meeting minutes may be viewed on the city's web site at www.fortsmithar.gov, Click on "Government" then "Board of Directors" then "Board of Directors Minutes, Agendas & Meeting Videos" .

If you have additional questions regarding the quality of drinking water, you can contact someone on the following list.

Agency	Telephone Number
Environmental Protection Agency (EPA) Safe Drinking Water Hotline	(800) 426-4791
Arkansas Department of Health Division of Engineering	(501) 661-2623