"The Water We Drink"

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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 ensure 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.

Environmental Quality Analytical Laboratory Recertified by Arkansas Department of Health

The Fort Smith Utility Environmental Quality Analytical Laboratory has been recertified by the Arkansas Department of Health (ADH) for drinking water analyses. The Analytical Laboratory is one of only 4 water utility laboratories to obtain this certification out of the more than 700 community public water systems in the state. This is the 24th consecutive year that certification has been achieved under the direction of Randy Easley, Environmental Manager.

The on site evaluation conducted by ADH reviews and ranks 578 rigorous performance standards which include: Competency of Personnel; Laboratory Facilities; Laboratory Equipment and Supplies; and Analytical Techniques. To be "Certified", a laboratory must meet or exceed all of the regulatory performance criteria in the manual and all other applicable regulatory requirements.

In the approval letter to the Utility, Cathy Moore, lead Microbiologist of the ADH certification team states, "We appreciate your and your staff's efforts to operate a high quality laboratory.", and further in their report commends lab staff stating, "EQAL personnel show a good understanding of quality control (QC) principles."

Not only does this certification benefit the citizens of Fort Smith, but also the surrounding community. As a "Certified" laboratory, the Environmental Quality Analytical Laboratory serves as a backup laboratory to the Arkansas Department of Health's lab in Little Rock, provides "Boil Order" analyses for the surrounding communities and can assist other communities during times of crisis such as it did during Hurricane Katrina. This aid helps get these water utilities back in operation quickly and in a safe manner preventing serious waterborne disease.

The Fort Smith Utility certification team members include: Randy Easley, Environmental Manager; Lance McAvoy, Environmental Chemist; Tiffany Mallard, Laboratory Analyst; and Rachel Sharp, Water Quality Technician. This Team pursues continued certification not only to ensure quality service to the citizens of Fort Smith but to also show our commitment to the community and the environment.

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**

Fort Smith's Water Sources

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 the recently expanded **Lake Fort Smith** (approximately 1,400 surface acres).

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 is stored in the **Lee Creek Reservoir** (approximately 634 surface acres).

The Arkansas Department of Health completed a Source Water Vulnerability Assessment for Fort Smith Waterworks (PWS ID 507) on June 15, 2000. This 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 the Fort Smith Water Utility office, or access it through the Arkansas Department of Health's website at: www.healthyarkansas.com/eng/swp/swp.htm

"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 can pick up substances resulting from the presence of animals or from human activity."

Protecting Your Drinking Water Source!

Why should watersheds matter to me?
While folks may not always realize it, they place a high value on healthy watersheds. Protecting drinking water sources is the first line of defense in ensuring safe drinking water. If communities are aware of their drinking water sources and of potential threats to these sources and their watersheds, they can take steps to keep the sources safe and improve their local environment.

Drinking water, which may be from ground water, surface water, or both, is vulnerable to being contaminated. If the drinking water source is not protected, contamination can cause a community significant expense as well as put people's health in danger. Cleaning up contamination or finding a new source of drinking water is complicated, costly, and sometimes impossible. In addition to reducing public health risks, effective watershed management minimizes operating costs and reduces the degree of drinking water treatment required, the quantity of chemicals used during treatment, and the creation of treatment by-products.

In order to combat these threats to our water source, the Fort Smith Utility Watershed Management team has developed and maintains an aggressive source water monitoring program. Degreed Biologists conduct weekly, monthly and quarterly sampling at select sites in the reservoirs and watersheds for a variety of physical and chemical parameters. Some of the monitoring activities include: reservoir profiling, nutrient and sediment analysis, direct algal counts and chlorophyll "A" determinations; source streams are monitored during storm events; aquatic macroinvertebrates and fish populations are monitored to evaluate stream and reservoir "health" and diversity. Changes in these populations can indicate degradation of water quality and would initiate increased management activities.

The Watershed Management Team also partners with: the Arkansas Natural Heritage Commission, Environmental Protection Agency, US Forest Service, Arkansas Game and Fish Commission, Arkansas Stream Team, US Geological Survey, University of Arkansas and the Watershed Conservation Resource Center in a multiple research grant projects studying water quality in the City's watersheds. Results of this research will help guide decision making processes nationwide concerning watersheds and water quality management and the proper way to manage these resources.

The Fort Smith Utility Watershed Management team consists of: Randy Easley, Environmental Manager; Don Clover, Biologist; Tim Smith, Biologist, and Colby Marshall, Assistant Biologist. If you would like to learn more about our other research activities, email us at info@fortsmithwater.org.

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.

About Cryptosporidium...

Cryptosporidium parvum caused intestinal illness in thousands of people in Milwaukee, Wisconsin in 1993. This organism can be transmitted several ways, including drinking water. People may also be exposed to Cryptosporidium by person-to-person exposure (handling diapers from an infected child) or animal-to-person (such as fecal contamination from an infected pet).

Growing scientific knowledge about this organism suggests it is naturally present in bodies of water throughout the world. Surface water supplies are particularly vulnerable if they receive runoff or pollution from human or animal wastes. (Surface water supplies, such as rivers and lakes rely on water that flows across the surface of the land.)

Cryptosporidium is a microbial pathogen found in surface water throughout the U.S. Our monitoring indicates the presence of these organisms in our source water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. 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.

To date there have been no known cases of Cryptosporidiosis (the disease caused by cryptosporidium) attributed to Fort Smith's drinking water.

Terms and abbreviations used in this report

Finished water: Water leaving the treatment plant and entering the distribution system.

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.

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.

Concentration Levels: Most measurements are reported in concentrations of milligrams (1/1000 of a gram) per liter of water (mg/L). This is the same as one part per million. If a different measurement is used, the table will note that.

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 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.

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.

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

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.

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.

Key to Water Quality Tables

AL	Action Level
TT	Treatment Technique
MCL	Maximum Contaminant Level
MCLG	Maximum Contaminant Level Goal
ppm	parts per million, or milligrams per liter, (equivalent to 1 cent in $10,000 or 1 minute in 2 years)
ppb	parts per billion, or micrograms per liter, (equivalent to 1 cent in $10,000,000 or 1 second in 32 years)
NTU	Nephelometric Turbidity Unit
MRDL	Maximum Residual Disinfectant Level
MRDLG	Maximum Residual Disinfection Level Goal

The data represented in the following tables are from the monitoring period of January 1, 2009 through December 31, 2009 unless otherwise noted.

Water Quality Data Tables

Microbiological Contaminants						
Contaminant	**Violation (Y/N)**	**Level Detected**	**Unit**	**MCLG (Public Health Goal)**	**MCL (Allowable Level)**	**Major Sources in Drinking Water**
Total Coliform Bacteria	N	None	Present	0	1 positive sample per month	Naturally present in the environment
Turbidity*	N	Highest yearly sample result: 0.27 Lowest monthly % of samples meeting the turbidity limit: 100.0	NTU	NA	Any measurement in excess of 1 NTU constitutes a violation --- A value less than 95% 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**
Nitrate [as Nitrogen]	N	Highest level detected: 0.33 Range: 0.18-0.33	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	<0.003	ppm	0.015	Corrosion of household plumbing systems; erosion of natural deposits
Copper (Cu) (Distribution System)	0	<0.20	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. Our last monitoring period was in 2009. Our next scheduled monitoring period is the year 2010.					

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 or at http://www.epa.gov/safewater/lead.

"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.

Additional 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."

Water Quality Data Tables

Disinfection By-Products Precursors

The percentage of Total Organic Carbon (TOC) removal was routinely monitored in 2009, and all TOC removal requirements set by USEPA were met. Total Organic Carbon (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	Average: 1.17 Range: 0.83-1.49	ppm	4	4	Water additive used to control microbes.

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: 14 Range: 7.8 - 19.1	ppb	0	60
TTHM [Total Trihalomethanes]	N	Highest running 12 month average: 25 Range: 14.8 - 41.1	ppb	NA	80

Unregulated Contaminants

Contaminant	Level Detected	Unit	MCLG (Public Health Goal)	Major Sources in Drinking Water
Chloroform	Average: 13.9 Range: 12.8 - 15.0	ppb	70	By-products of drinking water disinfection
Bromodichloromethane	Average: 3.68 Range: 3.26 - 4.10	ppb	0	
Dibromochloromethane	Average 0.80 Range: 0.60 - 0.97	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.

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	<0.05	<0.20
Chloride	ppm	250	3.2	5.8
Iron	ppm	0.3	<0.1	<0.1
Manganese	ppm	0.05	<0.001	<0.001
Sulfate	ppm	250	23.7	4.4
Zinc	ppm	NA	<0.05	<0.03

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 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)."

Water Quality Data Tables

Additional Water Quality Parameters Monitored by ADH/City of Fort Smith			
Analytes	**Unit**	**Level Detected in Lake Fort Smith Finished Water**	**Level Detected in Lee Creek Finished Water**
Alkalinity (Total)	ppm as CaCO3	20	34
Calcium	ppm as CaCO3	15.0	13.2
Carbonate Hardness	ppm as CaCO3	20	34
Fluoride	ppm	<0.2	<0.2
Hardness (Total)	ppm as CaCO3	44	39
Magnesium	ppm	1.66	1.44
Potassium	ppm	<3.0	<3.0
Sodium	ppm	1.42	1.81
Sediment	ppm	<0.5	<0.5

2009 System Violations			
Type	**From**	**To**	**Corrective Action**
Treatment technique	January 1, 2009	July 1, 2009	Maintain Optimal pH

Is our water system meeting the rules that govern our operations?

Fort Smith monitors for lead and copper in our drinking water and as a large water system is required to maintain Optimal Water Quality Parameters. During the monitoring period of January 1, 2009 to July 1, 2009 we were out of compliance for 13 days for the pH water quality parameter. As such, we were issued a treatment technique violation. Operations were improved at the water treatment facility to prevent future excursions. Consequently, optimal pH has been maintained in the distribution system since that date. We at the Fort Smith Water Utility work around the clock to provide top quality water to every tap.

Regulations for Public Water Systems

The federal Safe Drinking Water Act required that water quality standards be developed and enforced. Congress delegated enforcement of these drinking water standards to the EPA. The EPA develops rules that govern how the provisions of the Act will be carried out. The Arkansas Department of Health is the primacy agency that enforces drinking water regulations in Arkansas. In order to assure 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 which must provide the same protection for public health.

In 1986 Congress reauthorized the Act and amended it. The 1986 amendments to the Safe Drinking Water Act and the Rules developed to implement it have influenced the operation of Fort Smith's water system. Among the changes were the initial regulation of 83 drinking water contaminants, and a requirement to regulate an additional 25 contaminants every three years.

We make every effort to assure that the water supplied by Fort Smith's public water system complies with federal and state 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.

Fort Smith's Water Conservation Program

Fort Smith maintains year-round water conservation measures which are intended to prevent the wasteful use of water. Fort Smith also has a Two-Phase water conservation plan in the event its water supply lake levels drop due to the lack of rainfall.

Phase I Conservation will go into effect when lake levels drop from 91,100 acre-feet (100%) to a capacity of 55,000 acre-feet (60%) and will continue until lake levels remain above 56,000 acre-feet (61%) for 15 consecutive days.

Phase II Conservation will go into effect when the total usable water storage decreases to 36,000 acre-feet (39%). The restrictions and prohibitions of Phase II will be removed when the lake levels remain above 41,000 acre-feet (45%) for 15 consecutive days.

During time periods when water conservation measures are NOT in effect, the following limitations or prohibited uses of water are in effect:

(1) No person shall use water for the irrigation or watering of lawns, turf, shrubs, plants, trees or gardens to such an extent as to allow water to escape from user's premises onto public property, such as alleys or streets, nor onto another person's property.

(2) No person shall irrigate or water lawns, turf, shrubs, plants, trees or gardens between the hours of 11:00 a.m. and 6:00 p.m. (not applicable to greens and tee boxes on golf courses).

(3) No person during the course of cleaning or washing motor vehicles, aircraft, building exteriors, sidewalks, walkways, driveways, patios, decks, fences, parking lots, tennis courts, or other similar types of hard surfaces, with a hose or other equipment, will allow the flow of water to be used or uncontrolled at the point of use, or to continue if unattended, such that water is wasted.

(4) No person shall use potable water for any construction activity that can be performed using non- potable water unless approved by the Director of Utilities, or his designated representative, and, if required by same, shall be conducted under the direct supervision of an employee of the City of Fort Smith Utility Department.

(5) No person shall use water from a fire hydrant unless approved by the Director of Utilities, or his designated representative, and, if required by same, shall be conducted under the direct supervision of an employee of the City of Fort Smith Utility Department. Any such use shall be registered through a City owned meter issued under a permit for a specific use, time period, location and, if further specified, for a maximum volume of use.

Additional information regarding the city's water conservation may be obtained by contacting the Fort Smith Water Utility by calling 479-784-2231 or visit EPA's WaterSense website @ www.epa.gov/watersense.

Water, Use It Wisely!

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

If you have any questions about this report or to learn more about your water utility, contact the Fort Smith Utility Department at 479-784-2231 or visit our web site at **www.fortsmithwater.org**.

You can attend meetings of the City's Board of Directors held on the first and third Tuesday of each month (contact the City Clerk's office at 479-784-2208 for meeting times and locations). Agendas and meeting minutes may be viewed on the city's web site at www.fortsmithar.gov, Click on "Departments and Services" then "Board of Directors".

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

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2009 Water Quality Report
Fort Smith Utility Department
3900 Kelley Hwy.
Fort Smith, AR 72904

Fort Smith Utility 2009 Annual Water Quality Report

Fort Smith Utility Department
3900 Kelley Highway - Fort Smith, AR 72904
Phone: 479-784-2231

Director of Utilities - Steve Parke
Superintendent of Water Operations - Steve Floyd
Environmental Manager - Randy Easley

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 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 informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien.

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

Laotian:

ລາຍງານນີ້ມີຂໍ້ມູນສຳຄັນກ່ຽວກັບນ້ຳປະປາຂອງທ່ານ. ຈົ່ງໃຫ້ຄົນອື່ນແປຄວາມໃຫ້ທ່ານ, ຫລືໃຫ້ປຶກສາກັບຄົນໃດຄົນໜຶ່ງທີ່ເຂົ້າໃຈເລື່ອງ.