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Central Arkansas Water Annual Water Quality Report 2011

COMPLIANCE PERIOD *January 1, 2011 through December 31, 2011*



Central Arkansas Water is pleased to report that for the year of 2011, we were in full compliance with federal and state regulations for drinking water quality. This 2011 Water Quality Report contains important information about the quality and sources of your drinking water. We hope you will take a few minutes to review the report and

learn more about the water you drink.

Graham W. Rich, P.E., BCEE
Chief Executive Officer

Board of Commissioners

- Thomas W. Rimmer, Sc.D., Chair
- Carmen Sanders, Vice Chair
- Marie-Bernarde Miller, Secretary/Treasurer
- Eddie Powell, Member
- Roby Robertson, Ph.D., Member
- Tony Kendall, Member
- Jay Hartman, Member

For additional information about this report, please write or call :

Central Arkansas Water U.S. Environmental Protection Agency
221 East Capitol Avenue Safe Drinking Water Hotline
P.O. Box 1789 1.800.426.4791
Little Rock, AR 72203

Sharon Sweeney, Water Quality Specialist 501.210.4914
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IMPORTANTE: Se establece que para el año 2011, la calidad de agua, provista en relacion a los trabajos efectuados por Central Arkansas Water (Agua de Arkansas Central), es apta para el consumo y se encuentra dentro de los parametros establecidos por las regulaciones tanto del gobierno federal como del gobierno estatal. El presente documento contiene informacion importante sobre el agua para consumo y sobre el suministro publico del agua. Si usted no habla ingles, sirvase contactar a una persona que pueda traducirle esta informacion. En Julio este infome sería disponible en Español en nuestro Centro del Servicio al Cliente, 221 East Capitol Avenue en Little Rock.





Water Quality Report 2011

Protecting the High Quality of Our Drinking Water



Refreshing water is essential to sustaining our lives and the environment around us. It is necessary for the simple, everyday activities of bathing and drinking, cooling and heating, and even recreation. In addition, water is indispensable to the quality of life and economic vibrancy of our metropolitan community.

While Central Arkansas Water (CAW) works vigilantly and diligently to ensure the high quality of water service that customers enjoy today, we have an equal focus on sustaining the quality and quantity of this vital commodity for the future.

In your 2011 Water Quality Report, we update you on key initiatives that we are undertaking toward our goals of sustainability. The report also includes:

- Required information about the sources and quality of your drinking water
- Results of tests that CAW and regulatory agencies conducted to make sure your drinking water is safe for consumption

For more than a century, cities and communities in our metropolitan area have enjoyed a high quality of drinking water at an affordable price. From the pioneering filtration system at the Ozark Point Water Treatment Plant to modern-day, state-of-the-art treatment techniques, the goals have always been the continual enhancement of water quality, protection of public health, and regulatory compliance.



Important information about the sources and quality of your drinking water

Results of tests that CAW and regulatory agencies conducted to make sure your drinking water is safe for consumption

Information on the steps that Central Arkansas Water is taking to protect your drinking water and the public health now and in the future

What's in your 2011 Water Quality Report?

Over the last century, water quality regulations have become more stringent, the business of water treatment and delivery has become more complex, and our region has experienced tremendous population growth. Yet, the utility's commitment has remained the same: quality, reliability, and affordability.



This commitment requires securing the future water needs of our consumer population of 400,000 and extending the availability of our existing water sources through watershed management and conservation — both of which are formal initiatives that are currently under way.

You are receiving this 2011 Water Quality Report in accordance with the Consumer Confidence Rule of the federal Safe Drinking Water Act (SDWA). This law of standards for public drinking water suppliers in the United States requires the protection of drinking water sources and the monitoring and treatment of drinking water to safeguard public health.

The Consumer Confidence Rule of the SDWA mandates that you receive by July 1 of each year an annual report on your drinking water. The report specifically must contain information about the quality of your drinking water, the sources of your drinking water, and our compliance with federal and state drinking water standards.

The initial enactment of the SDWA was in 1974 by the U.S. Congress. The current regulations require that public water suppliers, such as CAW, test or sample for up to 165 potential contaminants and limit the level of concentration at which substances may be present in the finished drinking water.

The federally-monitored constituents range from lead and copper to coliform bacteria and disinfection by-products. As an added measure, we monitor for other potential contaminants that, while not regulated, have been found in some drinking water supplies in the United States. This emerging group of constituents includes pharmaceuticals and industrial chemicals.

Since the enactment of the federal law in 1974, we have had ZERO violations of the SDWA for 38 straight years.



Source to the Tap

Central Arkansas Water receives its supply from two surface water sources, Lake Maumelle in Pulaski County and Lake Winona in Saline County. Both lakes can supply water to Jackson Reservoir, a regulating reservoir located within the Little Rock city limits at Reservoir Park. Water is delivered by pipeline to the Jack H. Wilson Water Treatment Plant and Ozark Point Water Treatment Plant. Both treatment plants are located within the city limits of Little Rock.

Water Treatment Process

Central Arkansas Water utilizes a conventional water treatment process at each of our two water treatment facilities. The process includes flash mixing, coagulation/flocculation, sedimentation, filtration, and disinfection.

Source Water Assessment Statement

The Arkansas Department of Health completed a Source Water Vulnerability Assessment for the water utility in June 2000. The assessment, a requirement of the federal Safe Drinking Water Act, summarizes the potential for contamination of our sources 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 surface water sources have been determined to have medium to high susceptibility to contamination due to surrounding land uses.

Customers may obtain a copy of the report, which explains the assessment process and includes the results, from Central Arkansas Water's administrative office at 221 East Capitol Avenue in Little Rock or by calling 501.377.1229.

Multiple Layers of Protection

Central Arkansas Water utilizes a multi-barrier approach to ensuring safe drinking water for customers. The strategy of safeguards begins at the source with watershed management to protect the quality of water in our sources, Lake Maumelle and Lake Winona. Safeguards include treatment and disinfection, the training and certification of personnel responsible for the water supply, cross-connection control/backflow prevention to maintain quality in the distribution system, and testing at the customer's tap for certain constituents.

Lake Maumelle Watershed Management

Extensive research shows that assuring the highest quality of water must begin with the source, and CAW is leading water utilities across the nation in watershed management and protection. The Board of Commissioners in 2007 adopted the Lake Maumelle Watershed Management Plan. The plan followed an extensive study that identified comprehensive and proactive measures to safeguard against all potential pollution sources in the watershed of the lake.

The strategies include:

- Prohibition of wastewater discharges into the watershed
- Erosion and sediment control guidelines for new development in the watershed
- Required "set aside" of undeveloped land in the watershed
- Required purchase of at least 1,500 additional acres in the watershed by CAW
- Active management of the 9,433 acres of CAW-owned lands within the watershed and allowances for low- to non-impact public and recreational uses
- Expanded water quality monitoring

To date, CAW has worked with several regulatory and governmental entities to address all of the above strategies, including work with Pulaski County Government on the final component, "The Lake Maumelle Land Use Study." The land-use plan will fulfill the required implementation milestones identified in the 2007 Watershed Management Plan.

Underscoring the importance of protecting our sources, CAW dedicated a budget of \$1 million to the Watershed Management Program in 2011.

A primary objective of the Lake Maumelle Watershed Management Plan is to ensure that as land development occurs it is in a manner that maintains the high water quality of Lake Maumelle, protects our drinking water, and ensures the continued viability of the lake as our primary water source for generations to come.



About Drinking Water

Sources of drinking water (both tap water and bottled water) include lakes, rivers, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive materials. It can also pick up substances resulting from the presence of animals or human activity.

Substances that may be present in source water include:

- Microbial substances, such as viruses and bacteria, which may come from septic systems, agricultural livestock operations, and wildlife.
- Inorganic substances, such as salts and metals, which can be naturally occurring or result from oil and gas production, domestic wastewater discharges, mining, farming, and urban stormwater runoff.
- Pesticides and herbicides, which may come from a variety of sources, such as agriculture, silviculture (forestry activity), residential uses, and urban stormwater runoff.
- Organic chemicals, which include synthetic and volatile organic chemicals that are by-products of petroleum production and which also can come from gas stations, septic systems, and stormwater runoff.
- Radioactive substances, which can be naturally occurring or the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency prescribes regulations that limit the amount of certain substances in water provided by public drinking water systems. U.S. Food and Drug Administration (USFDA) regulations establish limits for substances in bottled water, which must provide the same protection for public health.

Drinking water, including bottled water, reasonably may be expected to contain at least small amounts of some contaminants. The presence of the contaminants does not necessarily mean that the water poses a health risk.

More information about contaminants in drinking water and potential health effects may be obtained by calling the U.S.

Environmental Protection Agency's (USEPA) Safe Drinking Water Hotline (1.800.426.4791).

Information for Vulnerable Populations

Some people may be more vulnerable than the general population to contaminants in drinking water. Immuno-compromised persons, such as persons who have cancer and are undergoing chemotherapy; persons who have undergone organ transplants; people with HIV/AIDS or other immune system disorders; some elderly people; and infants can be particularly at risk from infections.

These people should seek advice about drinking water from their health care providers. U.S. Environmental Protection Agency and Centers for Disease Control and Prevention guidelines on appropriate means to lessen the risk of infection from *Cryptosporidium parvum* and other microbial contaminants are available through the Safe Drinking Water Hotline (1.800.426.4791).

About *Cryptosporidium*

Cryptosporidium parvum is a microbial contaminant linked to animal and human wastes. The contaminant is fairly common in the untreated water of surface sources (lakes and rivers). *Cryptosporidium* has never been detected in the treated water supplied to your tap by Central Arkansas Water.

Of the 193 samples collected over the past 17 years, there have been only two detections of *Cryptosporidium* in the untreated surface sources. Quarterly monitoring for *Cryptosporidium* in the untreated source water and the treated water supply to customers began in 1994.

From July 1997 through December 1998, we performed additional monthly monitoring of the source water as part of USEPA's Information Collection Rule (ICR). As part of the ICR Supplemental Survey, twice-monthly monitoring of the Lake Maumelle source water began in March 1999. Beginning in January 2004 and continuing through March 2006, CAW conducted monthly sampling for *Cryptosporidium* in the source water in preparation for upcoming regulations.

About Lead in Drinking Water

If present in drinking water, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. The source of lead in drinking water primarily is from the materials and components associated with service lines and home plumbing.

Central Arkansas Water is responsible for ensuring that the drinking water the utility delivers to your tap meets all federal and state standards for health and safety; however, the water utility cannot control the variety of materials that customers use in plumbing components. When water has been sitting for several hours in plumbing, a customer can minimize the potential for lead exposure by flushing the tap for 30 seconds to 2 minutes before using water for drinking, beverage preparation, or cooking.

Should a customer have a concern about lead in the drinking water at the tap, CAW recommends contacting the Arkansas Department of Health at 501.661.2623 or a private laboratory for testing. Additional information on the potential for lead in drinking water, testing methods, and steps a customer may take to minimize exposure is available from the Safe Drinking Water Hotline at 1.800.426.4791 or at <http://www.epa.gov/safewater/lead>.

Public Participation

If you are interested in learning more about your public water supplier, there are various opportunities to do so. Our seven-member Board of Commissioners meets at 2 p.m. each second Thursday of the month at the James T. Harvey Administration Building. The building location is 221 East Capitol Avenue in Little Rock. The Board announces changes in meeting location and times, as well as special meetings, prior to the meeting dates. All sessions are open to the public and news media.

Regulated Substances

The charts in this document indicate the substances that Central Arkansas Water detected in treated water. The charts contain testing results for 2011. We have not listed numerous substances for which we monitored but did not have a detectable level.

CAW operates two water treatment plants:

- The Jack H. Wilson Water Treatment Plant primarily serves the areas of Little Rock and Pulaski County west of University Avenue, and the areas of North Little Rock north of Interstate 40.
- The Ozark Point Water Treatment Plant primarily serves the areas of Little Rock and Pulaski County east of University Avenue, and the areas of North Little Rock south of Interstate 40.

Some blending of water from the two treatment plants takes place within the pipelines of the distribution system. In the charts, "W" indicates water quality monitoring results for the Wilson Plant and "OP" indicates water quality monitoring results for the Ozark Point Plant. "D" indicates water quality monitoring results for our Distribution System.

Water Quality Terms

Action Level (AL) — The concentration of a contaminant which – if exceeded – triggers treatment or other requirements that a drinking water system must follow.

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) — 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. This is an unenforceable public health goal.

Maximum Residual Disinfectant Level (MRDL) — The highest level of a disinfectant allowed in drinking water. There is convincing evidence that the addition of a disinfectant is necessary for the control of microbial contaminants, such as bacteria.

Maximum Residual Disinfectant Level Goal (MRDLG) — The level of a drinking water disinfectant below which there is no known or expected risk to public health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Micromhos per centimeter ($\mu\text{mho/cm}$) — Measurement of conductivity.

Nephelometric Turbidity Units (NTUs) — A measure of turbidity (clarity) of water.

None Detected (ND) — Laboratory analyses indicate that the constituent is below detectable levels.

Not Applicable (N/A) — Does not apply.

Parts per billion (ppb) — One part per billion corresponds to one minute in 2,000 years or a single penny in \$10,000,000.

Parts per million (ppm) — One part per million corresponds to one minute in two years or a single penny in \$10,000.

Running Annual Average (RAA) — The arithmetic average, computed quarterly, of the latest four quarterly arithmetic averages of all samples collected by the water system.

Secondary Maximum Contaminant Level (SMCL) — Recommended guideline for enhancing aesthetic quality of water (odor and appearance). The Secondary Standards are not required for compliance with the federal Safe Drinking Water Act.

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

REGULATED SUBSTANCES

INORGANIC SUBSTANCES

SUBSTANCE (unit of measure)	MCLG	MCL	Highest Level Detected	Range Detected	SDWA Violation	Likely Source of Substance
Turbidity (NTU)	n/a	1 NTU	0.20 (W) 0.46 (OP)	0.03 – 0.20 (W) 0.03 – 0.46 (OP)	No (W and OP)	Turbidity is a measurement of the cloudiness of water. We monitor it because it is a good indicator of the effectiveness of our filtration process. It may be caused by soil runoff.
		and 95% of monthly samples or more equal to or less than 0.3 NTU	Lowest monthly % equal to or less than 0.3 NTU 100% (W) 98.9% (OP)	100% (W) 98.9% - 100% (OP)	No (W and OP)	
SUBSTANCE (unit of measure)	MCLG	MCL	Average Level Detected	Range Detected	SDWA Violation	Likely Source of Substance
Fluoride (ppm)	4	4	0.86 (W) 0.87(OP)	0.66 – 1.01 (W) 0.73 – 1.02 (OP)	No (W and OP)	Erosion of natural deposits; water additive that promotes strong teeth.
SUBSTANCE (unit of measure)	AL	90th Percentile Concentration	95th Percentile Concentration	Number of Samples Exceeding Action Level	SDWA Violation	Likely Source of Substance
Lead* (ppb)	15	< 3	< 3	0	No	Corrosion of household plumbing; erosion of natural deposits.
Copper* (ppb)	1300	< 200	< 200	0	No	Corrosion of household plumbing; erosion of natural deposits.

* Lead and copper results are from the latest required round of sampling in 2010. The next required round of sampling is on-schedule for 2013.

VOLATILE ORGANIC SUBSTANCES

SUBSTANCE (unit of measure)	MCLG	MCL	Highest Level Detected	Range Detected	SDWA Violation	Likely Source of Substance
Total Trihalomethanes (ppb)	n/a	RAA 80 ppb	53.0	22.2 – 93.0** at individual sampling sites	No	By-products of drinking water disinfection.
Haloacetic acids (ppb)	0	RAA 60 ppb	25.0	13.5 – 53.8 at individual sampling sites	No	By-products of drinking water disinfection.

** While only the upper end of the range for TTHMs 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.

MICROBIOLOGICAL SUBSTANCES

SUBSTANCE (unit of measure)	MCLG	MCL	Highest Level Detected	Range Detected	SDWA Violation	Likely Source of Substance
Coliform Bacteria (% positive)	0	5% of monthly samples total coliform positive	0.9%	0% - 0.9%	No	Naturally present in the environment.

DISINFECTANTS

SUBSTANCE (unit of measure)	MRDLG	MRDL	Average Level Detected	Range Detected	SDWA Violation	Likely Source of Substance
Chlorine (ppm)	4	4	0.52	0.04 – 1.19	No	Water additive used for disinfection.

Disinfection By-Product Precursors

The percentage of Total Organic Carbon (TOC) removal was routinely monitored in 2011, and our water system met all TOC removal requirements set by the U.S. Environmental Protection Agency (USEPA). Total Organic Carbon has no health effects. However, Total Organic Carbon provides a medium for the formation of disinfection by-products. The by-products include trihalomethanes (THMs) and haloacetic acids (HAAs).

UNREGULATED SUBSTANCES FOR WHICH MONITORING IS REQUIRED

Unregulated contaminants are substances for which the U.S. Environmental Protection Agency (USEPA) has not established Drinking Water Standards. The purpose of unregulated contaminant monitoring is to assist USEPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. Maximum Contaminant Level Goals (MCLGs) have not been established for all unregulated contaminants.

SUBSTANCE (unit of measure)	MCLG	MCL	Average Level Detected	Range Detected	Likely Source of Substance
Chloroform** (ppb)	n/a	Not Regulated	41.8 (W) 5.13 (OP)	One Sample Only (W) One Sample Only (OP)	Component of Total Trihalomethanes.
Bromodichloromethane** (ppb)	0	Not Regulated	6.52 (W) 0.84 (OP)	One Sample Only (W) One Sample Only (OP)	Component of Total Trihalomethanes.
Dibromochloromethane** (ppb)	60	Not Regulated	0.60 (W)	One Sample Only (OP)	Component of Total Trihalomethanes.

** The U.S. Environmental Protection Agency does not regulate the above contaminants individually but does so as a part of the Total Trihalomethane Group, which has a Maximum Contaminant Level (MCL) of 80 parts per billion (ppb).

ADDITIONAL WATER QUALITY INFORMATION FOR CALENDAR YEAR 2011

(Not Required in Consumer Confidence Report/Annual Water Quality Report)

SECONDARY STANDARDS

Physical Parameters	Unit of Measure	SMCL	Average Value	Range of Values
Apparent Color	Color Units	15	0	0-5
Threshold Odor	TON	3	0	0-1.4
Inorganic Chemicals	Unit of Measure	SMCL	Average Value	Range of Values
Aluminum	ppm	0.05 – 0.2	0.11	0.03 – 0.28
Chloride	ppm	250	4	1 – 6
Iron	ppm	0.3	<0.2	All <0.2
Manganese	ppm	0.05	0.01	0.00 – 0.09
Silver	ppm	0.1	<0.001	All <0.001
Sulfate	ppm	250	15	12- 27
Total Dissolved Solids	ppm	500	40	33 - 50
Zinc	ppm	5	<0.2	All < 0.2
Hydronium (pH)	SU	6.5 – 8.5	7.7	7.1 – 8.7

UNREGULATED PHYSICAL & CHEMICAL PARAMETERS

Parameter	Unit of Measure	Average Value	Range of Values
Alkalinity (Phenolphthalein)	ppm	0	All 0
Alkalinity (Total)	ppm	9	5 - 17
Calcium	ppm	6.7	4.5 – 9.1
Conductivity	µmho/cm	65	53 - 89
Hardness	grains/gallon	1.3	1.0 – 2.3
Magnesium	ppm	0.98	0.74 – 1.30
Phosphate (Total)	ppm	0.57	0.32 – 0.84
Potassium	ppm	0.64	0.40 – 0.83
Silica	ppm	3.6	<1 – 4.5
Sodium	ppm	1.9	0.86 – 3.3
Sediment	ppm	< 0.5	All < 0.5
Temperature	°F	66.6	42.8 – 91.4

Definitions

Grain — Measurement of mass. One gram is equal to 15.4 Grains. One Grain per gallon equals 17 parts per million.

Secondary Maximum Contaminant Level (SMCL) — Aesthetic standard recommended; not required.

Standard pH Unit (SU) — Measurement of acidity or alkalinity of water.

Threshold Odor Number (TON) — Measurement designed to effectively measure odor, regardless of origin.

µmho/cm — Micromhos per centimeter.