

# *2005 Annual Drinking Water Quality Report*

## **CARTHAGE WATER AND ELECTRIC**

MO5010142

*This report is intended to provide you with important information about your drinking water and the efforts made to provide safe drinking water.*

### **Attencion!**

Este informe contiene información muy importante. Tradúscalo o prequentele a alguien que lo entienda bien.

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. 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.

### **What is the source of our water?**

The sources of drinking water, both tap 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, in some cases radioactive material and can pick up substances resulting from the presence of animals or from human activity. Our water source is ground water. We have 14 deep wells that range in depth from 1000 ft. to 1868 feet deep at various locations in and around the city.

The Department of Natural Resources conducted a source water assessment to determine the susceptibility of our source water to contamination. The final assessment will not be completed until late this year, but you can review the preliminary results on the internet at <http://maps.cares.missouri.edu/maproom/SwipMaps/index.html>.

### **Why are there contaminants in my water?**

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 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.

Contaminants that may be present in source water include:

- A. Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- B. Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial, or domestic wastewater discharges, oil and gas production, mining, or farming.
- C. Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
- D. 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 runoff, and septic systems.
- E. Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure tap water is safe to drink, the Department of Natural Resources prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Department of Health regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

### **Is our water system meeting other rules that govern our operations?**

The Missouri Department of Natural Resources regulates our water system and requires us to test our water on a regular basis to ensure its safety. Our system has been assigned the identification number MO5010142 for the purposes of tracking our test results. Last year we tested for a variety of contaminants. The detectable results of these tests are on the following pages of this report. Any violations of the state requirements or standards will be further explained later in this report.

### **How might I become actively involved?**

If you would like to observe the decision making process that affects drinking water quality or if you have any further questions about your drinking water report, please call us at 417-237-7300 to inquire about scheduled meetings or contact persons.

## Do I need to take special precautions?

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer that are 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 microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

## Contaminants Report

Carthage Water and Electric 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 1 to December 31, 2004. 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.

### Definitions and Abbreviations:

**Non-Detects (ND)** –not detectable at testing limits. **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. **Picocuries per liter (pCi/L)** - Picocuries per liter is a measure of the radioactivity in water. **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)** - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water. **Maximum Contaminant Level** - The "Maximum Allowed" (**MCL**) is the highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology. **Maximum Contaminant Level Goal** - The "Goal" (**MCLG**) is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety. **90<sup>th</sup> percentile**: For lead and Copper testing 10% of test results are above this level and 90% are below this level. **Level Found**- the average of all test results for a particular contaminant. **Range of Detections**- Shows the lowest and highest levels found during a testing period, if only one sample was taken, then this number equals the level found. Missouri Department of Natural Resources – State of Missouri regulatory agency that oversees the monitoring and regulation of public drinking water systems.

The State has reduced monitoring requirements for certain contaminants to less often than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Records marked with \*, though representative, are more than one year old.

### Regulated Contaminants

<b>Inorganic</b>	<i>Units</i>	<i>MCL</i>	<i>MCLG</i>	<i>Level Found</i>	<i>Range of Detection</i>	<i>Violation</i>	<i>Sample Year</i>
<b>ANTIMONY</b>	ppb	6	6	0.4267	Nd-1.28	No	2004
<i>Sources</i>	Discharge from petroleum refineries; fire retardants;ceramica;electronics; solder						
<b>ARSENIC</b>	ppb	50	n/a	1.9133	Nd-5.74	No	2004
<i>Sources</i>	Erosion of natural deposits; Runoff from glass and electronics production wastes						
<b>BARIUM</b>	ppm	2	2	0.0769	0.0664-0.096	No	2004
<i>Sources</i>	Discharge of drilling wastes: Discharge from metal refineries; Erosion of natural deposits.						
<b>FLUORIDE</b>	ppm	4	4	0.9550	0.9-1.06	NO	2005
<i>Sources</i>	Erosion of natural deposits: Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories						
<b>NITRATE+NITRITE (AS N)</b>	ppm	10	10	0.4450	Nd-0.89	No	2005
<i>Sources</i>	Runoff from fertilizer use; Leaching from septic tanks, sewage erosion of natural deposits						
<b>Radionuclide</b>	<i>Units</i>	<i>MCL</i>	<i>MCLG</i>	<i>Level Found</i>	<i>Range of Detection</i>	<i>Violation</i>	<i>Sample Year</i>
<b>GROSS ALPHA PARTICLE ACTIVITY, TOTAL</b>	pCi/L	15	0	5.7	5.7	No	2003
<i>Sources</i>	Erosion of natural deposits						
<b>Volatile Organic</b>	<i>Units</i>	<i>MCL</i>	<i>MCLG</i>	<i>Level Found</i>	<i>Range of Detection</i>	<i>Violation</i>	<i>Sample Year</i>
<b>TETRACHLOROETHYLENE</b>	ppb	5	0	0.3675	Nd-1.47	No	2004
<i>Sources</i>	Discharge from factories and dry cleaners						
<b>Combined Radionulides</b>	<i>Units</i>	<i>MCL</i>	<i>MCLG</i>	<i>Level Found</i>		<i>Violation</i>	<i>Sample Year</i>
Combined Radium Level RA226 and RA228	pCi/L	5	0	0.9000		No	2004
<i>Sources</i>	Erosion of natural deposits						

<b>Copper</b>				
<b>Collection Period</b>	<b>Units</b>	<b>Action Level</b>	<b>90th percentile</b>	<b>Sites exceeding AL</b>
1/1/2004-12/31/2004	ppm	AL=1.3	0.089	0
<b>Sources</b>		Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives		
<b>Lead</b>				
<b>Collection Period</b>	<b>Units</b>	<b>Action Level</b>	<b>90th percentile</b>	<b>Sites exceeding AL</b>
1/1/2004-12/31/2004	ppb	AL=15	2.41	0
<b>Sources</b>		Corrosion of household plumbing systems; Erosion of natural deposits		

## ***Contaminants Report Continued***

### **Unregulated Contaminants Notice**

*Our water system participated in the Unregulated Contaminant monitoring required by the Environmental Protection Agency (EPA). This special monitoring helps EPA decide if new contaminants of concern are found in drinking water at levels that need to be controlled. We did not detect any of these unregulated contaminants in our water. If you want to review the individual results of the monitoring, please contact us at the phone number listed under "How might I become actively involved?"*

### **Unregulated Contaminants**

Unregulated contaminants are those for which the EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist the EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. Information on all the contaminants that were monitored for, whether regulated or unregulated, can be obtained from this water System or the Department of Natural Resources.

<b><u>INORGANIC</u></b>	<b><u>UNITS</u></b>	<b><u>LEVEL FOUND</u></b>	<b><u>RANGE OF DETECTIONS</u></b>	<b><u>SAMPLE YEAR</u></b>
NICKEL	ppm	0.983	Nd-2.95	2004

### ***Violations and Health Effects Information***

**There were no MCL, Monitoring, or treatment technique violations for this report.**

### ***Optional Monitoring (not required by EPA)***

<b><u>Inorganic</u></b>	<b>Units</b>	<b>Level Found</b>	<b>Range of Detections</b>	<b>Sample Year</b>
ALKALINITY, CaCO <sub>3</sub> STABILITY	ppm	117.0000	117	2001
ALKALINITY TOTAL	ppm	140.0000	127-154	2004
CALCIUM	ppm	38.7000	35.4-41.3	2004
CHLORIDE	ppm	17.2967	9.99-26.6	2004
HARDNESS, CARBONATE	ppm	161.6667	153-170	2004
IRON	ppb	36.6667	nd-70.8	2004
MAGNESIUM	ppm	15.8000	14.4-17.3	2004
MANGANESE	ppb	1.9633	nd-3.05	2004
pH		7.7400	7.6-7.9	2004
POTASSIUM	ppm	1.6733	1.2-2.41	2004
SODIUM	ppm	10.5800	5.54-15.6	2004
SOLIDS, TOTAL DISSOLVED (TDS)	ppm	184.0000	162-196	2004
SULFATE	ppm	20.4333	10.2-36.5	2004
ZINC	ppb	4.6667	nd-14	2004

Please call our office if you have questions. 237-7300

We at Carthage Water and Electric 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.