



Murfreesboro Water & Sewer Department 2008 Annual Water Quality Report

January 1, 2008 – December 31, 2008

The purpose of this water quality report is to provide you with information regarding your drinking water. We want to keep you informed about the water and services that we have delivered to you over the past year and we are pleased to provide you with this year's Annual Drinking Water Quality Report. The most important part is to let you know that your water is safe for drinking. We also want to take this opportunity to give you a little more background on your water system.



East Fork Stones River

Your water comes from two surface water locations. One water source is the East Fork of the Stones River and the other source is the J. Percy Priest Lake. Our goal is to protect our water from contaminants and we are working with the State to determine the vulnerability of our water supply to contamination. The Tennessee Department of Environment and Conservation (TDEC) has prepared a Source Water Assessment Program (SWAP) Report for the water supplies serving Murfreesboro Water & Sewer Department (MWSD). The SWAP Report assesses the susceptibility of public water supplies to potential contamination. Water sources have been rated as reasonably susceptible, moderately susceptible or slightly susceptible based on geologic factors and human activities in the vicinity of the water source. The MWSD conducted a SWAP update in December 2006 that was approved by the TDEC. The MWSD sources are rated moderately susceptible to potential contamination.¹

The MWSD serves over 25,000 customers and a population of over 80,000 through more than 400 miles of water lines. The water treatment plant operates continuously and has an average production of over 10 million gallons per day (MGD) of potable water. Our goal is to provide to you a safe and dependable supply of drinking water.

Pure water does not occur naturally. In nature, all water contains some impurities. These impurities are referred to as contaminants. Drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (800) 426-4791.

¹ An explanation of Tennessee's Source Water Assessment Program, the Source Water Assessment summaries, susceptibility scorings and the overall TDEC report to EPA can be viewed online at www.state.tn.us/environment/dws/dwassess.shtml or you may contact the Water System or TDEC at 1-888-891-TDEC to obtain copies of specific assessments.

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 in some cases radioactive material and 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 organic chemicals, come from gas stations, urban stormwater runoff, and septic systems.
- ✓ Radioactive contaminants which can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, EPA and the Tennessee Department of Environment and Conservation prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Cryptosporidium is a microbial parasite which is found in surface water throughout the U.S. Although Cryptosporidium can be removed by filtration, the most commonly used filtration methods cannot guarantee 100 percent removal. Monitoring of our source water indicated the presence of

Cryptosporidium in 7 out of 48 samples tested. No Cryptosporidium were detected in finished water samples. Symptoms of infection include nausea, diarrhea, and abdominal cramps. However, immunocompromised people have more difficulty and are at greater risk of developing severe, life threatening illness. Immunocompromised individuals are encouraged to consult their doctor regarding appropriate precautions to take to prevent infection. The MWSD meets the treatment standard for Cryptosporidium and no additional treatment is required at this time however as part of the recent upgrades at the water treatment plant, the MWSD added membrane filtration that will remove 100% of cryptosporidium. These new membrane filters were placed into service during December 2008. For more information on cryptosporidium contact the Safe Drinking Water Hotline (800) 426-4791.



Elevated levels of lead, if present, 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. The MWSD 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>.

A routine distribution sample was positive for total coliform in January 2008. Because of this positive test result, the MWSD was required to follow repeat testing protocol and collect repeat samples at three specified locations. Unfortunately one of the three repeat samples was not collected and tested at the right location within the 24-hour period because an out door hose connection had been winterized and the technician could not access the water supply at that location. The other two repeat samples were collected and tested and did not have a positive test result. However, not collecting the third repeat sample placed the water system in violation of the Tennessee Safe Drinking Water Act regulations. When the sampling and testing oversight was realized, the Tennessee Department of Environment Water Supply Branch was notified and a third sample was taken and tested. All three repeat samples were absent of total coliform. The technician has been retrained on the applicable regulations to prevent another violation of the monitoring requirements. For more information please contact Alan Cranford at (615) 848-3222 or Murfreesboro Water & Sewer Department, Attn: Alan Cranford, P.O. Box 1477, Murfreesboro, TN 37133-1477. (This information concerns the same event that was previously provided to you by mail in January or February 2009 and is not a new event.)

The Stones River Water Treatment Plant is currently undergoing an upgrade and expansion. The treatment capacity is being increased from 15.7 million gallons per day to 20 million gallons per day. In addition to the increased capacity, the MWSD has added membrane filtration, added increased pumping capacity, added standby power generation, changed from chlorine gas to sodium hypochlorite as the disinfectant, and upgraded other treatment chemical feed systems. In the near future the plant will be operating granular activated carbon beds for removal

of taste and odors and disinfection byproducts, and an expanded laboratory. All of these improvements by the MWSD are directed at continually ensuring that you are receiving the highest quality of water.



Membrane Filters

The MWSD routinely monitors contaminants in your drinking water in accordance with Federal and State laws. The Water Quality Data Table located in this report shows the contaminants that were detected for the period from January 1 to December 31, 2008, or the last time they were required to be monitored. We're proud that your drinking water meets or exceeds all Federal and State requirements. We have learned through our monitoring and testing that some contaminants have been detected.



Jones Boulevard Tank

WATER QUALITY DATA TABLE

Contaminant	MCL	MCLG	Level Found	Range of Detection	Violation Yes/No	Date of Sample	Typical Source of Contaminant
Microbiological Contaminants							
Total Coliform	Greater than 5% of monthly samples are positive	0	1 ⁽¹⁾	0-1	No	2008	Likely caused by sampling error as contaminant is naturally present in the environment
TOC (ppm) Total Organic Carbon	TT ⁽²⁾	N/A	2.80	1.59-2.80	No	2008	Naturally present in the environment
Turbidity (NTU)	TT ⁽³⁾	N/A	0.25	0.02-0.25	No	2008	Soil runoff
Radioactive Contaminants							
Combined radium (pCi/l)	5	0	0.30	BDL-0.30	No	07/16/03	Erosion of natural deposits
Inorganic Contaminants							
Barium (ppb)	2,000	2,000	18	11	No	05/03/05	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Copper (ppb)	AL=1,300	1,300	250 ⁽⁴⁾	N/A	No	06/25/08	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Fluoride (ppb)	4,000	4,000	1,280	860-1,280	No	2008	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Lead (ppb)	AL=15	0	1.6 ⁽⁴⁾	N/A	No	06/26/08	Corrosion of household plumbing systems; Erosion of natural deposits
Sodium (ppm)	N/A	N/A	4.1	N/A	No	05/28/08	Erosion of natural deposits
Nitrate (ppm)	10	10	2.3	N/A	No	01/08/08	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Volatile Organic Contaminants							
Chlorine (ppm)	MRDL=4	MRDL=4	3.7	1.4-3.7	No	2008	Water additive used to control microbes
HAAs (ppb) Haloacetic Acids	60	N/A	59	9-84	No	2008	By-product of drinking water chlorination
TTHMs (ppb) Total trihalomethanes	80	N/A	76	8-119 ⁽⁵⁾	No	2008	By-product of drinking water chlorination

- (1) We received a monitoring violation for January 2008 for failing to take one of three repeat samples after a total coliform positive sample. A public notification was mailed to all customers in January and February 2009. If you would like to request another copy of the public notification please contact the Stones River Water Treatment Plant at (615) 848-3222.
- (2) We met the treatment technique requirements for total organic carbon in 2008.
- (3) We met the treatment technique for turbidity with 100% of monthly samples below the turbidity limit of 0.3 NTU. Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.
- (4) Lead and copper values are 90th percentile values. During the most recent round of lead and copper testing, 0 out of 30 households sampled exceeded the action level.
- (5) 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.

TERMS AND ABBREVIATIONS FOR TABLE

- ✓ **Action Level (AL):**
The concentration of a contaminant, which if exceeded, triggers treatment or other requirements that a water system must follow.
- ✓ **Below Detection Level (BDL):**
The concentration of a contaminant is below the minimum level that the instrument is capable of detecting.
- ✓ **Maximum Contaminant Level (MCL):**
The highest level that a contaminant 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.
- ✓ **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 contamination.
- ✓ **Nephelometric Turbidity Unit (NTU):**
The measure of clarity in the water. Turbidity in excess of 5 NTU is just noticeable to the average person.
- ✓ **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.
- ✓ **Picocuries per liter (pCi/L):**
The measure of radioactivity in the water.
- ✓ **N/A:**
Not applicable.
- ✓ **Treatment Technique (TT):**
A required process intended to reduce the level of a contaminant in drinking water.

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 microbiological contaminants are available from the Safe Drinking Water Hotline (800) 426-4791.

We urge our customers to be on guard against cross-connections that might contaminate our water supply. A cross-connection is a link between an approved drinking water supply and any system other than an approved drinking water supply. If an irrigation system is supplied by a well or stream, the system must be totally segregated from the public water supply. Our City ordinance provides safeguards against cross-connections in industrial, commercial and residential settings. MWSD has full time employees whose sole function is to guard against these types of cross-connections. The risk from residential cross-connections is less than that from industrial and commercial applications, but is very real. Cross-connections can occur in private residences when garden hoses are left submerged in pools, when they

lay in elevated positions above the hose bib, or when chemical sprayers are attached to hoses to spray pesticides. Hoses should be disconnected promptly after use, and the installation of hose bib vacuum breakers is strongly recommended. This is a simple device that is available at most hardware and plumbing supply stores and generally costs between five and fifteen dollars—a small investment that provides an enormous potential benefit.

The MWSD is owned and operated by the City of Murfreesboro. We receive no tax revenue from City, State or Federal governments, but rely solely upon our rates and fees for operational funding. MWSD reads every water meter and bills each customer every month. In the event of an abnormally high meter reading, we will attempt to alert the customer. Payment may be made at our drive-up window, walk-in service counter, night depository, mail, or by bank draft.

Although we anticipate being able to meet all of our customers' needs, we urge you to conserve water by promptly repairing leaks within your plumbing system. This not only helps us to keep down production costs it provides savings on your monthly billings. Even as we encourage conservation, we understand the seasonal need to replenish pools and to water landscaped areas. An automatic sewer adjustment is made during the months of April through October

whenever the usage during these months exceeds the average winter usage by twenty percent.

If you have any questions about this report, or concerning your water quality, please contact Alan Cranford at (615) 848-3222 between 7:00 a.m. and 3:00 p.m. Monday through Friday. General information and services are available from our administrative offices at 890-0862 from 8:00 a.m. to 4:30 p.m. Monday through Friday. TTY services are available at (615) 848-3214. Customer Service questions may be directed to Sharon Seibert at sseibert@murfreesborotn.gov. Our emergency after-hours phone number is (615) 893-1223.

The MWSD works 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.

Our regularly scheduled Water & Sewer Board meetings are held on the fourth Tuesday of each month at 3:30 p.m. Meeting with the location advertised in the Murfreesboro Post and on the City's website <http://www.murfreesborotn.gov>. Please feel free to participate in these meetings.

Este informe contiene información muy importante. Tradúzcalo o hable con alguien que lo entienda bien.