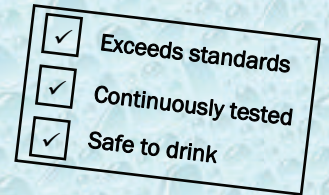




TOWN OF SMYRNA

WATER SYSTEM



2009 Annual Water Quality Report

January 2009 — December 2009

What is a Water Quality Report?

The Town of Smyrna Water System is committed to delivering to you, our customer, water that meets or exceeds federal and state requirements. This report will show that we are doing just that.

While you may not even think about what it takes to purify and deliver water to your home, it is our priority every day. We invest in protecting our water resources for both present needs and for the future.

The drinking water analysis table on the following pages provides the results of our testing program and identifies the goals set by the federal government to protect public health. We have provided a key to help you understand the table.

For more information on the quality of your drinking water call the Smyrna Water Treatment Plant at (615) 459-3574 and speak with Kevin Relford or Bryan Warden. The Town of Smyrna Council meets in the Town Hall Council Room every 2nd Tuesday of the month at 6:00 p.m. The Council meetings provide an opportunity for public participation in decisions that may affect the quality of the water. For more information regarding Council meetings please contact Roseanne Peppers at (615) 459-2553.

Who provides my water?

You are a customer of the Smyrna Water System a department of the Town of Smyrna municipal government. We treat water in a manner that is safe for your families and the environment.

The Smyrna Water Treatment Plant treats drinking water using state-of-the art equipment and ensures water quality through continued monitoring and testing. Tap water is delivered to approximately 16,000 customers in the Smyrna Water System.

The big question...Is the water safe to drink?

The bottom line...Absolutely! Drinking water provided to you by the Smyrna Water System meets or exceeds all federal and state drinking water standards. The water is tested and checked continuously each day to make sure it is safe. Thousands of tests are performed each month on the water that leaves the treatment plant, as well as the water that travels through the distribution system to your homes, businesses, and industries.

We provide safe, quality drinking water to you 24 hours a day, seven days a week, 365 days a year because we know that safe, good drinking water is vital to the health and well being of our community.

Where does my water come from?

Your water, which is surface water, comes from the Stones River/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 source to *potential* contamination. The Tennessee Department of Environment and Conservation (TDEC) has prepared a Source Water Assessment Program (SWAP) Report for the untreated water sources to *potential* contamination. To ensure safe drinking water, all public water systems treat and routinely test their water. Water sources have been rated as reasonably susceptible (high), moderately susceptible (moderate), or slightly susceptible (low) based on geologic factors and human activities in the vicinity of the water source. The Smyrna Water System sources rated as reasonably susceptible to *potential* contamination.

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.tn.gov/environment/dws/dwassess.shtml

Copies of this source water assessment can also be viewed at Smyrna Town Hall in the Utilities department, the Smyrna Library, or the Smyrna Water Treatment Plant.

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. Contaminants that may be present in source water:

- ◆ 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 storm water 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 storm water runoff, and residential uses.
- ◆ 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.
- ◆ 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.

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 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).



Notice to People with Health Concerns

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 people, 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).

What exactly are *Cryptosporidium* and *Giardia*?

Cryptosporidium (KRIP-toe-spor-Rid-ee-um) and *Giardia* (jee-ahr-dee-uh) are microscopic parasites found in surface waters (rivers, lakes, streams or ponds) especially when these waters contain a high amount of sewage or animal waste. If ingested through food or drink, they can cause symptoms that include diarrhea, nausea or stomach cramps. As other conditions can cause these same symptoms, a special laboratory test is needed to confirm the cause. Your tap water is continually filtered and treated to prevent exposure to these parasites.

Cryptosporidium Occurrences	Giardia Occurrences
01/05/2007 - 0.29 (Oo) Cysts/L 03/20/2007 - 0.10 (Oo) Cysts/L 02/05/2008 - 0.10 (Oo) Cysts/L	05/06/2008 - 0.10 (Oo) Cysts/L

Concerning Lead in Our Water

If present, elevated levels of lead (atomic symbol Pb) 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 Smyrna Water System 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>.

Flow Analysis of Raw Water Treated and Sent to Our Customers in 2009

2009 Flow Analysis - Smyrna Water Treatment Plant (MGD- Million Gallons per Day)								
MONTH (2009)	TOTAL MGD RAW FLOW/MONTH	AVERAGE MGD RAW FLOW/MONTH	MAX MGD RAW DAILY FLOW/MONTH	MIN MGD RAW DAILY FLOW/MONTH	TOTAL MGD FINISHED FLOW/MONTH	AVERAGE MGD FINISHED FLOW/MONTH	MAX MGD FINISHED DAILY FLOW/MONTH	MIN MGD FINISHED DAILY FLOW/MONTH
Jan-09	238.706	7.700	9.031	5.742	232.962	7.515	8.765	5.452
Feb-09	188.897	6.746	8.005	5.630	183.873	6.567	7.758	5.586
Mar-09	205.054	6.615	8.472	5.803	202.158	6.521	7.768	5.936
Apr-09	247.825	8.261	12.996	5.603	245.782	8.193	12.498	5.863
May-09	222.249	7.169	9.104	5.947	215.898	6.964	8.884	2.675
Jun-09	279.371	9.312	11.308	6.999	280.740	9.358	11.158	7.325
Jul-09	273.198	8.813	10.861	7.004	271.556	8.760	10.686	7.309
Aug-09	290.508	9.371	11.803	6.989	290.083	9.358	11.712	6.816
Sep-09	271.333	9.044	10.597	7.114	268.880	8.963	10.385	7.703
Oct-09	249.660	8.054	9.882	6.303	246.037	7.937	9.578	6.181
Nov-09	235.409	7.847	9.427	5.887	231.384	7.713	9.201	6.234
Dec-09	240.028	7.743	8.978	5.774	235.777	7.606	8.616	6.237
2009 Averages	245.187	8.056	10.039	6.233	242.094	7.955	9.751	6.110

Important Cross-Connection Safety Information

The Tennessee Division of Water Supply requires all public water systems in the state to operate an on-going program to protect the public water supply from possible cross-connections. The most effective method for Smyrna Water Utilities to meet this requirement is to require customers to install a backflow preventer on the main supply line to their property or facility, thus protecting the community from any cross-connections that may be present inside a customer's plumbing system. All water users benefit from an active, on-going cross-connection control program that includes the installation of backflow preventers where required by state regulations and local codes.

The backflow preventer is installed to protect the public water supply against possible hazards in the customer's plumbing system. The actual or potential cross connection belongs to the property owner and not the regulatory agency or Smyrna Utilities. Once the water goes beyond the meter in many cases the water quality is altered. Smyrna Utilities does not want the water back, nor do other water customers want to purchase used water. If a backflow preventer is required to keep the water safe, then the person who purchased, installed, and maintained the cross-connection (actual or potential) should purchase, install, and maintain the backflow preventer.

For questions concerning cross-connection control, please contact Randy Roberts at Smyrna Utilities (615) 459-9752.

Key to Understanding the Laboratory Analysis Results Table ▶▶▶▶▶

The table to the right shows the results of the Smyrna Water System's laboratory analysis of your water during the period of January through December 2009. We monitor for some contaminants less than once per year, and for those contaminants, the date of the last sample is shown in the table. The table lists the name of each substance tested, the maximum level allowed in the drinking water (MCL), the ideal goals for public health (MCLG), the amounts detected and the range of levels detected. Also noted is the usual source of such contamination and an explanation of our findings.

AL: Action Level, the concentration of a contaminant which, if exceeded, triggers a treatment or other requirement which a water system must follow.

MCL: Maximum Contaminant Level. 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.

MCLG: Maximum Contaminant Level Goal. 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.

MRDL: Maximum Residual Disinfectant Level. The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant necessary for the control of microbial contaminants.

MRDLG: Maximum Residual Disinfectant Level Goal. 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.

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

ppm: parts per million or milligrams per liter.

ppb: parts per billion, or micrograms per liter.

N/A: Not applicable.

NTU: Nephelometric Turbidity Unit, a measure of particles in the water.

2009 Laboratory Analysis Results

INORGANIC CONTAMINANTS								
Contaminant	Test Date	Unit	MCL	MCLG	Detection	Range	Sources	Violation
¹ Copper	06/2008	ppm	1.3	1.3	0.34 (90th percentile)	0.0062 - 0.64	Household plumbing corrosion, erosion of natural deposits, leaching of wood preservatives	No
Fluoride	2009	ppm	4	4	1.26	0.11 - 1.26 Annual Ave. 0.942	Erosion of natural resources, additive to promote strong teeth, discharge from fertilizer and aluminum factories	No
Nitrate	10/14/2009	ppm	10	10	0.95 mg/L	<0.05 - 0.95 mg/L	Fertilizer runoff, leaching from septic tanks, sewage, erosion of natural deposits	No
¹ Lead	06/2008	ppb	15	0	4.9	0.5 - 17	Erosion of natural resources, household plumbing corrosion	No
Atrazine	04/20/2009	ppb	3	3	<0.1	All tests below detection limit	Run off from herbicides	No
Sodium	01/20/2009	ppm	N/A	N/A	7.7 mg/L	3.4 - 7.7	Ubiquitous in the environment	No

ORGANIC CONTAMINANTS								
Contaminant	Unit	MCL	MCLG	Detection	Range	Sources	Violation	
Total Trihalomethanes (TTHMs) Stage 1 & 2 2009***	ppb	80	N/A	48.78 Highest running annual avg.	12 - 111	By-product of water chlorination	No	
Haloacetic Acids (HAA) Stage 1 & 2 - 2009	ppb	60	N/A	44.65 Highest running annual avg.	12 - 70	By-product of water chlorination	No	
Chlorine	ppm	MRDL = 4	MRDLG = 4	Annual Ave. = 2.82	1.7 - 3.3	Disinfectant added to kill pathogens	No	
Total Organic Carbon (TOC)**	ppm	TT	N/A	Annual Ave. = 1.55	0.97 - 3.10	Naturally present in the environment	No	

TURBIDITY								
Turbidity*	NTU	TT	N/A	1.24	0.03 - 1.24 Ave. 0.07	Soil Runoff	Violation	
							No	

MICROBIOLOGICAL CONTAMINANTS								
Coliform	Total: (MCL = Less than 5 % of samples / month)	0%	1.64%	0 - 1.64%	Naturally present in the environment	No		
	Fecal:(MCL = 0% samples)	0%	0	0	Animal or human waste			
	100% of samples tested negative for fecal coliform							

*We met the treatment technique for turbidity in 2009 with at least 95% of samples being less than 0.3 NTU.

***What is turbidity?** Turbidity has no health effects; however turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms including bacteria, viruses, and parasites.

**We met the treatment technique for total organic carbon in 2009.

***Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their livers, kidneys, or central nervous systems, and may have a risk of getting cancer.

1. **Copper and Lead:** Data presented are from the most recent testing done in accordance with state of Tennessee and EPA guidelines. One of the thirty households tested exceeded the action level for lead. Zero of the thirty households tested exceeded the action level for copper.

How hard is my water?

The water drawn from J. Percy Priest Lake is hard/very hard with a 2009 hardness average of 214 (mg/l) or about 12.5 grains/gallon. Hardness is caused by naturally-occurring calcium and magnesium found in the water. Smyrna Utilities is aware of the problems caused by water hardness and has currently begun construction to implement methods of softening the water to an average of 100 ppm (mg/l). We will keep the customer informed of any major changes dealing with water softening.

Why is there someone flushing the fire hydrant in my neighborhood?

The Smyrna Water System regularly flushes hydrants to prevent the build-up of mineral deposits and to better regulate chlorine residuals in the system.

Replacing Water Meter - Smyrna Utilities

Smyrna Utilities will be installing a new water meter and setter on your water line to raise the meter while making repairs. Due to the new plumbing codes, when making repairs on existing water lines the **Cross-Connection Code Section 607.3.2** requires Smyrna Utilities to install a **Check Valve** to prevent backflow, or stop the water at your house from entering back into the public main.

You may experience a water pressure increase due to thermal expansion from the installation of the check valve. If you experience any fluctuations in your pressure you may want to install an expansion tank on your water line near the water heater to avoid any damage to your appliances. An expansion tank is available at your local hardware store or an experienced plumber can install one for you.

Water Quality Enhancements on the Horizon.....

On February 1, 2010 the Town of Smyrna Water Plant began the construction phase of our expansion and upgrade of the treatment process to improve the treatment techniques to not only produce a safer drinking water, but to provide a much better tasting finished water product. The capacity will be increased from 15.2 to 18.3 million gallons a day. The plant is being designed to replace the existing pretreatment and filtration processes with lime softening and membrane filtration. Organic matter found in Smyrna's source water has historically been extremely hard to treat with the technology presently at the water plant. These process changes will improve the plant's removal of iron, manganese, hardness and microbial pathogens. The aesthetic nature of manganese (yellow or brown water) and hardness (white flakes, deposits in water heaters) contribute to most of the problems from the treatment plant to the customer. The lime softening process will greatly reduce levels of manganese and reduce hardness from the 200's to about 100mg/L (2009 hardness annual average 214 mg/L).

With the new and more stringent EPA and state regulations Smyrna Utilities continues to provide you with an excellent supply of safe drinking water.



Town Of Smyrna Water System

WATER CONSERVATION PROGRAM

Let's Slow the Flow of Smyrna H₂O!!



SMYRNA is growing.....and with this growth more demands have been placed on our Town's water supply requiring the implementation of a Water Conservation Program.

Like many things around us we tend to take for granted what is plentiful and easily obtained. All we do to get water is turn on the faucet any time and there it is ready to use....right? Think again...the water we use doesn't just magically flow to our homes and businesses. Treated water comes to your homes/businesses after a lengthy treatment process and traveling through miles and miles of pipeline.

Water is an extremely valuable resource and shouldn't be wasted so please take time to evaluate your water use and help us conserve Smyrna's water.

BE A WATER MISER!



Congratulations!

On November 19, 2009 the Tennessee Department of Environment and Conservation, Division of Water Supply, visited the Smyrna Water System and conducted a Sanitary Survey. Based upon observations made during the survey and file review the Smyrna Water System earned a score of ninety-nine (99).

A Sanitary Survey is an onsite evaluation and documentation of a water system's capabilities, operations, sources, facilities, treatment process, equipment, distribution network, monitoring, reporting and data verification, pump facilities, controls, and overall management needed to continually provide safe drinking water and any deficiencies that might impact the provision of safe drinking water. The Sanitary Survey is conducted annually on an unscheduled date.

We are extremely pleased with our score, our management and staff strives daily to operate the Smyrna Water System in a manner to always provide safe drinking water to our customers.

Este informe contiene información muy importante sobre su agua beber. Tradúzcalo ó hale con alguien que lo entienda bien.

**Town of Smyrna
Water Treatment Plant
156 Sharp Springs Road**

Phone: 615-459-3574

Fax: 615-459-9703

Email: kevin.relford@townofsmyrna.org

QUESTION ABOUT YOUR

SMYRNA UTILITIES BILL

**Please call Smyrna Utilities Customer Service
615-355-5740**

Monday - Friday 8:00 - 4:30 PM



TO PAY YOUR BILL

**Smyrna Town Hall - Office / Drive Thru
Monday - Friday 8:00 - 4:30 PM**

You may have your bill payment automatically deducted from your bank account. Forms are available at the Smyrna Utilities office. We will need a voided check to process.

After hours we have a convenient drop box located next to our drive thru.



To pay by credit card please call 615-355-5705.

**Whether you come for the day or come to stay...
You're always welcome in Smyrna!**