2010 Annual Drinking Water Quality Report

Tebbston on Magothy (PWSID MD0020059)

We are pleased to present the 2010 Annual Drinking Water Quality 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.

The source of our drinking water is the Magothy Aquifer, which lies approximately 142 feet below the ground. An aquifer is like an underground reservoir or deposit of water that is tapped by drilling wells and pumping the water to the surface for distribution. The 142 feet of ground between surface sources of contamination and this underground source helps to purify the water before it actually reaches the aquifer, making it easier for us to treat before we pump it into your distribution system.

A **source water assessment** was performed by the Maryland Department of the Environment (MDE). This assessment outlines the potential sources of contamination for our raw water supply. The final report was issued in the winter of 2003. A copy can be obtained through Anne Arundel County Department of Planning and Zoning, Anne Arundel County Public Libraries, or MDE.

It was determined that the Tebbston on Magothy **water supply is not susceptible to contaminants originating at the land surface** due to the protected nature of confined aquifers. The water supply is susceptible to naturally occurring radionuclides and naturally occurring iron.

We are pleased to report that our drinking water is safe and meets Federal and State requirements. The following report is provided in compliance with federal regulations and will be provided annually. This report outlines the quality of our finished water and what that quality means.

Tebbston on Magothy routinely monitors for contaminants in your drinking water according to Federal and State laws. The table on the following page shows the results of our monitoring for the period of January 1st, 2009 to December 31st, 2009. As water travels over the land or underground, it can pick up substances or contaminants such as microbes, inorganic and organic chemicals, and radioactive substances. All drinking water, *including bottled water*, may be reasonably expected to contain at least small amounts of some contaminants. It is important to remember that the presence of these contaminants does *not necessarily* pose a health risk.

All sources of drinking water are subject to potential contamination by substances that are naturally occurring or man made. These substances can be microbes, inorganic or organic chemicals and radioactive substances. 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. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at (800) 426-4791. The presence of some contaminants in drinking water is unavoidable, but we make every effort to keep our water at or below the levels specified by law as being safe for consumption.

Definitions

In this report you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:

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 (µg/L) - One part per billion corresponds to one minute in 2,000 years, or a single penny in $10,000,000.

Action Level (AL) - The concentration of a contaminant that, if exceeded, triggers treatment or other requirements, which a 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 and are non-enforceable public health goals.

PicoCurie per liter (pCi/L) - Unit of measurement for radioactivity.

COMPLIANCE WITH EPA ORDER

In June 2004, **the EPA issued an administrative order imposing certain requirements on the operation of the Tebbston water system.** This order was in response to previous violations by the water system pertaining to the Lead and Copper Rule occurring prior to the date of the EPA Order. The requirements in the order were imposed to cure the aforementioned violations, which were related to lead and copper remediation through corrosion control measures, the certification by MDE of the personnel operating the system and related operational procedures.

We have fully satisfied the requirements identified in the order in 2005. Primarily, through the installation in the well house during August of 2005 of a new chemical injection system, the function of which is to raise the ph level and to remediate the hydrogen sulfide level of the water being supplied by the system to your unit. Prior to the installation of the system, the results of our semi-annual treating of the water from the taps in your units for lead and copper produced , on at least two occasions , a tap sample that reflected lead and copper levels which slightly exceeded the published action levels for those contaminants. This was most likely the result of the fact that prior to the installation of the new injection system, the water in the system had a very low ph, in other words it was acidic. Acidic water can leach lead and copper out of plumbing fixtures and although there are no lead pipe water lines in Tebbston and all copper water lines are joined with lead free solder, modern plumbing fixtures (e.g. faucet valves and stems) still contain some lead, which can be leached out by acidic water. Because of the acidic water, the above referenced order issued by the EPA in 2004 required us to institute corrosion control measures because of the leaching phenomenon of the acidic water. Federal and State rules and regulations governing the operation of our system allowed us to attempt to get two (2) consecutive semi-annual lead and copper test results below action levels in order to satisfy the corrosion control requirement in the EPA order. We used this method in the latter half of 2004 and the first half of 2005 to attempt to qualify under the two (2) consecutive test provision. However, in each batch of samples there was at least one that exceeded the action levels for lead and copper. Consequently, we installed the chemical injection system described above as our corrosion control measure. This new system has raised the ph level of the water to target levels and the water is no longer acidic.

The new chemical injection system is functioning as it should to keep the ph level of the water at an alkaline as opposed to acidic level as a corrosion control measure to prevent lead and cooper leaching from fixtures. In accordance with the requirements of EPA and of MDE, we are required to disclose that we were in violation of reporting our water tests to the MDE. Our third party water testing company is required to submit test results to MDE by the 10th of every month. In the month of April, results were not received by the MDE – Water Supply Division until the 12th of April.

Detected Contaminants NOT in Violation of the MCL

The data presented in this table is from testing performed between October 2006 and December 2009. Some regulated contaminants are monitored less frequent than once per year. In addition to over one hundred *undetected* substances that were subject to testing, Tebbston on Magothy did find some regulated and unregulated substances present in the water system at levels below the maximum allowable level (MCL), which is determined safe by the EPA. These substances are shown below, along with the MCL and MCLG for each contaminant detected (if applicable).

Contaminant	Level Detected	Unit of Measurement	MCL	MCLG	Likely Source of Contamination
Dibromochloromethane	.9	Ug/l	5	0	Chemical Manufacturers
Gross Alpha	1	pCi/L	15	0	Erosion of natural deposits.
Gross Beta	< 3	pCi/L	50[a]	0	Erosion of natural deposits.
Bromodichloromethane	6.9	Ug/l	Unregulated		Chemical Manufacturers
Nitrate	< 1	Ppm	10	10	Runoff from fertilizer use, erosion of natural deposits.
Combined Radium	< 2.5	pCi/L	5	0	Erosion of natural deposits.
^{222}Radon	65	pCi/L	Unregulated[b, c]		
Sodium	24.3	Ppm	Unregulated[b]		
Sulfate	15	Ppm	Unregulated[b, d]		
Combined Uranium	0.295	pCi/L	30[e]	0	Decay of natural and man-made deposits.

Detection of these substances in the drinking water does not constitute a known threat to public health because they were found only at levels less than the MCL and below the level that EPA currently feels may constitute a health threat. MCL's are set at very stringent levels, and Tebbston on Magothy's water has proved to be below those levels for the constituents listed above.

Radon is a radioactive gas that you cannot see, taste, or smell. It is throughout the United States and can move up through the ground into a home through cracks and holes in the foundation. Radon can build to high levels in all types of homes. Radon can also get into indoor air when released from tap water from showering, washing dishes, and other household activities. Compared to radon entering the home through soil, radon entering the home through tap water will in most cases be a small source of radon in the air. Radon is a known human carcinogen. Radon can lead to lung cancer and stomach cancer. If you are concerned about radon in your home, test the air in your home. Fix your home if the level of radon in the air is 4 picoCuries per liter or higher. For information, call EPA's Radon Hotline at (800) SOS-RADON.

Some people may be more vulnerable to contaminants in the drinking water than the general population. Immuno-compromised persons, such as those people 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.

Lead

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. Mid-Atlantic Water Systems 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 drinking 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 EPA Safe Drinking Water Hotline at 1-800-426-4791 or at http://www.epa.gov/safewater/lead.

Thank you for allowing us to continue providing your family with clean, quality water this year. In order to maintain a safe and dependable water supply, we sometimes need to make improvements that will benefit all of our customers. These improvements are sometimes reflected as rate structure adjustments. Thank you for understanding.

Please remember to conserve water!

Steve Davis
Tebbston on Magothy
(410) 953-0222

---

[a] The MCL for Gross Beta is 4 millirems per year. EPA considers 50 pCi/L to be the level of concern for Gross Beta.

[b] 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.

[c] EPA is considering establishing the MCL for ^{222}Radon between 300 pCi/L and 4,000 pCi/L.

[d] The National Secondary Drinking Water Regulation for sulfate, which is an unenforceable standard, is 250 mg/L.

[e] The MCL for combined Uranium is 30 ppb. The conversion from ppb to pCi/L varies depending upon the concentrations of the constituent isotopes, but is always less than 30 pCi/L.