2016 Drinking Water Report

As required by the federal Safe Drinking Water Act, the City of Woodbury is issuing the results of monitoring done on its drinking water for the period from Jan. 1 to Dec. 31, 2016. The purpose of this report is to advance consumers' understanding of drinking water and heighten awareness of the need to protect precious water resources.

We are proud to report that no contaminants were detected at levels that violated state and federal drinking water standards.

This document contains the city's annual water quality report, which includes information on the monitoring done on Woodbury drinking water in 2016. Please review the report and, if you have questions, contact Jim Westerman, utilities superintendent, at (651) 714-3720 or jim.westerman@woodburymn.gov.

Inside this Report

CITY OF Woodbury

How much water does the city use?

In 2016, residents and businesses in Woodbury used nearly 2.5 billion gallons of water. This works out to an average of about 6.8 million gallons of water per day (MGD). A typical Woodbury family consumes approximately 22,500 gallons of water each quarter of the year, on average. Water use is lower than average during the winter months (approximately 4.2 MGD), and higher in the summer (approximately 12-15 MGD), primarily due to lawn watering. The maximum daily summer usage during 2016 was 15.71 million gallons.

Where does the city get its water?

The City of Woodbury provides safe drinking water to residents and businesses by pumping groundwater from the Jordan aquifer. The city currently has 19 wells ranging from 380 to 540 feet deep.

The water provided to customers meets drinking water standards.

The city's wells meet all construction standards and do not present a pathway for contamination to readily enter the water supply. However, the Minnesota Department of Health also made a determination as to how vulnerable the source of water may be to future contamination incidents. If you wish to obtain the entire source water assessment regarding your drinking water, please call (651) 201-4700 during regular business hours. Also, you can view it online at www.health.state.mn.us/divs/eh/water/swp/swa.

Call Jim Westerman, utilities superintendent, at (651) 714-3720, if you have questions about the City of Woodbury's drinking water or would like information about opportunities for public participation in decisions that may affect the quality of the water.

Abbreviations Key and Term Glossary

90th Percentile Level: This is the value obtained after disregarding 10 percent of the samples taken that had the highest levels. (For example, in a situation in which 10 samples were taken, the 90th percentile level is determined by disregarding the highest result, which represents 10 percent of the samples.) Note: In situations in which only five samples are taken, the average of the two with the highest levels is taken to determine the 90th percentile level.

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

MCL–Maximum Contaminant Level: The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the ideal maximums (MCLGs) 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. MCLGs allow for a margin of safety.

MRDL–Maximum Residual Disinfectant Level.

MRDLG–Maximum Residual Disinfectant Level Goal.

N/A–Not Applicable: Does not apply.

nd–No Detection.

pCi/l–PicoCuries per Liter: A measure of radioactivity in water.

ppb—Parts Per Billion: The number of units of the substance, in its pure form, found in every billion units of water. Can also be expressed as micrograms per liter.

ppm–Parts Per Million: The number of units of the substance, in its pure form, found in every million units of water. Can also be expressed as milligrams per liter.

Substances Detected in Woodbury Water

No contaminants were detected at levels that violated federal drinking water standards. However, some contaminants were detected in trace amounts that were below the maximum allowed in drinking water. The table that follows shows the contaminants that were detected in trace amounts in 2016. (Some contaminants are sampled less frequently than once a year; as a result, not all contaminants were sampled for in 2016. If any of these contaminants were detected the last time they were sampled for, they are included in the table along with the date that the detection occurred.)

Detected Substance and units measured	Average Amount Detected*	Range Detected (2016)	Allowed Maximum (MCL)	Ideal Maximum (MCLG)	Meets Standard	Typical Source of Contaminant
Alpha Emitters in pCi/l	9.37	3.3-13	15.4	0	Yes	Erosion of natural deposits.
Arsenic in ppb	3.51	nd-3.51	10	0	Yes	Erosion of natural deposits; Run-off from orchards; Runoff from glass and electronics production wastes.
Barium in ppm	0.08	nd-0.075	2	2	Yes	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Combined Radium in pCi/l	1.2	nd-1.2	5.4	0	Yes	Erosion of natural deposits.
Fluoride in ppm	0.9	0.71-0.85	4	4	Yes	State of Minnesota requires all municipal water systems to add fluoride to the drinking water to promote strong teeth; Erosion of natural deposits; Discharge from fertilizer and aluminum factories.
Nitrate (as Nitrogen) in ppm	2.7	nd-2.7	10.4	10.4	Yes	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Nitrite (as Nitrogen) in ppm	0.13	N/A	1	1		Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Selenium in ppb	5.5	nd-5.5	50	50	Yes	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines.
Total Trihalomethenes (TTHM) in ppb	8.2	6.6-8.2	80	0	Yes	By-product of drinking water disinfection.

*This is the value used to determine compliance with federal standards. It sometimes is the highest value detected and sometimes is an average of all the detected values. If it is an average, it may contain sampling results from the previous year.

Chlorine

Chlorine is added to protect the system from biological growth or bacteria. Chlorine samples are tested from different areas of the city to verify that the disinfection properties are carried throughout the entire system.

Substance and units measured	Highest Quarterly Average	Highest and Lowest Monthly Average	Allowed Maximum (MRDLG)	Ideal Maximum (MRDL)	Typical Source of Contaminant
Chlorine in ppm	0.65	0.4-0.7	4	4	Water additive used to control microbes.

Copper and 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. The City of Woodbury is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has not been turned on for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to two 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 at 1-800-426-4791 or at www.epa.gov/safewater/lead.

The city tests for lead and copper every three years by collecting water samples from a representative set of households in the city. The chart on the following page shows the results of tests performed during 2014.

Detected Substance and units measured	Action Level (AL)	90% Level	# of Sites Over AL	Ideal Maximum (MCLG)	Meets Standards	Typical Source of Contaminant
Copper in ppm Tested July 2014	1.3	0.15	0 out of 30	1.3	Yes	Corrosion of household plumbing systems; erosion of natural deposits.
Lead in ppm Tested July 2014	15	3.4	0 out of 30	0	Yes	Corrosion of household plumbing systems; erosion of natural deposits.

Contaminants and Drinking Water

Monitoring may have been done for additional contaminants that do not have MCLs established for them and are not required to be monitored under the Safe Drinking Water Act. Results may be available by calling (651) 201-4700 or 1-800-818-9318 during normal business hours.

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, which are by-products of industrial processes and petroleum production, and can also 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, the U. S. Environmental Protection Agency (EPA) prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration 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 Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

Water and Health

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 Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline at 1-800-426-4791.

PFC Levels Remain Below Health Risk Standards

In 2007, the Minnesota Department of Health (MDH) found low levels of the chemical perfluorobutanoic acid (PFBA) in wells serving the city's water system. PFBA is one of a family of chemicals known as perfluorochemicals (PFCs).

The MDH evaluated the available information on the toxicity of PFBA and established a health based limits (HBL) for PFBA of 7 parts per billion (ppb). The HBL is a level that is deemed safe for human consumption, even if the water is consumed daily over a lifetime.

Woodbury's levels of the chemical remain well below the guideline. Municipal wells continue to be sampled on an annual basis. In 2016, the amount of PFBA found in all wells ranged between 0.1 to 0.36 ppb.

In 2016 the Environmental Protection Agency (EPA) issued Drinking Water Health Advisories for Perfluorooctanoic acid (PFOA) and Perfluorooctanesulfonate (PFOS). The new EPA guidance is 70 parts per trillion (0.07 ppb). The MDH health based value (HBV) is currently 0.3 ppb. The MDH is in the process of reviewing the studies and methods used by the EPA to determine whether to lower the HBV for these chemicals.

Woodbury's levels of the chemicals remain below the current HBV and the updated EPA guideline. In 2016, the amount of PFOA and PFOS found in all sampled wells ranged between 0.019 ppb and 0.043 ppb for PFOA and 0.014 ppb to 0.022 ppb for PFOS below both the MDH HBV and EPA HA guideline.

Other PFCs detected at low levels
Due to technology improvements and enhanced lab methods, additional PFCs are now being detected at trace levels in Woodbury wells. This does not mean that any particular PFC concentration is increasing, only that the lab is now able to detect PFCs at levels so low they previously could not be measured. Below is a list of other PFCs detected at trace levels in 2016:

- Perfluorobutanesulfonate (PFBS) – The MDH health risk limit (HRL) for PFBS is 7.0 ppb. In 2016 all PFBS sample results were reported as less than 0.050 ppb of PFBS, well below the HRL.
- Perfluorohexanoic acid (PFHxA), Perfluorohexane sulfonate (PFHxS)and Perfluoropentanoic acid (PFPeA) – The MDH has not established a health risk limit for PFHxA, PFHxS or PFPeA. In 2016, PFHxA, PFHxS and PFPeA levels found in Woodbury water samples ranged from 0.006 and 0.023.

The MDH is not recommending that the city or residents take any special precautions regarding their use of the water. Monitoring of Woodbury's municipal water supply for PFCs will continue. Continued annual sampling will reveal whether the levels and/or contaminants are changing.

What are PFCs?

PFCs were made by 3M in Cottage Grove and by other companies around the world for use in household and industrial products. PFC wastes were disposed of in several landfills in Washington County.

City officials pushed for an aggressive cleanup of the former 3M disposal site near Woodbury's border with Cottage Grove, the Oakdale 3M disposal site, the former Washington County landfill, and the Cottage Grove 3M site – all shown to be sources of the groundwater contamination.

Cleanup activity at all four sites was completed in 2011. A groundwater extraction system also remains operational at the site near Woodbury's southern border to capture and prevent off site migration of PFCs. Ongoing oversight of the four sites continues under the direction of the Minnesota Pollution Control Agency.

For more information about PFCs, visit the MDH website at www.health.state.mn.us.

American Water Works Association

The City of Woodbury is a member of the American Water Works Association, an international nonprofit scientific and educational society dedicated to the improvement of drinking water quality and supply. The city is also a member of the American Public Works Association.