

# 2006 DRINKING WATER REPORT

CITY OF MAPLE GROVE • 763-494-6000



The City of Maple Grove is issuing the results of monitoring done on its drinking water for the period from January 1 to December 31, 2005. The purpose of this report is to advance consumers' understanding of drinking water and heighten awareness of the need to protect precious water resources.

## SOURCE OF WATER

The City of Maple Grove provides drinking water to its residents from a groundwater source: 10 wells ranging from 157 to 715 feet deep, that draw water from the Fraconia-Mt. Simon, Quaternary Water Table, and Quaternary Buried Artesian aquifers.

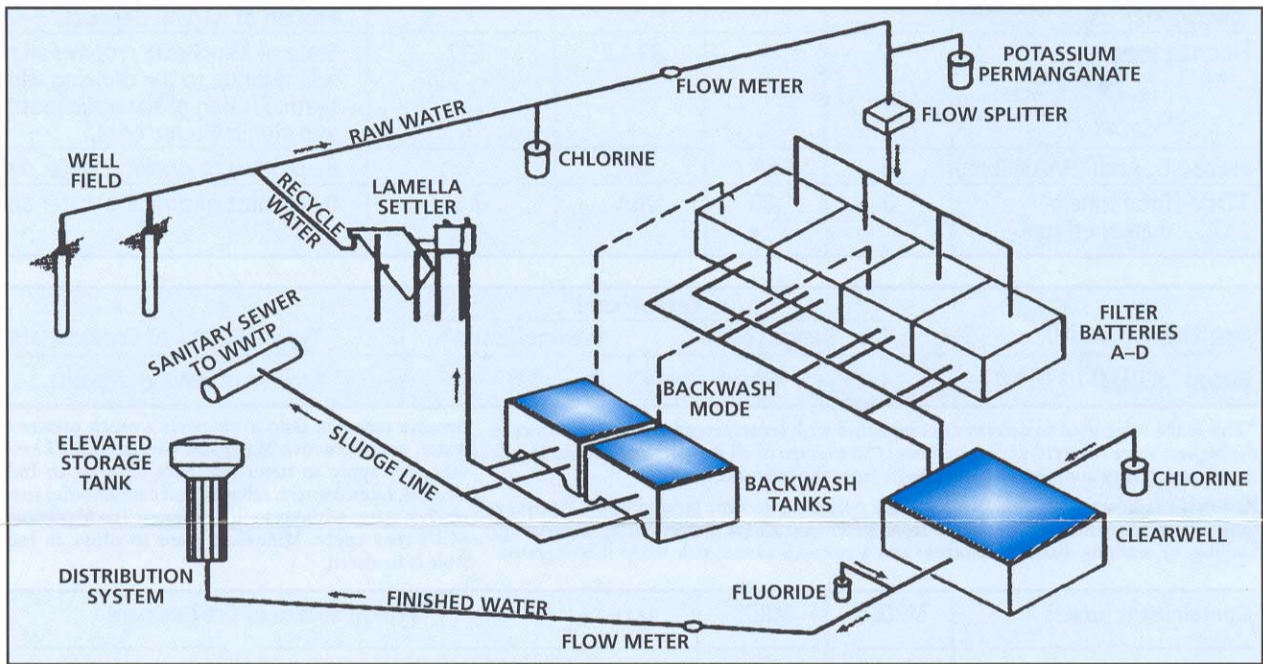
The water provided to customers may meet drinking water standards but the Minnesota Department of Health has determined that one or more of the sources of water is potentially susceptible to contamination. If you wish to obtain the entire source water assessment regarding your drinking water, please call 651-201-4670 or 1-800-818-9318 (and press 5) during normal business hours. Also, you can view it on line at [www.health.state.mn.us/divs/eh/water/swp/swa](http://www.health.state.mn.us/divs/eh/water/swp/swa).

Call 763-494-6377 if you have questions about the City of Maple Grove drinking water or would like information about opportunities for public participation in decisions that may affect the quality of the water.

## Welcome to the Maple Grove Water Treatment Plant

Owned and operated by the City of Maple Grove, in response to a growing population and a demand for improved water quality, the plant was constructed in 1987-88.

Maple Grove's raw water contains iron and excessive amounts of manganese. Without removal, this combination of minerals will cause the following problems for the City's residents:



- Rusty, brownish-red water
- Spotting of clothes
- Staining of sinks, tubs and toilets
- Occasional foul taste and odor

	Raw	Finish
Iron	.06 ppm	.02 ppm
Manganese	.42 ppm	.03 ppm

**Filtration:** The chemically treated water then flows by gravity through filters, where the oxidized iron and manganese solids are removed. Specially sized and coated silica sand (filter media) removes the solids from the passing water. The media's special coating absorbs any unoxidized iron and manganese for eventual oxidation by the potassium permanganate.

## WATER TREATMENT PROCESS

**Raw Water Metering and Pre Chlorination:** As raw (well) water enters the treatment plant, chlorine is automatically injected at a dosage proportional to the measured water flow rate.

**Flow Splitting:** The water is divided into two streams of equal flow for travel through two identical sets of filters.

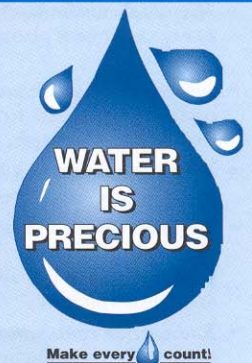
**Chemical Action:** As the raw water flow is split, a chemical called potassium permanganate is added. Aided by the chlorine, the potassium permanganate oxidizes the dissolved iron and manganese, causing metal precipitates or solids to form in the water.

**Disinfection:** Prior to entering the clearwell (a storage reservoir), the water is again chlorinated. Inside the clearwell, the water flows through a simple maze of walls (baffles) to enhance chlorine/water mixing and to allow ample time for complete disinfection.

**High Service Pumps:** The treated, disinfected water is then pumped from the clearwell into the distribution system. The pumps are started and stopped automatically by signals received from the City's two elevated storage tanks. The signals indicate the tanks need water or they are full. As treated water is pumped into the system, fluoride is added and the flow is metered.

The City of Maple Grove in conjunction with the United States Environmental Protection Agency National Water Quality Standards, conducts random samplings of lead and copper levels in 60 residential properties. As required by law, 120 samplings have been completed and additional future testing has been scheduled. To date, all samples have tested within the recommended guidelines set by this agency.

**AFTER HOURS  
WATER, SEWER,  
OR STREET  
EMERGENCIES CALL:  
763-494-5998**



# RESULTS OF MONITORING

No contaminants were detected at levels that violated federal drinking water standards. However, some contaminants were detected in trace amounts that were below legal limits. The table that follows shows the contaminants that were detected in trace amounts last year. (Some contaminants are sampled less frequently than once a year; as a result, not all contaminants were sampled for in 2005. If any of these contaminants were detected the last time they were sampled for, they are included in the table along with the date the detection occurred.)

## KEY TO ABBREVIATIONS:

**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.

**MCL—Maximum Contaminant Level:** 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.

**MRDL—Maximum Residual Disinfectant Level**

**MRDLG—Maximum Residual Disinfectant Level Goal**

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

**90<sup>th</sup> 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 5 samples are taken, the average of the two with the highest levels is taken to determine the 90th percentile level.

**pCi/1—PicoCuries per liter:** A measure of radioactivity.

**ppb—parts per billion:** Which can also be expressed as micrograms per liter (ug/l).

**ppm—parts per million:** Which can also be expressed as milligrams per liter (mg/l).

**N/A—Not Applicable:** Does not apply.

Contaminant (units)	MCLG	MCL	Level Found		Typical Source of Contaminant
			Range (2005)	Average/Result*	
Barium (ppm) (08/09/2002)	2	2	N/A	.12	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Fluoride (ppm)	4	4	.99-1.2	1.12	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.
Haloacetic Acids (HAA5) (ppb)	0	60	N/A	1	By-product of drinking water disinfection.
TTHM (Total trihalo-methanes) (ppb)	0	80	N/A	7.1	By-product of drinking water disinfection.

Contaminant (units)	Level Found		Typical Source of Contaminant
	Range (2005)	Average/Result*	
Radon (pCi/1) (11/13/2001)	N/A	408	Erosion of natural deposits.

\*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.

Radon is a radioactive gas which is naturally occurring in some groundwater. It poses a lung cancer risk when gas is released from water into air (as occurs during showering, bathing, or washing dishes or clothes) and a stomach cancer risk when it is ingested.

Because radon in indoor air poses a much greater health risk than radon in drinking water, an Alternative Maximum Contaminant Level (AMCL) of 4,000 picoCuries per liter may apply in states that have adopted an Indoor Air Program, which compels citizens, homeowners, schools, and communities to reduce the radon threat from indoor air. For states without such a program, the Maximum Contaminant Level (MCL) of 300 pCi/1 may apply. Minnesota plans to adopt an Indoor Air Program once the Radon Rule is finalized.

Contaminant (units)	MRDLG	MRDL	****	*****	Typical Source of Contaminant
Chlorine (ppm)	4	4	.1-.7	.69	Water additive used to control microbes.

\*\*\*\*Highest and Lowest Monthly Average

\*\*\*\*\*Highest Quarterly Average

Contaminant (units)	MCLG	AL	90% Level	# sites over AL	Typical Source of Contaminant
Copper (ppm) (07/14/2004)	N/A	1.3	.76	0 out of 30	Corrosion of household plumbing systems; Erosion of natural deposits.
Lead (ppb) (07/14/2004)	N/A	15	7	0 out of 30	Corrosion of household plumbing systems; Erosion of natural deposits.

Some contaminants do not have Maximum Contaminant Levels established for them. These "unregulated contaminants" are assessed using state standards known as health risk limits to determine if they pose a threat to human health. If unacceptable levels of

an unregulated contaminant are found, the response is the same as if an MCL has been exceeded; the water system must inform its customers and take other corrective actions. In the table that follows are the unregulated contaminants that were detected:

Contaminant (units)	Level Found		Typical Source of Contaminant
	Range (2005)	Average/Result	
Sodium (ppm) (08/09/2002)	N/A	12	Erosion of natural deposits.
Sulfate (ppm) (08/09/2002)	N/A	48	Erosion of natural deposits.

## COMPLIANCE WITH NATIONAL PRIMARY DRINKING WATER REGULATIONS

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.

*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 are available from the Safe Drinking Water Hotline at 1-800-426-4791.*