

# Village of Fox River Grove Water Quality Report –

2010



This year, as in years in past, your tap water met all U.S. and State Environmental Protection Agency (EPA) drinking water health standards. Our system vigilantly safeguards its groundwater supply, and we are working hard to continue providing the best water possible. This report summarizes the quality of water that we provided in 2010. It includes details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies.

## What is a water quality report?

The Illinois EPA requires all communities to provide drinking water quality reports to their customers on an annual basis. They include information on the water system and tables that summarize monitoring data. Consumer awareness and right-to-know were major themes of the 1996 Safe Drinking Water Act Amendments. These amendments confirm the importance of educating the consumer and added new reporting requirements to the operators of community water systems.

## Drinking Water Source.

The Village of Fox River Grove uses groundwater provided by four shallow wells constructed in the Silurian Dolomite aquifer at depths ranging from 120 ft. to 140 ft. (An aquifer is a geological formation that contains water). Two of the wells are located at Water Treatment Plant No. 1, the third and fourth wells are located at Water Treatment Plant No. 2. Each well can produce between 400 and 500 gallons per minute.

## How is the drinking water treated?

Groundwater is pumped from the wells to the treatment facilities where dissolved iron and manganese are then removed with filters. The oxidized aeration is provided to strip any volatile organic compounds out, to improve taste and odor and to oxidize iron and manganese. Fluoride is added to prevent cavities (A concentration of 1 part per million of fluoride which has shown to reduce cavities by 60%). Chlorine is added for disinfection, along with blended poly-phosphate to inhibit corrosion.

Treated water is pumped to the distribution system where water storage is provided in a 500,000-gallon capacity elevated tank located on Algonquin Road. An emergency water main inter-connection with the Village of Lake Barrington provides fire protection back-up.

## Required EPA Educational Information:

Drinking water, including bottled water, may reasonably be expected to contain 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 USEPA's Safe Drinking Water Hotline (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 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. USEPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbial contaminants are available from the USEPA's Safe Drinking Water Hotline (1-800-426-4791).

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 can dissolve naturally occurring minerals and radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Possible contaminants consist of:

- 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, can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharge, oil and gas production, mining or farming.
- Pesticide 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 may be naturally occurring or the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the USEPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems.

Water quality testing is performed on a daily basis, with monthly bacteriological samples collected and submitted to the Illinois Environmental Protection Agency. The Village's water supply is in compliance with all EPA water quality standards and regulations.

The Village currently maintains 20.4 miles of water distribution pipe, in sizes of 4", 6", 8" and 12" diameter. There are 262 fire hydrants that are color-coded according to gallon per minute flow and 1,541 service lines to homes and business. Fire hydrants are inspected and flushed in both spring and fall to ensure they are in good working order and available for fire protection needs. The Village maintains water service lines from the b-box to the main, including the b-box. The homeowner is responsible for the service to the house including the shutoff valve before the water meter. Water meters are read and billed bi-monthly. Every other bi-monthly is estimated. The cost for one thousand gallons of water is \$6.36 plus a base charge of \$44.57 every two months for water and sewer customers as of May 1, 2011

A cross connection safety program has been implemented to protect the public water supply from back flow and back siphoning. A drop in water pressure could result in a reverse flow into the service lines causing contaminants to be drawn into the system from cross-connections. All underground sprinkler systems and fire sprinkler systems are required to have an approved back-flow preventer device installed and tested annually.

The Village's groundwater protection program also works with local business to prevent the accidental introduction of hazardous chemicals into the groundwater.

The Village of Fox River Grove had no water quality violations during 2010.

## COMMON QUESTIONS FROM FOX RIVER GROVE WATER CUSTOMERS

### 1. What is the hardness of our Village water?

The mineral content or water hardness of the Village water is 28 grains per gallon. Anything above 10.5 grains is considered to be very hard water.

### 2. Do I need a water softener if I am on Village water?

Adding a water softener is an individual homeowner's choice. Water that is too soft makes it difficult to remove soap from your hands and might add too much salt to your drinking water. Too hard, and laundry detergents works less effectively and there is a greater chance of excessive scaling of pipes and water fixtures.

### 3. Does Fox River Grove add fluoride to the Village's water?

Yes, fluoride is added to the drinking water to prevent cavities. Water fluoridation is the single most effective public health measure to prevent tooth decay and improve oral health in both children and adults. Studies have shown that for every dollar invested in fluoridation, as much as \$38 is saved in dental treatment costs.

### 4. Is radon a contaminate concern in Fox River Grove's water?

No, radon is not a concern in the Village's water system. Radon that may naturally occur in groundwater, is removed during the aeration phase if our treatment process.

### 5. Why does the water have a chlorine taste or smell?

Chlorine is added during the treatment process as a disinfectant to prevent the re-growth of harmful bacteria in the water distribution system. To remove any chlorine taste or smell, fill a pitcher full of water and refrigerate it overnight with the lid off. The chlorine content will dissipate.

### 6. I have low water pressure, what can I do?

If the pressure is low at only a few sinks, remove the aerator from the faucet and inspect for debris that may be obstructing water flow. If the pressure is low throughout your home many times a softener may malfunction and reduce water pressure. To isolate the softener, close the bypass valve and re-check water pressure. If that does not solve the issue call the Water Department and we will investigate.

### 7. Do you give tours of your water treatment plant?

Yes, we are proud of our facilities and enjoy giving tours. We encourage citizens to schedule a tour and see where their tap water comes from. Please call Tim Zintl, Asst. Public Works Director at (847) 639-8360 to make arrangements.

### 8. Want more information?

More information is available on the Village of Fox River Grove's website [www.foxrivergrove.org](http://www.foxrivergrove.org). The Village does routine water quality testing. A table of results can be obtained at Village Hall or visit the website. If you have other questions about this report or concerning your water system, please contact Tim Zintl, Asst. Supt. Public Works, Water & Sewer Dept. at (847) 639-8360. We want our valued customers to be informed about their water quality. Also, feel welcome to attend any of our regularly scheduled

Public Works committee meetings held on the 1st. Thursday of each month at 7:00 p.m. at the Village Hall, at 305 Illinois Street. Water is a valuable natural resource, please help protect our drinking water and practice good water conservation.

# Annual Drinking Water Quality Report 2010

## Source Water Assessment Summary

Based on information obtained in the Well Site Survey, published in 1989, fourteen possible problem sites were identified within the survey area of Fox River Grove. Furthermore, information provided by the Leaking Underground Storage Tank and Remedial Project Management Sections of the Illinois EPA indicated several additional sites with ongoing remediations which may be of concern. The Illinois EPA has determined that Fox River Grove's wells are susceptible to contamination. This determination is based on a number of criteria including: monitoring conducted at the wells; monitoring conducted at the entry point to the distribution system; and the available hydrogeologic data on the wells. The Illinois Environmental Protection Act provides minimum protection zones of 400 feet for Fox River Grove's wells. These minimum protection zones are regulated by the Illinois EPA. To further minimize the risk to the groundwater supply, the Illinois EPA recommends that five additional activities be assessed. First, the village may wish to enact a "maximum setback zone" ordinance to further protect their water supply. These ordinances are authorized by the Illinois Environmental Protection Act and allow county and municipal officials the opportunity to provide additional protection up to 1,000 feet from their wells. Second,

the water supply staff may wish to revisit their contingency planning documents. Contingency planning documents are a primary means to ensure that, through emergency preparedness, the village will minimize their risk of being without safe and adequate water. Third, the water supply staff is encouraged to review their cross connection control program to ensure that it remains current and viable. Cross connections to either the water treatment plant (for example, at bulk water loading stations) or in the distribution system may negate all source water protection initiatives provided by the village. Fourth, the village should obtain aquifer property data and groundwater flow direction information so the recharge areas for the wells can be mapped. This information can be obtained by completing pump tests on the wells and mass water level measurements on wells finished in the aquifers utilized by the wells. Finally, the Illinois EPA recommends that the village investigate additional source water protection management options to

address land use activities within the recharge areas, when developed. Specifically, these management options must include potential impacts from point and nonpoint sources of groundwater contamination.

## 2010 Regulated Contaminants Detected

### Water Quality Test Results:

Maximum Contaminant Level Goal or MCLG: The level of a contaminant in drinking water below which there is no known risk to health. MCLGs allow for a margin of safety.

Maximum Contaminant Level or 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 residual disinfectant level goal or 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 for the use of disinfectants to control microbial contaminants.

Maximum residual disinfectant level or 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.

Definitions: The following tables contain scientific terms and measures, some of which may require explanation.

ppb: micrograms per liter of parts per billion – or one ounce in 7,350,000 gallons of water.

na: not applicable

Avg: Regulatory compliance with some MCLs are based on running average for monthly samples.

ppm: milligrams per liter or part per million - or one ounce in 7,350 gallons of water.

## Regulated Contaminants Detected

Lead and Copper - Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow. Action Level Goal (ALG): The level of a contaminant in drinking water below which there is no known or expected risk to health. ALGs allow for a margin of safety.								
	Date Sampled	MCLG	Action Level	90th Percentile	# Sites Over AL	Units	Violation	Likely Source of Contaminant
Copper		1.3	1.3	0.903	3	ppm	N	Erosion of natural deposits; Leaching from wood preservatives; corrosion of household plumbing systems
Lead*		0	15	6.08	2	ppb	N	Corrosion of household plumbing systems; Erosion of natural deposits

Disinfectants & Disinfection By-Products	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contaminant
Chlorine		0.7	0.35-0.816	MRDLG=4	MRDL=4	ppm	N	Water additive to control microbes.
HaloAcetic Acids (HAA5)*		0.01	0.01 - 0.01	No goal for the total	60	ppb	N	By-product of drinking water chlorination.
Not all sample results may have been used for calculating the Highest Level Detected because some results may be part of an evaluation to determine where compliance sampling should occur in the future								
Total Trihalomethanes (TTHM)*		24.92	24.92 - 24.92	No goal for the total	80	ppb	N	By-product of drinking water chlorination.
Not all sample results may have been used for calculating the Highest Level Detected because some results may be part of an evaluation to determine where compliance sampling should occur in the future								
Inorganic Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contaminant
Arsenic	08/05/2009	1.43	1.38-1.43	0	10	ppb	N	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production
Barium	08/05/2009	0.117	0.107 - 0.117	2	2	ppm	N	Discharge of drilling wastes; Discharge from metal refineries; erosion of natural deposits.
Iron	08/05/2009	1.14	1.09-1.14		1.0	ppm	N	Erosion from naturally occurring deposits.
Manganese	08/05/2009	51.6	50.1-51.6	150	150	ppb	N	Erosion from naturally occurring deposits.
Nitrate (measured as Nitrogen)		1	0-1.15	10	10	ppm	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Sodium	08/05/2009	84.5				ppm	N	Erosion from naturally occurring deposits; in water softener regeneration.
Radioactive Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contaminant
Combined Radium 226/228	01/21/2009	1.1	1.1 - 1.1	0	5	pCi/L	N	Erosion of natural deposits
Volatile Organic Collection Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contaminant
Trichloroethylene		2	0-0	0	5	ppb	N	Discharge from metal degreasing sites and other factories.

\*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. We 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>.