2013 Consumer Confidence Report Data
FREDONIA WATERWORKS, PWS ID: 24601093

Letter from the Director

It is that time of year when we provide information about the quality of your drinking water, and I am pleased again to report that Fredonia's water has met or surpassed all Federal and State standards for health and safety. Please see the Water Quality Table on page 5 for the details. Last year we pumped 68,622,000 gallons from our wells. The average of the previous five years is 63,160,000 . High water use this year is from seven water main breaks and conducting a more rigorous hydrant flushing program than in past years. We were fortunate that we only had two frozen water services over the winter. Many of our neighboring communities were dealing with frozen laterals well into March. An inspection of our water tower this March did show that ice was forming in the water tower. During the budgeting process, we will look at adding a mixer to the tower to help prevent it from freezing.

The design for the water main under Fredonia Avenue is completed and installation is anticipated to occur during this summer. This will improve pressure on the west side of the village and reduce the potential for water main breaks in Fredonia Avenue once the water main is constructed. We may need to install additional improvements in combination with maintenance activities to the water distribution system in the west part of the Village. The system pressure is low in this area and needs to be improved to be in conformance with accepted standards. We also have plans to install a digital monitoring system in the well houses to provide us additional data on the well operations and eventually provide us with 24/7 monitoring capabilities. We will continue to paint. Other activities planned for the water system include: inspection and cleaning of the Village Hall Reservoir, replacement of two hydrants (There are several hydrants in the Village that are obsolete and repair parts are difficult to obtain. These hydrants currently work fine but we want to begin the process of replacing them before they do not work.), testing of our

large non-residential meters to verify their accuracy, performing system flushing and exercising of the valves to ensure that our system operates as designed.

Water from the Fredonia Water Utility costs less than a penny per gallon. The table below provides you an indication of the value of the water service that we provide.

Item	Cost/gallon
Gasoline	$3.75
Milk	$2.59
Case of Beer	$7.56
Bottled Water	$1.10
Orange Juice	$3.99
Village of Fredonia Water	$0.0015

Our water system meets the Village's demands; however, think about this the next time your mouth goes dry and you could really use a glass of cool, clean water: Analysts with Bank of America Merrill Lynch Global Research warn in a recent report that, when it comes to global drinking water supplies, a "perfect storm" is approaching. "Water scarcity is a pressing people and planet issue," they write, noting that 768 million people around the world have no access to clean drinking water and 2.5 billion are without proper sanitation. Fresh water makes up about 2.5 percent of all the water on earth. Meanwhile, humans have already reached "peak water," according to B of A. That means we're at the limit, or approaching the limit, of environmental, physical and economic demands on the renewable freshwater supply. The report also projects that half of the world's population will be dealing with "water stress" conditions -- defined as when the demand for water is exceeded by the available amount -- by 2030. And by 2050, 45 percent of projected GDP could be at risk, with as many as 50 nations expected to be involved in conflicts over water. http://www.cbsnews.com/news/global-demand-for-water-set-to-exceed-supply// With this article in mind, keep conserving water.

A recent study of ground water within the dolomite aquifer below Green Bay showed elevated levels of Strontium. Exposure to Strontium as an infant can cause strontium rickets – a thickening and shortening of bones. Strontium can also cause mottling of the teeth. Because the aquifer that we draw our water from is also dolomite, we tested our water supply for Strontium. We did find low levels of Strontium in our water supply. One well tested at 1.7 mg/L and the other at 3.8 mg/L. Both these levels are below the EPA recommended limit of 4.0 mg/L and water softeners remove over 90% of the Strontium in the water system. More information on the health effects of Strontium can be found at http://www.dhs.wisconsin.gov/water/strontium.htm

Water System Information

If you would like to know more about the information contained in this report, please contact Roger Strohm at (262) 692-9179.

Opportunity for input on decisions affecting your water quality

First and Third Thursday of every month at the Fredonia Government Center located at 242 Fredonia Avenue. Meetings typically begin at 7:00 PM.

Health Information

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 (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 systems 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 Environmental Protection Agency's safe drinking water hotline (800-426-4791).

Source(s) of Water

Source ID	**Source**	**Depth (in feet)**	Status
1	Groundwater	457	Active
2	Groundwater	360	Active

To obtain a summary of the source water assessment please contact, Roger Strohm at (262) 692-9179.

Educational Information

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, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water, which shall provide the same protection for public health.

Definitions

Term	Definition
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 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.
MFL	million fibers per liter
MRDL	Maximum residual disinfectant level: 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.
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.
mrem/year	millirems per year (a measure of radiation absorbed by the body)
NTU	Nephelometric Turbidity Units
pCi/l	picocuries per liter (a measure of radioactivity)
ppm	parts per million, or milligrams per liter (mg/l)
ppb	parts per billion, or micrograms per liter (ug/l)
ppt	parts per trillion, or nanograms per liter
ppq	parts per quadrillion, or picograms per liter
TCR	Total Coliform Rule

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

Detected Contaminants

Your water was tested for many contaminants last year. **The Village takes almost 700 tests a year to ensure that we are providing safe water to our customers.** We are allowed to monitor for some contaminants less frequently than once a year. The following tables list only those contaminants which were detected in your water. If a contaminant was detected last year, it will appear in the following tables without a sample date. If the contaminant was not monitored last year, but was detected within the last 5 years, it will appear in the tables below along with the sample date.

Disinfection Byproducts

Contaminant (units)	Site	MCL	MCLG	Level Found	Range	Sample Date (if prior to 2013)	Violation	Typical Source of Contaminant
TTHM (ppb)		80	0	9.0	4.0 - 9.0		No	By-product of drinking water chlorination
HAA5 (ppb)		60	60	2	1 - 2		No	By-product of drinking water chlorination

Inorganic Contaminants

Contaminant (units)	Site	MCL	MCLG	Level Found	Range	Sample Date (if prior to 2013)	Violation	Typical Source of Contaminant
ARSENIC (ppb)		10	n/a	4	3 - 4	3/29/2011	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
BARIUM (ppm)		2	2	0.095	0.030 - 0.095	3/29/2011	No	Discharge of drilling wastes; Discharge from metal refineries;

Contaminant (units)	Site	MCL	MCLG	Level Found	Range	Sample Date (if prior to 2013)	Violation	Typical Source of Contaminant
								Erosion of natural deposits
CADMIUM (ppb)		5	5	0.2	0.0 - 0.2	3/29/2011	No	Corrosion of galvanized pipes; Erosion of natural deposits; Discharge from metal refineries; runoff from waste batteries and paints
FLUORIDE (ppm)		4	4	0.6	0.4 - 0.6	3/29/2011	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
NICKEL (ppb)		100		13.0000	4.7000 - 13.0000	3/29/2011	No	Nickel occurs naturally in soils, ground water and surface waters and is often used in electroplating, stainless steel and alloy products.
NITRATE (N03-N) (ppm)		10	10	0.22	0.00 - 0.22		No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
SELENIUM (ppb)		50	50	2	0 - 2	3/29/2011	No	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines
SODIUM (ppm)		n/a	n/a	11.00	10.00 - 11.00	3/29/2011	No	n/a

Contaminant (units)	Action Level	MCLG	90th Percentile Level Found	# of Results	Sample Date (if prior to 2013)	Violation	Typical Source of Contaminant
COPPER (ppm)	AL=1.3	1.3	0.1000	0 of 10 results were above the action level.	7/13/2011	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
LEAD (ppb)	AL=15	0	2.50	0 of 10 results were above the action level.	7/13/2011	No	Corrosion of household plumbing systems; Erosion of natural deposits

Radioactive Contaminants

Contaminant (units)	Site	MCL	MCLG	Level Found	Range	Sample Date (if prior to 2013)	Violation	Typical Source of Contaminant
RADIUM, (226 + 228) (pCi/l)		5	0	2.0	1.5 - 2.0	3/17/2009	No	Erosion of natural deposits

Additional Health Information

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. Fredonia Waterworks 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 or at http://water.epa.gov/drink/index.cfm

Information on Monitoring for Cryptosporidium and Radon

Our water system did not monitor our water for cryptosporidium or radon during 2013. We are not required by State or Federal drinking water regulations to do so.