



VILLAGE OF GRAFTON 2017 ANNUAL DRINKING WATER QUALITY REPORT

April 2018

EXCEPTIONAL WATER QUALITY DELIVERED TO YOUR TAP

The Village of Grafton's Annual Drinking Water Quality Report for 2017 indicates that the Village's drinking water continues to meet or exceed all current Federal and State safe drinking water requirements. This report and all required water quality compliance sampling performed indicates that there were no safe drinking water quality violations reported in 2017.

YOUR SOURCE OF WATER

Grafton's water system obtains its supply from groundwater drawn from six active production wells scattered throughout the Village. All six of Grafton's municipal wells are completed in the Niagara dolomite aquifer and average between 500 to 600 feet in depth. Each well feeds into a common water distribution system divided into east and west pressure zones and delineated roughly by the railway tracks running north to south through the Village. These six wells are capable of pumping 5.2 million gallons per day.

Based upon 2017 water pumpage data, the Water Utility averaged just under 1.1 million gallons per day of pumpage with a maximum demand of 1.9 million gallons over a 24-hour period. The water is generally of high quality although in some locations the water is treated to improve characteristics and to meet safe drinking water standards.

Fluoride is added at all supply wells to prevent dental decay and phosphates are added at three wells to alleviate red water and scale formation. An air stripping treatment process has been implemented at two wells for the removal of low levels of volatile organic chemicals (VOC's). In conjunction with the VOC's treatment, chlorine has been added at these and all other wells to disinfect the water.

The Grafton water supply contains approximately 26 grains of hardness; the Water Utility strongly encourages the use of privately-owned, on-site water softening equipment.

UTILITY PLANNING AND WATER CONSERVATION

The Water Utility continues to plan for future water system improvements and expansion per the recommendations of our Water System Master Plan update completed in January of 2016. The updated Plan provides the Utility with a "roadmap" to follow relative to providing adequate levels of municipal water service through the year 2035.

Water conservation remains an important component of maintaining a reliable source and availability of quality drinking water in the Village. The Water Utility no longer offers a seasonal sprinkling credit for excess water usage. Heavier users of water during the warmer months of the year have the option of installing a water-only deduct meter. Further information is available by contacting the Water Utility's billing department at (262) 375-5330.



EDUCATIONAL INFORMATION

The sources of drinking water for 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:

1. Microbial contaminants such as viruses and bacteria which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
2. 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.
3. Pesticides and herbicides which may come from a variety of sources such as agriculture, urban stormwater runoff and residential uses.
4. 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.
5. Radioactive contaminants which can be naturally occurring or be the result of oil and gas production and mining activities.

All drinking water including bottled water may be expected to contain at least small traces of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. In order to ensure that tap water is safe to drink, the Environmental Protection Agency (EPA) prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Alternately, Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same level of protection for public health.

IMPORTANT HEALTH INFORMATION

Some people are more vulnerable to contaminants in drinking water than the general population, especially those whose immune system has been impaired by disease or treatment. Individuals undergoing chemotherapy, those who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants may be particularly at risk from infections. Those at risk should seek advice about drinking water from their health care providers. Guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the EPA's Safe Drinking Water Hotline toll-free at (800) 426-4791.

ADDITIONAL HEALTH INFORMATION

While Grafton's drinking water supply meets the EPA standard for **arsenic**, it does contain trace levels of the contaminant. The EPA standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. The EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

WATER PUMPAGE & QUALITY INFO

The 2017 maximum daily water pumpage occurred on 12/17/17 (1.879 MG); while the minimum daily pumpage was on 1/20/17 (0.760 MG).

For 2017, the month with the highest average daily water demand was June (1.219 MG) while the month with the lowest average daily demand was February (0.917 MG).

The Village's largest producing well in 2017 was Well #6; located at 215 Oak Street, delivering 126 MG.

Of the total 390.5 MG of water pumped in 2017, 58-percent of the total volume was supplied to the Village's west side pressure zone and 42-percent to the east side.

In 2017, the Utility collected 120 bacti samples from the water distribution system and another 24 samples from the six Village well sites. All 144 bacti samples tested safe.

Average 2017 water system residual values reported: fluoride (0.71 mg/L), free available chlorine (0.32 mg/L) and polyphosphate (0.40 mg/L).

Commonly requested water system inorganic average values: hardness (370 mg/L), iron (0.06 mg/L), chloride (64 mg/L), sodium (32 mg/L) and nitrates (0.9 mg/L).

Sodium hypochlorite (12.5 percent) is fed into the Village's drinking water supply at all well locations for disinfection purposes.

DRINKING WATER TEST RESULTS

Contaminants (Units)	MCL	MCLG	Max. Level Found	Range	Sample Date (if prior 2017)	Violation	Typical Source of Contamination
Inorganic Contaminants							
Arsenic, ppb	10	0	4.0	0.0 – 4.0		No	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium, ppb	2000	2000	150	48.0 – 150		No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Copper, ppb	AL= 1300	1300	490 (90%)	1 of 30 results > AL		No	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Fluoride, ppm	4	4	0.76	0.22 – 0.76		No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Lead, ppb	AL= 15	0	3.9 (90%)	1 of 30 results > AL		No	Corrosion of household plumbing systems; erosion of natural deposits
Nickel, ppb	100	N/A	1.9	1.0 – 1.9		No	Naturally occurs in soils, ground water, and surface waters; used in electroplating, stainless steel and alloy products
Nitrate (NO ₃ -N), ppm	10	10	2.3	0.069 – 2.3		No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Sodium, ppm	N/A	N/A	87.0	9.9 – 87.0		No	N/A

Radioactive Contaminants							
Combined Uranium pCi/L	30	0	0.2	0.2	6/15/2011	No	Erosion of natural deposits
Radium, (226+228) pCi/L	5	0	1.5	1.5		No	Erosion of natural deposits

Volatile Organic Chemicals							
Bromodichloromethane, ppb	80	0	4.1	0.0 – 4.1		No	By-product of drinking water chlorination
Bromoform, ppb	80	0	0.65	0.0 – 0.65		No	By-product of drinking water chlorination
Chloroform, ppb	80	N/A	11.0	0.0 – 11.0		No	By-product of drinking water chlorination
Dibromochloromethane, ppb	80	N/A	1.8	0.0 – 1.8		No	By-product of drinking water chlorination
1,1,1 – Trichloroethane, ppb	200	200	5.4	0.0 – 5.4		No	Discharge from metal degreasing sites and other factories
1,1 Dichloroethylene, ppb	7	7	1.6	0.0 – 1.6		No	Discharge from industrial chemical factories
Cis 1,2 – Dichloroethylene, ppb	70	70	0.77	0.0 – 0.77		No	Discharge from industrial chemical factories
Tetrachloroethylene, ppb	5	0	2.6	0.0 – 2.6		No	Leaching from PVC pipes; discharge from factories and dry cleaners
Trichloroethylene, ppb	5	0	3.8	0.0 – 3.8		No	Discharge from metal degreasing sites and other factories
Carbon Tetrachloride, ppb	5	0	0.0	0.0		No	Discharge from chemical plants and other industrial activities
Vinyl Chloride, ppb	0.2	0	0.0	0.0		No	Leaching from PVC pipes; discharge from plastic factories

Disinfection Byproducts							
TTHM, ppb	80	0	18.1	13.9 – 18.1		No	By-product of drinking water chlorination
HAA5, ppb	60	60	4.6	2.6 – 4.6		No	By-product of drinking water chlorination

DRINKING WATER TEST RESULTS

Contaminants (Units)	MCL	MCLG	Max. Level Found	Range	Sample Date (if prior 2017)	Violation	Typical Source of Contamination
Unregulated Contaminants							
Sulfate, ppm	N/A	N/A	54.0	26.0 – 54.0		No	Occur naturally in many minerals within soils and rock formations containing groundwater
1,4-Dioxane, ppb	N/A	N/A	2.4	0.0 – 2.4	5/26/2015	No	Commercially produced stabilizer and solvent; released through spills and illegal disposal
Chloromethane, ppb	N/A	N/A	0.0	0.0		No	Used previously as aerosol propellant, refrigerant and solvent. Does occur naturally in low levels
Isopropyl benzene, ppb	N/A	N/A	0.22	0.13 – 0.22	5/26/2015	No	Organic compound commonly found in crude oil and refined fuels
Methyl-tert-butyl-ether, ppb	N/A	N/A	0.18	0.18	9/8/2015	No	Leaking underground and above ground fuel storage tanks, refueling spills and pipeline failure
Chlorate, ppb	N/A	N/A	140	0.0 - 140	5/26/2015	No	By-product of drinking water chlorination
Molybdenum, ppb	N/A	N/A	1.8	0.0 – 1.8	5/26/2015	No	Naturally occurring in soils at low levels
Strontium, ppb	N/A	N/A	2400	339 – 2400	5/26/2015	No	Naturally occurring within various soil minerals
Hexavalent chromium, ppb	N/A	N/A	0.046	0.0	5/26/2015	No	Man-made chemical compound commonly found in pigments, metal finishing and wood preservatives
1,1-Dichloroethane, ppb	N/A	N/A	1.8	0.0 – 1.8		No	Used in the manufacture of various chemicals, limited use as solvent, previous use as anesthetic

NOTE: 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. EPA required us to participate in this monitoring.

DETECTED CONTAMINANTS

The Village of Grafton's water supply was tested for many contaminants in 2017. Many of these contaminants are tested for on a quarterly basis while others are sampled for annually. There are certain contaminants that the Village's Water Utility is allowed to monitor less frequently than once per year. The contaminants listed above in the tables were detected in the Village's water supply. If a contaminant was detected in 2017, it will appear in the tables without a sample date. If the contaminant was not monitored last year, but was detected in the last 5 years of compliance sampling, it will appear in the tables along with the actual sample date.

OTHER COMPLIANCE – MONITORING VIOLATION

Description	Contaminant Group	Sample Location	Compliance Period Beginning	Compliance Period Ending
Chem M/R - Reg - No Regular Samples	Fluoride	Distribution System	10/1/2017	10/31/2017

The Village of Grafton Water Utility is required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not your drinking water meets health guidelines and standards. Fluoride is added to the Village's water supply to aid in the prevention of tooth decay. During the compliance period noted in the above table, the Utility collected the required daily fluoride sample; however, failed to submit it to the State Lab of Hygiene for comparative analyses. This resulted in the Utility being issued a **Notice of Noncompliance** on 11/13/17 by the State of WI Department of Natural Resources as the missed sample is considered a monitoring violation. Despite the Utility documenting that the fluoride sample concentration was within all health guidelines and standards; failure to submit to the State for confirmation does not permit the Utility to assure its customers that the quality of drinking water at the time of sampling was within those fluoride standards.

SUMMARY OF WATER QUALITY DATA

The Village of Grafton Water Utility routinely monitors your drinking water according to Federal and State laws. The water quality table included with this report shows the results of our treated water supply monitoring for the period of January 1 to December 31, 2017, unless a prior sampling date is identified.

The table includes many scientific terms and abbreviations. The following definitions may help clarify the data. Please feel free to contact us with any questions.

Non-Detects (ND): Laboratory analysis indicates that the constituent is not present.

Parts per million (ppm) or Milligrams per litre (mg/l): One part per million is roughly equivalent to one minute in two years or one penny in \$10,000.

Parts per billion (ppb) or Micrograms per litre (ug/l): One part per billion is roughly equivalent to one minute in 2,000 years or one penny in \$10,000,000.

Picocuries per liter (pCi/l): A measure of radioactivity.

TCR: Abbreviation for Total Coliform Rule.

Action Level (AL): The concentration of a contaminant, which if exceeded, necessitates treatment or other regulatory requirement.

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.

Maximum Contaminant Level (MCL): The highest level of a contaminant allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

MG: Abbreviation for million gallons.

WHERE CAN I GET MORE INFORMATION?

More information about specific contaminants and their potential health effects may be obtained by calling the EPA's Safe Drinking Water Hotline at (800) 426-4791. Interested persons may also visit the EPA's Drinking Water Requirements home page at <https://www.epa.gov/dwreginfo>. Drinking water quality information specific to the Village of Grafton and its water distribution system may also be obtained through the State of Wisconsin DNR's web site at <http://dnr.wi.gov/topic/DrinkingWater/QualityData.html>.

If you have additional questions about this annual water quality report, please contact Utility Superintendent Tim Nennig at (262) 375-5331. The Utility's Services Facility is located at 1900 Ninth Avenue in the Village of Grafton. General hours of operation are Monday through Friday from 7:00 a.m. until 3:30 p.m. From the first Monday in May through the last Friday before Labor Day, Utility hours are 6:30 a.m. through 4:00 p.m.; Monday through Thursday and Friday from 6:30 a.m. until 10:30 a.m. If you would like to learn more about Utility activities, please consider attending any of the regularly scheduled monthly meetings of the Village of Grafton Board of Public Works. Meetings are typically held at the Municipal Services Facility, 675 North Green Bay Road on the second Monday of each month beginning at 6:00 p.m.