

# City of Plainwell, Michigan 2017 Water Quality Report

The Plainwell Department of Public Works is pleased to provide you with this year's annual Water Quality Report. This report presents information about drinking water in general and Plainwell's water system in particular.

Untreated water contains impurities that are naturally occurring or manmade. As water travels overland or underground, it can pick up substances such as microbes, inorganic and organic chemicals, and radioactive substances. Microbial contaminants such as viruses and bacteria 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 storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming. Pesticides and herbicides may come from a variety of sources such as agriculture, urban storm water runoff and residential uses. Organic chemical contaminants including synthetic and volatile organic compounds are by-products of industrial processes and petroleum production and can also come from gas stations, chemical spills, urban storm water runoff and septic systems. Radioactive contaminants can occur naturally or be the result of oil and gas production and mining activities.

## Plainwell Water System Overview

The City of Plainwell uses water obtained from wells. The City has two high capacity and one lower capacity well that draw ground water from an aquifer underlying the city. We drive these wells with Variable Frequency Drives (VFDs) to maintain a more even water pressure and to reduce distribution system damage from water hammer when wells are starting and stopping.

The water from these wells is relatively pure as it comes from the ground. As the water is pumped from the ground, fluoride is added to aid in the prevention of tooth decay, and chlorine is added as a disinfectant to destroy pathogenic organisms that can be harmful to your health. The clean water is then pumped into the distribution system. Our public works staff monitors our water supply, pumping and treatment processes, and distribution system, and collects and tests water samples from the system each day. These tests ensure that proper chemical levels are maintained and that our water remains free of unwanted contaminants. The water we produce meets or exceeds all State and Federal requirements and our water had no contaminant violation in 2017.

Plainwell updated its Wellhead Protection Program in 2015. This work included evaluating current and future well sites, identifying existing and potential sources of contamination, and developing methods to minimize threats to both developed and future well supplies. We strive to protect our groundwater from the potential of contamination. We ask that everyone help us protect our water sources. If you see questionable activity at or near a manhole, a well house, or anywhere that may impact groundwater, please notify Public Safety at 685-9858 or call 911.

The susceptibility to contamination for Plainwell's operating well fields is determined by the Michigan Department of Environmental Quality (MDEQ). Susceptibility is rated on a six-tier scale from "Very Low" to "Very High" based on geologic sensitivity, water chemistry, and current or potential contaminant sources. According to the DEQ in 2015, our wells were rated "High" in susceptibility. To obtain information on the report, contact Public Works Superintendent Rick Updike at 685-9363 or email [dpw@plainwell.org](mailto:dpw@plainwell.org).

During the monitoring period from January 1, 2017 to September 30, 2017, we did not take the required number of routine samples for Partial Chemistry. Partial Chemistry compounds are tested by collecting a sample and testing that sample for nitrate, nitrite fluoride, and sodium. This did not pose a threat to the quality of the drinking water. Follow-up samples collected during December indicated that all Partial Chemistry compounds were within the standards of the Safe Drinking Water Act. Our staff is working hard to ensure that this does not happen again.

## Interpreting the Data in the Attached Table

All drinking water, including bottled drinking water, may reasonably be expected to contain some impurities. The presence of impurities does not necessarily indicate that the water poses a health risk. The Michigan Department of Environmental Quality (MDEQ) follows regulations developed by the federal government's Environmental Protection Agency (EPA) and Center for Disease Control (CDC). The EPA and CDC established, and MDEQ enforces, a set of Maximum Contaminant Levels (MCLs) to protect public health. MCLs are set at very stringent levels. To understand the possible health effects described for many regulated elements, a person would have to drink two liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immune-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, persons with HIV, AIDS or other immune system disorders, the elderly and infants can be particularly at risk from infections. These people should seek advice from their health care providers about drinking water. EPA/CDC guidelines for appropriate means to lessen risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline at 800-426-4791.

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 in service lines and building plumbing. Plainwell is responsible for providing high quality drinking water, but we cannot control the materials used in your private plumbing. If your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30-seconds before using the 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 [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead)

We monitor for potential contaminants in the water supply to meet all regulatory requirements. The attached table shows that our system had no violations. Some substances were detected but the EPA has determined that your water is safe at these levels.

We make improvements every year to enhance our ability to supply safe, dependable water to our customers and these improvements may result in rate adjustments. Thank you for understanding this, and for trusting us to provide your family with clean, quality water.

The 2017 Water Quality Report will not be mailed except by request. Copies are available from Public Works or City Hall during normal business hours, and on the city web site at [www.plainwell.org/reports](http://www.plainwell.org/reports). You may request a paper or emailed copy from Public Works at [dpw@plainwell.org](mailto:dpw@plainwell.org).

**Plainwell 2017 Water Quality Data**

This table shows the results of our monitoring for regulated substances during the period of January 1<sup>st</sup> to December 31<sup>st</sup>, 2017. It is important to remember that the presence of these constituents does not necessarily pose a health risk.

**REGULATED SUBSTANCES**

Substance	Sample Dates	Violation	Highest Detect	Range of Detect	Unit of Measure	MCLG	MCL	Likely Sources of Contamination
Combined Radium	07-2015	No	0.2	0 – 0.2	pCi/L	0	5	Erosion of natural deposits
Barium (ME)	04-2009	No	0.08	0.07-0.08	ppm	2	2	Erosion of natural deposits
Mercury	04-2009	No	0.0	ND	ppm	2	2	Erosion of natural deposits; discharge from factories; runoff from cropland
Selenium	04-2009	No	0.0	ND	ppm	50	50	Erosion of natural deposits
Fluoride	07-2017	No	0.55	0.42 – 0.55	ppm	4	4	Erosion of natural deposits
Nitrate (as Nitrogen)	07-2017	No	1.2	0.7 – 1.2	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage.

Substance	Sample Dates	Violation	Highest RAA	Range of Detect	Unit of Measure	MCL	Likely Sources of Contamination
Total Trihalomethanes	07-2017	No	17	17	ppb	80	By-products of water disinfection
Haloacetic Acids	07-2017	No	0	0	ppb	60	By-products of water disinfection
Gross Alpha	07-2015	No	0.95	0.12 – 0.95	pCi/L	15	Erosion of natural deposits

Substance	Sample Dates	Violation	Highest RAA	Range of Detect	Unit of Measure	MRDL	MRDLG	Likely Sources of Contamination
Chlorine Residual	Monthly	No	0.63	0.4 – 0.8	ppm	4	4	By-products of water disinfection

**SUBJECT TO ACTION LEVEL**

Substance	Sample Date	Violation	Range of Detect	90 <sup>th</sup> Percentile	Unit of Measure	Action Level	No. of Samples Above AL	Likely Sources of Contamination
Copper**	06-2017	No	0.02 - .220	0.2	ppm	1.3	0	Corrosion of household plumbing systems.
Lead**	06-2017	No	0 – 4	2	ppb	15	0	Corrosion of household plumbing systems.

\*\* Lead and copper are not found in your drinking water as it leaves the main and enters the service lateral.

**UNREGULATED SUBSTANCES\*\*\***

Substance	Sample Date	Violation	Range Detected	Unit of Measurement	Likely Sources of Contamination
Sodium	07-2017	No	6.86 - 58	ppm	Erosion of natural deposits

\*\*\* Unregulated contaminants are those for which the EPA has not established drinking water standards. Our monitoring helps the EPA to determine where certain contaminants occur and whether it needs to regulate those contaminants.

<b>DEFINITIONS</b>	<b>Action Level (AL)</b> – the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
	<b>Maximum Contaminant Level (MCL)</b> - 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.
	<b>Maximum Contaminant Level Goal (MCLG)</b> - 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.
	<b>Maximum residual disinfectant level (MRDL)</b> - Highest level of disinfectant allowed in drinking water; there is convincing evidence that use of a disinfectant is necessary to control microbials.
	<b>Maximum residual disinfectant level goal (MRDLG)</b> - Level of 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.
	<b>Non-Detects (ND)</b> – laboratory analysis indicates that the constituent is not present.
	<b>Parts per billion (ppb) or Micrograms per liter</b> – one part per billion corresponds to one minute in 2000 years, or a single penny in \$10,000,000.
	<b>Parts per million (ppm) or Milligrams per liter (mg/l)</b> – one part per million corresponds to one minute in two years or a single penny in \$10,000.
<b>RAA</b> – Running annual average. For most contaminants, this is calculated quarterly.	

The following information is provided to assist you in installing or regulating your water conditioning systems.

Parameter Tested	Result
Hardness (as CaCO3)	Range of 286 - 310, average of 299 or 17.5 grains
Iron	Range of 0 - 0.293, average of 0.111

If you have any questions about this report or concerning your water utility, please contact the Plainwell Department of Public Works at 685-9363 Monday through Friday 7 AM – 3 PM. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency (EPA) Safe Drinking Water Hotline at 1-800-426-4791.