



2017 Water Quality Report

This report covers the City of Petoskey's drinking water quality for the 2017 calendar year. The report is a snapshot of the quality of the water that the City provides. 594,061,000 gallons of water were produced for the water system. Included are details about where your water comes from, what it contains, and how it compares to Environmental Protection Agency (EPA) and state standards.

Your water comes from 7 groundwater wells. The State performed an assessment of the City's source water to determine the susceptibility or the relative potential of contamination. The susceptibility rating is on a seven-tiered scale from "very-low" to "very-high" based on geologic sensitivity, well construction, water chemistry and contamination sources. The MDEQ completed an assessment of the City of Petoskey source water in 2015. A determination of sensitivity and susceptibility to contamination was made by reviewing the City's source water geology, well construction, water chemistry, and potential contaminant sources near the wells. The Department of Environmental Quality has determined in that report the City's wells have a low to moderate geologic sensitivity with an overall very low to moderate susceptibility to contamination. This report is available upon request.

There are no significant sources of contamination in the City's water supply. The City is making efforts to protect our water sources. The City along with the MDEQ have completed the delineation study in 2015.

If you would like to know more about the report, please contact Jason Berndt of the Michigan Department of Environmental Quality. Jason can be reached by email at Berndtj1@michigan.gov.

- **Contaminants and their presence in water**
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 **EPA's Safe Drinking Water Hotline (800-426-4791)**.

Well	Depth of Well in feet	Geological Sensitivity
WL002	258	Moderate Low
WL004	405	Low
WL010	460	Low
WL008	565	Moderate
WL009	565	Moderate Low
WL011	542	Moderate Low
WL012	537	Moderate Low

- **Vulnerability of sub-populations** 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 and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).
- **Sources of drinking water** The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. City water comes from 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 and residential uses.

- **Radioactive contaminants**, which can be naturally occurring or be the result of oil and gas production and mining activities.
- **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.

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. Food and Drug Administration regulations establish limits for contaminants in bottled water which provide the same protection for public health.



Water Quality Data

The table below lists all the drinking water contaminants that the City detected during the 2017 calendar year. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in this table is from testing done January 1 – December 31, 2017. The State allows the City to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. All of the data is representative of the water quality, but some are more than one-year-old.



Terms and abbreviations used below:

- 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 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 (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.
- Maximum Residual Disinfectant Level Goal (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 of the use of disinfectants to control microbial contaminants.
- N/A: not applicable
- ND: not detectable at testing limit
- ppb: parts per billion or micrograms per liter
- ppm: parts per million or milligrams per liter
- pCi/l: picocuries per liter (a measure of radioactivity)
- Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

Regulated Contaminant	MCL, TT, or MRDL	MCLG or MRDLG	Level Detected	Range	Year Sampled	Violation Yes / No	Typical Source of Contaminant
Inorganic Contaminants							
Arsenic (ppb)	10	0	ND	ND	2015	N	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Barium (ppm)	2	2	0.09	ND to 0.09	2015	N	Discharge of drilling wastes; Discharge of metal refineries; Erosion of natural deposits
Nitrate (ppm)	10	10	0.28	ND to 0.28	2017	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Fluoride (ppm)	4	4	1.7	0.87 to 1.7	2017	N	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Sodium ¹ (ppm)	N/A	N/A	43	4.4 to 43	2017	N	Erosion of natural deposits
Disinfectants & Disinfection By-Products							
TTHM - Total Trihalomethanes (ppb)	80	N/A	11.8	11.8	2017	N	Byproduct of drinking water disinfection
HAA5 Haloacetic Acids (ppb)	60	N/A	4	ND to 4	2017	N	Byproduct of drinking water disinfection
Chlorine ² (ppm)	4	4	<u>RAA</u> 1.1	1.15 to 1.65	2017	N	Water additive used to control microbes

Radioactive Contaminants							
Alpha emitters (pCi/L)	15	0	3.6	ND-3.6	2015	N	Erosion of natural deposits
Combined radium (pCi/L)	5	0	2.71	ND-2.71	2015	N	Erosion of natural deposits
Microbiological Contaminants							
Total Coliform (total number or % of positive samples/month)	TT	N/A	N/A	N/A	2017	N	Naturally present in the environment
<i>E. coli</i> in the distribution system (positive samples)	See <i>E. coli</i> ^β note below	0	0	N/A	2017	N	Human and animal fecal waste
Fecal Indicator – <i>E. coli</i> at the source (positive samples)	TT	N/A	0	N/A	2017	N	Human and animal fecal waste
Inorganic Contaminant Subject to AL	AL	MCLG	Your Water ⁴	Year Sample d	# of Samples Above AL	Does System Exceed AL? Yes/No	Typical Source of Contaminant
Lead (ppb)	15	0	2.0	2015	0	N	Corrosion of household plumbing systems; Erosion of natural deposits
Copper (ppm)	1.3	1.3	.5	2015	0	N	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

¹ Sodium is not a regulated contaminant.

² The chlorine “Level Detected” was calculated using a running annual average.

³ *E. coli* MCL violation occurs if: (1) routine and repeat samples total coliform-positive and either is *E. coli*-positive, or (2) supply fails to take all required repeat samples following *E. coli*-positive routine sample, or (3) supply fails to analyze total coliform-positive repeat sample for *E. coli*.

⁴ 90 percent of the samples collected were at or below the level reported for our water.

Information about Lead 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. The City of Petoskey 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://www.epa.gov/safewater/lead>.

Water Hardness The City of Petoskey pumps the water from underground aquifers which have contact with different type of rock formations. The City's drinking water hardness ranges from 236 to 294 ppm. The hardness range is from a sample taken from City wells during different times of the year. This is equivalent to 13 to 17 grains of hardness. Hardness is caused by impurities dissolved in the water; calcium and magnesium. When a pan of water is heated and allowed to air dry often a white residue is left behind. This residue is the calcium. Water softeners use either sodium (salt) or with potassium (salt substitute) to replace the calcium and or magnesium. Some of these rocks are limestone (calcium based) or rocks that have iron deposits. The iron dissolves into the water. When the water is exposed to oxygen, the iron "oxidizes" (binds iron and oxygen together) turning the water reddish in color. The iron concentration ranges from ND to 0.13 ppm.

Monitoring and Reporting to the DEQ Requirements The State and EPA require the City to test water on a regular basis to ensure its safety. The City met all the monitoring and reporting requirements for 2017.

The City will update this report annually and will keep you informed of any problems that may occur throughout the year, as they happen. Copies are available at City Hall, previous year's information on water quality is available on the City's website. This report will not be sent to you.

The City invites public participation in decisions that affect drinking water quality. The City Council meetings are the first and third Monday of each month. These meetings are held at City Hall located at 101 East Lake Street, Petoskey, Michigan 49770. Please refer to the City website for any information on these meetings. For more information about your water, or the contents of this report, contact waterquality@petoskey.us or Sherrie Elliott or Martin Flynn in the City of Petoskey Water Division at 231-347-2500. For more information about safe drinking water, visit the U.S. Environmental Protection Agency at www.epa.gov/safewater or the Michigan Department of Environmental Quality website at www.michigan.gov/deq.