

2018 Water Quality Report for Village of Pentwater

This report covers the drinking water quality for Village of Pentwater for the 2018 calendar year. This information is a snapshot of the quality of the water that we provided to you in 2018. 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 [THREE (3)] groundwater wells, each over Approximately 200 feet deep. The State performed an assessment of our 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 susceptibility of our source is Moderately Low for Well # 1 and Very High for Wells #2 and #3. If you would like to know more about the report please contact Village Hall at 327 South Hancock Street or call 231-869-8301 or call DPW at 231-869-4327. Or email for request Manager@pentwatervillage.org

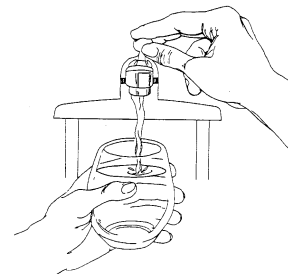
There are no Significant sources of contamination in our water supply. We are making efforts to protect our sources by PARTICIPATION IN THE WELLHEAD PROTECTION PROGRAM.

- **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)**.
- **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 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 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. Our 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 we detected during the 2018 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, 2018. The State allows us 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.
- **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.
- **HRAA:** Highest running annual average **RAA:** Running annual average **HD:** Highest Detection

Regulated Contaminant	MCL,	MCL G	Level Detected	Year Sampled	Violation Yes / No	Typical Source of Contaminant
Arsenic (ppb)	10	0	H 7.1ppb L 4.2 ppb HRAA 5.3 ppb	2018	no	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Sodium ¹ ppm	NA	NA	HD 64 ppm	2018	no	Erosion of natural deposits
Barium (ppm)	2	2	0.12 ppm	2013	no	Discharge of drilling wastes; Discharge of metal refineries; Erosion of natural deposits
Fluoride (ppm)	4	4	.46 ppm	2018	no	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
TTHM - Total Trihalomethanes (ppb)	80	N/A	2.1 ppb	2018	no	Byproduct of drinking water disinfection
HAA5 Haloacetic Acids (ppb)	60	N/A	3.0 ppb	10/10/2018	no	Byproduct of drinking water disinfection
Chlorine ² (ppm)	4	4	H 0.88 ppm L 0.07 ppm HRAA 0.29 ppm	2018	no	Water additive used to control microbes
Total Coliform (total number or % of positive samples / month)	TT	NA	NA	2018	no	Naturally present in the environment
E. Coli in the distribution system (positive samples)	See E ³ Coli Note below		NA	2018	no	Human and animal fecal waste
Fecsl indicator- E. Coli at the source (positive samples)	TT	NA	NA	2018	no	Human and animal fecal waste

Inorganic Contaminant Subject to AL	AL	MCL G	Your Water ⁴	Sample Date	Does System Exceed AL? Yes / No	Typical Source of Contaminant
Lead (ppb)	15	0	7.0 ppb	09/23/2015	no	Corrosion of household plumbing systems; Erosion of natural deposits
Copper (ppm)	1.3	1.3	0.47 ppm	06/23/2015	no	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.

Additional Monitoring

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

Unregulated Contaminant Name	Level Detected	Year Sampled	Comments
[Name of Unregulated Contaminant] (unit)			Results of monitoring are available upon request.
Carbamates	ND	2018	Sources such as agricultural runoff
Pesticides	ND	2018	Sources such as agricultural runoff
Chlorinated Acid Herbicides	ND	2018	Sources such as agricultural runoff
Gross Alpha (Radiological)	ND	2018	Naturally occurring or the result of oil and gas production and mining activities.
Radium 226 & Radium 228	ND	2018	Naturally occurring or the result of oil and gas production and mining activities.

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. Village of Pentwater 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 (800) 426-4791 or at <http://www.epa.gov/safewater/lead>.

Copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilton's Disease should consult their personal doctor.

While your drinking water meets EPA's standards for Arsenic, it does contain low levels of arsenic. EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. 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.

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that the potential pathway exists through which contamination may enter the drinking water distribution system. We are required to conduct assessments to identify problems and to correct the problems that were found during these assessments.

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

We 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 Village Hall at 327 S. Hancock Street or Contact Christopher Brown, Village Manager at 231-869-8301 or call DPW at 231-869-4327. Or email for request Manager@pentwatervillage.org. This report will not be sent to you. You may also visit our Village website at <https://pentwatervillage.org/dpw-department-of-public-works.php>.

We invite public participation in decisions that affect drinking water quality. [2ed Monday of every month, at village hall, 6:00 PM EST [COUNCIL MEETINGS]. For more information about your water, or the contents of this report, contact ; Christopher Brown, Village Manager (231)869-8301 manager@pentwatervillage.org (web site if applicable)]. For more information about safe drinking water, visit the U.S. Environmental Protection Agency at www.epa.gov/safewater/.

Instructions to Water Supplier

****Note: The CCR should contain the most recent data back to 5 years.**

1. Under "Level Detected" and "Range":

- enter the highest test result from the lab report using the appropriate unit of measure as listed in the table **UNLESS** a contaminant's compliance is determined based on a running annual average. Then, the highest running annual average would be listed in the table.
- range of levels detected such as "12 to 48" (if you sample more than once or from multiple locations)
- average and range of levels detected such as "35" and "12 to 48" (for unregulated contaminants)
- enter the test result from the lab report for sodium, even if it was not detected
- range of levels detected and highest running annual average such as "range 12 to 48, highest running annual average 35" (if compliance is based on a running annual average)

2. Under "Year Sampled" enter the year sampled (if earlier than the year of this report) of **detected** contaminants for which monitoring is done less frequently than annually (no data older than five years need be included).

3. Under "Violation Yes / No" enter "No" for each contaminant whose level was at or below the MCL. Enter "Yes" if the level was above the MCL (usually calculated as a running annual average). Below the table, explain each violation including the length of the violation, the steps taken to remedy the situation (such as posting a public notice, finding alternative sources of drinking water, or changing water treatment).

4a. If arsenic was detected above 5 ppb but at or below 10 ppb include the following:

While your drinking water meets EPA's standard for arsenic, it does contain low levels of arsenic. EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. 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.

4b. If the arsenic level was above 10 ppb, calculated as a running annual average, enter "Yes" in the table under "Violations." Include an explanation of the length of the violation and steps taken to remedy the situation. Also, include the following:

Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.

4c. If total trihalomethanes (TTHMs) were detected above 80 ppb, enter "Yes" in the table under "Violations." Include an explanation of the length of the violation and steps taken to remedy the situation. Also, include the following:

Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.

4d. If haloacetic acids (HAA5s) were detected above 60 ppb, enter "Yes" in the table under "Violations." Include an explanation of the length of the violation and steps taken to remedy the situation. Also, include the following:

Some people who drink water containing haloacetic acids in excess of EPA's standard over many years may have an increased risk of getting cancer.

4e. Surface water systems or ground water under direct influence of surface water, include the following:

Many water suppliers add a disinfectant to drinking water to kill germs such as giardia and E.coli. Especially after heavy rainstorms, your water system may add more disinfectant to guarantee that these germs are killed.

4f. If the chlorine running annual average is detected above the MRDL for any quarter, enter "Yes" in the table under "Violations." Include an explanation of the length of the violation and steps taken to remedy the situation. Also include the following:

Some people who use drinking water containing chlorine well in excess of EPA's standard could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine well in excess of EPA's standard could experience stomach discomfort.

5. If nitrate was detected above 5ppm but below 10 ppm include the following:

Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask for advice from your health care provider.

6. If nitrate was detected above the MCL (10 ppm) enter "Yes" in the table under "Violations." Include an explanation of the length of the violation and steps taken to remedy the situation. Also include the following:

Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill, and if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.

7. If any samples detected Nitrite above the MCL (1 ppm), enter "Yes" in the table under "Violations." Include an explanation of the length of the violation and steps taken to remedy the situation. Also include the following:

Infants below the age of six months who drink water containing nitrite in excess of the MCL could become seriously ill, and if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.

8. If another contaminant was detected above the MCL, call your MI DEQ, drinking water district engineer or analyst for mandatory language on potential adverse health effects or special education statements.

9. If the supply sampled for lead and copper, the water supply is required to notify the occupants of the buildings/homes tested of the lead results (even if not detected). If the water supply failed to make this notification, include the following:

During the year, we failed to provide lead results to persons served at the sites that were tested as required by the Lead and Copper Rule.

10. If lead or copper was detected above the action level (15 ppb for lead, 1.3 ppm for copper) in any sample, enter the "Number of Samples Above the Action Level" in the table, and include the following, as appropriate:

[Lead] Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

[Copper] Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.

11. If the 90th percentile for lead or copper was above the action level (15 ppb for lead, 1.3 ppm for copper), explain the situation and what steps you took to lower the concentration of lead or copper, such as changing water treatment.

12. If you detected total coliform, enter the highest number of positive samples collected in any one month under "Number Detected." (If you routinely collect 40 or more samples, include the highest percentage of positive samples in any one month and change the heading to "Percent Detected.")

13. If monitoring requirements were not met, explain the violation such as:

During the monitoring period from _____ to _____ we did not take the required number of routine samples for [enter contaminant name]. This violation did not pose a threat to the quality of the drinking water. [FURTHER EXPLAIN WHAT HAPPENED, ACTIONS TAKEN TO REMEDY THE SITUATION, AND STEPS TAKEN TO PREVENT ANOTHER VIOLATION.]

14. If a level 1 assessment or a level 2 assessment was required, include the following, as appropriate:

(A) During the past year we were required to conduct [INSERT NUMBER OF LEVEL 1 ASSESSMENTS] level 1 assessment(s). [INSERT NUMBER OF LEVEL 1 ASSESSMENTS] level 1 assessment(s) were completed. In addition, we were required to take [INSERT NUMBER OF CORRECTIVE ACTIONS] corrective actions and we completed [INSERT NUMBER OF CORRECTIVE ACTIONS] of these actions.

(B) During the past year [INSERT NUMBER OF LEVEL 2 ASSESSMENTS] level 2 assessments were required to be completed for our water supply. [INSERT NUMBER OF LEVEL 2 ASSESSMENTS] Level 2 assessments were completed. In addition, we were required to take [INSERT NUMBER OF CORRECTIVE ACTIONS] corrective actions and we completed [INSERT NUMBER OF CORRECTIVE ACTIONS] of these actions.

15. If a level 1 assessment or a level 2 assessment was required but not completed, or the identified sanitary defects were not corrected, include the following, as appropriate:

During the past year we failed to conduct all of the required assessment(s).

During the past year we failed to correct all identified defects that were found during the assessment.

16. If a level 1 assessment or a level 2 assessment was required that was not due to an *E. coli* MCL violation, include the following:

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct the problems that were found during these assessments.

17. If a level 2 assessment was required due to a *E. coli* MCL violation, include the following:

E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely compromised immune systems. We found *E. coli* bacteria, indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct the problems that were found during these assessments.

We were required to complete a level 2 assessment because we found *E. coli* in our water system. In addition, we were required to take [INSERT NUMBER OF CORRECTIVE ACTIONS] corrective actions and we completed [INSERT NUMBER OF CORRECTIVE ACTIONS] of these actions.

18. If *E. coli* was detected and the *E. coli* MCL was violated, include the following, as appropriate:

(A) We had an *E. coli*-positive repeat sample following a total coliform-positive routine sample.

(B) We had a total coliform-positive repeat sample following an *E. coli*-positive routine sample.

(C) We failed to take all required repeat samples following an *E. coli*-positive routine sample.

(D) We failed to test for *E. coli* when a repeat sample tests positive for total coliform.

19. If the groundwater supply has any uncorrected significant deficiency, as designated by the DEQ, or fecal indicator positive source sample result during the year, include the following elements:

(A) Nature of the significant deficiency or source of the fecal contamination, if known, and the date(s).

(B) Whether the fecal contamination has been addressed and date addressed.

(C) For unaddressed significant deficiencies and unaddressed fecal contamination, the approved plan and schedule for correction, including interim measures, and progress to date.

(D) The potential health effects of the fecal indicator positive source sample.