

## 2017 Water Quality Report

## Providence Water Works

KY1170361

Manager: Terry L. Rice

Contact: Terry L. Rice

Phone: 270-667-7332

Address: 625 Cedar Street

Providence, KY 42450

Meetings: Providence City Hall

First & Third Monday at 7:00 PM

Providence treats surface water from Providence City Lake and from the Tradewater River. Water from the river is used to maintain adequate levels within the lake. The Source Water Assessment for Providence has been divided into 3 protection zones. For the lake zone 1 extends one mile upstream from the intake, zone 2 extends 5 miles upstream, and zone 3 extends 10 miles upstream. For the river zone 1 extends 5 miles upstream, zone 2 extends 10 miles upstream, and zone 3 extends 25 miles upstream.

Most of the potential contaminant sites were located in zone 3 several miles from the intake. The majority of the potential contaminant sources are considered to be of moderate concern there are several potential contaminant sources that are of high concern. Areas of high concern include fuel storage tanks, underground injection sites, landfills, oil and gas wells, and agricultural activities. Another area of medium concern includes the major highways where the potential of chemical spills due to accidents exists. The Source Water Assessment can be reviewed at the Providence Water Department.

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 may be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

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 may 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, (sewage plants, septic systems, livestock operations, or wildlife). Inorganic contaminants, such as salts and metals, (naturally occurring or from stormwater runoff, wastewater discharges, oil and gas production, mining, or farming). Pesticides and herbicides, (stormwater runoff, agriculture or residential uses). Organic chemical contaminants, including synthetic and volatile organic chemicals, (by-products of industrial processes and petroleum production, or from gas stations, stormwater runoff, or septic systems). Radioactive contaminants, (naturally occurring or from oil and gas production or 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 to provide the same protection for public health.

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).

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. Your local public water system 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>.

### Some or all of these definitions may be found in this report:

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 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 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.

Below Detection Levels (BDL) - laboratory analysis indicates that the contaminant is not present.

Not Applicable (N/A) - does not apply.

Parts per million (ppm) - or milligrams per liter, (mg/L). One part per million corresponds to one minute in two years or a single penny in \$10,000.

Parts per billion (ppb) - or micrograms per liter, (µg/L). One part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

Parts per trillion (ppt) - one part per trillion corresponds to one minute in 2,000,000 years, or a single penny in \$10,000,000,000.

Parts per quadrillion (ppq) - one part per quadrillion corresponds to one minute in 2,000,000,000 years or one penny in \$10,000,000,000,000.

Picocuries per liter (pCi/L) - a measure of the radioactivity in water.

Millirems per year (mrem/yr) - measure of radiation absorbed by the body.

Million Fibers per Liter (MFL) - a measure of the presence of asbestos fibers that are longer than 10 micrometers.

Nephelometric Turbidity Unit (NTU) - a measure of the clarity of water. Turbidity has no health effects. However, turbidity can provide a medium for microbial growth.

Turbidity is monitored because it is a good indicator of the effectiveness of the filtration system.

Variances & Exemptions (V&E) - State or EPA permission not to meet an MCL or a treatment technique under certain conditions.

Action Level (AL) - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system shall follow.

Treatment Technique (TT) - a required process intended to reduce the level of a contaminant in drinking water.

Spanish (Español) Este informe contiene información muy importante sobre la calidad de su agua beber. Tradúzcalo o hable con alguien que lo entienda bien.

To request a paper copy call (270) 667-2511.

The data presented in this report are from the most recent testing done in accordance with administrative regulations in 401 KAR Chapter 8. As authorized and approved by EPA, the State has reduced monitoring requirements for certain contaminants to less often than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data in this table, though representative, may be more than one year old.

	Allowable Levels	Highest Single Measurement	Lowest Monthly %	Violation	Likely Source of Turbidity
Turbidity (NTU) TT * Representative samples of filtered water	No more than 1 NTU* Less than 0.3 NTU in 95% of monthly samples	0.2	100	No	Soil runoff

**Regulated Contaminant Test Results**

Contaminant [code] (units)	MCL	MCLG	Report Level	Range of Detection	Date of Sample	Violation	Likely Source of Contamination
Arsenic [1005] (ppb)	10	N/A	0.5	0.5 to 0.5	Feb-17	No	Natural erosion; runoff from orchards or glass and electronics production wastes
Barium [1010] (ppm)	2	2	0.022	0.022 to 0.022	Feb-17	No	Drilling wastes; metal refineries; erosion of natural deposits
Copper [1022] (ppm) sites exceeding action level 0	AL = 1.3	1.3	0.209 (90 <sup>th</sup> percentile)	0.0028 to 0.982	Jul-17	No	Corrosion of household plumbing systems
Fluoride [1025] (ppm)	4	4	0.60	0.6 to 0.6	Feb-17	No	Water additive which promotes strong teeth
Lead [1030] (ppb) sites exceeding action level 1	AL = 15	0	7 (90 <sup>th</sup> percentile)	0 to 26	Jul-17	No	Corrosion of household plumbing systems
Nickel (ppb) (US EPA remanded MCL in February 1995)	N/A	N/A	2.2	2.2 to 2.2	Feb-17	No	N/A
Atrazine [2050] (ppb)	3	3	0.3	BDL to 0.5	Aug-17	No	Runoff from herbicide used on row crops
Simazine [2037] (ppb)	4	4	BDL	BDL to 0.3	May-17	No	Herbicide runoff
Total Organic Carbon (ppm) (measured as ppm, but reported as a ratio)	TT*	N/A	1.56 (lowest average)	1.23 to 2.27 (monthly ratios)	2017	No	Naturally present in environment.
*Monthly ratio is the % TOC removal achieved to the % TOC removal required. Annual average must be 1.00 or greater for compliance.							
Chlorine (ppm)	MRDL = 4	MRDLG = 4	0.95 (highest average)	0.23 to 2.01	2017	No	Water additive used to control microbes.
HAA (ppb) (Stage 2) [Haloacetic acids]	60	N/A	39 (high site average)	15 to 76 (range of individual sites)	2017	No	Byproduct of drinking water disinfection
TTHM (ppb) (Stage 2) [total trihalomethanes]	80	N/A	67 (high site average)	9 to 124.5 (range of individual sites)	2017	No	Byproduct of drinking water disinfection.

	Average	Range of Detection
Fluoride (added for dental health)	0.8	0.47 to 1.23
Sodium (EPA guidance level = 20 mg/L)	17.5	17.5 to 17.5

Maximum Contaminant Levels (MCL's) are set at very stringent levels. To understand the possible health effects described for many regulated contaminants, a person would have to drink 2 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.

## Violations

Within the previous few years we have received several violations when our HAA and TTHM values exceeded the MCLs. We have taken additional steps to change treatment processes, remove natural organic matter, and increased flushing of water lines. We are also monitoring water storage tank levels and water flow patterns within the distribution system. Public notices were distributed for the following HAA and TTHM violations:

2016-9915228 – HAA MCL – 0.067 mg/L - 7/1/2015-9/30/2015  
2016-9915229 – TTHM MCL – 0.092 mg/L – 7/1/2015-9/30/2015  
2016-9915233 – HAA MCL – 0.075 mg/L – 10/1/2015-12/31/2015  
2016-9915234 – TTHM MCL – 0.101 mg/L – 10/1/2015-12/31/2015  
2016-9915237 – HAA MCL – 0.085 mg/L – 1/1/2016-3/31/2016  
2016-9915238 – TTHM MCL – 0.106 mg/L – 1/1/2016-3/31/2016  
2016-9915239 – HAA MCL – 0.076 mg/L – 4/1/2016-6/30/2016  
2016-9915240 – TTHM MCL – 0.100 mg/L – 4/1/2016-6/30/2016  
2016-9915241 – HAA MCL – 0.077 mg/L – 7/1/2016-9/30/2016  
2016-9915242 – TTHM MCL – 0.093 mg/L – 7/1/2016-9/30/2016

Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer. 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 systems, and may have an increased risk of getting cancer. Most of the problems have been resolved and current TTHM and HAA test results are within compliance levels.

2017-9915243 – We received this violation because some of the above mentioned HAA and TTHM public notices were done incorrectly. Public notices for violations 2016-9915228 and 2016-9915229 were turned in late, with no approved extension, and the results reported were incorrect. The results should have been 0.067 mg/L for HAA and 0.092 mg/L for TTHM. Instead they were reported as 0.076 mg/L for HAA and 0.130 mg/L for TTHM. The public notice also reported results incorrectly for 2016-9915233 and 2016-9915234. Results should have been reported as 0.075 mg/L for HAA and 0.101 mg/L for TTHM, but were incorrectly reported as 0.095 mg/L for HAA and 0.120 mg/L for TTHM.

2017-9915244 – We received this violation because the public notices for the above mentioned HAA and TTHM violations 2016-9915241 and 2016-9915242 incorrectly stated the results as 0.071 mg/L for HAA and 0.089 mg/L for TTHM when the correct results should have been 0.077 mg/L for HAA and 0.093 mg/L for TTHM.

2016-9915230 (OEL) and 2016-9915232 (SWTR-Filter) The public notices for these two violations were included in our 2015 CCR. However, they were never closed out by Division of Water because the CCR certification package did not contain public notice certifications as well. When this was brought to our attention we submitted the additional documents to Division of Water.

### 2017-9915245 reporting violation

\*We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During 10/1/2017 – 10/30/2017, we did not complete all monitoring by failing to report or correctly report testing for chlorine. Therefore, we could not verify the quality of your drinking water to the primacy agency during that time.\*

Each month we are required to complete a Monthly Operation Report (MOR) and submit it to the Kentucky Division of Water by the tenth of the following month. This report includes daily testing result.

We failed to include the distribution system chlorine test results summary page in our MOR for October 2017. We have submitted the missing chlorine summary page. There is nothing you need to do. We have established procedures to prevent similar situations in the future.

For more information, please contact Terry L. Rice at 270-667-7332 or P.O. Box 128, Providence, KY 42450.

\*Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.\*