

May 9, 2019

Kalamazoo Treatment Technique Violation – Q&A

What happened?

We add phosphate, a safe chemical found in many foods, to the water system. Phosphates protect pipes from corrosion. Corrosion of pipes could result in elevated lead or copper levels in the water. Phosphates create a safe coating in the pipes that the water flows past. Elevated amounts of lead and copper can have significant health effects. We test water throughout the system to monitor lead and copper levels in the drinking water.

The state requires that we maintain phosphate within a range of acceptable levels. A public water supply is allowed nine days during a six-month period to be out of those ranges. This is called an excursion. An excursion day occurs when any range, at any location in our system, is either too high or too low. For every day we are outside of our ranges, the number increases by one. For the dates listed below, we did not maintain the range for phosphate:

Monitoring period	Location	Number of allowed excursion days	Excursion days
January 1 – June 30, 2018	Point of entry (where we add phosphate)	9	26 days
July 1 – December 31, 2018	Point of entry (where we add phosphate)	9	13 days
July 1 – December 31, 2018	Parchment Distribution System	9	20 day

Many water supply systems use one source of water. The City of Kalamazoo pumps water from 16 stations, from many aquifers, in 10 separate districts. The City of Kalamazoo monitors phosphate at 14 of these sources called points of entry. Every station has a state-designated range for phosphate. The number of allowable excursion days per year for a one-source system is 18 out of the 26 total samples required for monitoring. The number of allowable excursions days per year for our system is also 18, although over 350 samples were required in order to monitor our many points of entry in 2018. We had readings outside the ranges at five of our 16 pumping stations between January 1 and June 30, 2018. We had readings outside the ranges at three of our 16 pumping stations between July 1 and December 31, 2018.

In July, we also started supplying Parchment with drinking water. The Parchment Distribution System lost some of its phosphate coating during the PFAS removal and cleaning process. We made phosphate adjustments to re-coat Parchment’s pipes. The State of Michigan approved these changes. As we adjusted our treatments, we had readings outside our range for phosphate. The pumping stations that were outside the range feed the east side of Kalamazoo, Parchment, Cooper Township and Kalamazoo Township.

Why are we just now being told about a violation that occurred in 2018?

Compliance with this parameter is measured over a six-month period – it takes six months to determine if a violation did/did not take place. Additionally, the data submitted to the Michigan Department of Environment, Great Lakes, and Energy (EGLE) must be verified and reviewed and often the U.S. Environmental Protection Agency (EPA) also provides input on data sets; this is like an audit and the associated information is provided in the Consumer Confidence/Water Quality Report which is published annually in July. There are no immediate risks and there is no immediate action required on your part.

Is the water safe to drink?

Yes.

Does this mean that the water was corrosive in 2018?

No, the City of Kalamazoo has fed phosphates into the system since 1956 and has maintained an approved corrosion control program since 1992. Phosphates were fed into the system every day. We just had more excursions than what is allowed during 2018. Measuring how corrosive the water is includes more than just phosphate levels, and additional water quality parameters were measured within the distribution system at 24 locations every week to verify that the water is not corrosive. An excursion from 1 of 16 sources is not an indication of the overall water quality of the blend of 16 sources.

How did this happen?

Excursions took place when phosphate levels were above or below the approved range. Low level excursions were the result of mechanical failures of chemical feed equipment and/or due to the dynamic use of peaking stations (stations not typically used every day). High phosphate level excursions were the result of mechanical failures of chemical feed equipment and/or due to the directive to increase phosphate feed rates. Any change of set point in the chemical feed system (in this case moving to a higher set point), creates instability which could cause excursions to temporarily take place.

When Kalamazoo started providing water to Parchment in July 2018 under emergency conditions, flushing was necessary to remove the PFAS contamination. Phosphate levels were increased to provide additional coating of the pipes. Phosphate “uptake” is a process where increased feed rates are used during a time where low levels of phosphate are detected within the distribution system. The 20 excursion days within the Parchment Distribution System were due to phosphate uptake to protect Parchment’s water pipes.

The letter says that Kalamazoo does not meet treatment standards – what does this mean?

This only refers to the phosphate excursions that occurred in 2018. Compliance with this parameter is measured over a six-month period – it takes six months to determine if a violation did/did not take place. Once the violation notice is issued for the Treatment Technique Violation it takes six months thereafter to return to compliance. Kalamazoo expects to be back in compliance on July 1, 2019. The water is safe to drink, and we are in compliance with all EPA Safe Drinking Water Act primary drinking water standards.

Some of the excursions were high level phosphate excursions, what are the health effects of that?

The phosphates that we use are certified food grade products designed for consumption. Each product has a maximum certified dosage to which **the City never fed at or above those thresholds.** The EGLE set treatment parameters for phosphate are not the maximum safe dosage of the products used.

Kalamazoo System EGLE Required Ranges	Product Maximum Dosage	Highest High Excursion
0.5 – 4.0 mg/L phosphate	16 mg/L	13 mg/L

Parchment System EGLE Required Ranges	Product Maximum Dosage
2.8 – 6.5 mg/L phosphate	23 mg/L

Milk
1,000 mg/L phosphate

What are you doing to fix this?

The City of Kalamazoo has been planning, engineering and implementing improvements to the phosphate systems since 2017. Several chemical feed pumps have been replaced in 2018. A treatment technique change was implemented in 2018 to improve the reliability, accuracy and precision of the systems feeding Parchment. New policies and procedures were put into place in 2019 to better control the dynamic use of peaking stations to meet hydraulic demands. Bids were opened in April 2019 to upgrade three additional “point of entry” stations with improved and automated chemical feed systems. We are also working on the planning and engineering to have all of the stations’ phosphate feed systems improved and automated by the end of 2021. Sampling and analyses scheduling for phosphate and other related water quality parameters has been modified to obtain results in a shorter time frame. Finally, new laboratory and field equipment has been purchased to support the objective for faster water quality sampling results.

What should we do, what precautions should be taken?

Please review the lead/copper public education documents. Clean your aerator on your faucet. Run your tap until you feel temperature change following stagnation periods of six hours or longer. If you have a lead service line use a NSF certified lead removal filter provided by the City of Kalamazoo for drinking water. **DO NOT BOIL YOUR WATER.** If you do not know your service line material type or you need a filter give us a call at 337-8550 or 337-8000.

I have a filter, but I need a replacement filter element – does the City provide replacement elements too?

Yes, the City will provide additional filters as needed. Give us a call at (269) 337-8550.

Who can I call or contact with questions or for more information?

(269) 337-8000

hello@kalamazocity.org

www.kalamazocity.org/water

www.protectyourwater.net