

# 2019 ANNUAL DRINKING WATER QUALITY REPORT

**PWSID #: 7360058 -- NAME: CITY OF LANCASTER, PA**

*Este informe contiene información importante acerca de su agua potable. Haga que alguien lo traduzca para usted, ó hable con alguien que lo entienda. (This report contains important information about your drinking water. Have someone translate it for you, or speak with someone who understands it).*

## **WATER SYSTEM INFORMATION:**

This report shows our water quality and what it means. We want you to be informed about your water supply. If you have any questions about this report or concerning your water utility, please contact the water quality lab at (717) 291-4818.

## **SOURCES OF WATER:**

Our sources of water are the Conestoga River and the Susquehanna River located in Lancaster County. A Source Water Assessment was completed in 2012 by the PA Department of Environmental Protection (PA DEP). The Assessment found our sources are potentially susceptible to agricultural activity, accidental spills along roads and urban runoff. Overall, our sources have a low risk of significant contamination. The assessment is available at: <http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-59455/RS7360058001%20City%20of%20Lancaster%20BofW.pdf>. Complete reports were distributed to municipalities, water supplier, local planning agencies and PA DEP offices. Copies of the complete report are available at the DEP Regional Office, Records Management Unit at 484-250-5910.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as individuals 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).

## **MONITORING YOUR WATER:**

We routinely monitor for contaminants in your drinking water according to federal and state laws. The following tables show the results of our monitoring for the period of January 1 to December 31, 2019. The State allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data is from prior years, in accordance with the Safe Drinking Water Act. The date has been noted on the sampling results table.

## **DEFINITIONS:**

**Action Level (AL)** - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

**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.

**Minimum Residual Disinfectant Level (MinRDL)** - The minimum level of residual disinfectant required at the entry point to the distribution system.

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

**ppb** = parts per billion, or micrograms per liter

**pCi/L** = picocuries per liter, measure of radiation

**ppq** = parts per quadrillion or picograms per liter

**mrem/year** = millirems per year

**ppm** = parts per million or milligrams per liter

**ppt** = parts per trillion or nanograms per liter

**DETECTED SAMPLE RESULTS: SUSQUEHANNA PLANT; ENTRY POINT 101**

| Chemical Contaminants |                  |      |                |                     |       |             |               |  |
|-----------------------|------------------|------|----------------|---------------------|-------|-------------|---------------|--|
| Contaminant           | MCL in CCR Units | MCLG | Level Detected | Range of Detections | Units | Sample Date | Violation Y/N | Sources of Contamination   |
| Fluoride              | 2*               | 2    | 0.64           | ---                 | ppm   | 2019        | N             | Water additive that promotes strong teeth.   |
| Barium                | 2                | 2    | 0.024          | ---                 | ppm   | 2019        | N             | Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits |
| Nitrate               | 10               | 10   | 1.10           | ---                 | ppm   | 2019        | N             | Runoff from fertilizer use.  |

\* EPA's MCL for fluoride is 4 ppm. However, Pennsylvania has set a lower MCL to better protect human health.

| Turbidity   |  |      |                                |                |               |                         |
|-------------|--|------|--------------------------------|----------------|---------------|-------------------------|
| Contaminant | MCL  | MCLG | Level Detected                 | Sample Date    | Violation Y/N | Source of Contamination |
| Turbidity   | TT=1 NTU for a single measurement              | 0    | 0.04 NTU                       | 01/04/19       | N             | Soil runoff.            |
|             | TT= at least 95% of monthly samples ≤ 0.15 NTU |      | ≤ 0.15 NTU<br>100% of the time | Jan - Dec 2019 | N             |                         |

| Total Organic Carbon (TOC) |                                   |                                   |                                      |               |                                   |
|----------------------------|-----------------------------------|-----------------------------------|--------------------------------------|---------------|-----------------------------------|
| Contaminant                | Range of percent Removal Required | Range of percent removal achieved | Number of quarters out of compliance | Violation Y/N | Sources of Contamination          |
| TOC                        | 0% - 35%                          | 21%-54%                           | 0                                    | N             | Naturally present in environment. |

| Entry Point Disinfectant Residual: Susquehanna and Conestoga Treatment Plants |        |                       |                     |       |                       |               |  |
|---|--------|-----------------------|---------------------|-------|-----------------------|---------------|--|
| Contaminant   | MinRDL | Lowest Level Detected | Range of Detections | Units | Date of Lowest Sample | Violation Y/N | Sources of Contamination                 |
| Susquehanna Plant Chlorine  | 0.2    | 0.24                  | 0.24– 2.01          | ppm   | 04/14/19              | N             | Water additive used to control microbes. |
| Conestoga Plant Chlorine  | 0.2    | 0.32                  | 0.32 - 1.54         | ppm   | 02/02/19              | N             | Water additive used to control microbes. |

### DETECTED SAMPLE RESULTS: CONESTOGA WATER PLANT; ENTRY POINT 102

| Chemical Contaminants        |                  |      |                |                             |       |             |               |   |
|------------------------------|------------------|------|----------------|-----------------------------|-------|-------------|---------------|---|
| Contaminant                  | MCL in CCR Units | MCLG | Level Detected | Range of Detections         | Units | Sample Date | Violation Y/N | Sources of Contamination  |
| Fluoride                     | 2*               | 2    | 0.52           | ---                         | ppm   | 2019        | N             | Water additive to promote strong teeth.   |
| Nitrate                      | 10               | 10   | 6.30           | Four samples<br>5.60 – 6.58 | ppm   | 2019        | N             | Runoff from fertilizer use.   |
| Barium                       | 2                | 2    | 0.051          | ---                         | ppm   | 2019        | N             | Discharge of drilling wastes;<br>Discharge from metal refineries;<br>Erosion of natural deposit |
| Gross Beta Particle Activity | 50**             | 0    | 3.8            | ---                         | pCi/L | 2014        | N             | Decay of natural and man-made deposits  |
| Atrazine                     | 3                | 3    | 0.29           | ---                         | ppb   | 2019        | N             | Runoff form Herbicides used on row crops  |

\*EPA's MCL for fluoride is 4 ppm. However, Pennsylvania has set a lower MCL to better protect human health.

\*\*The MCL for Gross Beta Particle Activity is 4 mrem/year. Since there is no simple conversion between mrem/year and pCi/L, EPA considers 50 pCi/L to be the level of concern for Gross Beta Particle Activity.

| Turbidity   |   |      |                               |                |               |                         |
|-------------|---|------|-------------------------------|----------------|---------------|-------------------------|
| Contaminant | MCL   | MCLG | Level Detected                | Sample Date    | Violation Y/N | Source of Contamination |
| Turbidity   | TT=1 NTU for a single measurement             | 0    | 0.09 NTU                      | 09/25/19       | N             | Soil runoff.            |
|             | TT= at least 95% of monthly samples ≤0.15 NTU |      | ≤0.15 NTU<br>100% of the time | Jan - Dec 2019 | N             |                         |

| Total Organic Carbon (TOC) |                             |                                   |                                      |               |                                   |
|----------------------------|-----------------------------|-----------------------------------|--------------------------------------|---------------|-----------------------------------|
| Contaminant                | Range of % Removal Required | Range of percent removal achieved | Number of quarters out of compliance | Violation Y/N | Sources of Contamination          |
| TOC                        | 0% – 35%                    | 19% - 39%                         | 0                                    | N             | Naturally present in environment. |

#### DETECTED SAMPLE RESULTS: DISTRIBUTION SYSTEM

| Distribution Disinfectant Residual |      |                        |                              |       |                              |               |  |
|------------------------------------|------|------------------------|------------------------------|-------|------------------------------|---------------|--|
| Contaminant                        | MRDL | Highest Average Result | Range of Monthly Avg Results | Units | Month w/ Highest Avg. Result | Violation Y/N | Sources of Contamination                 |
| Chlorine                           | 4.0  | 0.92                   | 0.71-0.92                    | ppm   | September 2019               | N             | Water additive used to control microbes. |

| Disinfection Byproducts |                  |      |              |                     |       |             |               |                            |
|-------------------------|------------------|------|--------------|---------------------|-------|-------------|---------------|----------------------------|
| Contaminant             | MCL in CCR Units | MCLG | Highest LRAA | Range of Detections | Units | Sample Date | Violation Y/N | Sources of Contamination   |
| Haloacetic Acids        | 60               | n/a  | 42           | 9.9-66.5            | ppb   | 2019        | N             | By-product of disinfection |
| Trihalomethanes         | 80               | n/a  | 54.1         | 5.9-101             | ppb   | 2019        | N             | By-product of disinfection |

\*Violation of MCL is based on **Running Annual Average**

| Lead and Copper |                   |      |                                   |       |                                    |             |               |                             |
|-----------------|-------------------|------|-----------------------------------|-------|------------------------------------|-------------|---------------|-----------------------------|
| Contaminant     | Action Level (AL) | MCLG | 90 <sup>th</sup> Percentile Value | Units | # of Sites Above AL of Total Sites | Sample Date | Violation Y/N | Sources of Contamination    |
| Lead            | 15                | 0    | 5.7                               | ppb   | 0 of 50                            | 2019        | N             | Corrosion of home plumbing. |
| Copper          | 1.3               | 1.3  | 0.16                              | ppm   | 0 of 50                            | 2019        | N             | Corrosion of home plumbing  |

**DETECTED SAMPLE RESULTS: DISTRIBUTION SYSTEM CONTINUED:**

| <b>Microbial (related to Assessments/Corrective Actions regarding TC positive results)</b> |   |             |  |                          |                                       |
|--|---|-------------|--|--------------------------|---------------------------------------|
| <b>Contaminants</b>  | <b>TT</b>   | <b>MCLG</b> | <b>Assessments/<br/>Corrective Actions</b> | <b>Violation<br/>Y/N</b> | <b>Sources of<br/>Contamination</b>   |
| Total Coliform<br>Bacteria   | Any system that has failed to complete all the required assessments <b>or</b> correct all identified sanitary defects, is in violation of the treatment technique requirement   | N/A         | 0  | N                        | Naturally present in the environment. |
| <b>Microbial (related to E. coli)</b>  |   |             |  |                          |                                       |
| <b>Contaminants</b>  | <b>MCL</b>  | <b>MCLG</b> | <b>Positive Sample(s)</b>                  | <b>Violation<br/>Y/N</b> | <b>Sources of<br/>Contamination</b>   |
| <i>E. coli</i>   | Routine and repeat samples are total coliform-positive <b>and</b> either is <i>E. coli</i> -positive <b>or</b> system fails to take repeat samples following <i>E. coli</i> -positive routine sample <b>or</b> system fails to analyze total coliform-positive repeat sample for <i>E. coli</i> . | 0           | 0  | N                        | Human and animal fecal waste.         |
| <b>Contaminants</b>  | <b>TT</b>   | <b>MCLG</b> | <b>Assessments/<br/>Corrective Actions</b> | <b>Violation<br/>Y/N</b> | <b>Sources of<br/>Contamination</b>   |
| <i>E. coli</i>   | Any system that has failed to complete all the required assessments <b>or</b> correct all identified sanitary defects, is in violation of the treatment technique requirement   | N/A         | 0  | N                        | Human and animal fecal waste.         |

## **VIOLATIONS:**

No Violation

## **EDUCATIONAL INFORMATION:**

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 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 run-off, 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, urban stormwater runoff, and residential uses.
- 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.
- Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, EPA and DEP prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA and DEP regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

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 Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

## **CRYPTOSPORIDIUM MONITORING:**

Our system performed Cryptosporidium monitoring for both sources of our drinking water, Conestoga River and Susquehanna River. Cryptosporidium is a microbial pathogen found in source water throughout the US.

The monitoring took place from April 2015 to March 2017. Results indicated that Cryptosporidium was present in both sources of water. This was only for our source water and not our finished water. Our water plants do everything to try to ensure NO Cryptosporidium is in our finished water. Our filtration for both plants is Ultrafiltration Membrane technology. This type of filtration can filter out particles and microorganisms much smaller than conventional filtration. We also use Log Inactivation monitoring to ensure proper disinfection. Even though we cannot guarantee 100 percent removal and disinfection of Cryptosporidium, we believe there is no reason to be alarmed about the results of the Cryptosporidium monitoring of our source 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 Lancaster, Bureau of Water is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. Lead was not detected in City drinking water when it leaves our treatment plants and underground pipes. 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>. For information about lead, go to the city web site: <http://www.cityoflanasterpa.com/information-about-lead-drinking-water>. If you have questions about City drinking water, contact the water quality lab at 717-291-4818.

## ***OTHER INFORMATION:***

About Nitrate: 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.