

QUARRYVILLE BOROUGH AUTHORITY

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2020 ANNUAL DRINKING WATER QUALITY REPORT

PWSID #: **7360112**

NAME: **QUARRYVILLE BOROUGH AUTHORITY**

THIS REPORT CAN BE ACCESSED AT www.quarryvilleborough.com

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. If you have any questions about this report or concerning your water utility, please contact **William S. Lamparter, Authority Manager** at **717-786-2404**.

We want you to be informed about your water supply. If you want to learn more, please attend any of our regularly scheduled meetings. They are held **the third Tuesday of each month at 7:00 PM at 300 Saint Catherine Street, Quarryville, PA.**

SOURCE(S) OF WATER:

Our water sources are: A municipal well located on North Church Street in the Borough and an interconnection with PA American Water Company on East State Street.

A Source Water Assessment of our sources was completed by the PA Department of Environmental Protection (PA DEP). The Assessment has found that our sources are potentially most susceptible to road deicing materials, accidental spills along roads and leaks in underground storage tanks. Overall, our sources have high risk of significant contamination. A summary report of the Assessment is available on the Source Water Assessment Summary Reports eLibrary web page: <http://www.elibrary.dep.state.pa.us/dsweb/View/Collection-10045>. Complete reports were distributed to municipalities, water supplier, local planning agencies and PA DEP offices. Copies of the complete report are available for review at the PA DEP Reading District Office, at (610) 916-0100.

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).

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. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

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

Level 1 Assessment – A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.

Level 2 Assessment – A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an *E. coli* MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

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

Mrem/year = millirems per year (a measure of radiation absorbed by the body)

pCi/L = picocuries per liter (a measure of radioactivity)

ppb = parts per billion, or micrograms per liter ($\mu\text{g/L}$)

ppm = parts per million, or milligrams per liter (mg/L)

ppq = parts per quadrillion, or picograms per liter

ppt = parts per trillion, or nanograms per liter

DETECTED SAMPLE RESULTS:

<i>Chemical Contaminants</i>								
Contaminant	MCL in CCR Units	MCLG	Level Detected	Range of Detections	Units	Sample Date	Violation Y/N	Sources of Contamination
Haloacetic Acid	60.0	N/A	1.7	0.00 -7.8	ppb	2020	No	By-product of chlorination
Trihalomethanes	80.0	N/A	5.8	0.00 – 19.3	ppb	2020	No	By-product of chlorination
Nitrate as Nitrogen	10.0	10.0	6.3	6.08-6.87	ppm	2020	No	Run-off from fertilizer, leaching from septic tanks, sewage, erosion of natural deposits
Chlorine	MRDL =4	MRDLG =4	1.13	0.64 -1.13	ppm	2020	No	Water additive used to control microbes
*Fluoride in the Distribution System	2	2	0.33	0.00 – 0.33	ppm	2020	No	Erosion of natural deposits
Cis-1,2-Dichloroethylene	70	70	1.2	0.90 – 1.4	ppb	2020	No	Discharge from industrial chemical factories

***The Quarryville Borough Authority adds fluoride to the Borough water system. The EPA’s MCL for fluoride is 4 ppm. However, Pennsylvania has set a lower MCL to better protect human health. The American Dental Association supports the Department of Health and Human Services’ recommendation to set the level for optimally fluoridated water at 0.7 ppm.**

<i>Entry Point Disinfectant Residual</i>							
Contaminant	Minimum Disinfectant Residual	Lowest Level Detected	Range of Detections	Units	Sample Date	Violation Y/N	Sources of Contamination
Chlorine	0.40	1.12	1.12 – 1.48	ppm	2020	No	Water additive used to control microbes.

<i>Lead and Copper</i>							
Contaminant	Action Level (AL)	MCLG	90 th Percentile Value	Units	# of Sites Above AL of Total Sites	Violation Y/N	Sources of Contamination
Lead	15	0	5.0	ppb	0 of 10	No	Corrosion of household plumbing.
Copper	1.3	1.3	0.901	ppm	1 of 10	No	Corrosion of household plumbing.

OTHER VIOLATIONS: Failure to monitor disinfection by product rule. Quarryville Borough Authority failed to monitor for trihalomethanes.

A sample was collected on July 9, 2020 as required; however, the sample did not meet the Safe Drinking Water Act (SDWA) sampling protocol for reporting purposes for this method at the time of collection. The laboratory received the sample with a headspace in the collection vial which did not meet the SDWA protocol. A re-sample was taken on July 27, 2020 that was in compliance with all trihalomethane limits set by the PA Department of Environmental Protection (DEP), but since it was not within the compliance timeframe (July 9, 2020 plus or minus three (3) days) the Authority received a failure to monitor 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).

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 Quarryville Borough Authority 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>.

Educational Statement for Nitrate

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.

OTHER INFORMATION:

PENNSYLVANIA AMERICAN WATER COMPANY INFORMATION

Pennsylvania American Water Company
Coatesville System
800 West Hershey Park Drive
Hershey, PA 17033 1-800-565-7292

Water Quality Statement

We are pleased to report that during calendar year 2020, the results of testing of your drinking water complied with all state and federal drinking water requirements. For your information, we have compiled a list in the table below showing the testing of your drinking water during 2020. The PA DEP allows us to monitor for some contaminants less than once per year because the concentration of the contaminant does not change frequently. Some of our data, though representative, is more than one year old.

Water Quality Results

TURBIDITY – Continuous monitoring at the surface water treatment plant

Substance (with units)	Year Sampled	Compliance Achieved	MCLG	MCL	Highest Single Measurement and Lowest Monthly % of Samples ≤0.3 NTU	Sample Date of Highest and Lowest Compliance Result	Typical Source
Turbidity (NTU)	2020	Yes	0	TT: Single Result >1 NTU	0.25	04/10/20	Soil Runoff
Turbidity (NTU)	2020	Yes	NA	TT: At least 95% of samples ≤0.3 NTU	100%	NA	Soil Runoff

LEAD AND COPPER MONITORING – At least 30 tap water samples are collected at customers' taps every 3-years

Substance (with units)	Year Sampled	Compliance Achieved	MCLG	Action Level	90 th Percentile	No. of Homes Sampled	Homes Above Action Level	Typical Source
Lead (ppb)	2019	Yes	0	15	1	30	0	Corrosion of household plumbing systems
Copper (ppm)	2019	Yes	1.3	1.3	0.066	30	0	Corrosion of household plumbing systems

TOTAL COLIFORM MONITORING – At least 30 samples collected each month throughout the distribution system

Substance (with units)	Year Sampled	Compliance Achieved	MCLG	MCL	Highest No. of Positive Samples	Typical Source
Total Coliform	2020	Yes	0	MCL=No more than 1 positive monthly sample	3	Naturally present in the environment
E. Coli	2020	Yes	0	TT=No confirmed samples	0	Human and animal fecal waste

Note: 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 assessments to identify problems and to correct any problems that were found during these assessments. During the past year, we were required to conduct one (1) Level 1 Assessment and one (1) Level 2 Assessment. Both assessments were completed. In addition, we were required to take one (1) corrective action and we completed this corrective action.

DISINFECTANT RESIDUAL MONITORING – Collected at the treatment plant entry point and within the distribution system

Substance (with units)	Year Sampled	Compliance Achieved	MRDLG	MRDL	Minimum Required Chlorine Residual	Compliance Result	Range Detected	Typical Source
Surface Water Entry Point Chlorine Residual (ppm) ¹	2020	Yes	4	4	0.20	1.37	1.37 to 3.58	Water additive used to control microbes
Distribution System Chlorine Residual (ppm) ²	2020	Yes	4	4	0.2	2.5	1.68 to 2.5	Water additive used to control microbes

1 – Data represents the lowest residual entering the distribution system from the surface water treatment plant.

2 – Data represents the highest monthly result of chlorine residual measured throughout the distribution system.

DISINFECTION BY-PRODUCT MONITORING – Collected in the distribution system

Substance (with units)	Year Sampled	Compliance Achieved	MCLG	MCL	Highest Compliance Result	Range Detected	Typical Source
Total Trihalomethanes (TTHMs) (ppb)	2020	Yes	NA	80	48.6	23.6 to 81.4	By-product of drinking water disinfection
Haloacetic Acids (HAAs) (ppb)	2020	Yes	NA	60	28.7	15.7 to 47.9	By-product of drinking water disinfection

NOTE: Compliance is based on the running annual average at each location. The Highest Compliance Result reflects the highest average at any location and the Range Detected reflects all samples from this year used to calculate the running annual average.

DISINFECTION BY-PRODUCTS PRECURSOR REMOVAL – Collected at the surface water treatment plant

Substance (with units)	Year Sampled	Compliance Achieved	MCLG	MCL	Range of % Removal Required	Range of % Removal Achieved	Number of Quarters Out of Compliance	Typical Source
Total Organic Carbon (TOC)	2020	Yes	NA	TT	35% - 45%	43.2% - 68.8%	0	Naturally present in the environment

OTHER REGULATED SUBSTANCES – Collected at the treatment plant

Substance (with units)	Year Sampled	Compliance Achieved	MCLG	MCL/SMCL	Highest Compliance Result	Range Detected	Typical Source
Nitrate (ppm)	2020	Yes	10	10	3.27	Single Sample	Runoff from fertilizer use, industrial or domestic wastewater discharge; erosion of natural deposits
Fluoride (ppm)	2020	Yes	2	2	0.72	Single Sample	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Atrazine (ppm)	2020	Yes	3	3	0.2	ND to 0.2	Runoff from herbicide used on row crops
Sodium (ppb) ¹	2020	NA	NA	NA	35.8	Single Sample	Sodium is a natural constituent of raw water, but its concentration can be increased by pollution sources such as rock salt treatment, runoff and detergents

¹ – For healthy individuals, the sodium intake from water is not important because a much greater intake of sodium takes place from salt in the diet. However, sodium levels above the recommended upper limit of 20 ppm may be of concern to individuals on a sodium restricted diet.

SECONDARY CONTAMINANTS & OTHER MONITORING – Collected at the water treatment facility

Substance (with units)	Year Sampled	SMCL	Average Result	Typical Source
pH ¹	2020	6.5 – 8.5	7.76	pH is an expression of the acidic or basic condition of a liquid (scale 0 to 14), with neutral being 7. Adjusted to maintain optimal corrosion control
Iron (ppm) ¹	2020	0.3	0.01	Corrosion of pipes; leaching of iron salts from soil and rocks, and industrial pollution. Essential dietary trace nutrient.
Manganese (ppm) ¹	2020	0.05	0.02	Naturally occurring elemental metal; largely used in aluminum alloy production. Essential dietary trace nutrient.
Hardness (ppm)	2020	NA	79	Represents the total concentration of calcium and magnesium ions, reported as calcium carbonate.
Phosphates (ppm)	2020	NA	1.59	Chemical added to water to reduce corrosion tendencies of the water as it travels from the treatment plant to our customer's homes.

1 – Secondary contaminants with SCMLs are primarily established to address aesthetic concerns

PER- AND POLYFLUOROALKYL SUBSTANCES

PFAS refer to per- and polyfluoroalkyl substances, a class of synthetic chemicals, manufactured for industrial applications and commercial household products such as: non-stick cookware, waterproof and stain resistant fabrics and carpets; firefighting foam and cleaning products. The properties that make these chemicals useful in so many of our everyday products also resist breaking down and therefore persist in the environment. Exposure may be from food, food packaging, consumer products, house dust, indoor and outdoor air, drinking water and at workplace where PFAS are made or used.

UNREGULATED PERFLUORATED COMPOUNDS

Parameter	Units	Average Result	Range Detected	Typical Source
Perfluorooctanoic Acid (PFOA)	ppt	2.1	Single Sample	Used for emulsifier and surfactant properties in or as fluoropolymers (such as Teflon), fire fighting foams, cleaners, cosmetics, lubricants, paints, polishes, adhesives and photographic films
Perfluoropentanoic Acid (PFOS)	ppt	1.4	Single Sample	Manmade chemicals; used in products for stain, grease, heat and water resistance

UNREGULATED CONTAMINANT MONITORING

Unregulated contaminants are those for which the EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist the EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is necessary. Every five years, the EPA issues a new list of no more than 30 unregulated contaminants to be

Parameter	Units	Year	Average Result	Range Detected	Typical Source
Bromochloroacetic Acid	ppb	2019-2020	2.8	1.3 to 3.84	By-product of drinking water disinfection
Bromodichloroacetic Acid	ppb	2019-2020	2.3	1.2 to 3.6	By-product of drinking water disinfection
Chlorodibromoacetic Acid	ppb	2019-2020	0.4	ND to 0.8	By-product of drinking water disinfection
Dibromoacetic Acid	ppb	2019-2020	0.2	ND to 0.5	By-product of drinking water disinfection
Dichloroacetic Acid	ppb	2019-2020	10.2	4.2 to 17	By-product of drinking water disinfection
Monobromoacetic Acid	ppb	2019-2020	0.02	ND to 0.3	By-product of drinking water disinfection
Monochloroacetic Acid	ppb	2019-2020	0.2	ND to 3.5	By-product of drinking water disinfection
Total Haloacetic Acids	ppb	2019-2020	24.9	16 to 41	By-product of drinking water disinfection
Total Haloacetic Acids-Br	ppb	2019-2020	15.4	3.8 to 41	By-product of drinking water disinfection
Trichloroacetic Acid	ppb	2019-2020	8.6	5.5 to 14	By-product of drinking water disinfection
*Manganese	ppb	2019-2020	3.3	0.5 to 5	Naturally occurring elemental metal; largely used in aluminum alloy production. Essential dietary element.

*Manganese has a Secondary MCL of 50 ppb.