

**ELIZABETHTOWN AREA WATER AUTHORITY
CONSUMER CONFIDENCE REPORT FOR 2022
PWSID # 7360124**

Este informe contiene informacion muy importante sobre su agua de beber. Traduzcalo o hable con alguien que lo entienda bien. (This report contains very important information about your drinking water. Translate it or speak with someone who understands it).

Introduction

To comply with the Safe Drinking Water Act, Elizabethtown Area Water Authority (EAWA) is issuing this annual report on monitoring tests performed on its drinking water. The purpose of this report is to provide our customers with an understanding of their drinking water and to heighten awareness of the need to protect and conserve our water resources.

If you have any questions about this report of our water system, please contact Jason Bock, Operations Manager, at 717-367-7448. We want our customers to be informed about their water system. If you want to learn more, we invite you to attend an EAWA meeting. EAWA meets the second Monday of every month at 211 West Hummelstown Street, Elizabethtown, PA at 6:30 PM.

2022 Annual Drinking Water Quality Report

We are pleased to present this year's Annual Drinking Water Quality Report. This report is designed to inform you about the water and services we deliver to you every day. Our goal is to provide you with a dependable supply of drinking water. We want you to understand the efforts made to continually improve the water treatment process and to protect our water resources. We are committed to ensuring the quality of our water.

EAWA's water comes from multiple sources. In 2022, surface water comprised only 27% of the total water produced. Surface water comes from a tributary named Back Run, which is augmented with flow during dry weather from the Conewago Creek, which is in turn amplified with flow from the Cornwall Quarry. This water is processed by the Authority's filter plant, which is located at 211 West Hummelstown St.

The remaining 73% of water was produced by eight (8) deep wells. Water from these wells is treated at the well sites and is then pumped into the distribution system. We have a well-head protection plan available from our office that provides more information about potential sources of contamination.

A Source Water Assessment of our Elizabethtown sources was completed in 2018 by Spotts, Stevens and McCoy for the PA Department of Environmental Protection. The study found that our sources are potentially most susceptible to agricultural activities and urban runoff. Overall, our sources have little risk of significant contamination.

Water Quality Data and What it Means

EAWA routinely monitors for contaminants in our drinking water according to federal and state laws. It is reasonable for all drinking water, including bottled water, to contain at least small amounts of some contaminants. It's important to remember that the presence of these contaminants **does not** necessarily present a health risk.

The tables below list all the drinking water contaminants that we detected during the 2022 calendar year. Unless otherwise noted, the data presented in these tables is from testing done January 1 – December 31, 2022. The state requires 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. The following table shows the results of EAWA's monitoring for the past year.

DEFINITIONS:

Non-Detects (ND) - Laboratory analysis indicates that the contaminant is not present at a detectable level.

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 - One part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

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

Nephelometric Turbidity Unit (NTU) - Nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

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

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

Maximum Contaminant Level Goal - The "Goal" (MCLG) is 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 - The "Maximum Allowed" (MCL) is 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. MCLs are set at very stringent levels for health effects. To understand the possible health effects described for many regulated constituents, a person would have to drink two 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.

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.

EAWA TEST RESULTS 2022

Chemical Contaminants								
Contaminant	MCL in CCR Units	MCLG	Level Detected	Range of Detections	Units	Sample Date	Violation Y/N	Sources of Contamination
Nitrate	10	10	7.51	1.63 – 7.51	ppm	2022	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Arsenic	10	0	6.0 1.0 1.0 4.0	1.0 – 6.0 1.0 1.0 2.0 – 4.0	ppb	2018 2019 2020 2021	N	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Zinc *	5000	N/A	81	10 - 81	ppb	2022	N	Erosion of natural deposits
TTHM (Total Trihalomethanes)	80	N/A	60.43	40.3 - 128	ppb	2022 **	N	By-product of drinking water chlorination
HAA5 (Haloacetic Acids)	60	N/A	39.7	21.9 – 85.1	ppb	2022 **	N	By-product of drinking water chlorination
Sulfate *	250	N/A	82.6	22.9 – 82.6	ppm	2022	N	Sulfates are from fossil fuel & biomass combustion.
Nickel	N/A	N/A	2.0	N/A	ppb	2021	N	Erosion of natural deposits
Iron *	300	N/A	96	10 - 96	ppb	2022	N	Erosion of natural deposits
Antimony	6	6	0.5 0.5 0.5	0.5 0.5 0.5	ppb	2020 2021 2022	N	Discharge from petroleum refineries; fire retardants; ceramics; electronics; and solder.
Manganese *	50	N/A	96	14 - 96	ppb	2022	N	Erosion of natural deposits
Chromium	100	100	2.0 2.0 2.0 2.0	1.0 – 2.0	ppb	2018 2019 2020 2021	N	Discharge from steel and pulp mills; erosion of natural deposits.
Barium	2000	2000	151 68 151 244	74 – 151 68 54 – 151 35 - 244	ppb	2018 2019 2020 2021	N	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
Chlorine (Distribution)	4	4	0.74 Avg.	0.74 - 0.95	ppm	(Highest Avg.) January 2022	N	Water additive used to control microbes.
Methylene Chloride	5	0	0.50	0.50	ppb	2022	N	Discharge from chemical, textile, electronics, metals, plastics, manufacturing
Atrazine	3	3	0.245	0.245	ppb	2022	N	Runoff from herbicide used on row crops

* Secondary Contaminants. ** Violations are calculated on a running annual average. One slightly high result can be mitigated by lower results in the average. During the quarters with high results, EAWA collected extra samples and averaged the results, which reduced our values to acceptable levels.

Entry Point Disinfectant Residual							
Contaminant	Minimum Disinfectant Residual	Lowest Level Detected	Range of Detections	Units	Sample Date (Lowest)	Violation Y/N	Sources of Contamination
Chlorine (#100)	0.20	0.41	0.41 – 1.47	ppm	08/06/22	N	Water additive used to control microbes.
Chlorine (#101)	0.40	0.40	0.40 – 1.50	ppm	08/07/22	N	Water additive used to control microbes.
Chlorine (#102)	0.60	0.60	0.60 – 1.45	ppm	04/29/22	N	Water additive used to control microbes.
Chlorine (#103)	0.40	0.45	0.45 – 1.33	ppm	09/07/22	N	Water additive used to control microbes.
Chlorine (#104)	0.80	0.87	0.87 – 1.59	ppm	07/30/22	N	Water additive used to control microbes.
Chlorine (#105)	0.40	0.43	0.43 – 1.28	ppm	03/10/22	N	Water additive used to control microbes.

Lead and Copper							
Contaminant	Action Level (AL)	MCLG	90 th Percentile Value	Units	# of Sites Above AL of Total Sites	Violation Y/N	Sources of Contamination
Lead 2022	15	0	2.0	ppb	0	N	Corrosion of household plumbing.
Copper 2022	1.3	1.3	0.612	ppm	0	N	Corrosion of household plumbing.

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***	15% to 40%	7.0% to 33.8%	None	N	Naturally present in the environment.

Radionuclides								
Contaminant	MCL in CCR Units	MCLG	Level Detected	Range of Detections	Units	Sample Date	Violation Y/N	Sources of Contamination
Combined Uranium	20	0	2.83	2.83	pCi/L	2021	N	Erosion of natural deposits
Radium 226	5	0	0.33	0.33	pCi/L	2017	N	Erosion of natural deposits
Radium 228	5	0	0.47	0.47	pCi/L	2017	N	Erosion of natural deposits
Gross Alpha	15	0	3.22	3.22	pCi/L	2021	N	Erosion of natural deposits

*** TOC – with membrane filtration TOC removal is not reportable to DEP; however, EAWA is reporting it on the CCR report as it is an indicator of how the membrane system is operating

**** Entry Point Residual – Site #105 showed a low of 0.38 ppm, DEP regulations require that EAWA report this low but it is not a violation, as EAWA has 4 hours to get the chlorine level back to the required minimum

Microbial					
Contaminants	MCL	MCLG	Highest # or % of Positive Samples	Violation Y/N	Sources of Contamination
Total Coliform Bacteria	1 positive monthly sample	0	0	N	Naturally present in the environment.
Fecal Coliform Bacteria or E. coli	0	0	0	N	Human and animal fecal waste

Turbidity						
Contaminant	MCL	MCLG	Level Detected	Sample Date	Violation Y/N	Source of Contamination
Turbidity *	TT=1.0 NTU for a single measurement	0	0.035	2/06/22	N	Soil runoff.
	TT= at least 95% of monthly samples \leq 0.3 NTU		100%	Every Month	N	

* Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system. Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches.

OTHER VIOLATIONS:

During 2022, Elizabethtown Area Water Authority, received a failure to monitor violation from DEP for TTHM/HAA5 sampling for the Distribution system. The samples had been collected by our lab but one sample was not collected properly. EAWA is allowed a 3 day leeway as to when the sample is be collected. The sample was re-collected by the lab outside the time frame allowed. The results were analyzed and reported to DEP. The sample was approved and accepted.

HEALTH EFFECTS:

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

Manganese is a Secondary Contaminant that impacts the taste and color of water, and the MCL is a reference for aesthetics rather than health effects. The average daily intake of manganese (a health requirement) from food ranges from 1 to 5 milligrams per day (mg/d). At 70 parts per billion, 4 gallons of water would hold about 1 milligram of manganese.

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. Elizabethtown Area Water 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 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).

CONCLUSIONS

Some people may be more vulnerable to contaminants in drinking water than others. Immuno-compromised persons such as persons with cancer who are 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. 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 microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791). Your tap water from EAWA water sources met all EPA and state drinking water health standards. We vigilantly safeguard our water supplies to provide top quality water and we ask that all our customers help protect our water sources.