

ELIZABETHTOWN AREA WATER AUTHORITY
CONSUMER CONFIDENCE REPORT FOR 2016
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 Gene Haldeman, 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.

2016 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 2016, surface water comprised only 15% 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 85% 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 source was completed in 2003 by The Susquehanna River Basin Commission for the PA Department of Environmental Protection. The study found that our source is potentially most susceptible to agricultural activities and urban runoff. Overall, our source has 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 2016 calendar year. Unless otherwise noted, the data presented in these tables is from testing done January 1 – December 31, 2016. 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.

EAWA ANALYSIS RESULTS 2016

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	7.48	1.18– 7.48	ppm	2016	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Arsenic	10	0	4.0 6.0 1.0	1.0 – 4.0 N/A N/A	ppb	2012 2015 2016	N	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Zinc *	5000	N/A	60	1 -60	ppb	2015	N	Erosion of natural deposits
TTHM (Total Trihalomethanes)	80	N/A	75	0 – 75	ppb	2016	N **	By-product of drinking water chlorination
HAA5 (Haloacetic Acids)	60	N/A	52	0 – 52	ppb	2016	N **	By-product of drinking water chlorination
Sulfate *	250	N/A	84	21.6 – 84.0	ppm	2015	N	Sulfates are from fossil fuel & biomass combustion.
Nickel *	N/A	N/A	1.2 1.0 3.0	0.7 – 1.2 N/A N/A	ppb	2012 2015 2016	N	Erosion of natural deposits
Antimony	6	6	0.5	0.5	ppb	2015	N	Discharge from petroleum refineries; fire retardants; ceramics; electronics; and solder.
Manganese *	50	N/A	113	10 - 113	ppb	2015	N	Erosion of natural deposits
Chromium	100	100	1.0 2.0	0.6 – 1.0 N/A	ppb	2012 2015	N	Discharge from steel and pulp mills; erosion of natural deposits.
Barium	2000	2000	222 139 65	41 - 222 N/A N/A	ppb	2012 2015 2016	N	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
Distribution Chlorine	4	4	0.83 Avg.	0.66-0.99	ppm	(Highest Avg.) March 2016	N	Water additive used to control microbes.
Methylene Chloride	5	0	1.80	0.90 – 1.80	ppb	2016	N	Discharge from chemical, textile, electronics, metals, plastics, manufacturing

* Secondary Contaminants.

** Violations are calculated on a running annual average. One slightly high result can be mitigated by lower results in the average.

<i>Entry Point Disinfectant Residual</i>							
Contaminant	Minimum Disinfectant Residual	Lowest Level Detected	Range of Detections	Units	Sample Date (Lowest)	Violation Y/N	Sources of Contamination
Chlorine (#100)	0.20	0.40	0.40 – 2.17	ppm	01/20/16	N	Water additive used to control microbes.
Chlorine (#101)	0.40	0.42	0.42 – 1.62	ppm	05/02/16	N	Water additive used to control microbes.
Chlorine (#102)	0.60	0.60	0.60 – 1.40	ppm	06/28/16	N	Water additive used to control microbes.
Chlorine (#103)	0.40	0.43	0.43 – 1.18	ppm	07/11/16	N	Water additive used to control microbes.
Chlorine (#104)	0.80	0.81	0.81 – 1.84	ppm	02/23/16	N	Water additive used to control microbes.
Chlorine (#105)	0.20	0.43	0.43 – 1.60	ppm	11/28/16	N	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 2016	15	0	3.0	ppb	0	N	Corrosion of household plumbing.
Copper 2016	1300	1300	778	ppb	0	N	Corrosion of household plumbing.

<i>Total Organic Carbon (TOC)</i>					
Contaminant	Range of % Removal Required	Range of percent removal achieved	Number of quarters out of compliance	Violation Y/N	Sources of Contamination
TOC 2012	25% to 40%	37.9% to 87.1%	None	N	Naturally present in the environment.

<i>Radionuclides</i>								
Contaminant	MCL in CCR Units	MCLG	Level Detected	Range of Detections	Units	Sample Date	Violation Y/N	Sources of Contamination
Combined Uranium	20	0	2.4 1.01	N/A 0.74 – 1.01	pCi/L	2011 2014	N	Erosion of natural deposits
Radium 228	5	0	1.23	N/A	pCi/L	2011	N	Erosion of natural deposits
Gross Alpha	15	0	6.90	N/A	pCi/L	2015	N	Erosion of natural deposits

<i>Microbial</i>						
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 <i>E. coli</i>	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	10/7/16	N	Soil runoff.
	TT= at least 95% of monthly samples ≤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.

During 2016, Elizabethtown Area Water Authority, had three reported monitoring violations to DEP which were monitoring/reporting violations involving two different sources.

The 1st violation was a missed sample from Entry point 100 (Treatment Plant). In September, we had a minor VOC detection for trans-1,2 Dichloroethylene which bumped the monitoring to quarterly from annual starting with the 4th quarter of 2016. The additional monitoring was missed for that period. Since then, all samples have been collected and reported as necessary.

The 2nd violation was a missed Nitrate/Nitrite sample from Entry point 101 (Well #3). The 2015 result at Entry point was low enough to allow for annual testing. The 2016 result was slightly higher causing the Authority to return to annual testing beginning in the 4th quarter of 2016. The missed sample was an oversight. Since then, all samples have been collected and reported as required.

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 <https://www.epa.gov/ground-water-and-drinking-water/basic-information-about-lead-drinking-water>.

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.

FINDINGS

All sources of drinking water are subject to potential contamination by constituents that are naturally occurring or man-made. Those constituents can be microbes, organic or inorganic chemicals or radioactive materials. All drinking water, including bottled water, may contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's (EPA) Safe Drinking Water Hotline at 1-800-426-4791.

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.