

2016 Annual Water Quality Report

SHIPPENSBURG BOROUGH AUTHORITY
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PWSID NO. 7210043

THIS REPORT CONTAINS IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

Este informe contiene información muy importante sobre su agua beber.

Tradúzcalo ó hable con alguien que lo entienda bien.

Consumer Confidence Report Rule

In 1996, Congress amended the Safe Drinking Water Act, adding a provision that requires all community water systems to deliver to their customers a brief annual water quality report. Final regulations were promulgated by EPA in 1998, known as the Consumer Confidence Report Rule, which established the requirements for these annual water quality reports. The deadline or distribution of the annual report is July 1st of every year, for the preceding calendar year.

Shippensburg Sources of Water

The water system, owned by the Shippensburg Borough Authority and operated by Shippensburg Borough, is permitted under the Pennsylvania Safe Drinking Water Act and is identified as PWSID No. 7210043.

The Authority's water system serves approximately 6,200 customers and an estimated population of 16,000 persons in Shippensburg Borough; Shippensburg, Southampton and South Newton Townships in Cumberland County; and Orrstown Borough; Letterkenny, Lurgan and Southampton Townships in Franklin County. The Authority provides water on a bulk sales basis to Shippensburg Mobile Estates, a mobile home park. The Authority also has an interconnection with the Southern Cumberland Water Association to provide water to the Association in case of an emergency.

The drinking water currently provided by Shippensburg comes from a reservoir and three wells. Reservoirs are classified as surface water sources and the wells are classified as ground water sources. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and radioactive material and may pick up substances resulting from the presence of animals or from human activity.



Surface water is withdrawn from the Letterkenny Dam Reservoir through an interconnect with the Franklin County General Authority as of March 5, 2007.



Well No. 1 is located south of the Village of Cleversburg in Southampton Township, Cumberland County. Well No. 2 is located south of the Village of Mainsville in Southampton Township, Franklin County. Well No. 3 is located southwest of the Village of Cleversburg in Southampton Township, Cumberland County. A spring source, known as Dykeman Spring, located in the southern portion of Shippensburg Borough, Cumberland County, is currently out of service.

Shippensburg has several finished water storage facilities, including: Orrstown storage tank, with a storage capacity of 149,000 gallons, located in Orrstown Borough; Roxbury Reservoir, with a storage capacity of 500,000 gallons, located near the Gunter Valley Water Treatment Plant; Shippensburg (In-Town) Reservoir, with a storage capacity of 1,400,000 gallons, located in the southern portion of Shippensburg Borough; Cleversburg Reservoir, with a storage capacity of 500,000 gallons, located south of the Village of Cleversburg; Mainsville Reservoir, with a storage capacity of 250,000 gallons, located south of the Village of Mainsville; Huckleberry Reservoir, with a storage capacity of 110,000 gallons, located on Strohm's Hollow Road in Southampton Township, Cumberland County; Timberhill storage tank, with a storage capacity of 3,000,000 gallons, located off of Possum Hollow Road in Southampton Township, Franklin County.

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For More Information About Your Water:

Shippensburg Borough Authority Board Meetings
 Second Tuesday of Every Month
 @ 6:00 PM

Meeting Location Borough Office:
 111 North Fayette Street
 Shippensburg

Contact Person:
John Epley
(717) 532-2147

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Treatment of Drinking Water

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 **EPA's Safe Drinking Water Hotline at (800) 426-4791** or by visiting EPA's website at www.epa.gov/safewater.

Surface water withdrawn from the Letterkenny Dam Reservoir is treated at the Gunter Valley Water Treatment Plant using conventional filtration. The water treatment plant has a treatment design capacity of 1,600,000 gallons per day. Treatment chemicals added include: sodium permanganate, alum, caustic soda, chlorine, fluoride, polymer and polyphosphate. Chemical addition is necessary for neutralization, solids removal, corrosion control, fluoridation and disinfection. The finished water is pumped to the Roxbury reservoir prior to distribution to customers.

Water from Well Nos. 1, 2, and 3 are treated with chlorine and fluoride for disinfection and fluoridation respectively. The treated water from these sources is pumped to their respective storage facility and/or distributed to customers.



Chemical addition for corrosion control is necessary to prevent corrosion of household plumbing systems. Disinfection is necessary to inactivate microorganisms which are naturally present in the environment.

Common Contaminants in Water

Contaminants that may be present in the 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 storm water runoff, industrial or domestic wastewater discharges, mining or farming.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and which may

also come from gas stations, urban storm water runoff and septic systems.

- Radioactive contaminants, which can be the result of mining activities or naturally-occurring.

In order to ensure that tap water is safe to drink, EPA establishes regulations which limit the amount of certain contaminants in water provided by public water systems.

Safety of Drinking Water

Some people may be more vulnerable to drinking water contaminants than the general population. Immuno-compromised persons, such as people with cancer undergoing chemotherapy, persons who have had organ transplants, people with HIV/AIDS or other immune system disorders, some elderly persons and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/Center for Disease Control guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the **Safe Drinking Water Hotline at (800) 426-4791** or at www.epa.gov/safewater.

Definitions of Terms

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 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 disinfectant residual, in this case for Chlorine, that is allowed in drinking water.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of disinfectant residual in drinking water, in this case Chlorine, below which there is no known or expected risk to health.

Nephelometric Turbidity Unit (NTU): Measure of turbidity which is the clarity of water.

Parts Per Billion (ppb): Unit of concentration equivalent to micrograms per Liter ($\mu\text{g/L}$).

Parts Per Million (ppm): Unit of concentration equivalent to milligrams per Liter (mg/L).

Picocuries per Liter (pCi/L): Measure of radiation.

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

Contaminants Detected In Your Water

Last year, we conducted more than 1,900 tests for over 80 contaminants. We only detected 12 of those contaminants, and found only 1 at a level higher than EPA allows. As we told you at the time, our water temporarily exceeded drinking water standards. For more information, see the paragraph marked *MCL Exceedance Violation* on the back of this report. The 12 contaminants and their potential source of contamination are shown on the tables on the following pages. The parameters not detected include the following: Total Coliform Bacteria, Lead, Inorganic Chemicals (11), Synthetic Organic Chemicals (37), Volatile Organic Chemicals (21), and Radiological (1).

TABLE OF CONTAMINANTS - DISTRIBUTION SYSTEM					
CONTAMINANTS	MCL	MCLG	TEST VALUE ⁴	VIOLATION	MAJOR SOURCES IN DRINKING WATER
DISINFECTION BYPRODUCTS (DBPs) AND DISINFECTANT RESIDUALS					
Chlorine	MRDL= 4.0 ppm	MRDLG = 4.0 ppm	Max Level: 3.32 ppm Range: 0.51 – 3.32 ppm	NO	Water additive used to control microbes.
HAA5 ¹	60 ppb	NA	Max LRAA ² : 54.6 ppb Range: 0.0 – 79.0 ppb	YES	Byproduct of drinking water disinfection.
TTHM ³	80 ppb	NA	Max LRAA ² : 46.5 ppb Range: 0.0 – 48.0 ppb	NO	Byproduct of drinking water disinfection.
LEAD AND COPPER RULE (LCR)					
Copper	AL = 1.3 ppm	1.3 ppm	90th Percentile: 0.43 ppm Max: 0.62 ppm	NO	Corrosion of household plumbing. Erosion of natural deposits.
Lead	AL = 15 ppb	0 ppb	90th Percentile: 0.00 ppb Max: 0.00 ppb	NO	Corrosion of household plumbing. Erosion of natural deposits.
¹ HAA5 represents Total Haloacetic Acids. ² LRAA represents Local Running Annual Average using 2015-2016 data. ³ TTHM represents Total Trihalomethanes. ⁴ Pennsylvania DEP allows public water systems to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of the data presented in this table, though representative, may be more than one year old. In these cases, the calendar year in which water samples were tested for these contaminants is shown in parentheses.					

The Susquehanna River Basin commission (SRBC) and Pennsylvania Department of Environmental Protection (DEP) have developed source water assessment and protection (SWAP) plans for Shippensburg's surface and ground water sources. The purpose of SWAP plans is to determine potential sources of pollution that may impact public water supplies and to identify the appropriate measures to protect such water supplies.

The most significant potential source of contamination to the Letterkenny Dam Reservoir is from on-lot wastewater disposal, due to the increase of development in the watershed. Other sources of concern are animal populations, transportation corridors and public use of the reservoir and surrounding areas. Potential contaminants of Shippensburg's three wells include household hazardous waste; fertilizer, pesticide and herbicide runoff from agricultural use; leaking underground fuel oil tanks; road deicing, transportation spills and on-lot sewage disposal discharges. All wells have been deemed to have a low susceptibility to contamination but still require development of a source water protection program by Shippensburg to prevent such releases from entering the public water supply.

The final SWAP report is available from DEP upon request, and a report summary is available through DEP's website by visiting: <http://www.dep.state.pa.us/dep/deputate/watermgt/wc/Subjects/SrceProt/SourceAssessment/default.htm> and clicking on "SWAP Reports" at the top of the page.

TABLE OF CONTAMINANTS - GUNTER VALLEY WATER TREATMENT PLANT					
CONTAMINANTS	MCL	MCLG	TEST VALUE ⁵	VIOLATION	MAJOR SOURCES IN DRINKING WATER
MICROBIOLOGICAL CONTAMINANTS					
Turbidity ¹	TT: Minimum 95% Samples < 0.3 NTU	0 NTU	100% of Samples < 0.30 NTU	NO	Soil runoff.
	TT Maximum = 1.0 NTU		TT Maximum = 0.07 NTU		
INORGANIC CONTAMINANTS					
Barium	2 ppm	2 ppm	0.02 ppm	NO	Erosion of natural deposits. Discharge from drilling waste.
Fluoride	2 ppm	2 ppm	0.44 ppm	NO	Erosion of natural deposits. Water additive that promotes strong teeth.
Nitrate	10 ppm	10 ppm	0.58 ppm	NO	Erosion of natural deposits. Runoff from fertilizer use. Leaching from septic tanks.
RADIONUCLIDE CONTAMINANTS					
Radium-228	5 pCi/L	0 pCi/L	1.4 pCi/L (2014)	NO	Erosion of natural deposits.
DISINFECTION BYPRODUCT (DBP) PRECURSORS					
Alkalinity	NA	NA	Max Level: 25.1 ppm Range: 8.47 – 40.93 ppm	NO	Naturally present in the environment.
TOC ² - CFE ³	TT	NA	All Quarters in Compliance	NO	Naturally present in the environment.
	35% Removal Required		40.2% – 48.5% Removal Achieved		
SURFACE WATER TREATMENT RULE (SWTR)					
Chlorine	Minimum 0.2 ppm	NA	Minimum: 0.5 ppm Range: 0.50 – 3.46 ppm	NO	Water additive used to control microbes.

¹ Turbidity is a measure of the cloudiness of the water. Turbidity is monitored because it is a good indicator of the effectiveness of the filtration system. Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses and parasites which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

² TOC represents Total Organic Carbon.

³ CFE represents Combined Filter Effluent.

⁴ RAA represents Running Annual Average using 2015- 2016 data.

⁵ Pennsylvania DEP allows public water systems to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of the data presented in this table, though representative, may be more than one year old. In these cases, the calendar year in which water samples were tested for these contaminants is shown in parentheses.

Lead Statement

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. Ship-pensburg 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>.

TABLE OF CONTAMINANTS- WELL NO. 1					
CONTAMINANTS	MCL	MCLG	TEST VALUE ¹	VIOLATION	MAJOR SOURCES IN DRINKING WATER
INORGANIC CONTAMINANTS					
Barium	2 ppm	2 ppm	0.018 ppm (2015)	NO	Erosion of natural deposits. Discharge from drilling waste.
Fluoride	2 ppm	2 ppm	0.65 ppm (2015)	NO	Erosion of natural deposits. Water additive that promotes strong teeth.
Nitrate	10 ppm	10 ppm	2.20 ppm	NO	Erosion of natural deposits. Runoff from fertilizer use. Leaching from septic tanks.
RADIONUCLIDE CONTAMINANTS					
Gross Alpha	15 pCi/L	0 pCi/L	4.1 pCi/L (2014)	NO	Erosion of natural deposits.
TABLE OF CONTAMINANTS- WELL NO. 2					
CONTAMINANTS	MCL	MCLG	TEST VALUE	VIOLATION	MAJOR SOURCES IN DRINKING WATER
INORGANIC CONTAMINANTS					
Barium	2 ppm	2 ppm	0.027 ppm (2015)	NO	Erosion of natural deposits. Discharge from drilling waste.
Fluoride	2 ppm	2 ppm	0.93 ppm (2015)	NO	Erosion of natural deposits. Water additive that promotes strong teeth.
Nitrate	10 ppm	10 ppm	1.20 ppm	NO	Erosion of natural deposits. Runoff from fertilizer use. Leaching from septic tanks.
TABLE OF CONTAMINANTS- WELL NO. 3					
CONTAMINANTS	MCL	MCLG	TEST VALUE	VIOLATION	MAJOR SOURCES IN DRINKING WATER
INORGANIC CONTAMINANTS					
Barium	2 ppm	2 ppm	0.016 ppm (2015)	NO	Erosion of natural deposits. Discharge of drilling wastes.
Fluoride	2 ppm	2 ppm	0.79 ppm (2015)	NO	Erosion of natural deposits. Water additive that promotes strong teeth.
Nitrate	10 ppm	10 ppm	1.80 ppm	NO	Erosion of natural deposits. Runoff from fertilizer use. Leaching from septic tanks.

¹ Pennsylvania DEP allows public water systems to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of the data presented in this table, though representative, may be more than one year old. In these cases, the calendar year in which water samples were tested for these contaminants is shown in parentheses.

The following violations occurred in 2016. Customers were previously notified of these violations through a Public Notice, as required by the Department of Environmental Protection.

MCL EXCEEDANCE VIOLATION

Shippensburg Borough Authority routinely monitors for drinking water contaminants. Testing results received February 1, 2016 showed the system exceeded the maximum contaminant level for Haloacetic Acids. The standard for Haloacetic Acids is 0.060 mg/L and the local running annual averages at sampling locations *701: Mongul Church*, *702: Roxbury Apartments* and *735: Lytle Farm* were found at 0.067 mg/L, 0.074 mg/L, and 0.068 mg/L respectively, therefore a violation was issued. Notices were sent to affected customers when the violation was discovered. You should know that this is not an immediate health risk, however some people who drink water containing Haloacetic Acids in excess of the MCL over many years may have an increased risk of getting cancer. Immediate action was taken to alleviate this issue. The Shippensburg Borough Authority continues to take action avoid any possible future occurrences. Public Safety is and will remain our top priority. If you want more information about Haloacetic Acid or the violation, please call us at (717) 532-2147.

MCL EXCEEDANCE VIOLATION

Shippensburg Borough Authority routinely monitors for drinking water contaminants. Testing results received May 9, 2016 showed the system exceeded the maximum contaminant level for Haloacetic Acids. The standard for Haloacetic Acids is 0.060 mg/L and the local running annual averages at sampling locations *702: Roxbury Apartments* was found at 0.066 mg/L, therefore a violation was issued. Notices were sent to affected customers when the violation was discovered. You should know that this is not an immediate health risk, however some people who drink water containing Haloacetic Acids in excess of the MCL over many years may have an increased risk of getting cancer. Immediate action was taken to alleviate this issue. The Shippensburg Borough Authority continues to take action avoid any possible future occurrences. Public Safety is and will remain our top priority. If you want more information about Haloacetic Acid or the violation, please call us at (717) 532-2147.

FLUORIDE VIOLATION

Shippensburg Borough Authority has a permit that authorizes us to add fluoride to the drinking water that we produce at all of our treatment plants. Our permit requires us to monitor the fluoride levels daily and maintain an optimal level of 0.7 mg/L, but are allowed to range between 0.5 and 1.0 mg/L. On 2 days in January, 6 days in February, 5 days in March, 3 days in April, 8 days in May, and 6 days in June of 2016, the fluoride readings taken on those days were below the permitted level. There were also 6 days in February where the reading was not taken at all. This was according to the data provided for the Gunter Valley Water Treatment Plant. This was not an immediate risk at the time of the violation. If it had been, you would have been notified immediately. The Authority has taken steps to make sure that the readings are taken daily at all entry points and that the fluoride levels are maintained in the acceptable permitted range.

TREATMENT TECHNIQUE VIOLATION

Shippensburg Borough Authority did not meet treatment technique requirements on numerous days between January and June 2016. We are required to provide continuous filtration and disinfection of our drinking water, and our Gunter Valley Water Treatment Plant is required to meet a certain level of inactivation of disease-causing organisms. For certain periods of time between January and June 2016, our disinfection treatment was not operating at a level sufficient to meet the requirement for inactivation of pathogenic organisms in the drinking water provided to our customers. On several days, we are not sure of the level of inactivation, because we were not calculating it on a daily basis. We also failed to notify our customers and DEP within 24 hours of the problem. We were required to notify you that boiled or bottled water should have been used for drinking, making ice, brushing teeth, washing dishes, and food preparation until the problem was corrected. Boiling kills bacteria and other organisms in the water. THIS ISSUE WAS CORRECTED IN JULY 2016, SO IT IS NOT NECESSARY TO BOIL YOUR WATER NOW.

WATER MONITORING SCHEDULE VIOLATION

Shippensburg Borough Authority failed to submit a source water sampling schedule to the Department of Environmental Protection (DEP) by the required date July 1, 2016. The Authority prepared the required plan and submitted it to the DEP on August 8, 2016. The plan was approved by DEP on September 9, 2016. The Authority conducted all sampling required by the plan in 2016.