

UNDERSTANDING

Source Water Protection

THE GOAL: Prevent contaminants from entering waterways that serve as sources for our drinking water.

THE BENEFITS:

- ✓ Protects public health.
- ✓ Ensures a healthy habitat for countless species.
- ✓ Decreases need for costly, complex treatments to remove pollutants.

The source water for Middleburg Municipal Authority is from surface water intakes and a groundwater well.

Your water system has volunteered to participate in the Pennsylvania Department of Environmental Protection's Source Water Protection Technical Assistance Program (SWPTAP).

THROUGH SWPTAP: A plan will be developed to guide your water system's source water protection efforts in the future. Once complete, it will be available for all customers to learn more about assisting with our source water protection efforts.



More Ways to Help



Minimize your use of pesticides and herbicides on your lawn and garden.



Bring hazardous waste (ex: paint) to recycling facilities.



Don't pour motor oil on the ground or in a storm drain. Dispose of motor oil at garages that recycle it.



Pump out your septic system every two or three years.



Do not flush any unwanted or leftover medications down the toilet or sink drain. Dispose of them at a disposal event or collection box.



Don't dump chlorinated pool water into a creek or storm drain. Direct it to a sanitary sewer or dechlorinate prior to disposal.



Remember that anything you throw or store on the ground or put down the toilet will find its way into waterways.

If you observe a chemical spill, call the PA Department of Environmental Protection at 800-541-2050.

CITIZEN'S GUIDE:

Surface Water Treatment for Drinking Water



Middleburg Municipal Authority

This program is funded by the PA Department of Environmental Protection's Source Water Protection Technical Assistance Program.

DID YOU KNOW:

Over 10 million people in Pennsylvania receive their drinking water from surface water sources.

Surface water includes local streams, rivers, lakes, and reservoirs. But before reaching the tap, the water goes through a series of treatments to ensure it is safe to consume.

DEP, The Department of Environmental Protection, is responsible for ensuring that community water systems deliver both safe and reliable water to their customers.



Typical Steps in the Water Treatment Process:

To ensure safe drinking water, these are some of the treatment steps that surface water goes through before reaching the tap.

- COAGULATION:** Coagulants such as Bentonite clay, are mixed in with water to alter the electric charges of suspended particles. Neutralized charged particles clump together, forming larger particles.
- FLOCCULATION:** Water is agitated so that the large suspended particles collide with each other and stick together, forming larger and heavier particles.
- SEDIMENTATION:** Next, the water is moved slowly around a large tank which allows these larger particles to settle out of the water.

FILTRATION: Water is moved through filters such as sand, gravel or coal to remove remaining silt size particles. The water becomes crystal clear as turbidity is reduced. Other media such as activated carbon may also be used.

DISINFECTION: Compounds such as chlorine, chloramines or ozone are added to kill potentially harmful germs like bacteria, viruses and parasites. Enough disinfection is added to continue cleaning all the way through the distribution system up to the tap.

FINAL TREATMENT: Based on the chemistry, the water may receive an additional treatment such as aeration, fluoridation and/or pH adjustment. These final steps are for tuning the aesthetics and corrosion control of the treated water.

Why do we treat surface water?

One main reason to treat surface water for drinking is to eliminate waterborne disease outbreaks caused by pathogens. Some of the pathogens include *Legionella*, *Giardia Lamblia* and *Cryptosporidium*. To ensure safe drinking water, water systems must filter and disinfect water from surface sources. This includes groundwater that is deemed to be under the direct influence of surface water (GUDI).

Understanding regulations:

The U.S. Environmental Protection Agency (EPA) has developed rules to improve the quality of drinking water. Their standards include legal limits for more than 90 water contaminants. The Safe Drinking Water Act (SDWA) gives states the right to set and enforce their own standards providing they are at least as stringent as EPA's.

Middleburg Municipal Authority

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The members of your water system work around the clock to provide top quality tap water to every tap. It is a task that we take very seriously. For more information, contact us.