

WATER QUALITY REPORT

Calendar Year 2021

Public Water System ID #4550022

SHAMOKIN DAM BOROUGH

42 W 8th Avenue – PO Box 273

Shamokin Dam, Pa 17876



May 18, 2022

Dear Water Customer;

The U.S. Environmental Protection Agency (EPA) mandates that all public water systems inform their customers annually about the quality of the drinking water supplied to them and provide a description of the public water system. **This report contains important information about your drinking water. Este informe contiene informacion muy importante sobre su agua potable. Traduzcalo o hable con alguien que lo entienda bien.**

The following report is to satisfy this EPA mandate as well as to inform you about the Borough's public water system. Much of the information is like previous years' reports.

Owner Statement

The Shamokin Dam water treatment plant and distribution system are owned and operated by the Shamokin Dam Borough. The Borough Council is responsible to provide safe drinking water, on a continuous basis, to their customers. The Borough employs two certified water treatment operators and one water distribution specialist, who report to the Borough Manager, to ensure the required water quality standards are met. Council regularly scheduled meetings are on the first Monday of each month beginning at 7:00 PM to review and discuss any water system related items that may need to be addressed. Our meeting nights are available at the Borough office or on our website at www.shamokindam.net. Additional Borough contact information is listed at the end of this report.

Safe Water Statement

I am pleased to report that in 2021 your drinking water met all EPA and Pennsylvania Department of Environmental Protection (PA DEP) regulations, and health standards. The Shamokin Dam Borough closely monitors its water supply by taking hundreds of required water tests per year however we did have one monitoring violation to report in 2021., which is explained as follows:

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER FAILURE TO MONITOR

***ESTE INFORME CONTIENE INFORMACIÓN IMPORTANTE ACERCA DE SU AGUA POTABLE.
HAGA QUE ALGUIEN LO TRADUZCA PARA USTED, O HABLE CON ALGUIEN QUE LO ENTIENDA.***

Our water system rarely violates any drinking water standards over the course of a year. Even though the following were not emergencies, as our customer, you have a right to know what happened and what we did to correct these situations.

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether our drinking water meets health standards. During October 2021, we did not sample for one of three check samples following a total coliform-positive bacteria routine sample at the end of the system, and therefore could not be sure of the quality of our drinking water during that time, although the two submitted check samples came back as absent of total coliform.

What should I do?

There is nothing you need to do currently or in the future.

The table below lists the contaminant we did not properly test for during the last year, how often we are supposed to sample for total coliform bacteria and how many samples we are supposed to take, how many samples we took, when samples should have been taken, and the date on which follow-up samples were (or will be) taken.

Contaminant	Required sampling frequency	Number of samples required	Number of samples taken	When all samples should have been taken	When samples were or will be taken
Combined Uranium	Every 6 Years	1	0	2021	2022

What happened? *We missed the sampling deadline for this contaminate in 2021.*

What was done? *We collected the sample in the 1st quarter of 2022. The result was well below the MCL, and is shown on page (5) of this report.*

Source Water Information

The Boroughs' water source is the Susquehanna River (DEP Source ID 001) in Snyder County, which is classified as a 'surface type' water supply. Raw (untreated) river water flows by gravity from our intake, located in the Susquehanna River just below the Veteran's Memorial Bridge, to our treatment plant. Surface type waters, like any source water, can be susceptible to contamination. If contamination occurs, public notification may be necessary depending on the severity and the type of contaminate(s). PA DEP closely monitors daily river conditions, and promptly reports any problems which may occur in the river.

Source Water Assessment Statement

A Source Water Protection Assessment of the Susquehanna River, in our watershed area, was completed in 2017 by DEP in conjunction with Spotts, Stevens and McCoy – Engineers and Environmental Consultants. A copy of the Source Water Protection Plan is on file in our office. Any specific questions that you as a consumer may have concerning river conditions can be directed to our regional PA DEP office by calling (570) 327-3636 or see the source water assessment link <http://www.depgreenport.state.pa.us/elibrary/GetFolder?FolderID=4545>

Contaminants in Your 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 the water poses a health risk. The EPA has established drinking water MCL's (maximum contaminant level) for several contaminants. MCL's are the maximum level of a contaminant that can be present in the water and be considered safe. If an MCL is exceeded the public water system must notify the public of the contaminant that is present in the water, and the probable source of the contaminant.

The sources of drinking water (both tap and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land and through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material. Water can also pick-up substances resulting from the presence of animal or human activity. Microbial contaminants, such as viruses and bacteria may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife. Inorganic contaminants, which include salts and metals, are a result of naturally occurring conditions such as urban runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming. Pesticides and herbicides 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 are by-products of industrial processes and petroleum production; they can also come from fueling stations, urban storm water runoff, and septic systems. Radioactive type contaminants, which can be naturally occurring, or the result of oil and gas production and mining activities, may also be present in drinking water. To ensure that tap water is safe to drink, EPA prescribes regulations that limit the concentration of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health. More information about contaminants and potential health effects can be obtained by calling the EPA Safe Drinking Hotline @ (800-426-4791).

Information about Lead in Drinking Water

If present, elevated levels of lead in drinking water can cause serious health problems, especially for pregnant women and young children. The Borough is required by DEP to test for lead (& copper) every three (3) years, the latest being in 2019. The testing was done at twelve (12) locations throughout the system, mostly in residences, and in the (3) sample locations that detected lead and/or copper, the results were well below the allowable limits. In the nine (9) remaining sample locations neither lead or copper was detected. Lead in individual residences drinking water is primarily from materials and components associated with service lines and interior home plumbing. Shamokin Dam Borough is responsible for providing high quality drinking water to you as a customer, but we cannot control the variety of materials used in plumbing components within individual homes, which may contain lead. To minimize the potential of lead exposure in your home you can flush any one of your fixtures for a minimum of 30 seconds before using the water for drinking or cooking, especially if the water has been sitting within your home plumbing system for several hours or days. If for any reason you are concerned about lead in your water, you may choose to have your water independently 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>.

Contaminant Precautions

Some people may be more vulnerable to contaminants in drinking water than the general population. Water that is not properly filtered and treated could cause serious illness in immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, persons with HIV/AIDS, those with immune system disorders, and some of the elderly population. Infants can be particularly at risk for infections. These people should consult with their health care providers regarding special precautions that maybe appropriate given their condition. EPA/ Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other Microbial contaminants are available again from the Safe Drinking Water Hotline (800-426-4791).

Treating Our Water

Raw (untreated) river water flows by gravity from our intake, located in the Susquehanna River just below the Veteran's Memorial Bridge, to our raw water pumping station located at the north end of the Fabri-Dam Park. The untreated river water is then pumped from the raw water pumping station to our water treatment plant located next to Fiss Run, on the west side of Helen Street.

The treatment plant purification process consists of oxidation, flocculation, sedimentation, filtration, and disinfection.

As the raw river water passes through the treatment plant combinations of carbon, potassium permanganate, aluminum sulfate, polyaluminium chloride, and hydrated lime are added to the untreated river water prior to the flocculation chamber.

The following is a summary of how each chemical works to improve the water quality. Carbon improves the taste and odor of the water and acts as a coagulant aid. Potassium permanganate oxidizes out the soluble iron and manganese present in the river water. Aluminum sulfate, polyaluminium chloride, and lime form a coagulant (a sticky particle) that the turbidity (dirt) in the raw water will attach to and in return the coagulants will help to separate the dirt particles in the flocculation/sedimentation chamber. Once flocculation and sedimentation have occurred, the clearer water is decanted from the top of the sedimentation basin (up-flow Clarifier), chlorinated, and filtered through a mixed media filter. Chemicals added post filtration include fluoride which promotes strong teeth, and Shan-No-Corr (a zinc metaphosphate used for corrosion control which aids in controlling lead and copper levels in the distribution system). Both are added at this point to the filtered water. Finally, the water is disinfected with sodium hypochlorite prior to pumping the now potable water approximately 1.5 miles, and an elevation change of 330 feet, to a four (4)-compartment 1,000,000-gallon concrete enclosed reservoir. The reservoir is located above the current Nissan dealership site on the north side of Sunbury Road.

Average Daily Water Usage & Conservation

The Borough consumed, through metering (customer use) and the water processing operations, approximately 180,520 gallons of potable water per day in 2020. Under normal river conditions the treatment plant can process 700,000 gallons per day (per our water allocation permit).

Conclusion

The Shamokin Dam Borough strives to provide the maximum level of quality of water to our customers at an affordable price. We ask that anyone observing non-authorized use of water, such as fire hydrants being operated by unauthorized personnel, or if you notice water running down the street where it normally does not run, which could indicate a break in a water main or service line, immediately contact the Borough office or Snyder County Emergency.

Please take a moment to review the attached **2021** testing results and definitions for our system.

If you have any questions regarding this report or would like to tour the Borough water treatment facilities, please contact me at the Borough Office (**570-743-7565**), stop by the Borough office, or you can attend one of our monthly Borough Council meetings, which are held the first Monday of each month beginning at 7:00 PM in the Borough Council Chambers.

Sincerely,

Edward J. Hovenstine

**Edward J. Hovenstine
Borough Manager**

Shamokin Dam Borough - Detected Sample Results - 2021

Chemical Contaminants

Contaminant (See Health Effects on Page 6)	MCL	MCLG	Borough (Avg)	Range of Detects	Violation Yes/No	Likely Source of Contaminant
Barium (IOC) (ppm)	2	2	0.027	0.027	No	Discharges of drilling wastes, metal refineries and erosion of natural deposits
Fluoride (IOC) (ppm)	2	2	0.75	0.68 - 0.82	No	Water additive, promotes strong teeth.
Nitrate (ppm)	10	10	0.550	0.550	No	Runoff from fertilizer use
Uranium (ppb)	30	0	0.262	0.262	No (Failure to Collect)	Erosion of natural deposits present in the environment.
Trihalomethanes (TTHM)(ppb) (See Note #1 below)	80	80	25.3 (RAA)	6.5 -47.9	No (see note #1 below)	Chlorine Byproduct
Haloacetic Acids (HAA5)(ppb) (See Note #1 below)	60	60	40.2 (RAA)	13.8 - 61.1	No (see note #1 below)	Chlorine Byproduct
Combined Filter Effluent Turbidity (NTU) (See notes #2 & #3 below)	TT	0	0.04	0.02 - 0.22	No	Soil run-off
	TT		100%			
Total Organic Carbons (TOC's) (See Note #4 Below)	(Raw) >2.0 to 4.0	0	Raw Avg.= 1.53	N/A	No	Naturally present in the environment.
			Fin. Avg.= <1.0			

Contaminant (See Health Effects on Page 6)	MDR	MinRDL	Borough (Avg)	Range of Detects	Violation Yes/No	Likely Source of Contaminant
Sodium Hypochlorite (ppm) Entry Point (See Note #5 below)	4	0.20	1.39	0.92 - 1.79	No	Water additive used to control microbes.
Sodium Hypochlorite (ppm) Entry Point	4	0.20	0.98	0.77 - 1.17	No	Water additive used to control microbes.

Notes:

#1. **TTHM & HAA5 Testing Results** - Testing is done quarterly and compliance is based on a Running Annual Average (RAA), so a result that exceeds the MCL does not automatically constitute a violation.

#2. **TT - Treatment Technique** = 1.0 NTU for a single measurement.

#3. **TT - Treatment Technique** = For compliance, at least 95% of monthly samples less than or equal to 0.3 NTU.

#4. **Total Organic Carbon (TOC)** - In 2020 DEP required the Borough to monitor TOC removal on a quarterly basis. Readings are based on ppm of both the raw & finished water in combination with the raw water Alkalinity. A copy of each quarters removal data is on file in our office. All readings were well within the safe reporting limits.

#5. **MinRDL** - The Borough must maintain a 0.20 ppm disinfection residual at the entry point (reservoir), at all times. A violation would occur if the Borough failed to maintain a 0.20 for more than 4 consecutive hours.

Lead & Copper

Contaminant (See Health Effects on Page 6)	MCL	Result Range	Sample Date	Latest Sample Period Start Date	Latest Sample Period End Date	90th Percentile Result	Action Level	90% Action Level Exceeded
Copper (ppb)	N/A	15.0 - 194.0	8/15/2019	6/1/2019	9/30/2019	79.1	1300	No
Lead (ppb)	N/A	0.00 - 1.50	8/15/2019	6/1/2019	9/30/2019	2.1	15	No

* No Lead or Copper sample in the twelve that were tested exceeded the action level.

Other Reportable Detects

N/A

Cryptosporidium Monitoring

Cryptosporidium is a microbial pathogen found in surface water throughout the United States. Although filtration removes **Cryptosporidium**, the most commonly-used filtration methods cannot guarantee 100 percent removal. The Borough was required to begin monthly testing of our raw water source (the Susquehanna river) for **Cryptosporidium** in April of 2019 and continued to test until March of 2021. Our monitoring indicates a slight presence of these organisms in the raw water, prior to our filtration system. In addition to our conventional filtration system to eliminate the organism, we also use **Sodium Hypochlorite** disinfection to remove any organism that would happen to pass through the filters. Ingestion of **Cryptosporidium** may cause cryptosporidiosis, an abdominal infection. Symptoms of the infection include nausea, diarrhea and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people are at a greater risk of developing life-threatening illness. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. **Cryptosporidium** must be ingested to cause disease, and it may be spread through means other than drinking water. No further testing is required at this time.

In 2021 PA DEP required the Borough to test for a series of additional Organic Chemicals.

20 Regulated Volatile Organic Compounds (VOC's). The testing was done one time, in the first quarter of 2020. **VOC's** pose certain health risks, from cancer, liver / kidney, reproductive and stomach to nervous & immune system effects. Likely sources are discharges from industrial, chemical and petroleum factories and metal degreasing sites, leaching from gas storage tanks and landfills, and various other industrial activities. A complete list of the required **VOC's** that were tested, and results, are available at the Borough office. **VOC** levels are measured in mg/l's (ppm). The level of detection for each individual test was well below the minimum allowed and in most cases, less than the reportable limit as required by the EPA.

12 Regulated Inorganic Compounds (IOC's). This testing was done one time, in August of 2020. **IOC's** pose certain health risks, from increased blood pressure, sugar and cholesterol, liver and kidney damage. Likely sources are discharges from petroleum refineries, fire retardants, erosion from natural deposits and industrial type discharges. A complete list of the required **IOC's**, and the results, that were tested is available at the Borough Office. **IOC** levels are measured in mg/l's(ppm). There was very minimal, and most cases no detection for all that were tested.

Microbial					
Contaminant (See Health Effects this page)	Treatment Technique	MCLG	Assessment / Corrective Actions	Violation Y/N	Contaminate Source
Total Coliform Bacteria	Failing to complete all required assessments or correct all identified sanitary defects	N/A	*See description, this section	N	Naturally Present in the Environment.

*The Borough had to perform a Level 1 assessment for a confirmed positive total coliform bacteria detection, where check samples were not taken on time. We did discover that the facility where the original test was taken, that indicated the presence of coliform, had recently performed service work on a boiler, most likely causing the detect. All check samples submitted from the facility were absent of any Total Coliform Bacteria. DEP reviewed the entire assessment and determined that there was no violation.

Definitions

Maximum Contaminant Level Goal (MCLG): Indicates the level of a contaminant in drinking water below which there is no known or expected risk to health. **MCLG's** allow for a margin of safety.

Maximum Contaminant Level (MCL): Indicates the highest level of a contaminant that is allowed in drinking water. **MCL's** are set as close to the MCLG's as feasible using the best available treatment technology.

Maximum Disinfectant Residual (MDR): The (max) level of a disinfectant allowed in drinking water. The addition of a disinfectant is necessary for control of microbial contaminants.

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

Action Level (AL): Indicates the concentration of a contaminant which, when exceeded, triggers treatment or other requirements which a water system must follow.

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

(ppm) or (Mg/L) – Parts per million or milligrams per liter – One ounce to 7,812.5 gallons.

(ppb) or (Ug/L) - Parts Per Billion or Micrograms per Liter – one (1) ounce to 7,812,500 gallons.

(pCi/l) – **Picocuries/Liter** – A unit of concentration for radioactive contaminants.

(ND) - **Non-Detects** – Laboratory analysis indicates that the constituent is not present.

Chemical Contaminant Health Effects

Contaminant	Health Effects
Barium (IOC)	Some people that drink water containing barium in excess of the MCL, over an extended period of time, could experience an increase in their blood pressure.
Fluoride (IOC)	Some people that drink water containing Fluoride in excess of the MCL over an extended period of time, could develop bone disease, including pain and tenderness. Children may develop mottled teeth.
Nitrate (IOC)	Some infants that consume Nitrate in drinking water in excess of the MCL could experience Methemoglobinemia (blue baby syndrome).
Uranium	Uranium in drinking water that is in excess of the MCL could increase a persons risk of cancer.
Trihalomethanes / Haloacetic Acids	Some people that drink water containing these contaminants in excess of the MCL, over an extended period of time, may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.
Combined Filter Effluent (Turbidity)	Turbidity has no direct health effect in drinking water. Turbidity can interfere with the disinfection, which can provide a medium for microbial growth. Turbidity may also indicate the presence of disease causing organisms.
Total Organic Carbons	TOC's have no known health effects. However, TOC in drinking water provides a medium for the formation of disinfection byproducts. These byproducts include THM's and HAA's. Drinking water containing these byproducts in excess of the MCL, over an extended period of time, may lead to adverse health effects such as liver and kidney problems or nervous system effects, and may lead to an increase of getting cancer.
Sodium Hypochlorite Entry Point	When a disinfectant such as Sodium Hypochlorite or Chlorine is consumed in excess of the maximum residual disinfectant level, some people could experience irritating effects to their eyes and nose, and some could experience stomach discomfort.
Copper (ppb)	Copper is an essential nutrient, but some people that drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink copper in excess of the action level, over many years, could suffer liver or kidney damage.
Lead (ppb)	See information about lead in drinking water on page (3) of this report.
Total Coliform Bacteria	Coliforms are bacteria are used as an indicator that other potentially-harmful, bacteria may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system.