

**State of West Virginia
Source Water Assessment and
Protection Program
Source Water Assessment Report**

**Pierpoint PSD
Wyoming County
PWSID: WV3305536**



Prepared by:

**West Virginia Department of Health and Human Resources
Bureau for Public Health
Office of Environmental Health Services
Source Water Protection Unit**

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Ground Water Public Water Supply Systems

Source Water Assessment and Protection (SWAP) Program

Prepared by the West Virginia Bureau for Public Health, SWAP Program

What is the purpose of this Report?

This report identifies the most significant Potential Contaminant Sources (PCS) that could threaten your spring's water quality. Your susceptibility ranking does not imply poor water quality. Actual water quality is best reflected by results of regular water tests. The purpose of completing the source water assessment is to provide information that each public water system (PWS) can use to develop a plan to protect their drinking water supply from contamination. The development of a source water protection plan is strongly recommended by West Virginia Bureau for Public Health (WVBPH).

What is my spring's Source Water Protection Area (SWPA)?

A Source Water Protection Area (SWPA) is the land around the spring where protection activities should be focused. The SWPA is the area that is likely contributing water to the source. Please refer to the attached map for your SWPA.

Table 1: Public Water Supply Information

PWS Name	Pierpoint PSD
Address	P.O. Box 309
City, State, Zip	Pineville, WV 24874
PWSID#	WV3305536
County	Wyoming
System Type	Community

What is the Source Water Assessment and Protection (SWAP) Program?

The SWAP, established under the Safe Drinking Water Act, requires every state to:

- Delineate the area from which a public water supply system receives its water.
- Inventory land uses within the recharge areas of all public water supplies.
- Assess the susceptibility of drinking water sources to contamination from these land uses.
- Publicize the results to provide support for improved protection of sources.

The WVBPH is undertaking this task. Your spring's susceptibility to potential contamination is listed in Table 2. The WVBPH Central Office conducted the susceptibility analysis for your water source.

Table 2: Spring Information

Spring Name	SWPA (Acres)	GWUDI	Susceptibility of Intake
Mine-Spring	288	Non-Responsive	High

What is susceptibility?

Susceptibility is a measure of your spring's potential to become contaminated by land uses and activities within the SWPA. The purpose of a susceptibility analysis is to provide information a public water system may use to reduce the susceptibility of their drinking water supply.

How was my spring's susceptibility determined?

Your spring's susceptibility is based on the following parameters:

- Review of the hydrogeologic setting (ease of contamination transport through each material present in the local bedrock).
- Review of the physical (structural) integrity of the spring.
- Review of available groundwater quality data.
- Characterization of the Potential Contaminant Sources (PCS) identified in the SWAP area.
- Integration of this information to identify the greatest threats to the source water and suggestions of appropriate protection strategies or activities.

Source of Your Drinking Water - Hydrogeologic Setting

Spring Name	Geologic Setting/Sensitivity
Mine-Spring	Spring: High Sensitivity

An interim circular radius for your source(s) was calculated based on population and accepted rates of water usage for your facility. These range from a minimum of 500 feet to a maximum of 2000 feet. The radius for Mine-Spring is 2,000 feet and covers an estimated land area of 288 acres that contributes water to the spring. It is depicted in the attached map as the Source Water Protection Area (SWPA). The SWPA may be redone using other delineation techniques later, if the necessary information is available or special needs for this system arise.

Coal mine areas consist of areas of deep mining of coal and will function as a ground water drain for all permeable rocks above it. Therefore mines may store a large quantity

of water or may deplete surrounding ground water for an entire area if the mine is draining freely.

Physical Integrity of Spring

Spring Name	Structural Integrity
Mine-Spring	Unknown Construction

A spring must be protected with a shoebox type lid enclosure that is screened and locked to prevent unauthorized entry. A spring constructed to the most exacting standards will lose structural integrity with time. It is unknown if this spring was constructed to standards. The WVBPH files indicate sampling has been recommended to the system to determine GWUDI or Ground Water Under Direct Influence of surface water status. The agency encourages the system to complete the sampling recommendations as soon as possible to reduce the potential of surface influence on your water surface.

Water Quality and Water Treatment Information

Spring Name	Results
Mine-Spring	Does NOT Meets standards

Water Quality Information

This assessment evaluates contaminants that may enter the water drawn directly from the mine. The contaminants addressed in this assessment include those regulated under the Safe Drinking Water Act as well as those the BPH has determined may present a concern to public health. The water withdrawn from the mine is currently disinfected prior to distribution. Pierpoint PSD has NOT performed periodic analysis of the drinking water after treatment for a variety of bacterial, organic, nitrate, synthetic and inorganic contaminants. It is recommended by the WVBPH to perform these periodic analyses of your drinking water in order to comply with state and federal requirements. Because sampling requirements are for treated water, the lack of water quality impacts does not necessarily indicate a lack of contamination. This determination is limited by the sampling that is performed for the water system.

All drinking water including bottled water may reasonably be expected to contain small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. For further information regarding the quality of the system's finished water, please refer to the *Consumer Confidence Report* or call the Environmental Protection Agency's Safe Drinking Water Hotline at **1-800-426-4791** or contact your local health provider for more information about contaminants and potential health effects.

Evaluation of Potential Contaminant Sources (PCS)

The inventory for Pierpoint PSD consists of approximately 3 significant Potential Contaminant Sources (PCS) of which none are considered a high threat to ground water. Table 3 contains a list of any sites found in your SWAP area. Each significant potential source of contamination has been analyzed and prioritized (low, moderate, and high) in accordance with their potential to impact the water supply. It is important to note that the links between the PCS and the primary contaminant types are not intended to be comprehensive, but only those commonly associated with the PCS. Any potential source may have none, some, or more types of contaminants associated with the chemicals indicated. Threat rankings are a combination of the perceived risk of the release of a contaminant from a land use area, the migration route of the contaminant to the mine and the relative public health risk of the contaminant itself. The risk rankings are based on the general nature of their activities and the contaminants associated with them, not on facility specific information, such as management practices. This ranking does not take into consideration any unforeseen releases or the dynamics of new PCS's within the delineated SWPA. A detailed risk assessment of PCS's was beyond the scope of what could be accomplished with available resources and data. A detailed risk analysis is more meaningful when prepared by local decision makers as the bridge from assessment work to protection strategies.

Table 3: Potential Contaminant Sources (PCS)

Sequential Number	Map Code	PCS Category	PCS Name	Associated Chemicals	Threat to GW
1	I-27	Industrial	Permitted Discharge Pipe (outfall)	ALL	
2	I-27	Industrial	Permitted Discharge Pipe (outfall)	ALL	
3	I-27	Industrial	Permitted Discharge Pipe (outfall)	ALL	

Index to Associated Contaminants is as follows:

MP	Microbiological Pathogens: Total/Fecal Coliform, Viruses, Protozoa
NN	Nitrate/Nitrite
VOC	Volatile Organic Compounds
HM	Heavy Metals
M	Metals
SOC	Synthetic Organic Compounds
T	Turbidity
TO	Taste and Odor precursors
R	Radionuclides
PH	Petroleum Hydrocarbons
D	Disinfectant Byproducts
GW	Ground Water

SWAP Susceptibility Conclusion:

The hydrogeologic setting, the spring's structural integrity and the presence of Potential Contaminant Sources indicate that the spring at Pierpoint PSD has a high susceptibility to contamination. This points Pierpoint PSD to placing a high priority on protecting their water supply from future contamination.

Specific Recommendations

- ✓ Inspect the SWPA regularly; work with the WVBPH and other local officials to make sure your source is included in local regulations and inspections efforts.
- ✓ Complete the sampling associated with GWUDI determination, as recommended by the WVBPH. Once the GWUDI status is determined, the system needs to determine the corrective action to comply with SWTR requirements: either filter, infect and monitor in accordance with the SWTR; abandon the source and develop a replacement source; or rehabilitate the source to prevent surface water influence.
- ✓ Perform periodic analysis of the drinking water after treatment for a variety of bacterial, organic, nitrate, synthetic and inorganic contaminants in order to comply with state and federal requirements.
- ✓ Restrict access to the spring.
- ✓ Remove oil/hazardous materials storage tanks, hazardous materials use or storage from near the source.
- ✓ Check for Underground Storage Tanks (UST) that might have contaminated the soil and groundwater. If a UST is located within the SWPA and near the wellhead, check for signs of previous spills or leaks. If you need to store fuel to power an emergency generator, use natural gas or propane.
- ✓ Address any septic system issues.
- ✓ Regularly inspect activities in the Protective Radius.
- ✓ Clearly label any hazardous materials (essential to your treatment system) located near the spring.
- ✓ Cap and/or screen all vents, access ports, and other openings of the source.
- ✓ Check the condition of sanitary seals and replace those that are not intact.
- ✓ Slope parking areas and concrete pads under storage areas away from the source, periodically check their condition, and repair any permeable area.
- ✓ Safeguard chemical feeders from inadvertent physical disturbances or tampering.
- ✓ Use a properly constructed sample tap and take other measures to avoid cross-connections.
- ✓ Don't allow the installation of floor drains that discharge to a drywell or any surface leaching system.
- ✓ Don't use pesticides, fertilizers or road salt near the spring.
- ✓ Don't store any type of chemical in or near the well house; or risk cross-connections by using a hose bib as your sample tap or allowing hoses to be submerged in swimming pools.

Next Step - SWAP Protection (Management and Contingency Planning) Plan

The next step in source water protection planning is to prepare or updating a SWAP protection plan. Check with your water systems to see if they currently have a protection (Management and Contingency Planning) plan in place? The SWAP protection plan incorporates this source water delineation and assessment report and additional sections.

Contingency Planning

A contingency plan documents the system's planned response to interruption of the source water

Alternative Sources

Information pertaining to alternative water sources focusing on long-term source replacement should the system be required to develop a new source of water due to contamination (or other reasons). This section outlines the most likely sources that can be utilized.

Management Planning

Management planning is the most important element of SWAP. The management plan identifies specific activities that will be pursued by the system to protect their water resources. The system will benefit by taking a proactive approach to source water protection in their source water protection area.

It is anticipated that most of the management effort will focus on coordination with government agencies and periodic surveys of the watersheds. It may be necessary to conduct a limited number of special studies to determine actual risk and consequences for selected contaminant sources. This information may be needed before decisions can be made on management activities.

Need additional information?

Visit the BPH Web site at www.wvdhhr.org/bph/swap or call 304-558-2981 to obtain additional information.

*** Disclaimer - The coverage's presented in this program are under constant revision as new sites or facilities are added. They may not contain all the potential or existing sites or facilities. The West Virginia Bureau for Public Health is not responsible for the use or interpretation of this information.**

Please report any inaccuracies on either the map or inventory by phoning 304-558-2981.

Glossary of Terms

Alluvium - Sediments deposited by moving rivers.

Aquifer - A formation, group of formations, or part of a formation that contains sufficient saturated permeable materials to yield sufficient, economical quantities of water to wells and springs.

Conjunctive Delineation – In cases where a “groundwater” source is designated as groundwater under the direct influence (GWUDI), an additional delineation in addition to the five (5) year time of travel/recharge delineation for groundwater will be completed. The additional delineation will account for stream segments outside of the groundwater delineation in cases where the area of surface influence is known or reasonably suspected. It should be noted in Karst situations particularly, the surface link is not always an adjacent stream, but could come from a stream miles away. In these cases a conjunctive delineation may not always be performed.

Contamination - The addition to water of any substance or property preventing the use of reducing the usability of the water for ordinary purposes such as drinking, preparing food, bathing, washing, recreation, and cooling

Flood Plain - Any land area susceptible to inundation by floodwater from any source.

GWUDI or "Ground Water Under the Direct Influence" - is defined by the EPA as water beneath the surface of the ground with either a significant occurrence of insects or other macro organisms, algae, or large diameter pathogens such as Giardia, lambia or Cryptosporidium or other water characteristic such as turbidity, temperature, pH or conductivity. Systems need to determine the corrective action to comply with SWTR requirements, either filter, infect and monitor in accordance with the SWTR, abandon the source and develop a replacement source, rehabilitate the source to prevent surface water influence.

Hydrogeologic Setting - Evaluates the sensitivity of an aquifer. The likelihood of a contaminant reaching a well or spring is a function of the ground water flows patterns, the rate of flow, the distance to the source and the hydraulic characteristics of the contaminant. The technical factors include the well(s) pumping rate and spring flow, the direction, slope and elevation of the water table, transmissivity and storativity characteristics of the aquifer, overlaying material and recharge rate for ground water systems.

Infiltration - The process of, or fluids, entering the soil and recharging aquifers rather than becoming runoff.

Karst - A term denoting a formation containing soluble rocks, underground solution passages, sinkholes and springs.

Maximum Contaminant Level (MCL) - Defined as the maximum permissible level of a contaminant in water, which is delivered to any user of a public water system.

100-year Flood Plain - The area adjoining a river, stream, or water course covered by water in the event of a 100 year flood.

100-year Flood - The flood having a one percent chance of being equaled or exceeded in magnitude in any given years. Contrary to popular belief it is not a flood occurring once every 100 years.

Physical (Structural) Integrity of the Well or Spring - This analysis evaluates and reviews the integrity of the well or spring structures needed to protect the water source from a Potential Contaminant Source(s). It is recognized that protective well construction characteristics can prevent the occurrence of contamination even in the presence of a Potential Contaminant Source. The design and construction of a well should include casing without cracks; tight joints between lengths of casing; adequate grout between the casing and bore hole and location (floodplain or flooding area). A spring must be protected with a “shoe box” type lid enclosure that is screened and locked to prevent unauthorized entry. Surface water runoff diversion and land use of the recharge area are paramount elements to evaluate. These features provide reasonable assurance that contaminants will not enter the well or spring through any pathway, and allow operators to focus on the potential for contaminants to migrate through the aquifer and enter into the well(s) or spring. However, even a well(s) and springs constructed to the most exacting standards may lose structural integrity with time. Maintenance records of remedial improvements also will be reviewed in evaluation of integrity.

Potential Contaminant Source (PCS) – A facility or activity that stores, uses, or produces chemicals or elements, and that has the potential to release contaminants within a source water protection area.

Public Water System - is any water system or water supply which regularly supplies or offers to supply, piped water to the public for human consumption, if serving at least an average of twenty-five (25) individuals per day for at least sixty (60) days per year, or which has at least fifteen (15) service connections.

Recharge - Water entering the upper end of a groundwater flow system.

Remediation - The removal of contaminants from soil and/or ground water.

Sensitivity of the Source Water Protection Area (SWPA) - refers to the hydrologic or hydrogeologic characteristics that affect the transport of contaminant from a source of contamination to a well or intake.

Source Water Assessment and Protection (SWAP) Program - The program established by the 1996 Amendments to the Safe Drinking Water Act (SDWA) which expanded the initial Wellhead Protection Program to all public drinking water supply systems including surface water systems. This program is to assess, preserve, and protect

the source waters which are used to supply water for public drinking water supply systems and to provide a long term availability of an abundant supply of safe water in sufficient quantity for present and future citizens of the State. This program also enables the water supply owners, consumers, and others to initiate and promote actions to protect their drinking water supplies with the developed information.

Source Water Protection Area (SWPA) - refers to the area delineated by the State for a public water system, or including numerous public water systems, whether the source is ground water, surface water or both, as part of the West Virginia SWAP approved by the EPA under section 1453 of the Safe Drinking Water Act.

Susceptibility - The likelihood that a release from a PSCS would contaminate and render unusable a drinking water supply such as aquifers or surface streams.

Unconfined Aquifer - An aquifer over which there is no confining layer.

Water Quality - Available data will be evaluated to help direct protection activities. If the water quality impact is known, evaluating the source(s) present may help to determine the origin of the contamination and where immediate protection efforts should be focused

Well(s) - refers to ground water intakes including the well structure (i.e., casing, etc) and wellhead.

Wellhead Protection Area (WHPA) - The surface and subsurface area surrounding a water well or wellfield, supplying a public water system, through which contaminants are reasonably likely to move toward and reach such water well or wellfield. This area is delineated by the State for ground water source public water systems. The former Wellhead Protection Program (WHPP) is now part of the Source Water Assessment and Protection (SWAP) Program.



Map Key

Potential Contaminant Sources

- ◆ Agriculture
- Commercial
- ◆ Industrial
- Municipal
- Residential
- Source Water Protection Area



This map is provided as a public service by the West Virginia Bureau for Public Health. The Bureau makes NO representation regarding completeness or accuracy of the data hereon. Efforts are made to verify and update the data used to generate this map. However, with data sets of this size and nature, eliminating all errors is difficult. Thus, the user assumes total responsibility for verification.

Pierpont PSD WV305536 Wyoming County

Scale: 1:8,000
Drawn by: JEM
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