

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

Huttonsville PSD (Elkwater Fork)

PWSID WV3304211

Randolph County



Prepared by:

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

December 8, 2014

TABLE OF CONTENTS

Introduction	4
What is the Purpose of this Report?.....	4
Table 1 Public Water Supply Information	4
What is SWAP?	5
What is Susceptibility?	5
How Was my Intake's Susceptibility Determined?.....	5
Table 2 Source of Your Drinking Water - Hydrologic Setting	5
System Information	6
What is my Intake's Source Water Protection Area?	6
Delineation.....	6
Watershed Delineation Area.....	6
Zone of Critical Concern	6
Table 3 Physical Integrity of Intake	7
Water Quality and Water Treatment Information.....	7
Evaluation of Significant Potential Sources of Contamination.....	7
Potential Contaminant Source Inventory	7
Historic Land Use and Land Use Changes	8
Table 4 Underground Mining	8
Regional Water Supply and Sewage Treatment	8
Above Ground Storage Tanks (AST)	8
Underground Storage Tanks (UST).....	8
Overview of Leaking Underground Storage Tanks (LUST)	8
Table 5 Potential Contaminant Sources	9
Table 6 Regulated Facilities.....	10
Resource Characterization.....	11
Soils and Geology	11
Table 7 Soil Types	11
Potential for Surface Runoff to Occur	11
Table 8 Major Soil Associations, Drainage, Erosion Potential, and Topography.....	12
Ease of movement of material into the Stream System (Rate of Overland Material Transport)	12
Table 9 Size, Shape, and Slope of Watershed.....	12
Movement of Water through the Watershed Area.....	12
Table 10 Watershed Gradient and Flow.....	12
System Susceptibility	13
Next Step:.....	14

Contingency Planning.....	14
Alternative Sources.....	14
Management Planning	14
Need additional information?.....	15
Figure 1: Huttonsville PSD (Elkwater Fork) Location Map.....	15
Figure 2: Huttonsville PSD (Elkwater Fork) Source Water Protection Area with PCS Locations (Topographic Map Background)	16
Figure 3 Huttonsville PSD (Elkwater Fork) Source Water Protection Area with PCS Locations (2011 Aerial Photo Background)	17
Figure 4 Huttonsville PSD (Elkwater Fork) Source Water Protection Area with Mining Activity.....	18
Figure 5 Huttonsville PSD (Elkwater Fork) Slope Map	19
Figure 6 Huttonsville PSD (Elkwater Fork) Soil Map.....	20
Figure 7 Huttonsville PSD (Elkwater Fork) Land Cover Map	21
Figure 8 Huttonsville PSD (Elkwater Fork) Geologic Map.....	22
Appendix A USEPA and WVDEP Regulated Sites.....	23
Glossary of Terms	25

SOURCE WATER ASSESSMENT AND PROTECTION (SWAP) PROGRAM

REPORT

Prepared by: West Virginia Department of Health and Human Resources (WVDHHR), SWAP Program

INTRODUCTION

What is the Purpose of this Report?

The Source Water Assessment and Protection (SWAP) Program of the West Virginia Bureau for Public Health (BPH) is completing assessments of the contamination threats to all public water sources (private wells are not involved in this effort). This concept of source water protection is a preventative approach and complements the effort of proper treatment and disinfection by the individual water supply systems. This assessment is one step in a multilevel approach to ensure a safe future supply of water by understanding what potential threats exist.

This Source Water Assessment Public Summary is to provide information to support local and state efforts to protect public drinking water source and to maintain a safe and dependable water supply for the protection of human health by preventing contamination. The costs of these preventative measures will rarely exceed the cost of remediating a public water supply once it is contaminated.

The emphasis of this assessment is on “source” water rather than the “tap” water. Information on tap water quality is available in the Consumer Confidence Report, which can be obtained from your local water supplier.

This report identifies the significant potential contaminant sources that could threaten source(s) water quality. Your susceptibility ranking does not imply poor water quality. Actual water quality is best reflected by results of regular water tests. Please refer to Table 1 for an informational summary of your public water supply.

Source location, PCS inventories, and activity status are based on data and information collected during a field review conducted by WVDHHR personnel on November 5, 2014. A delineation and assessment is provided for the single reservoir source.

Table 1 Public Water Supply Information

PWS Name	Huttonsville PSD (Elkwater Fork)
Address	P.O. Box 277
City, State, Zip	Mill Creek, West Virginia 26280
PWSID#	WV3304211
County	Randolph County
System Type	Community

What is SWAP?

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 WVDHHR SWAP will complete all of these components of a source water assessment.

What is Susceptibility?

Susceptibility is a measure of your intake's potential to become contaminated by land uses and activities within the SWPA. The purpose of a susceptibility analysis is to provide an overview to actions a public water system may take to further reduce the susceptibility to their drinking water supply. Because public water supplies have been constructed in various hydrologic settings and have a range of potentially significant contaminant sources, best professional judgment has been used in determining the susceptibility of each public water system to contamination. The possibility of a release from potential contaminant sources is greatly reduced if Best Management Practices (BMP's) are used. The susceptibility determination for your intake did not take into account whether BMP's are being used.

Susceptibility of drinking water does not mean a customer will drink contaminated water. Water suppliers protect drinking water by monitoring and treating water supplies, and using BMP's and source water protection measures to ensure that safe water is delivered to the tap.

How Was my Intake's Susceptibility Determined?

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

- Review of the hydrologic setting (ease of contamination transport through the watershed);
- Review of the physical integrity of the intake(s);
- Review of available surface water quality data;
- Characterization of the potential significant contaminant sources identified in the SWPA;
- Integration of this information to identify the greatest threats to the source water and suggestions of appropriate protection strategies or activities.

Table 2 Source of Your Drinking Water - Hydrologic Setting

Source Name	Setting/Sensitivity
Elkwater Fork Reservoir	Small Watershed / High Sensitivity

System Information

Huttonsville PSD is located in Mill Creek, Randolph County, West Virginia. Huttonsville PSD currently operates a community public water system that serves a population of approximately 2,829 people. A community public water system is a system that regularly supplies drinking water from its own sources to at least 15 service connections used by year-round residents of the area or regularly serves 25 or more people throughout the entire year. Current average production is about 160,000 gallons per day.

Water is currently purchased from the Town of Beverly (WV3304202) and the City of Elkins (WV3304203). Both systems currently draw water from the Tygart Valley River. Water treatment processes include disinfection. There are 4 storage tank(s) with a combined capacity of 830,000 gallons on the Huttonsville PSD distribution system.

This assessment reviews the proposed source water intake located in the Elkwater Fork Reservoir. Elkwater Fork dam was constructed in 2009 and the reservoir reached full pool in 2011. The dam was constructed as part of the Upper Tygart Valley Watershed Project primarily for water supply. Total storage is approximately 2,100 acre feet. The dam is 125 feet high and 600 feet long.

Water will be supplied to the current customer base of 2,829 people with the addition of 55 new customers. Water will also be sold to the Huttonsville Correctional Center (1,650 people—1,200 residential and 450 non-transient). Projected water production will average 350,000 GPD. Water treatment processes will include coagulation, flocculation, sedimentation, filtration (multimedia), and disinfection. Additional water storage capacity of 466,000 gallons will be derived from a new tank (216,000 gallons) and a clear well (250,000 gallons).

What is my Intake's Source Water Protection Area?

Delineation

Delineation is the process used to identify and map the drainage basin that supplies water to a surface water intake. This area is referred to as the source water protection area (SWPA).

All surface waters are susceptible to contamination because they are exposed at the surface and lack a protective barrier from contamination. Accidental spills, releases, sudden precipitation events that result in overland runoff, or storm sewer discharges can allow pollutants to readily enter the source water and potentially contaminate the drinking water at the intake. Because of this, the SWPA consists of two types of delineations.

Watershed Delineation Area

The first type of delineation is the Watershed Delineation Area (WSDA). The WSDA covers approximately 5,450 acres (8.5 square miles) in the Elkwater Fork watershed. The WSDA includes the entire watershed area upstream of the intake up to the boundary of the West Virginia state border, or a topographic boundary. This catchment area provides the water to the water supply intake. Figure 2 shows the watershed boundaries.

Zone of Critical Concern

The second type of delineation is the Zone of Critical Concern (ZCC). The ZCC is a corridor along streams within the WSDA that warrants a more detailed inventory and management due to its proximity to the surface intake and to the susceptibility to potential contaminants. The ZCC is calculated using a mathematical model that accounts for stream flows, gradient, and area topography. The length of the ZCC is based on a five-hour time of travel. The ZCC width is 1,000 feet from each bank of the principal stream and 500 feet from each bank of the tributaries draining into the principal stream. Due to the relatively small size of the watershed delineation area compared to the ZCC, only the WSDA was applied in this report.

Table 3 Physical Integrity of Intake

Intake Name	Type	Construction Date	Source Integrity
Elkwater Fork Reservoir	Screened multilevel standpipe	2011	Meets Standards

Water Quality and Water Treatment Information

The contaminants addressed in this assessment include those regulated under the Safe Drinking Water Act as well as those the WVDHHR has determined may present a concern to public health. Since no monitoring results are currently available for the proposed source (treatment plant is not in operation), no assessment has been made regarding compliance monitoring.

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 SIGNIFICANT POTENTIAL SOURCES OF CONTAMINATION

Potential Contaminant Source Inventory

The inventory for Huttonsville PSD (Elkwater Fork) consists of approximately 23 significant Potential Contaminant Sources (PCS) of which 11 are considered higher threats to water quality. Please refer to Table 5 for a listing of identified PCSs and Figures 2 and 3 for their locations within the SWPA. Regulated facilities and activities are listed in Table 6 and located on Figures 2 and 3, if present within the SWPA.

Some PCSs that are located outside of the SWPA may be included for information purposes. Water supply intakes and treatment plants are not identified on the map for security reasons. Some facilities are not located on the SWPA map as they occur over broad geographic areas (agricultural fields, highways, and railroad right-of-ways).

Each significant potential source of contamination has been analyzed and prioritized (low, moderate, and high, unless otherwise noted) relative to its 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 one 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 water supply 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.

Historic Land Use and Land Use Changes

Historic land use within the SWPA has been primarily forest management and mineral extraction (surface and underground mining). Figure 7 shows current land cover type coverage within the WSDA. No major changes in land use have occurred during the last 20 years.

Surface and underground mining has occurred on the western edge of the WSDA. Surface mines were in the Sewell seam and underground mining occurred in the Welch seam. Figure 4 shows the location and extent of mining and Table 4 lists details for each underground mine. No additional data could be found for the surface mines.

Table 4 Underground Mining

Type	Permit No.	Mine Name	Owner	Seam	Map Year
Underground	376275A	Stone Run No. 6A	Craft Coal	Welch	1990
Underground	376172A	Coal Bank Fork No. 9A	Phoenix Resources	Welch	Unknown
Underground	365800A	Coal Bank Fork No. 9	SS Joe Burford Inc.	Welch	1983

Regional Water Supply and Sewage Treatment

Regional public and private water supply is from surface and ground water sources. Sewage treatment methods include individual residential septic systems.

Above Ground Storage Tanks (AST)

Above Ground Storage Tanks are regulated by the WVDEP and are subject to specific standards. Any facility using an AST should **contact the WVDEP Water and Waste Management office for current requirements and further advice at 304-926-0495 or <http://www.dep.wv.gov/WWE/abovegroundstoragetanks/Pages/default.aspx>**.

Underground Storage Tanks (UST)

Underground Storage Tanks operating within the WSDA should be located and a determination made as to operating status, whether it presently contains material, or if it has been or should be removed. **Contact the WVDEP UST Program office at 304-926-0499 for current operational and abandonment requirements and further advice.**

Overview of Leaking Underground Storage Tanks (LUST)

No LUST sites were identified within the WSDA from the current WVDEP inventory.

Note: The WVDEP LUST Inventory does not provide location coordinates - only physical addresses are provided. Other facilities may be present in your source water protection area. Please contact the WVDEP for more information at 304-926-0499. A current list of LUST sites is maintained by the WVDEP and can be obtained online at <http://www.dep.wv.gov/dlr/oer/lustmain/Pages/default.aspx>. To obtain additional information on any of the LUST sites, you may submit a Freedom of Information Act (FOIA) request to DEPFOIA@wv.gov.

Table 5 Potential Contaminant Sources

PCS No.	Map Code	PCS Description	PCS Name	PCS Category	Associated Chemicals	Threat to SW
1	R-4	Residential (single family homes)	Residential (single family homes)	Residential	VOC, SOC, NN	H
2	A-18	Pasture	Pasture	Agriculture	MP, SOC	L
3	R-4	Residential (single family homes)	Residential (single family homes)	Residential	VOC, SOC, NN	H
4	A-18	Pasture	Pasture	Agriculture	MP, SOC	L
5	C-9	Cemeteries	Cemeteries	Commercial	M, SOC, PH	L
6	C-9	Cemeteries	Cemeteries	Commercial	M, SOC, PH	L
7	A-18	Pasture	Pasture	Agriculture	MP, SOC	L
8	R-4	Residential (single family homes)	Residential (single family homes)	Residential	VOC, SOC, NN	H
9	R-4	Residential (single family homes)	Residential (single family homes)	Residential	VOC, SOC, NN	H
10	R-4	Residential (single family homes)	Residential (single family homes)	Residential	VOC, SOC, NN	H
11	R-4	Residential (single family homes)	Residential (single family homes)	Residential	VOC, SOC, NN	H
12	A-18	Pasture	Pasture	Agriculture	MP, SOC	L
13	I-2	Cement/concrete plants	Meadows Stone and Paving	Industrial	PH, VOC, HM, SOC	M
14	R-4	Residential (single family homes)	Residential (single family homes)	Residential	VOC, SOC, NN	H
15	R-4	Residential (single family homes)	Residential (single family homes)	Residential	VOC, SOC, NN	H
16	R-4	Residential (single family homes)	Residential (single family homes)	Residential	VOC, SOC, NN	H
17	C-1	Above Ground Storage Tanks	Meadows Stone and Paving	Commercial	PH, VOC	L
18	I-31	Quarry	Meadows Stone and Paving	Industrial	M, T, PH, VOC	L
19	C-9	Cemeteries	Cemeteries	Commercial	M, SOC, PH	L
	M-7	Highway (State Route 15)	Highway (State Route 15)	Municipal	PH, VOC, M	H

Please note that the locations of springs/wells and water treatment plants are not displayed on figures due to security reasons.

Table 6 Regulated Facilities

PCS No.	Map Code	PCS Description	PCS Name	PCS Category	Associated Chemicals	Threat to SW
R1	D-4	RCRA Registry ID 110010443000	Meadows Stone and Paving-Monterville	Database	PH, HM, M, VOC, SOC, R	H
R2	D-3	Permitted Discharge (NPDES) Registry ID 110055012000	Elkwater Fork Water Supply Dam	Database	All	M
R3	D-3	Permitted Discharge (NPDES) Registry ID 110046141000	Elkwater Fork Water Plant	Database	All	M
See also the “Overview of Leaking Underground Storage Tanks” Section						

Note: Regulated facility location information is derived from external databases and has not been field confirmed or verified and is subject to error. The West Virginia Bureau for Public Health is not responsible for the use or interpretation of this information.

You may check on the status of USEPA regulated facilities by going to the USEPA Envirofacts link and entering the necessary query information - http://www.epa.gov/enviro/html/fii/fii_query_java.html. The name of the facility and the registry ID are provided in the Regulated Facility table of the SWAR.

See Appendix A for an explanation of regulated activities

Index to Associated Chemicals is as follows:

MP	Microbiological Pathogens: Total/Fecal Coliform, Viruses, Protozoa	T	Turbidity
NN	Nitrate/Nitrite	TO	Taste and Odor precursors
VOC	Volatile Organic Compounds	R	Radionuclides
HM	Heavy Metals	PH	Petroleum Hydrocarbons
M	Metals	D	Disinfection byproducts
SOC	Synthetic Organic Compounds	ND	Not Determined

Index to Threat Ratings:

H	High
M	Medium
L	Low
ND	Not Determined

RESOURCE CHARACTERIZATION

The purpose for conducting the Resource Characterization analysis of the delineated SWPA is to obtain an understanding of its physical, biological, chemical, and hydrological characteristics.

Soils and Geology

The top ten soil series occurring within the SWPA are listed in Table 7 (ordered by rank). See Figure 6 for complete soil coverage within the SWPA. Soil characteristics for this report were derived from the USDA/NRCS - National Geospatial Center of Excellence, Soil Survey Geographic (SSURGO).

Table 7 Soil Types

MUSYM	Name	Slope (percent)	Area (acres)
CaF	Calvin channery silt loam	35 to 70	1061
DaC	Dekalb channery loam	8 to 15	354
CcE	Calvin stony silt loam	25 to 35	307
DaF	Dekalb channery loam	35 to 70	274
BbE	Belmont stony silt loam	25 to 35	256
DmF	Dekalb extremely stony loam	35 to 70	219
GkF	Gilpin-Dekalb stony complex, moist	35 to 70	219
CcF	Calvin stony silt loam	35 to 70	215
BtE	Buchanan and Ernest stony soils	15 to 35	193
Ud	Udifluvents, cobbly	NA	189

The source impoundment is located in the Folded Plateau of West Virginia. The Folded Plateau consists of faulted blocks that contain either localized-confined or localized unconfined aquifers, or lack of aquifers. Structural features include the Deer Park Anticline to the east with its axis centered on the Tygart River Valley. Rock units within the SWPA include those of the Kanawha and New River Formations of the Pottsville Group,, the Bluestone, Princeton, Hinton, and Bluefield Formations of the Mauch Chunk Group, the Greenbrier and Pocono Groups, and the Hampshire Formation (See Figure 8). The Greenbrier Limestone is exposed at the surface through the center of the watershed with a northeast/southwest orientation. The potential for karst development in the Greenbrier is possible.

Potential for Surface Runoff to Occur

The soil types present in the watershed area and the associated soil properties have a direct influence on the potential for surface runoff to occur. As infiltration rate of soil increases, (more precipitation soaking in rather than running off) the contaminant load associated with the reduced runoff should decrease. Table 8 provides a summary of the characteristics of the associated soil groups.

Table 8 Major Soil Associations, Drainage, Erosion Potential, and Topography

Soil Associations	Soil Drainage	Erosion Potential	Topographic Setting
Calvin Channery Silt Loams	Well Drained	Severe	Slopes
Dekalb Channery Loams	Well Drained	Moderate to Severe	Ridgelines and Slopes
Calvin Stony Silt Loams	Well Drained	Severe	Slopes
Belmont Stony Silt Loams	Well Drained	Severe	Ridgelines and Slopes

Ease of movement of material into the Stream System (Rate of Overland Material Transport)

The size, shape, and slope of the SWAP area have a direct influence on material transported by surface runoff. In general, the longer the overland travel distance and travel time that surface runoff has taken in order to reach a stream channel, the greater the chance it has to deposit and filter the contaminants that may occur. Table 9 provides an analysis of the size, shape, and slope.

Table 9 Size, Shape, and Slope of Watershed

Factor	Value
Size of WSDA	5,450 acres
Shape of WSDA	Irregular
Stream Length (main stem and major tributaries)	Elkwater Fork - 4.84 miles
	Stony Run - 1.96 miles
	Snake Run - 2.56 miles
Average Watershed Slope	42.7 percent

Movement of Water through the Watershed Area

A number of physical and natural factors can influence the movement of water through the SWAP area. The pattern and development of the drainage network of the SWAP area directly influence the rate of water movement. Evaluation of the hydrologic cycle will provide an indication of the amount of annual rainfall that is absorbed into the ground or becomes runoff. Table 10 summarizes the total mileage of streams contained in the WSDA, average stream gradient of the main stem, average rainfall, the nearest relevant USGS stream gauge, distance to gauge, topographic position of gauge, annual mean discharge, high flow, and low flow.

Table 10 Watershed Gradient and Flow

Factor	Value
Number of Stream Miles	21.43 miles
Average Stream Gradient (main stem and major tributaries)	Elkwater Fork - 132 feet per mile
	Stony Run - 551 feet per mile
	Snake Run - 359 feet per mile
Average Rainfall (within watershed)	50 inches per year (east) to 64 inches per year (west)
Nearest Relevant USGS Stream Gauge	NA

Distance to Relevant USGS Stream Gauge	NA
USGS Stream Gauge Topographic Position	NA
Annual Mean Discharge	NA
High Flow	NA
Low Flow	NA

SYSTEM SUSCEPTIBILITY

Based on this summarized narrative and susceptibility review, the overall susceptibility for Intake IN001 of the Huttonsville PSD (Elkwater Fork) indicates a high susceptibility to the identified potential sources of contamination.

For this susceptibility analysis, the State combined the inventory results with other relevant information to decide how likely a water supply may become contaminated by the identified potential sources of contamination. This step makes the assessments useful for communities, since it provides information that local decision-makers use to prioritize approaches for protecting the drinking water supply. It does not mean that these water sources are currently contaminated or are going to be contaminated in the near future, but the potential does exist.

RECOMMENDATION FOR YOUR SOURCE WATER ASSESSMENT AND PROTECTION ACTIVITIES

The following list provides specific recommendations for your source water assessment and protection activities.

- Communicate with local emergency services concerning potential treats to your water source from highway spills and other potential material releases. Set up a notification system where the PCS owner will notify the water system in a timely manner if a release occurs.
- A source water protection and management program should be developed for the water system. Preferably, the protection plan should be developed for the entire SWPA with the cooperation of neighboring towns, county, and state agencies. It is recommended that protection and management efforts should focus on obtaining additional information on the sources present to evaluate their risk.
- Reduce existing chronic threats by obtaining further detailed information concerning Leaking Underground Storage Tanks (LUST's) or other Underground Storage Tanks (UST's) within the SWPA that are now in service or were in the past. This information should include the type of leak detection and corrosion protection currently being used at the facility. For more information contact the WVDEP at 304-926-0499. A current list of LUST sites is maintained by the WVDEP and can be obtained online at <http://www.dep.wv.gov/dlr/lustmain/Pages/default.aspx>.
- Investigate what types of preventative pollution measures are being conducted by the industrial or commercial facilities located within the SWPA. Some facilities may already have developed an emergency response plan for their property.
- Inspect the SWPA regularly.

- Implement Land Use Planning tools to influence future developments within the SWPA. One way to accomplish this is to join forces with the county to adopt a zoning ordinance that would govern certain uses that are considered high threats to surface water.
- Provide maps of the SWPA to the County Planning Commission or other appropriate county agency to make them aware of the location of proposed development in relation to the water supply source.
- Support and encourage the implementation of Best Management Practices for agricultural areas including grazing lands, crop production farms, and orchards. In addition, support information can be provided to residents and commercial users to encourage the reduction in over use of common pesticides and fertilizers.
- Support and encourage the implementation of Best Management Practices for septic tank placement, design, operation, and maintenance in cooperation with the local County Department of Health. Provide guidance for proper maintenance of septic systems as an insert with water bills.
- Implement systems for regular collection of hazardous waste from residents.
- Encourage and implement public education about your water supply regarding its susceptibility to contamination and ways to protect. This could come in the form of brochures containing information and advice about surface water and the local terrain.
- Support and encourage the identification of contamination incidents by citizens.

NEXT STEP:

The next step in source water protection planning is to prepare a Source Water Protection Plan (SWPP) plan. **Your system must meet the requirements of Senate Bill 373 (effective June 6, 2014) as it is a surface water source. A completed plan must be submitted by July 1, 2016. Please contact the SWAP Program at 304-558-2981 for specific protection plan requirements and further information.**

The SWPP plan incorporates this source water delineation and assessment report and the following 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?

To obtain additional information and/or links, visit the WVDHHP Web site at <http://www.wvdhhr.org/oehs/eed/swap/> or call the SWAP Program at 304-558-2981.

***Disclaimer - The coverage 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.**

Maps contained in this source water assessment report are 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 presented thereon. Efforts are made to verify and update the data used to generate the maps. However, with data sets of this size and nature, eliminating all errors is difficult. Thus, the user assumes total responsibility for verification.

Please report any inaccuracies on either the map or inventory by calling the SWAP Program at 304-558-2981.

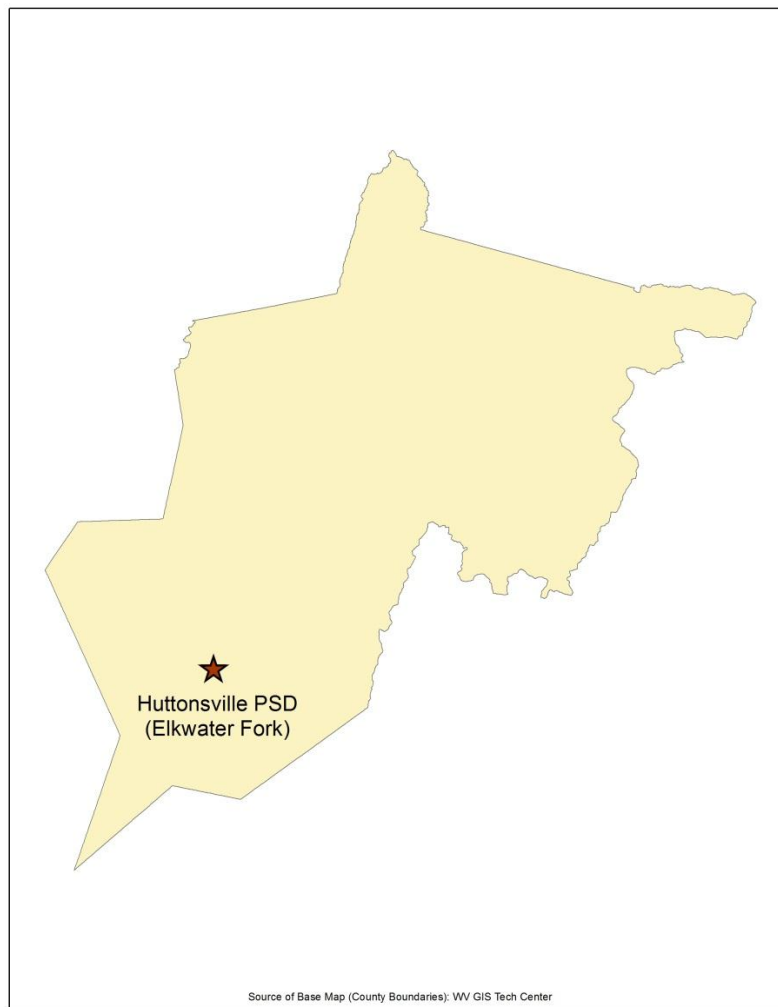


Figure 1: Huttonsville PSD (Elkwater Fork) Location Map

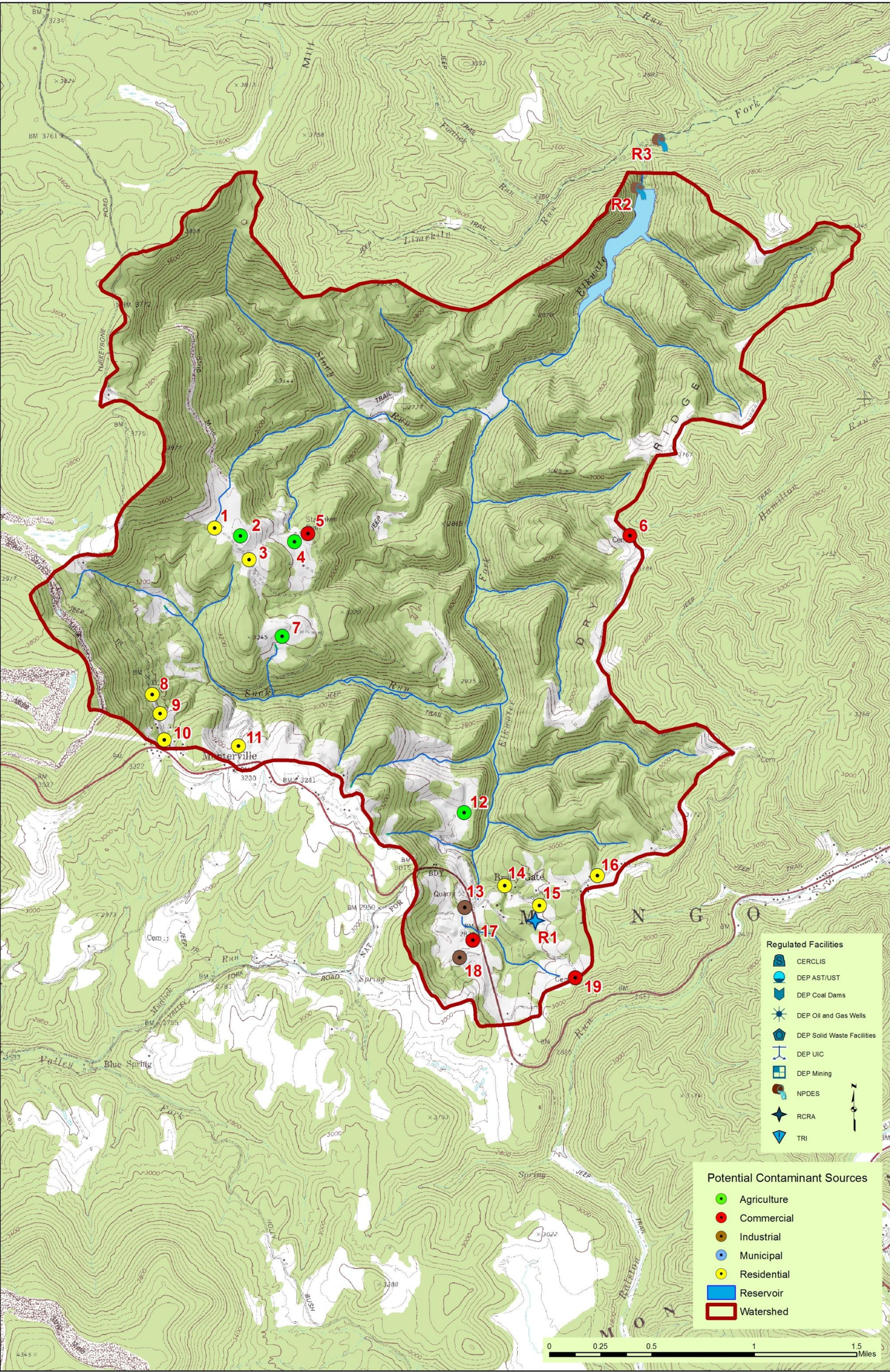
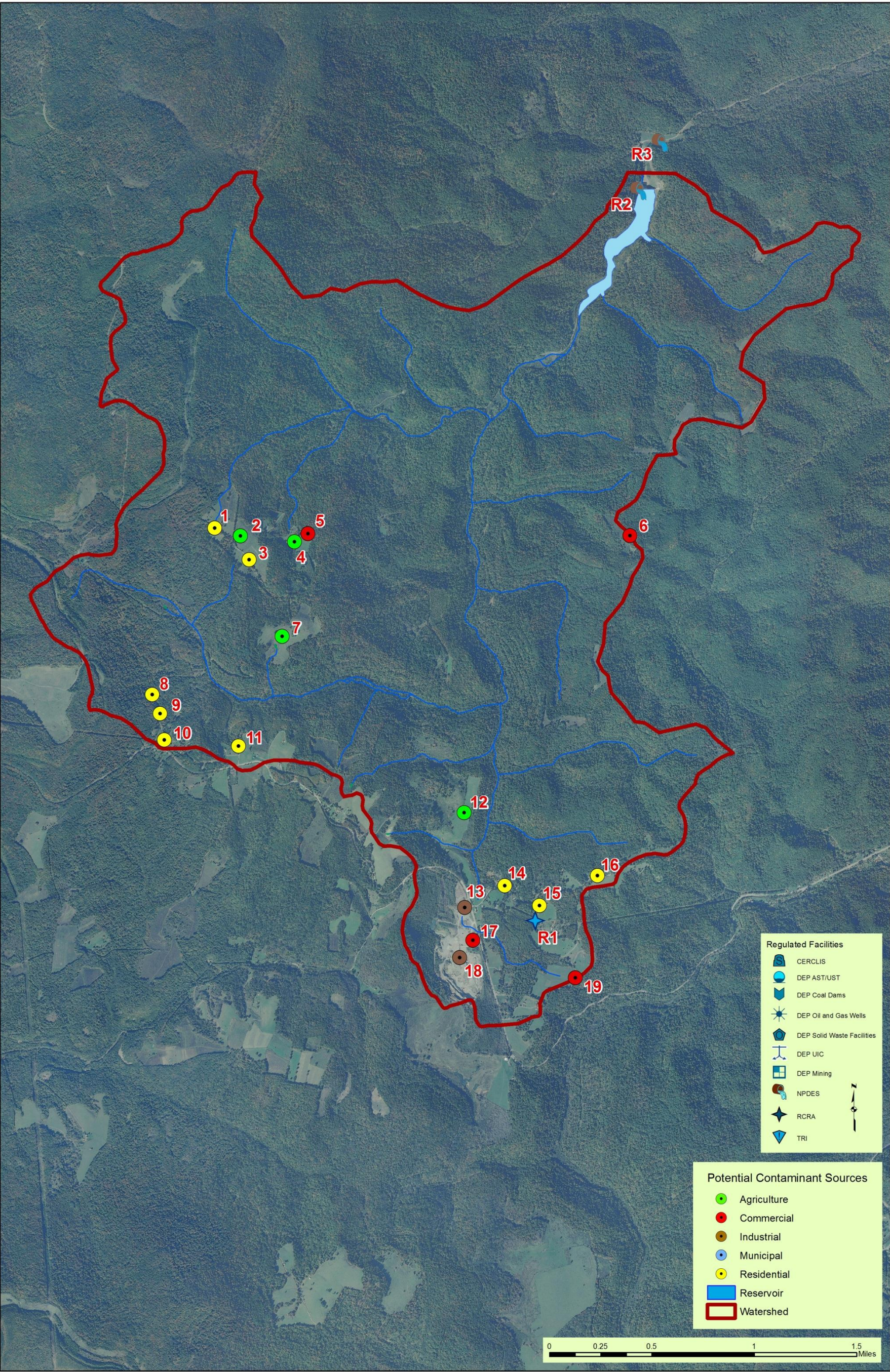
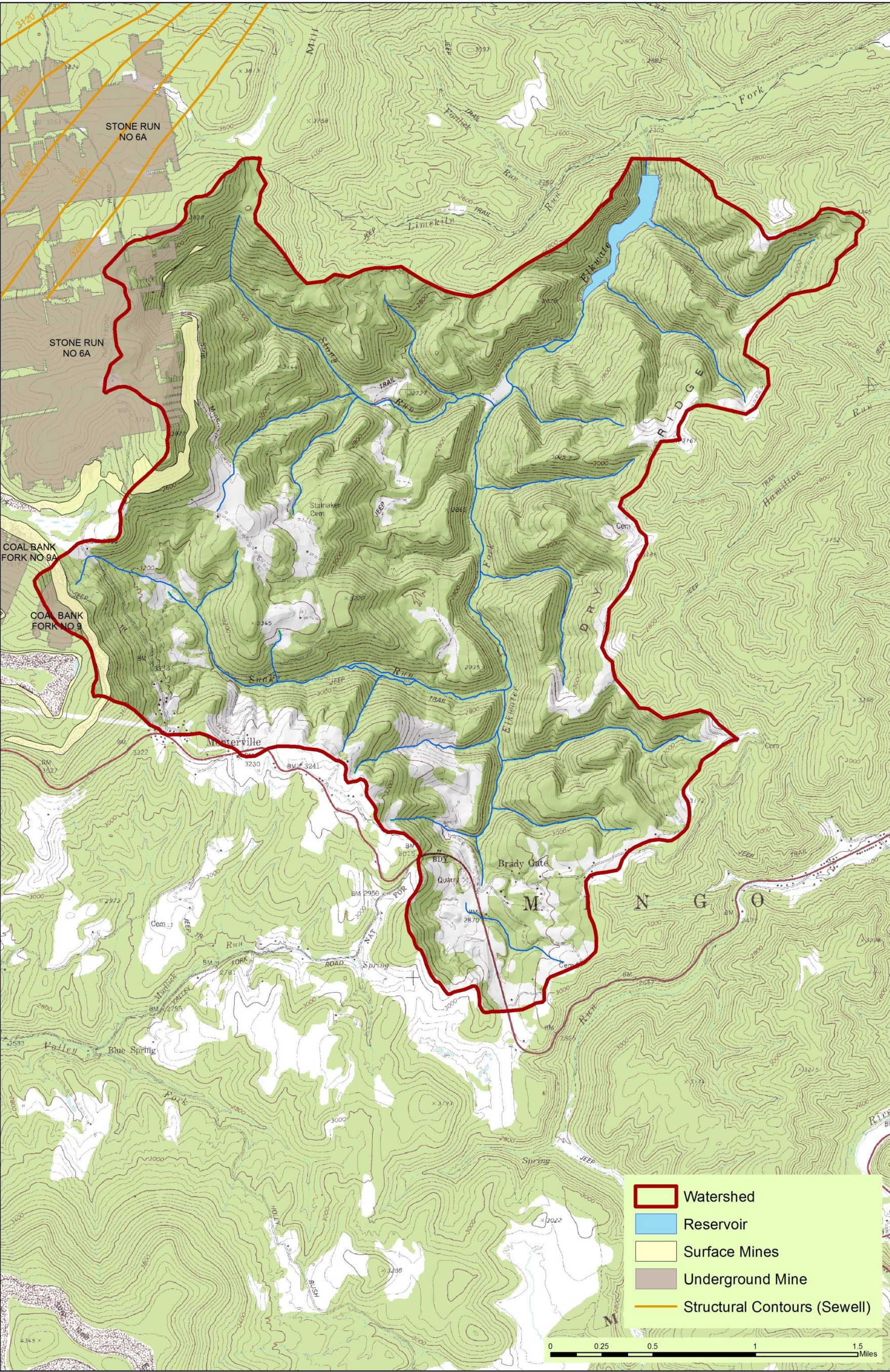


Figure 2: Huttonsville PSD (Elkwater Fork) Source Water Protection Area with PCS Locations (Topographic Map Background)



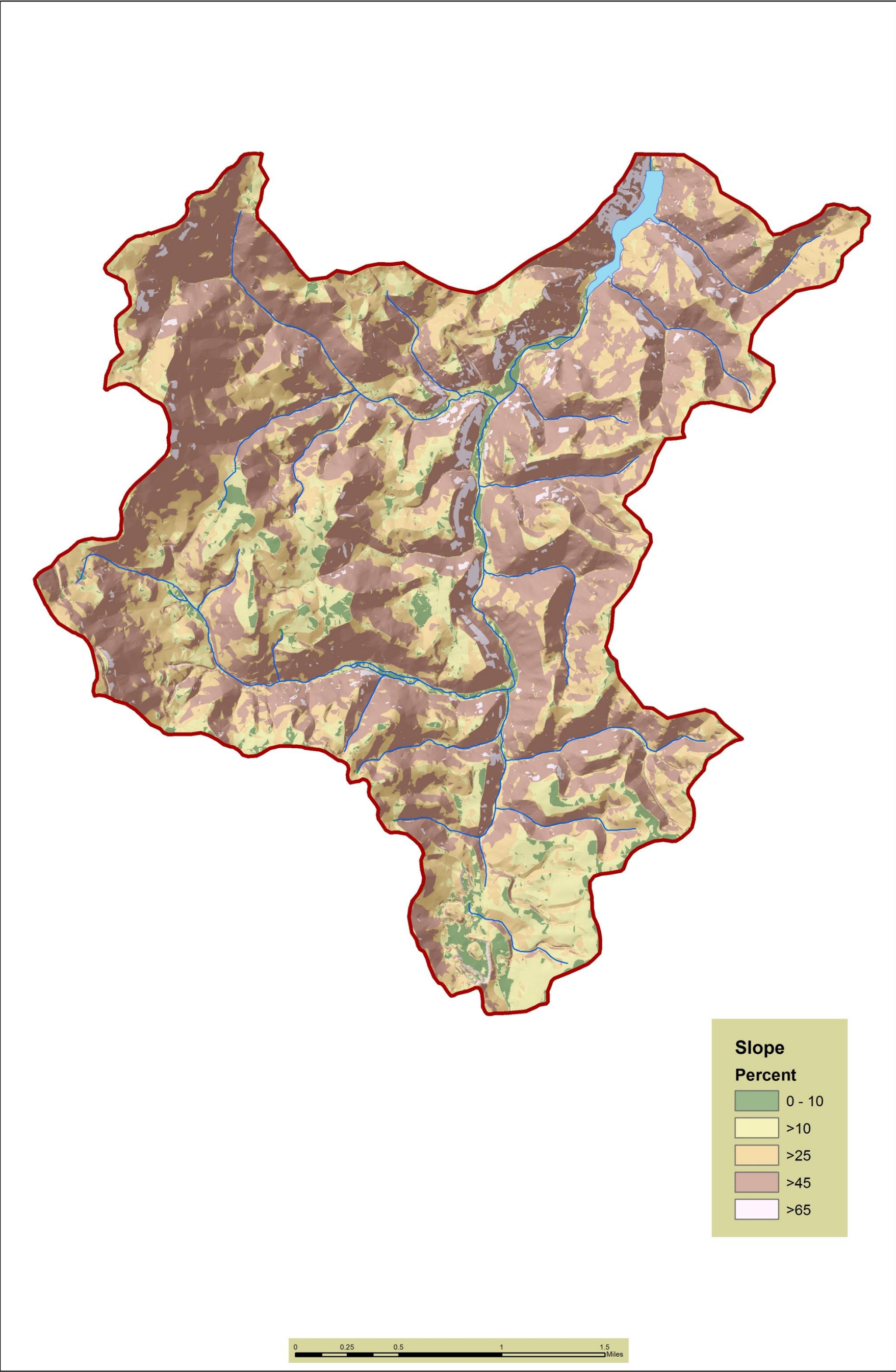
Source of Base Maps, Geological Features, Structural Features, DEM (elevation), and Flood Hazard: WV GIS Tech Center and WVGES

Figure 3 Huttonsville PSD (Elkwater Fork) Source Water Protection Area with PCS Locations (2011 Aerial Photo Background)



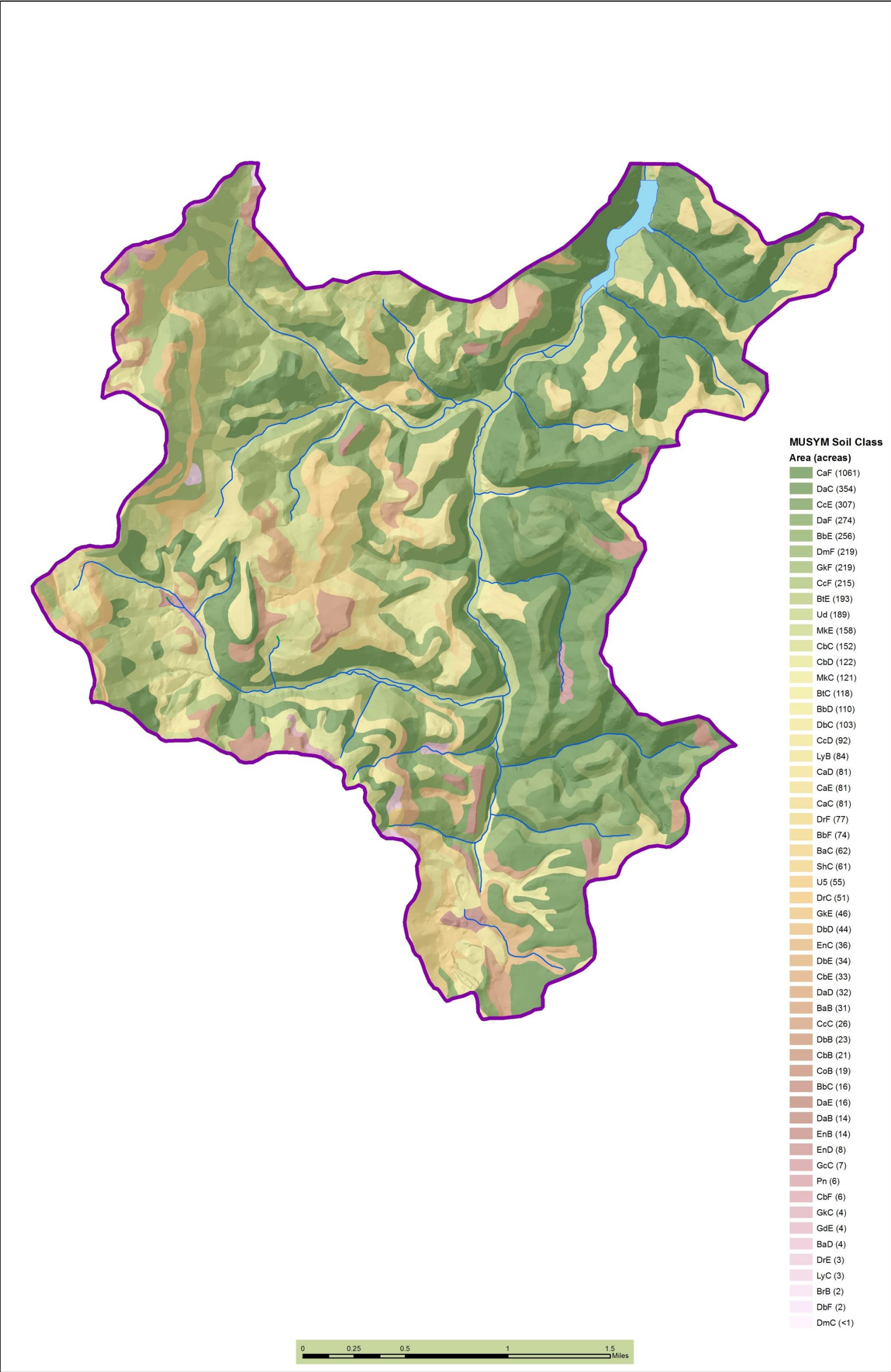
Source of Base Maps, Geological Features, Mining Activity, Structural Features, DEM (elevation), and Flood Hazard: WV GIS Tech Center and WVGES

Figure 4 Huttonsville PSD (Elkwater Fork) Source Water Protection Area with Mining Activity



Source of Base Maps, Geological Features, Structural Features, DEM (elevation), and Flood Hazard: WV GIS Tech Center and WVGES

Figure 5 Huttonsville PSD (Elkwater Fork) Slope Map



Source of Base Maps, Geological Features, Structural Features, DEM (elevation), and Flood Hazard: WV GIS Tech Center and WVGES. Source of Soil Data: USDA/NRCS

Figure 6 Huttonsville PSD (Elkwater Fork) Soil Map

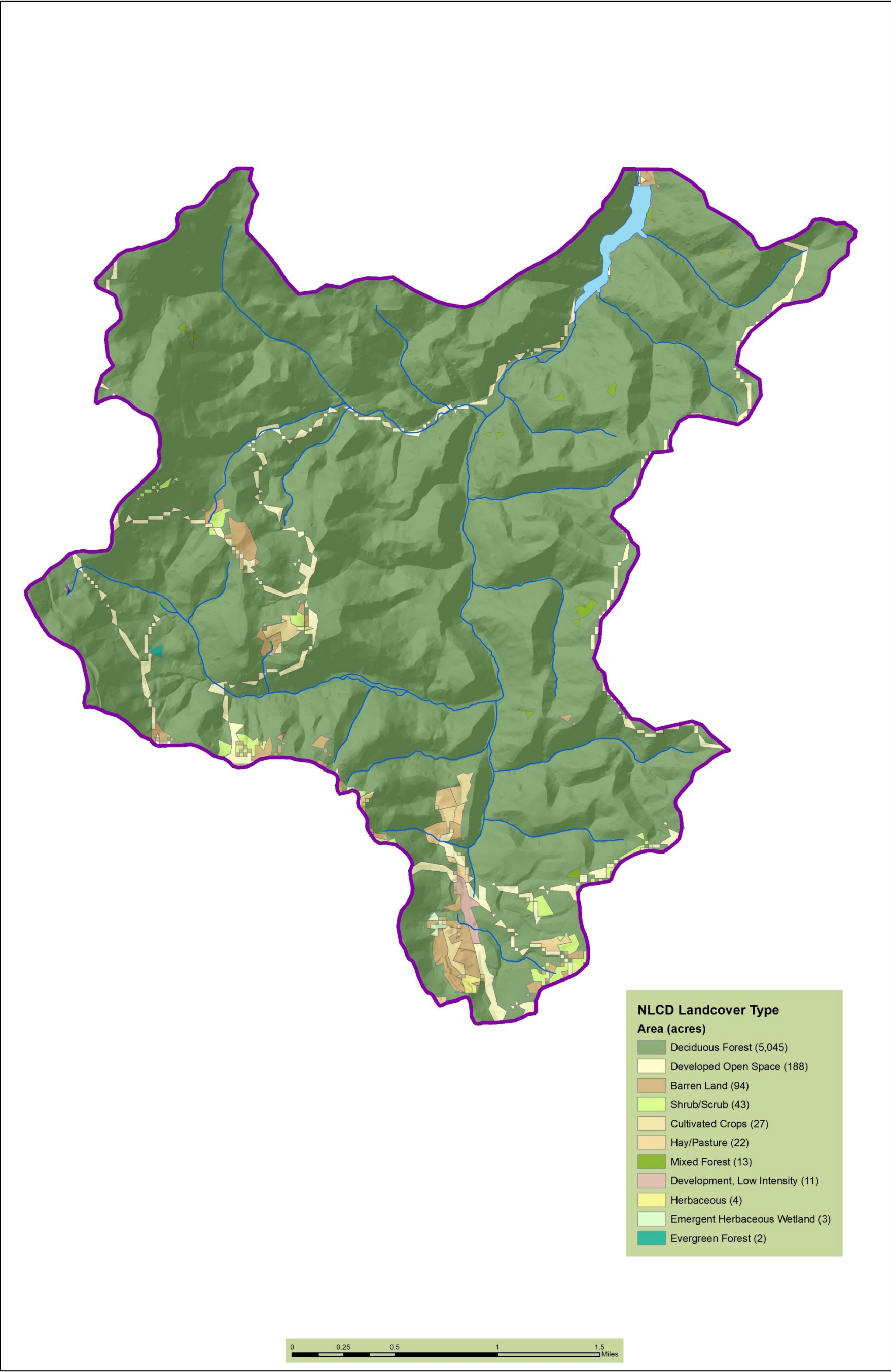
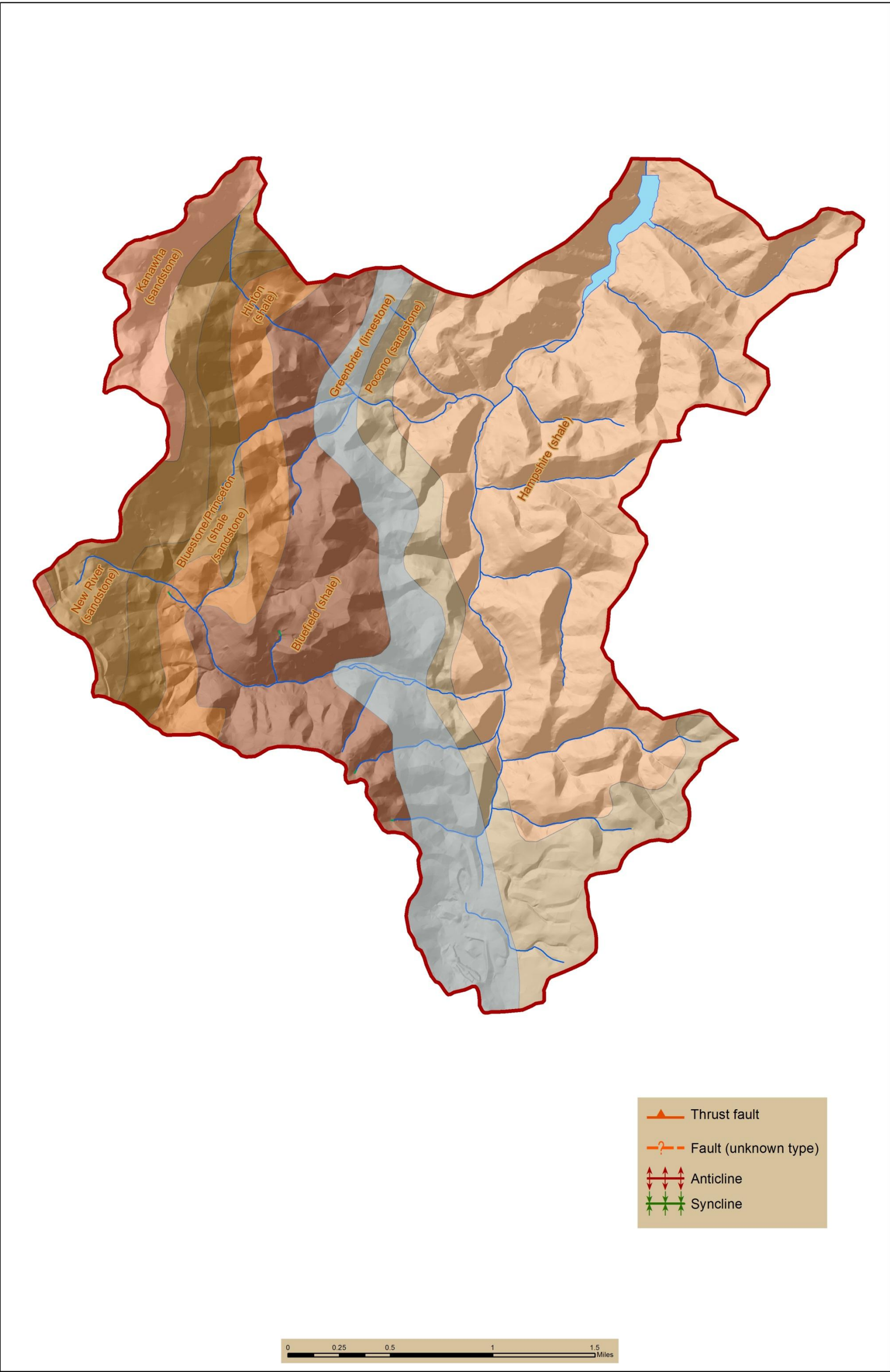


Figure 7 Huttonsville PSD (Elkwater Fork) Land Cover Map



Source of Base Maps, Geological Features, Structural Features, DEM (elevation), and Flood Hazard: WV GIS Tech Center and WVGES

Figure 8 Huttonsville PSD (Elkwater Fork) Geologic Map

APPENDIX A USEPA AND WVDEP REGULATED SITES

CERCLIS:

The Superfund program was created by the Comprehensive Environmental Response, Compensation, and Liability Act, amended by the Superfund Amendments and Reauthorization Act. The acts established authority for the government to respond to the release/threat of release of hazardous wastes, including cleanup and enforcement actions. Long-term cleanups at National Priority List sites last more than a year while short term /emergency cleanups are usually completed in less than a year. CERCLIS is a database used by the U.S. Environmental Protection Agency to track activities conducted under its Superfund program. CERCLIS contains data on potentially hazardous waste sites that have been reported to the EPA. Sites are investigated because of a potential for releasing hazardous substances into the environment are added to the CERCLIS inventory. EPA learns of these sites through notification by the owner, citizen complaints, state and local government identification, and investigations by EPA programs other than Superfund. Specific information is tracked for each individual site.

NPDES:

The National Pollutant Discharge Elimination System (NPDES) database identifies facilities permitted for the operation of point source discharges to surface waters in accordance with the requirements of Section 402 of the Federal Water Pollution Control Act. Point sources are discrete conveyances such as pipes or man-made ditches. Industrial, municipal, and other facilities must obtain permits if their discharges go directly to surface waters. The NPDES permit program controls water pollution by regulating point sources that discharge pollutants into public waters.

RCRA:

This database has records for all hazardous waste, generators, and transporters as defined by the Resource Conservation Recovery Act (RCRA). Hazardous waste as defined by RCRA is waste material that exhibits ignitability, corrosivity, reactivity, or toxicity. Hazardous waste comes in many shapes and forms. Chemical, metal, and furniture manufacturing are some examples of processes that create hazardous waste. RCRA tightly regulates all hazardous waste from "cradle to grave" (i.e., from manufacture to disposal).

TRI:

The Toxics Release Inventory (TRI) is a publicly available EPA database that contains information on toxic chemical releases and other waste management activities reported annually by certain covered industry groups as well as federal facilities. This inventory was established under the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) and expanded by the Pollution Prevention Act of 1990.

WVDEP Regulated Sites

Abandoned Mine Sites:

Abandoned mine features compiled by the Office of Abandoned Mine Lands and Reclamation (AMLR) of the West Virginia Department of Environmental Protection. The AMLR eliminates damage that occurred from mining operations prior to August 3, 1977 and is funded by the AML fund. It corrects hazardous conditions and reclaims abandoned and forfeited mine sites. Typical AML features include highwalls, portals, refuse piles, and mining structures such as tipples.

AST:

Above Ground Storage Tanks are regulated by the WVDEP and are subject to specific standards. Any facility using an AST should **contact the WVDEP Water and Waste Management office for current requirements and further advice at 304-926-0495 or <http://www.dep.wv.gov/WWE/abovegroundstoragetanks/Pages/default.aspx>**.

Coal Dams:

Point and polygonal mining related impoundments regulated by the West Virginia Department of Environmental Protection's (WVDEP) Division of Mining and Reclamation (DMR).

LUST:

The WV DEP became the lead agency for administering the Leaking Underground Storage Tank (LUST) Program with the federal Environmental Protection Agency (EPA)'s authorization in September 1997. Since then, the WV DEP has overseen the cleanup of released regulated substances, primarily petroleum products. Such releases can originate from overfilling, spilling, or leaking tanks and piping. **To report a release from an underground storage tank system, contact the Office of Environmental Remediation at 304-238-1220, ext. 3506. After hours releases should be reported to the statewide emergency spill line at 800-642-3074.**

Solid Waste Facilities:

Municipal and non-municipal waste landfills and waste transfers stations are regulated by the West Virginia Department of Environmental Protection's (WVDEP) Division of Waste Management.

Oil and Gas Wells:

The Office of Oil and Gas maintains records on active and inactive oil & gas wells. It also manages the Abandoned Well Plugging and Reclamation Program.

UIC:

The Underground Injection Control (UIC) program is designed to ensure that fluids injected underground will not endanger drinking water sources. The Division of Water and Waste Management regulates Class 5 wells. These wells include agriculture drainage wells, improved sinkholes, industrial disposal wells, stormwater wells and septic systems that have the capacity to serve 20 or more people. The following state codes address UIC regulations; 47CSR9, 47CSR13 and 47CSR55. The Division of Mining and Reclamation oversees all mining UIC permits.

UST:

The purpose of the Underground Storage Tank (UST) Section is to regulate underground storage tanks that contain petroleum or hazardous substances to determine compliance with state rules and federal regulations. West Virginia has had full program approval from EPA since February 1988.

GLOSSARY OF TERMS

Best Management Practices (BMPs) are operational procedures used to prevent or reduce pollution.

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.

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 year. Contrary to popular belief it is not a flood occurring once every 100 years.

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.

Potential Contaminant Source (PCS) - A facility or container or route of travel that could release a sufficient amount of a harmful contaminant that upon entering a surface stream could contaminate it past the level of human health concerns.

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.

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 the 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 PCS would contaminate and render unusable a drinking water supply such as aquifers or surface streams.

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