

# **Source Water Protection Plan**

## **CITY OF SPENCER WATERWORKS**

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PWSID WV3304405

ROANE COUNTY

6/30/2016

Prepared by:

CITY OF SPENCER WATERWORKS/TRIAD ENGINEERING, INC.

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**I certify the information in the source water protection plan is complete and accurate to the best of my knowledge.**

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**Signature of responsible party or designee authorized to sign for water utility:**

**Rob Miller**

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**Print Name of Authorizing Signatory (see instructions):**

**Director of Public Works**

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**Title of Authorizing Signatory:**

**6/30/2016**

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**Date of Submission**

# Table of Contents

<b>Purpose</b> .....	<b>1</b>
What are the benefits of preparing a Source Water Protection Plan?.....	1
<b>Background: WV Source Water Assessment and Protection Program</b> .....	<b>1</b>
<b>State Regulatory Requirements</b> .....	<b>2</b>
<b>System Information</b> .....	<b>2</b>
<b>Water Treatment and Storage</b> .....	<b>3</b>
<b>Delineations</b> .....	<b>6</b>
<b>Protection Team</b> .....	<b>7</b>
<b>Potential Sources of Significant Contamination</b> .....	<b>9</b>
Confidentiality of PSSCs.....	9
Local and Regional PSSCs.....	9
Prioritization of Threats and Management Strategies .....	13
<b>Implementation Plan for Management and Outreach Strategies</b> .....	<b>13</b>
<b>Education and Outreach Strategies</b> .....	<b>21</b>
<b>Contingency Plan</b> .....	<b>24</b>
Response Networks and Communication.....	24
Operation During Loss of Power.....	25
Future Water Supply Needs .....	26
Water Loss Calculation .....	27
Early Warning Monitoring System .....	28
<b>Single Source Feasibility Study</b> .....	<b>30</b>
<b>Communication Plan</b> .....	<b>30</b>
<b>Emergency Response</b> .....	<b>31</b>
<b>Conclusion</b> .....	<b>31</b>

## List of Tables

Table 1. Population Served by City of Spencer Waterworks .....	3
Table 2. City of Spencer Waterworks Water Treatment Information .....	4
Table 3. City of Spencer Waterworks Surface Water Sources .....	5
Table 4. City of Spencer Waterworks Groundwater Sources.....	5
Table 5. Watershed Delineation Information.....	7
Table 6. Protection Team Member and Contact Information .....	8
Table 7. Locally Identified Potential Sources of Significant Contamination .....	11
Table 8. Priority PSSCs or Critical Areas .....	14
Table 9. Priority PSSC Management Strategies .....	15
Table 10. Education and Outreach Implementation Plan .....	22
Table 11. City of Spencer Waterworks Water Shortage Response Capability .....	24
Table 12. Generator Capacity .....	25
Table 13. Future Water Supply Needs for City of Spencer Waterworks.....	26
Table 14. Water Loss Information.....	27
Table 15. Early Warning Monitoring System Capabilities .....	29

## Appendices

Appendix A. Figures .....	32
Appendix B. Early Warning Monitoring System Forms .....	40
Appendix C. Communication Plan .....	41
Appendix D. Single Source Feasibility Study.....	58
Appendix E. Supporting Documentation.....	59

## SOURCE WATER PROGRAM ACRONYMS

AST	Aboveground Storage Tank
BMP	Best Management Practices
ERP	Emergency Response Plan
GWUDI	Ground Water Under the Direct Influence of Surface Water
LEPC	Local Emergency Planning Committee
OEHS/EED	Office of Environmental Health Services/Environmental Engineering Division
PE	Professional Engineer
PSSCs	Potential Source of Significant Contamination
PWSU	Public Water System Utility
RAIN	River Alert Information Network



RPDC	Regional Planning and Development Council
SDWA	Safe Drinking Water Act
SWAP	Source Water Assessment and Protection
SWAPP	Source Water Assessment and Protection Program
SWP	Source Water Protection
SWPP	Source Water Protection Plan
WARN	Water/Wastewater Agency Response Network
WHPA	Wellhead Protection Area
WHPP	Wellhead Protection Program
WSDA	Watershed Delineation Area
WVBPH	West Virginia Bureau for Public Health
WVDEP	West Virginia Department of Environmental Protection
WVDHHR	West Virginia Department of Health and Human Resources
WVDHSEM	Division of Homeland Security and Emergency Management
ZCC	Zone of Critical Concern
ZPC	Zone of Peripheral Concern

## Purpose

The goal of the West Virginia Bureau of Public Health (WVBPH) source water assessment and protection (SWAP) program is to prevent degradation of source waters which may preclude present and future uses of drinking water supplies to provide safe water in sufficient quantity to users. The most efficient way to accomplish this goal is to encourage and oversee source water protection on a local level. Many aspects of source water protection may be best addressed by engaging local stakeholders.

The intent of this document is to describe what City of Spencer Waterworks has done, is currently doing, and plans to do to protect its source of drinking water. Although this water system treats the water to meet federal and state drinking water standards, conventional treatment does not fully eradicate all potential contaminants and treatment that goes beyond conventional methods is often very expensive. By completing this plan, City of Spencer Waterworks acknowledges that implementing measures to minimize and mitigate contamination can be a relatively economical way to help ensure the safety of the drinking water.

### **What are the benefits of preparing a Source Water Protection Plan?**

- Fulfills the requirement for the public water utilities to complete or update their source water protection plan.
- Identifying and prioritizing potential threats to the source of drinking water; and establishing strategies to minimize the threats.
- Planning for emergency response to incidents that compromise the water supply by contamination or depletion, including how the public, state, and local agencies will be informed.
- Planning for future expansion and development, including establishing secondary sources of water.
- Ensuring conditions to provide the safest and highest quality drinking water to customers at the lowest possible cost.
- Providing more opportunities for funding to improve infrastructure, purchase land in the protection area, and other improvements to the intake or source water protection areas.

## Background: WV Source Water Assessment and Protection Program

Since 1974 the federal Safe Drinking Water Act (SDWA) has set minimum standards on the construction, operation, and quality of water provided by public water systems. In 1986, Congress amended the SDWA. A portion of those amendments were designed to protect the source water contribution areas around ground water supply wells. This program eventually became known as the Wellhead Protection Program (WHPP). The purpose of the WHPP is to prevent pollution of the source water supplying the wells.

The Safe Drinking Water Act Amendments of 1996 expanded the concept of wellhead protection to include surface water sources under the umbrella term of Source Water Protection. The amendments encourage states to establish SWAP programs to protect all public drinking water supplies. As part of this initiative states must explain how protection areas for each public water system will be delineated, how potential contaminant sources will be inventoried, and how susceptibility ratings will be established.

In 1999, the WVBPH published the West Virginia Source Water Assessment and Protection Program, which was endorsed by the United States Environmental Protection Agency. Over the next few years, WVBPH staff

completed an assessment (i.e., delineation, inventory and susceptibility analysis) for all of West Virginia's public water systems. Each public water system was sent a copy of its assessment report. Information regarding assessment reports for City of Spencer Waterworks can be found in **Table 1**.

## State Regulatory Requirements

On June 6, 2014, §16 1 2 and §16 1 9a of the Code of West Virginia, 1931, was reenacted and amended by adding three new sections, designated §16 1 9c, §16 1 9d and §16-1-9e. The changes to the code outlines specific requirements for public water utilities that draw water from a surface water source or a surface water influenced groundwater source.

Under the amended and new codes each existing public water utility using surface water or ground water influenced by surface water as a source must have completed or updated a source water protection plan by July 1, 2016, and must continue to update their plan every three years. Existing source water protection plans have been developed for many public water utilities in the past. If available, these plans were reviewed and considered in the development of this updated plan. Any new water system established after July 1, 2016 must submit a source water protection plan before they start to operate. A new plan is also required when there is a significant change in the potential sources of significant contamination (PSSC) within the zone of critical concern (ZCC).

The code also requires that public water utilities include details regarding PSSCs, protection measures, system capacities, contingency plans, and communication plans. Before a plan can be approved, the local health department and public will be invited to contribute information for consideration. In some instances, public water utilities may be asked to conduct independent studies of the source water protection area and specific threats to gain additional information.

## System Information

City of Spencer Waterworks is classified as a state regulated public utility and operates a community public water system. 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. For purposes of this source water protection plan, community public water systems are also referred to as public water utilities. Information on the population served by this utility is presented in **Table 1** below.

**Table 1. Population Served by City of Spencer Waterworks**

<b>Administrative office location:</b>	116 Court Street Spencer, WV 25276		
<b>Is the system a public utility, according to the Public Service Commission rule?</b>	Yes		
<b>Date of Most Recent Source Water Assessment Report:</b>	2/2003		
<b>Date of Most Recent Source Water Protection Plan:</b>	12/21/2010		
<b>Population served directly:</b>	5,000		
<b>Bulk Water Purchaser Systems:</b>	<b>City of Spencer Waterworks</b>	<b>PWSID Number</b>	<b>Population</b>
	Clover PSD	WV3304409	764
	Town of Reedy	WV3304408	398
<b>Total Population Served by the Utility:</b>	6,162		
<b>Does the utility have multiple source water protection areas (SWPAs)?</b>	Yes		
<b>How many SWPAs does the utility have?</b>	2		

## Water Treatment and Storage

As required, City of Spencer Waterworks has assessed their system (e.g., treatment capacity, storage capacity, unaccounted for water, contingency plans) to evaluate their ability to provide drinking water and protect public health. **Table 2** contains information on the water treatment methods and capacity of the utility. Information about the surface sources from which City of Spencer Waterworks draws water can be found in **Table 3**. If the utility draws water from any groundwater sources to blend with the surface water the information about these ground water sources can be found in **Table 4**.

**Table 2. City of Spencer Waterworks Water Treatment Information**

<b>Water Treatment Processes (List All Processes in Order)</b>	Flocculation, sedimentation, chlorination, and fluorination
<b>Current Treatment Capacity (gal/day)</b>	1,500,000
<b>Current Average Production (gal/day)</b>	710,000
<b>Maximum Quantity Treated and Produced (gal)</b>	1,151,000
<b>Minimum Quantity Treated and Produced (gal)</b>	456,000
<b>Average Hours of Operation</b>	12
<b>Maximum Hours of Operation in One Day</b>	24
<b>Minimum Hours of Operation in One Day</b>	8
<b>Number of Storage Tanks Maintained</b>	5
<b>Total Gallons of Treated Water Storage (gal)</b>	2,200,000
<b>Total Gallons of Raw Water Storage (gal)</b>	535,000,000

**Table 3. City of Spencer Waterworks Surface Water Sources**

Intake Name	SDWIS #	Local Name	Describe Intake	Name of Water Source	Date Constructed/ Modified	Frequency of Use (Primary/ Backup/ Emergency)	Activity Status (Active/ Inactive)
Charles Fork Lake		Charles Fork Lake	Concrete Pump house at base of lake dam.	Charles Fork Lake	1973	Primary	Active
Spring Creek		Spring Creek	Pump station	Spring Creek	unknown	Backup	Active

**Table 4. City of Spencer Waterworks Groundwater Sources**

Does the utility blend with groundwater?					No				
Well/Spring Name	SDWIS #	Local Name	Date Constructed/ Modified	Completion Report Available (Yes/No)	Well Depth (ft)	Casing Depth (ft)	Grout (Yes/No)	Frequency of Use (Primary/ Backup/ Emergency)	Activity Status (Active/ Inactive)
NA									

## Delineations

For surface water systems, delineation is the process used to identify and map the drainage basin that supplies water to a surface water intake. This area is generally 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. The SWPA for surface water is distinguished as a Watershed Delineation Area (WSDA) for planning purposes; and the Zone of Peripheral Concern (ZPC) and Zone of Critical Concern (ZCC) are defined for regulatory purposes.

The WSDA includes the entire watershed area upstream of the intake to the boundary of the State of West Virginia border or a topographic boundary. The ZCC for a public surface water supply is a corridor along streams within the watershed that warrants more detailed scrutiny due to its proximity to the surface water intake and the intake's susceptibility to potential contaminants within that corridor. The ZCC is determined 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 of water in the streams to the water intake, plus an additional one-quarter mile below the water intake. The width of the zone of critical concern is 1,000 feet measured horizontally from each bank of the principal stream and five hundred feet measured horizontally from each bank of the tributaries draining into the principal stream. Ohio River ZCC delineations are based on ORSANCO guidance and extend 25 miles above the intake and one-quarter mile below the intake. The Ohio River ZCC delineations include 1,320 feet (one-quarter mile) measured from the bank of the main stem of the Ohio River and 500 feet on tributary.

The ZPC for a public surface water supply source and for a public surface water influenced groundwater supply source is a corridor along streams within a watershed that warrants scrutiny due to its proximity to the surface water intake and the intake's susceptibility to potential contaminants within that corridor. The ZPC is determined using a mathematical model that accounts for stream flows, gradient and area topography. The length of the zone of peripheral concern is based on an additional five-hour time-of-travel of water in the streams beyond the perimeter of the zone of critical concern, which creates a protection zone of ten hours above the water intake. The width of the zone of peripheral concern is one thousand feet measured horizontally from each bank of the principal stream and five hundred feet measured horizontally from each bank of the tributaries draining into the principal stream.

For groundwater supplies there are two types of SWPA delineations: 1) wellhead delineations and 2) conjunctive delineations, which are developed for supplies identified as groundwater under the direct influence of surface water, or GWUDIs. A wellhead protection area is determined to be the area contributing to the recharge of the groundwater source (well or spring), within a five year time of travel. A conjunctive delineation combines a wellhead protection area for the hydrogeologic recharge and a connected surface area contributing to the wellhead.

Information and maps of the WSDA, ZCC, ZPC and Wellhead Protection Area for this public water supply were provided to the utility and are attached to this report. See **Appendix A, Figures**. Other information about the WSDA is shown in **Table 5**.

**Table 5. Watershed Delineation Information**

<b>Size of WSDA (Indicate units)</b>	36.64 square miles
<b>River Watershed Name (8-digit HUC)</b>	05030203
<b>Size of Zone of Critical Concern (Acres)</b>	1,292 (primary) 8,859 (secondary)
<b>Size of Zone of Peripheral Concern (Acres) (Include ZCC area)</b>	1,292 (primary) 8,859 (secondary)
<b>Method of Delineation for Groundwater Sources</b>	NA
<b>Area of Wellhead Protection Area (Acres)</b>	NA

## Protection Team

One important step in preparing a source water protection plan is to organize a source water protection team who will help develop and implement the plan. The legislative rule requires that water utilities make every effort to inform and engage the public, local government, local emergency planners, the local health department and affected residents at all levels of the development of the protection plan. WVBPH recommends that the water utility invite representatives from these organizations to join the protection team, which will ensure that they are given an opportunity to contribute in all aspects of source water protection plan development. Public water utilities should document their efforts to engage representatives and provide an explanation if any local stakeholder is unable to participate. In addition, other local stakeholders may be invited to participate on the team or contribute information to be considered. These individuals may be emergency response personnel, local decision makers, business and industry representatives, land owners (of land in the protection area), and additional concerned citizens.

The administrative contact for City of Spencer Waterworks is responsible for assembling the protection team and ensuring that members are provided the opportunity to contribute to the development of the plan. The acting members of the Protection Team are listed in **Table 6**.

The role of the protection team members will be to contribute information to the development of the source water protection plan, review draft plans and make recommendations to ensure accuracy and completeness, and when possible contribute to implementation and maintenance of the protection plan. The protection team members are chosen as trusted representatives of the community served by the water utility and may be designated to access confidential data that contains details about the local PSSCs. The input of the protection team will be carefully considered by the water utility when making final decisions relative to the documentation and implementation of the source water protection plan.

City of Spencer Waterworks will be responsible for updating the source water protection plan and rely upon input from the protection team and the public to better inform their decisions. To find out how you can become involved as a participant or contributor, visit the utility website or call the utility phone number, which are provided in **Table 6**.



**Table 6. Protection Team Member and Contact Information**

<b>Name</b>	<b>Representing</b>	<b>Title</b>	<b>Phone Number</b>	<b>Email</b>
Mark Ray	City of Spencer Waterworks	<b>Chief Operator</b>	304.927.1497	mray2@suddenlinkmail.com
Rob Miller	City of Spencer	<b>Director of Public Works</b>	304.927.1654	rmiller3@suddenlinkmail.com
Tammy White	City of Spencer Waterworks	<b>Administrator</b>	304.927.2300	twhite@suddenlinkmail.com
Danny Cronin	Roane County EMS	<b>EMS Director</b>	304.927.0911	dannycronin@roaneems.com
Philip Smith	City of Spencer	<b>Director of Planning and Dev.</b>	304.927.1640	
Terry A. Williams	City of Spencer	<b>Mayor</b>	304.927.1640	
Woody Wilson	Red Cross/Retired School Admin	<b>Retired</b>		
<b>Date of first protection Team Meeting</b>		5/19/2016		
<b>Efforts made to inform and engage local stakeholders (public, local government, local emergency planners, local health department, and affected residents) and explain absence of recommended stakeholders:</b>		Information for the meeting was posted at public buildings, the meeting was advertised in the local newspaper, letters were mailed to potential team members (see attached list in Appendix E) and phone calls were made to invite team members. The reason for the absence of recommended stakeholders is unknown.		

## Potential Sources of Significant Contamination

Source water protection plans should provide a complete and comprehensive list of the PSSC contained within the ZCC based upon information obtained from the WVBPH, working in cooperation with the Department of Environmental Protection (WVDEP) and the Division of Homeland Security and Emergency Management (WVDHSEM). A facility or activity is listed as a PSSC if it has the potential to release a contaminant that could potentially impact a nearby public water supply, and it does not necessarily indicate that any release has occurred.

The list of PSSCs located in the SWPA is organized into two types: 1) SWAP PSSCs, and 2) Regulated Data. SWAP PSSCs are those that have been collected and verified by the WVBPH SWAP program during previous field investigations to form the source water assessment reports and source water protection plans. Regulated PSSCs are derived from federal and state regulated databases, and may include data from WVDEP, US Environmental Protection Agency, WVDHSEM, and from state data sources.

### Confidentiality of PSSCs

A list of the PSSCs contained within the ZCC should be included in the source water protection plan. However, the exact location, characteristics and approximate quantities of contaminants shall only be made known to one or more designees of the public water utility and maintained in a confidential manner. In the event of a chemical spill, release or other related emergency, information pertaining to the contaminant shall be immediately disseminated to any emergency responders reporting to the site. The designees for City of Spencer Waterworks are identified in the communication planning section of the source water protection plan.

PSSC data from some agencies (ex. (WVDHSEM)., WVDEP, etc.) may be restricted due to the sensitive nature of the data. Locational data will be provided to the public water utility. However, to obtain specific details regarding contaminants, (such as information included in Tier II reports), water utilities should contact the local emergency planning commission (LEPC) or agencies, directly. While the maps and lists of the PSSCs and regulated sites are to be maintained in a confidential manner, these data are provided in **Appendix A, Figures** for internal review and planning uses only.

### Local and Regional PSSCs

For the purposes of this source water protection plan, local PSSCs are those that are identified by the water utility and local stakeholders not included in the PSSCs lists distributed by the WVBPH and other agencies. Local stakeholders may identify local PSSCs for two main reasons. The first is that it is possible that threats exist from unregulated sources and land uses that have not already been inventoried and do not appear in regulated databases. For this reason each public water utility should investigate their protection area for local PSSCs. A PSSC inventory should identify all contaminant sources and land uses in the delineated ZCC. The second reason local PSSCs are identified is because public water utilities may consider expanding the PSSC inventory effort outside of the ZCC into the ZPC and WSDA if necessary to properly identify all threats that could impact the drinking water source. As the utility considers threats in the watershed they may consider collaborating with upstream communities to identify and manage regional PSSCs.

When conducting local and regional PSSC inventories, utilities should consider that some sources may be obvious like above ground storage tanks, landfills, livestock confinement areas, highway or railroad right of ways, and sewage treatment facilities. Others are harder to locate like abandoned cesspools, underground tanks, French drains, dry wells, or old dumps and mines.

City of Spencer Waterworks reviewed intake locations and the delineated SWPAs to verify the existence of PSSCs provided by the WVBPH and identify new PSSCs. If possible, locations of regulated sites within the SWPA were confirmed. Information on any new or updated PSSCs identified by City of Spencer Waterworks that do not already appear in datasets from the WVBPH can be found in **Table 7**.

**Table 7. Locally Identified Potential Sources of Significant Contamination**

PSSC Number	Map Code	Site Name	Site Description	Comments
1	C-10	Home Construction	Construction areas	construction site complete
2	M-7	State Route 119	Highway	
3	C-3	<Null>	Auto repair shops	auto repair
4	I-28	Bogg's Natural Gas Co. F.L.P.	Petroleum production and storage facilities	
5	C-53	East Drilling Company	Other (specify source)	
6	C-18	Exxon Gas Station	Gas Stations	
7	C-12	Roane County Schools	Dry cleaners	
8	M-20	WVDOT District 3 Roane County HQ	Road maintenance depots/deicing operations	maintenance garage
9	I-44	CSI Oil-Gas Contractor Services	Other (specify source)	oil and gas company
10	C-43	Cox's Auto Body LLC	Repair Shops (engine, appliances, etc.)	auto repair shop
11	A-13	Maple Hill Farms	Fertilizer Application	commercial farm

PSSC Number	Map Code	Site Name	Site Description	Comments
12	C-53	Consumer Gas Utility Company	Other (specify source)	garage and storage bldg
13	M-21	Spencer Elementary School	Schools	
14	M-21	Roane County High School	Schools	
15	M-7	County Route 36	Highway	

## Prioritization of Potential Threats and Management Strategies

Once the utility has identified local concerns, they must develop a management plan that identifies specific activities that will be pursued by the public water utility in cooperation and concert with the WVBPH, local health departments, local emergency responders, LEPCs, and other agencies or organizations to protect the source water from contamination.

Depending on the number identified, it may not be feasible to develop management strategies for all of the PSSCs in the SWPA. The identified PSSCs can be prioritized by potential threat to water quality, proximity to the intake(s), and local concern. The highest priority PSSCs can be addressed first in the initial management plan. Lower ranked PSSCs can be addressed in the future as time and resources allow. To assess the threat to the source water, water systems should consider confidential information about each PSSC. This information may be obtained from state or local emergency planning agencies, Tier II reports, facility owner, facility groundwater protection plans, spill prevention response plans, results of field investigations, etc.

In addition to identifying and prioritizing PSSCs within the SWPA, local source water concerns may also focus on critical areas. For the purposes of this source water protection plan, a critical area is defined as an area that is identified by local stakeholders and can lie within or outside of the ZCC. Critical areas may contain one or more PSSC(s) which would require immediate response to address a potential incident that could impact the source water.

A list of priority PSSCs was selected and ranked by the City of Spencer Waterworks Protection Team. This list reflects the concerns of this specific utility and may contain PSSCs not previously identified and not within the ZCC or ZPC. **Table 8** contains a description of why each critical area or PSSC is considered a threat and what management strategies the utility is either currently using or could use in the future to address each threat.

## Implementation Plan for Management Strategies

City of Spencer Waterworks reviewed the recommended strategies listed in their previous source water protection plan, to consider if any of them should be adopted and incorporated in this updated plan. **Table 9** provides a brief statement summarizing the status of the recommended strategies. **Table 9** also lists strategies from a previous plan that are being incorporated in this plan update.

When considering source management strategies and education and outreach strategies, this utility has considered how and when the strategies will be implemented. The initial step in implementation is to establish responsible parties and timelines to implement the strategies. The water utility, working in conjunction with the protection team members, can determine the best process for completing activities within the projected time periods. Additional meetings may be needed during the initial effort to complete activities, after which the Protection Team should consider meeting annually to review and update the Source Water Protection Plan. A system of regular updates should be included in every implementation plan.

Proposed commitments and schedules may change but should be well documented and reported to the local stakeholders. If possible, utilities should include cost estimates for strategies to better plan for implementation and possible funding opportunities. City of Spencer Waterworks has developed an implementation plan for priority concerns **Table 8**. The responsible team member, timeline, and potential cost of each strategy are presented in **Table 9**. Note: Because timelines may change, future plan updates should describe the status of each strategy and explain the lack of progress.

**Table 8. Priority PSSCs or Critical Areas**

PSSC or Critical Area	Priority Number	Reason for Concern
Septic Systems for residents along Jordan Lane (CR 42/1) and Rush Creek Road (CR 42)	1	Other than one gas well, these are the only PSSCs observed in the primary source Zone of Critical Concern. Discharge from smaller, failing sanitary systems as well as overflows from larger sanitary sewer systems located upstream of the intake can pose a possible contamination threat including fecal coliform into the source water.
Oil and Gas Wells and Related Tanks	2	The sheer number of oil and gas wells and related tanks (200 wells and 62 tanks) they are a reason for concern. Contaminants such as brine water, benzene and certain radioactive elements are used in the fracturing process and could spill.
US Route 119 and CR 36	3	Sections of these roadway pass through the ZCC (for the secondary intake) and spills have occurred in the past.
Vandalism	4	Security could be improved to reduce the likelihood of vandalism.
Future Development	5	Extent and type of future development, including potential impacts on source water, is not known at this time.

**Table 9. Priority PSSC Management Strategies**

PSSC or Critical Area	Management Activity	Responsible Protection Team Member	Status/Schedule	Comments	Estimated Cost
General	<p>There are 4 general management strategies for source water protection. These are incorporated in this plan update and listed below:</p> <ol style="list-style-type: none"> <li>1. A tier II recommendation is to meet with county OES or local fire chief to have access to local tier II information that is confidential and maintain that going forward with at least one annual meeting. Identify tier II facilities in critical areas and reach out to them.</li> <li>2. No generator – recommend doing the wiring to accept a generator. MOVRC will submit grant paperwork for a generator.</li> <li>3. Build capacity to identify contaminants, BPH staff will assist. The first step is to get spill reports</li> </ol> <p>Build communication team if possible to include more local and county entities including but not limited to: County OES/911 health department, county commission local fire department, etc.</p>	Rob Miller	This work will begin in 2016		\$0 up front costs to begin these strategies.



<p>Septic Systems for residents along Jordan Lane (CR 42/1) and Rush Creek Road (CR 42)</p>	<p>There were 3 management strategies recommended in the existing plan. 0 of these strategies has been accomplished. 3 of these are ongoing or continue to be a concern. These are incorporated in this plan update and listed below:</p> <ol style="list-style-type: none"> <li>1. Support study and planning of sanitary sewer system extensions and upgrades along Little Kanawha River and tributaries upstream of intake to extend service to these areas and eliminate failing septic systems, home aeration units and wastewater treatment systems and overflows from larger sanitary sewer systems.</li> <li>2. Raise awareness at city government and/or county commissions for need for source water protection to increase support for proposed sanitary sewer system extensions and upgrades.</li> <li>3. Evaluate enhanced fecal coliform testing of surface water to better identify sources of fecal coliform contamination including coordinating efforts with towns upstream of intake.</li> </ol>	<p>Rob Miller</p>	<p>These strategies will begin in 2016</p>		<p>\$0</p>
<p>Oil and Gas Wells and Related Tanks</p>	<p>There were 5 management strategies recommended in the existing plan. 2 of these strategies has been accomplished. 3 of these are ongoing or continue to be a concern.</p>	<p>Mark Ray</p>	<p>Strategies 1 and 4 have been completed. Strategies 2 and 3 are being</p>	<p>The installation of the early detection system may reduce the need for additional sampling.</p>	<p>\$20,000 for early detection monitoring system, with \$500 yearly operational</p>

	<p>These are incorporated in this plan update and listed below:</p> <ol style="list-style-type: none"> <li>1. Reviewing public information of surface water protection practices for oil and gas industry to raise PSD staff awareness of surface water protection practices of oil and gas industry (completed)</li> <li>2. Evaluate increased sampling of water quality for parameters associated with oil and gas industry to better assess whether source water quality is being impacted by oil and gas industry</li> <li>3. Evaluate installing monitoring equipment upstream of the intake are being evaluated as part of this SWPP.</li> <li>4. Maintain contact with other neighboring public water systems, to receive input on effects of anticipated Marcellus shale and gas well drilling and tract status of regulations through such organizations as WVDHHR, WVRWA, WVPSC and WVDEP.</li> <li>5. If parameters associated with oil and gas industry become problematic to water quality, consider symposium form local oil and gas industry to raise awareness of source water</li> </ol>		<p>evaluated as a part of this SWPP. Strategy 5 is not yet applicable.</p>		<p>costs. The cost for increased sampling is currently being evaluated</p>
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	protection and review regulatory requirements.				
US Route 119 and CR 36	<p>There were 4 management strategies recommended in the existing plan. 2 of these strategies has been accomplished. 2 of these are ongoing or continue to be a concern. These are incorporated in this plan update and listed below:</p> <ol style="list-style-type: none"> <li>1. Better coordination of emergency response with local first responders, including raising awareness for the need to protect drinking water supplies.</li> <li>2. Evaluate installing signage along state routes and targeted city streets with emergency contact numbers. This would also help raise awareness with motorist and truckers that they are traveling through a source water protection zone while providing them.</li> <li>3. Regular inspections of the roadways to identify if spillage is occurring. Maintain records of identified leaks and spills.</li> <li>4. Contact fire department and other first responders on boom availability, if any. If none (or if unsuitable), evaluate purchase of booms for in-stream spill containment.</li> </ol>	Mark Ray	<p>Strategies number 1 and 3 are currently being implemented. Strategies number 2 and 4 have not been implemented.</p>		\$0

<p>Vandalism</p>	<p>There were 2 management strategies recommended in the existing plan. 1 of these strategies has been accomplished. 1 of these are ongoing or continue to be a concern. These are incorporated in this plan update and listed below:</p> <ol style="list-style-type: none"> <li>1. Consider installing available security cameras at WTP intake.</li> <li>2. Install signage at intake, in visible places to general public identifying this as a source water area and providing a notice regarding video surveillance. Include emergency contact numbers.</li> </ol>	<p>Mark Ray</p>	<p>Strategy 1 is being evaluated by the board. Strategy 2 has been implemented.</p>		<p>\$20,000</p>
<p>Future Development</p>	<p>There were 3 management strategies recommended in the existing plan. 0 of these strategies has been accomplished. 3 of these are ongoing or continue to be a concern. These are incorporated in this plan update and listed below:</p> <ol style="list-style-type: none"> <li>1. Raise awareness of city and/or county government by providing SWPA map and educational brochure, to help decision making with respect to future development.</li> <li>2. Evaluate what authority exists at city and/or county government regarding approval over development that could be a high risk to surface water resources.</li> </ol>	<p>Rob Miller</p>	<p>Ongoing as part of this SWPP update</p>		<p>\$500</p>

	Evaluate developing policy that PWS Chief Operator should comment on building permit applications.				
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## Education and Outreach Strategies

The goal of education and outreach is to raise awareness of the need to protect drinking water supplies and build support for implementation strategies. Education and outreach activities will also ensure that affected citizens and other local stakeholders are kept informed and provided an opportunity to contribute to the development of the source water protection plan. City of Spencer Waterworks has created an Education and Outreach plan that describes activities it has either already implemented or could implement in the future to keep the local community involved in protecting their source of drinking water. This information can be found in **Table 10**.

**Table 10. Education and Outreach Implementation Plan**

Education and Outreach Strategy	Description of Activity	Responsible Protection Team Member	Status/Schedule	Comments	Estimated Cost
Utilize Social Media	Use the Town of Spencer Facebook page to inform residents with educational materials related to source water protection.	Philip Smith	This strategy is currently being utilized.		\$0
Consumer Confidence Report	A copy of the Consumer Confidence Report is kept online at CDC.gov	Philip Smith	This strategy is currently being utilized.	A link to the CCR will be posted on the Facebook page.	\$0
<p>Educational Brochure at <a href="http://www.yourwaterourdecision.org">www.yourwaterourdecision.org</a>. This brochure building tool was prepared by the Source Water Collaborative, a partnership between local, state and federal drinking water organizations and regulatory entities including USEPA</p>	Provide web address to public for their use.	Philip Smith	This strategy is currently being utilized	A link to the brochure will be posted on the Facebook page.	\$0

School Curricula	Source water protection is incorporated in the school's curriculum.	Woody Wilson	This strategy is currently in the beginning stages. It is the system's goal to have source water protection added to the school curricula by 2017.		\$0
Awareness of Best Management Practices and Need to Protect Drinking Water Supplies	Local first responders are to be educated about BMPs and the need to protect drinking water supplies	Rob Miller	This strategy has not yet been utilized. It is Spencers' goal to implement this strategy by the end of 2016.		\$1,000
Signage	Use signage to inform public about the limits of the source water protection area and provide an emergency number.	Mark Ray	This strategy is currently in use and is ongoing.		\$500



## Contingency Plan

The goal of contingency planning is to identify and document how the utility will prepare for and respond to any drinking water shortages or emergencies that may occur due to short and long term water interruption, or incidents of spill or contamination. Utilities should examine their capacity to protect their intake, treatment, and distribution system from contamination. They should also review their ability to use alternative sources and minimize water loss, as well as their ability to operate during power outages. In addition, utilities should report the feasibility of establishing an early warning monitoring system and meeting future water demands.

Isolating or diverting any possible contaminant from the intake for a public water system is an important strategy in the event of an emergency. One commonly used method of diverting contaminants from an intake is establishing booms around the intake. This can be effective, but only for contaminants that float on the surface of the water. Alternatively, utilities can choose to pump floating contaminants from the water or chemically neutralize the contaminant before it enters the treatment facility.

Public utilities using surface sources should be able to close the intake by one means or another. However, depending upon the system, methods for doing so could vary greatly from closing valves, lowering hatches or gates, raising the intake piping out of the water, or shutting down pumps. Systems should have plans in place in advance as to the best method to protect the intake and treatment facility. Utilities may benefit from turning off pumps and, if possible, closing the intake opening to prevent contaminants from entering the piping leading to the pumps. Utilities should also have a plan in place to sample raw water to identify the movement of a plume and allow for maximum pumping time before shutting down an intake (See Early Warning Monitoring System). The amount of time that an intake can remain closed depends on the water infrastructure and should be determined by the utility before an emergency occurs. The longer an intake can remain closed in such a case, the better.

Treated water storage capacity in the event of such an emergency also becomes extremely important. Storage capacity can directly determine how well a water system can respond to a contamination event and how long an intake can remain closed. Information regarding the water shortage response capability of City of Spencer Waterworks is provided in **Table 11**.

### Response Networks and Communication

Statewide initiatives for emergency response, including source water related incidents, are being developed. These include the West Virginia Water/Wastewater Agency Response Network (WV WARN, see <http://www.wvwarn.org/>) and the Rural Water Association Emergency Response Team (see <http://www.wvrwa.org/>). City of Spencer Waterworks has analyzed its ability to effectively respond to emergencies and this information is provided in **Table 11**.

**Table 11. City of Spencer Waterworks Water Shortage Response Capability**

<b>Can the utility isolate or divert contamination from the intake or groundwater supply?</b>	Yes
<b>Describe the utility's capability to isolate or divert potential contaminants:</b>	Yes. The use of booms.

<b>Can the utility switch to an alternative water source or intake that can supply full capacity at any time?</b>	Yes
<b>Describe in detail the utility's capability to switch to an alternative source:</b>	Spring Creek is an alternate source with pumps at the ready.
<b>Can the utility close the water intake to prevent contamination from entering the water supply?</b>	Yes
<b>How long can the intake stay closed?</b>	Indefinitely
<b>Describe the process to close the intake:</b>	Turn a gate valve
<b>Describe the treated water storage capacity of the water system:</b>	2,200,000
<b>Is the utility a member of WVRWA Emergency Response Team?</b>	No
<b>Is the utility a member of WV-WARN?</b>	No
<b>List any other mutual aid agreements to provide or receive assistance in the event of an emergency:</b>	No

### Operation During Loss of Power

This utility analyzed and examined its ability to operate effectively during a loss of power. This involved ensuring a means to supply water through treatment, storage, and distribution without creating a public health emergency. Information regarding the utility's capacity for operation during power outages is shown in **Table 12**.

**Table 12. Generator Capacity**

<b>What is the type and capacity of the generator needed to operate during a loss of power?</b>	Diesel, KVA 150, kW 120, 277/480 V, 3 phase
<b>Can the utility connect to generator at intake/wellhead? If yes, select a scenario that best describes system.</b>	Yes. Requires electrical work to connect to a rented/borrowed generator.
<b>Can the utility connect to generator at treatment facility? If yes, select a scenario that best describes system.</b>	Yes. Requires electrical work to connect to a rented/borrowed generator.
<b>Can the utility connect to a generator in distribution system? If yes, select a scenario that best describes system.</b>	Yes. Requires electrical work to connect to a rented/borrowed generator.

<b>Does the utility have adequate fuel on hand for the generator?</b>		No		
<b>What is your on-hand fuel storage and how long will it last operating at full capacity?</b>		<b>Gallons</b>		<b>Hours</b>
		NA		NA
<b>Provide a list of suppliers that could provide generators and fuel in the event of an emergency:</b>	<b>Supplier</b>		<b>Contact Name</b>	<b>Phone Number</b>
	<b>Generator</b>	Sunbelt Rental		304.342.5000
	<b>Generator</b>	Bosley Rental and Supply		304.776.6000
	<b>Fuel</b>	Harris Oil Company	Wayne Harris	304.927.2470
	<b>Fuel</b>	BFS Bulk Plant	Fred Depue	304.927.3700
<b>Does the utility test the generator(s) periodically?</b>		NA		
<b>Does the utility routinely maintain the generator?</b>		NA		
<b>If no scenario describing the ability to connect to generator matches the utility's system or if utility does not have ability to connect to a generator, describe plans to respond to power outages:</b>		NA		

### Future Water Supply Needs

When planning for potential emergencies and developing contingency plans, a utility needs to not only consider their current demands for treated water but also account for likely future needs. This could mean expanding current intake sources or developing new ones in the near future. This can be an expensive and time consuming process, and any water utility should take this into account when determining emergency preparedness. City of Spencer Waterworks has analyzed its ability to meet future water demands at current capacity, and this information is included in **Table 13**.

**Table 13. Future Water Supply Needs for City of Spencer Waterworks**

<b>Is the utility able to meet water demands with the current production capacity over the next 5 years? If so, explain how you plan to do so.</b>	Yes
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<b>If not, describe the circumstances and plans to increase production capacity:</b>	NA
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### Water Loss Calculation

In any public water system there is a certain percentage of the total treated water that does not reach the customer. Some of this water is used in treatment plant processes such as back washing filters or flushing piping, but there is usually at least a small percentage that goes unaccounted for. To measure and report on this unaccounted for water, a public utility must use the same method used in the Public Service Commission's rule, *Rules for the Government of Water Utilities*, 150CSR7, section 5.6. The rule defines unaccounted for water as the volume of water introduced into the distribution system less all metered usage and all known non-metered usage which can be estimated with reasonable accuracy.

To further clarify, metered usages are most often those that are distributed to customers. Non-metered usages that are being estimated include uses such as by the fire departments for fires or training, un-metered bulk sells, flushing to maintain the distribution system, backwashing filters, and cleaning settling basins. By totaling the metered and non-metered uses the utility calculates unaccounted for water. Note: To complete annual reports submitted to the PSC, utilities typically account for known water main breaks by estimating the amount of water lost. However, for the purposes of the source water protection plan, any water lost due to leaks, even if the system is aware of how much water is lost at a main break, is not considered a use. Water lost through leaks and main breaks cannot be controlled during a water shortages or other emergencies and should be included in the calculation of percentage of water loss for purposes of the source water protection plan. The data in **Table 14** is taken from the most recently submitted City of Spencer Waterworks PSC Annual Report.

**Table 14. Water Loss Information**

<b>Total Water Pumped (gal)</b>		259,174,000
<b>Total Water Purchased (gal)</b>		0
<b>Total Water Pumped and Purchased (gal)</b>		259,174,000
<b>Water Loss Accounted for Except Main Leaks (gal)</b>	<b>Mains, Plants, Filters, Flushing, etc.</b>	6,539,000
	<b>Fire Department</b>	150,000
	<b>Back Washing</b>	21,160,000
	<b>Blowing Settling Basins</b>	850,000
<b>Total Water Loss Accounted For Except Main Leaks</b>		28,699,000
<b>Water Sold- Total Gallons (gal)</b>		173,125,000

<b>Unaccounted For Lost Water (gal)</b>	55,173,000
<b>Water lost from main leaks (gal)</b>	2,177,000
<b>Total gallons of Unaccounted for Lost Water and Water Lost from Main Leaks (gal)</b>	57,350,000
<b>Total Percent Unaccounted For Water and Water Lost from Main Leaks (gal)</b>	22%
<b>If total percentage of Unaccounted for Water is greater than 15%, please describe any measures that could be taken to correct this problem:</b>	Investigate for Main Leaks

### Early Warning Monitoring System

Public water utilities are required to provide an examination of the technical and economic feasibility of implementing an early warning monitoring system. Implementing an early warning monitoring system may be approached in different ways depending upon the water utility’s resources and threats to the source water. A utility may install a continuous monitoring system that will provide real time information regarding water quality conditions. This would require utilities to analyze the data in order to establish what condition is indicative of a contamination event. Continuous monitoring will provide results for a predetermined set of parameters. The more parameters being monitored, the more sophisticated the monitoring equipment will be. When establishing a continuous monitoring system, the utility should consider the logistics of placing and maintaining the equipment, and receiving output data from the equipment.

Alternately, or in addition, a utility may also pull periodic grab samples on a regular basis, or in case of a reported incident. The grab samples may be analyzed for specific contaminants. A utility should examine their PSSCs to determine what chemical contaminants could pose a threat to the water source. If possible, the utility should plan in advance how those contaminants will be detected. Consideration should be given for where samples will be collected, the preservations and hold times for samples, available laboratories to analyze samples, and costs associated with the sampling event. Regardless of the type of monitoring (continuous or grab), utilities should collect samples for their source throughout the year to better understand the baseline water quality conditions and natural seasonal fluctuations. Having a baseline will help determine if changes in the water quality are indicative of a contamination event and inform the needed response.

Every utility should establish a system or process for receiving or detecting chemical threats with sufficient time to respond to protect the treatment facility and public health. All approaches to receiving and responding to an early warning should incorporate communication with facility owners and operators that pose a threat to the water quality, with state and local emergency response agencies, with surrounding water utilities, and with the public. Communication plays an important role in knowing how to interpret data and how to respond.

City of Spencer Waterworks has analyzed its ability to monitor for and detect potential contaminants that could impact its source water. Information regarding this utility’s early warning monitoring system capabilities can be found in **Table 15** and in **Appendix B**.

**Table 15. Early Warning Monitoring System Capabilities**

<p><b>Does your system currently receive spill notifications from a state agency, neighboring water system, local emergency responders, or other facilities? If yes, from whom do you receive notices?</b></p>	<p>No</p>	
<p><b>Are you aware of any facilities, land uses, or critical areas within your protection areas where chemical contaminants could be released or spilled?</b></p>	<p>Yes</p>	
<p><b>Are you prepared to detect potential contaminants if notified of a spill?</b></p>	<p>Yes</p>	
<p><b>List laboratories (and contact information) on whom you would rely to analyze water samples in case of a reported spill.</b></p>	<p><b>Laboratories</b></p>	
	<p><b>Name</b></p>	<p><b>Contact</b></p>
	<p>Reic Lab</p>	<p>John McGee</p>
	<p></p>	<p></p>
<p><b>Do you have an understanding of baseline or normal conditions for your source water quality that accounts for seasonal fluctuations?</b></p>	<p>Yes</p>	
<p><b>Does your utility currently monitor raw water (through continuous monitoring or periodic grab samples) at the surface water intake or from a groundwater source on a regular basis?</b></p>	<p>Yes</p>	
<p><b>Provide or estimate the capital and O&amp;M costs for your current or proposed early warning system or upgraded system.</b></p>	<p><b>Capital</b></p>	<p>\$20,000</p>
	<p><b>Yearly O &amp; M</b></p>	<p>\$500</p>
<p><b>Do you serve more than 100,000 customers? If so, please describe the methods you use to monitor at the same technical levels utilized by ORSANCO.</b></p>	<p>No</p>	
<p><b>Note: Complete appropriate Early Warning Monitoring form for your system in Appendix B (Line 71).</b></p>		

## Single Source Feasibility Study

If a public water utility's water supply plant is served by a single-source intake to a surface water source of supply or a surface water influenced source of supply, the submitted source water protection plan must also include an examination and analysis of the technical and economic feasibility of alternative sources of water to provide continued safe and reliable public water service in the event that its primary source of supply is detrimentally affected by contamination, release, spill event or other reason. These alternatives may include a secondary intake, two days of additional raw or treated water storage, an interconnection with neighboring systems, or other options identified on a local level. Note: a suitable secondary intake would draw water supplies from a substantially different location or water source.

To accomplish this requirement, utilities should examine all existing or possible alternatives and rank them by their technical, economic, and environmental feasibility. To have a consistent and complete method for ranking alternatives, WVBPH has developed a feasibility study guide. This guide provides several criteria to consider for each category, organized in a Feasibility Study Matrix. By completing the Feasibility Study Matrix, utilities will demonstrate the process used to examine the feasibility of each alternative and document scores that compare the alternatives. The Feasibility Study matrix and summary of the results are presented in an alternatives feasibility study attached as **Appendix D**.

## Communication Plan

City of Spencer Waterworks has also developed a Communication Plan that documents the manner in which the public water utility, working in concert with state and local emergency response agencies, shall notify the local health agencies and the public of the initial spill or contamination event and provide updated information related to any contamination or impairment of the source water supply or the system's drinking water supply. The initial notification to the public will occur in any event no later than thirty minutes after the public water system becomes aware of the spill, release, or potential contamination of the public water system. A copy of the source water protection plan and the Communication Plan has been provided to the local fire department. City of Spencer Waterworks will update the Communication Plan as needed to ensure contact information is up to date.

Procedures should be in place for the kinds of catastrophic spills that can reasonably be predicted at the source location or within the SWPA. The chain-of-command, notification procedures and response actions should be known by all water system employees.

The WVBPH has developed a recommended communication plan template that provides a tiered incident communication process to provide a universal system of alert levels to utilities and water system managers. The comprehensive Communication Plan for City of Spencer Waterworks is attached as **Appendix C** for internal review and planning purposes only.

The West Virginia Department of Environmental Protection is capable of providing expertise and assistance related to prevention, containment, and clean-up of chemical spills. The West Virginia Department of Environmental Protection Emergency Response 24-hour Phone is 1-800-642-3074. The West Virginia Department of Environmental Protection also operates an upstream distance estimator that can be used to determine the distance from a spill site to the closest public water supply surface water intake.

## Emergency Response Short Form

A public water utility must be prepared for any number of emergency scenarios and events that would require immediate response. It is imperative that information about key contacts, emergency services, and downstream water systems be posted and readily available in the event of an emergency. Elements of this source water protection plan, such as the contingency planning and communication plan, may contain similar information to the utility's emergency response plan. However, the emergency response plan is to be kept confidential and is not included in this source water protection plan. An Emergency Short Form is included in **Appendix C** to support the Communicate Plan by providing quick access to important information about emergency response and are to be used for internal review and planning purposes only.

## Conclusion

This report represents a detailed explanation of the required elements of City of Spencer Waterworks's Source Water Protection Plan. Any supporting documentation or other materials that the utility considers relevant to their plan can be found in **Appendix E**.

This source water protection plan is intended to help prepare community public water systems all over West Virginia to properly handle any emergencies that might compromise the quality of the system's source water supply. It is imperative that this plan is updated as often as necessary to reflect the changing circumstances within the water system. The protection team should continue to meet regularly and continue to engage the public whenever possible. Communities taking local responsibility for the quality of their source water is the most effective way to prevent contamination and protect a water system against contaminated drinking water. Community cooperation, sufficient preparation, and accurate monitoring are all critical components of this source water protection plan, and a multi-faceted approach is the only way to ensure that a system is as protected as possible against source water degradation.



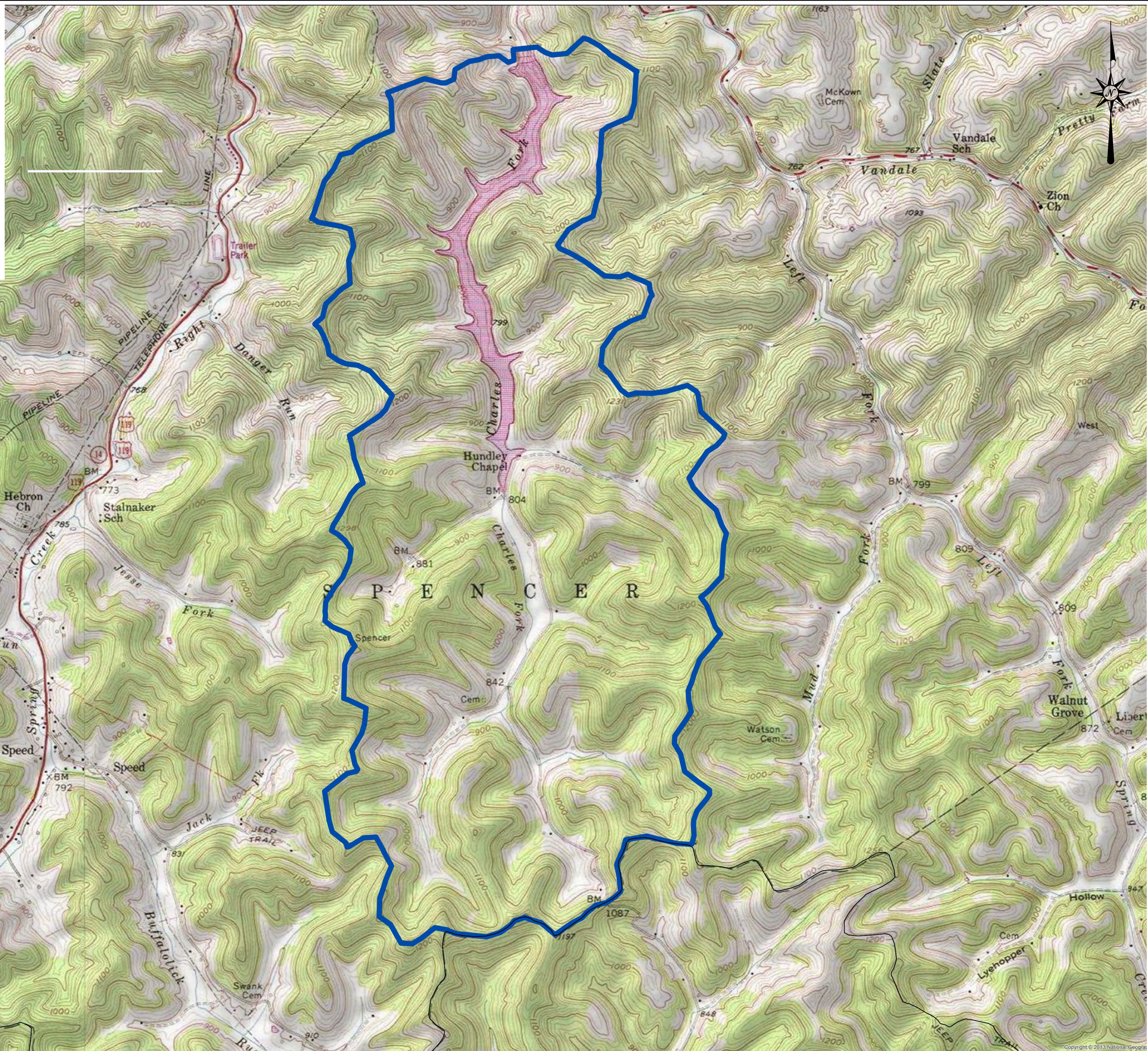
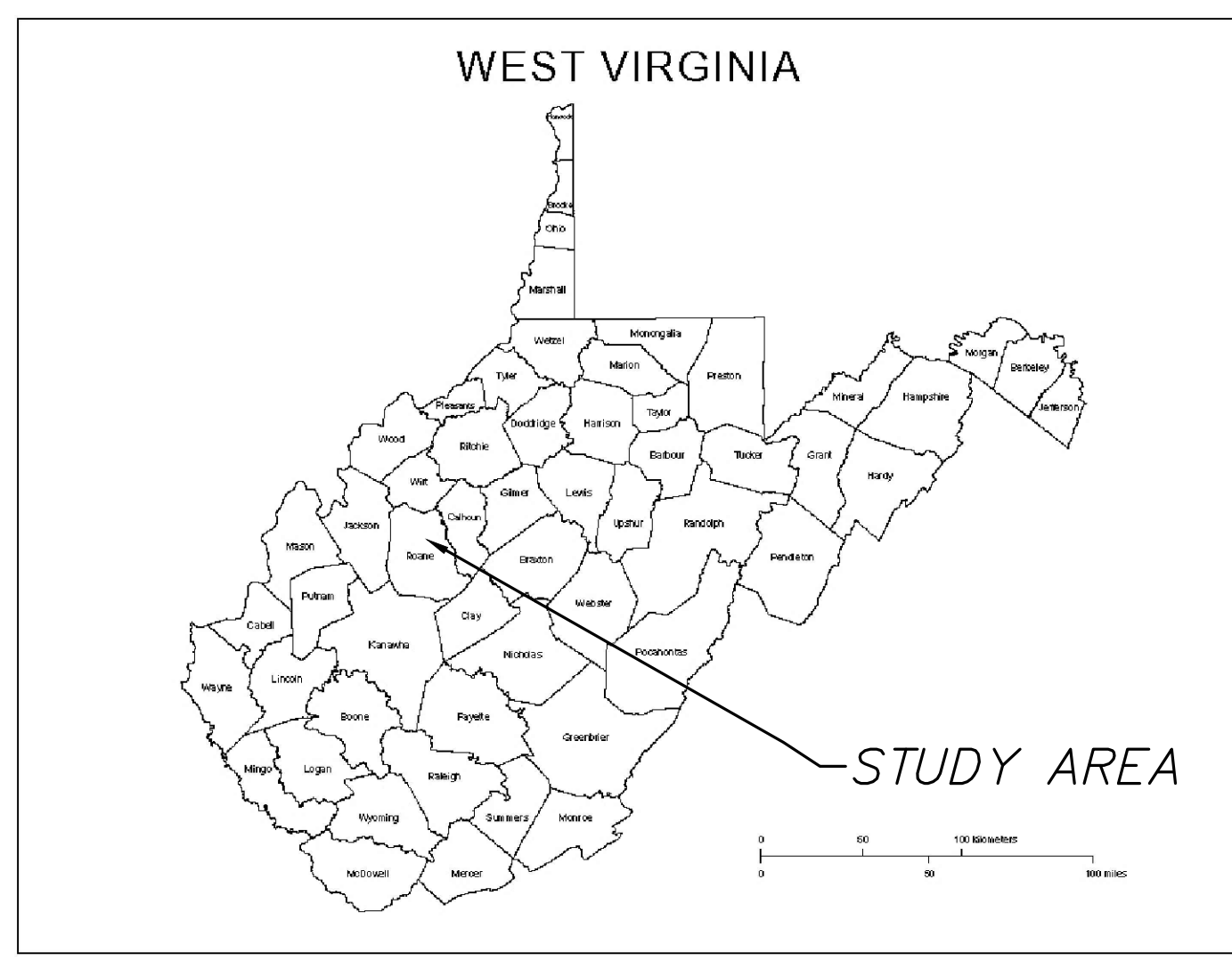
## Appendix A. Figures

## Watershed Delineation Area (WSDA Map









**TRIAD ENGINEERING, INC.**  
 10541 TEAYS VALLEY ROAD  
 SCOTT DEPOT, WV 25560  
 PH: 304.755.0721 FAX: 304.755.1880

REV. #	DATE	DESCRIPTION

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 DATE: 05-24-2016  
 SCALE: 1:150,000

CITY OF SPENCER WATERWORKS  
 SPENCER, ROANE COUNTY, WV

**PRIMARY INTAKE  
 WATERSHED AREA**

**TRIAD**  
 TRIAD ENGINEERING, INC.  
 www.triadeng.com

SHEET NUMBER:  
**FIG 1**

PROJECT No.: 04-15-0044

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**Zone of Critical Concern (ZCC) and Zone of Peripheral Concern (ZPC) Map(s)**



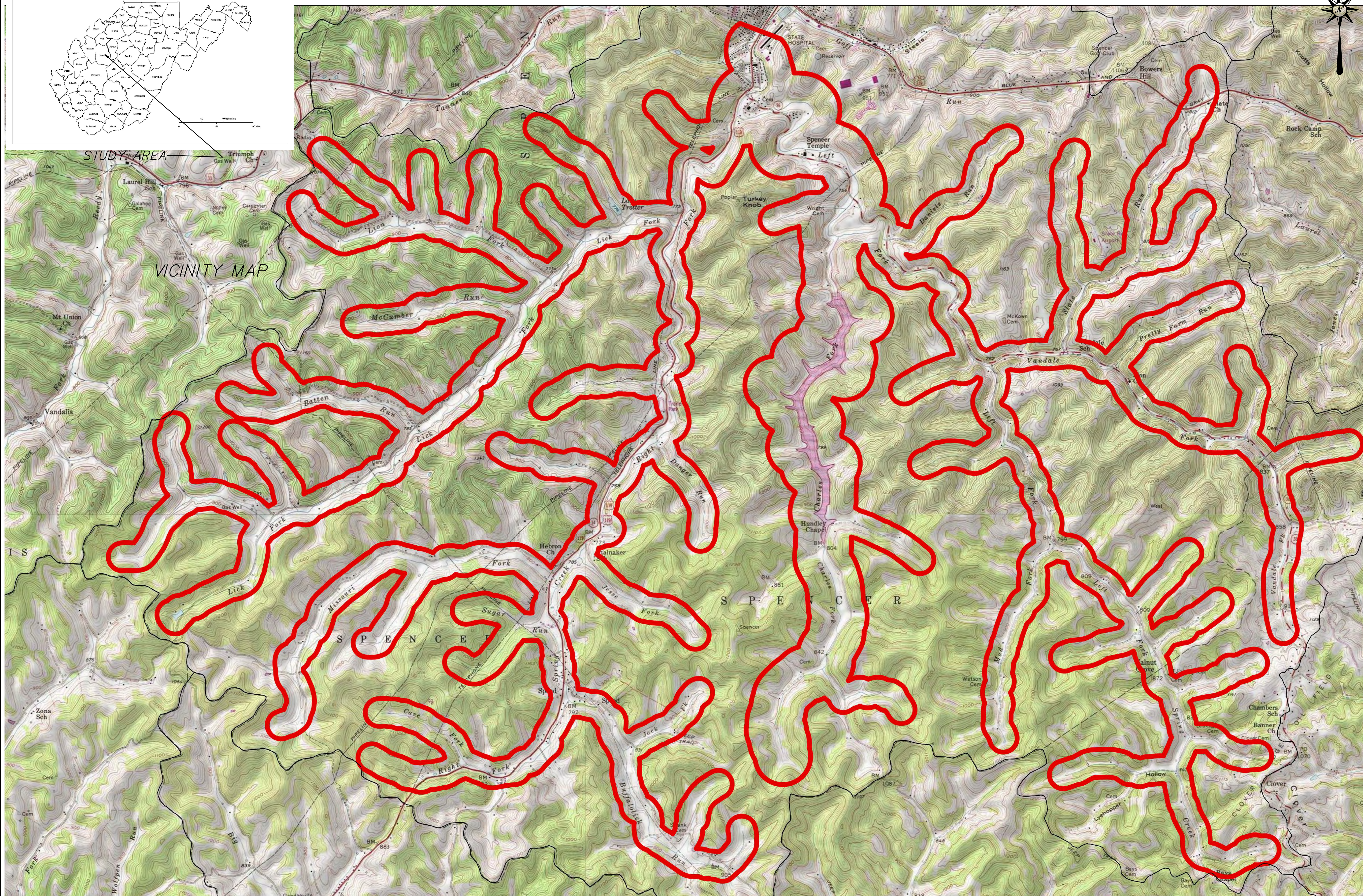
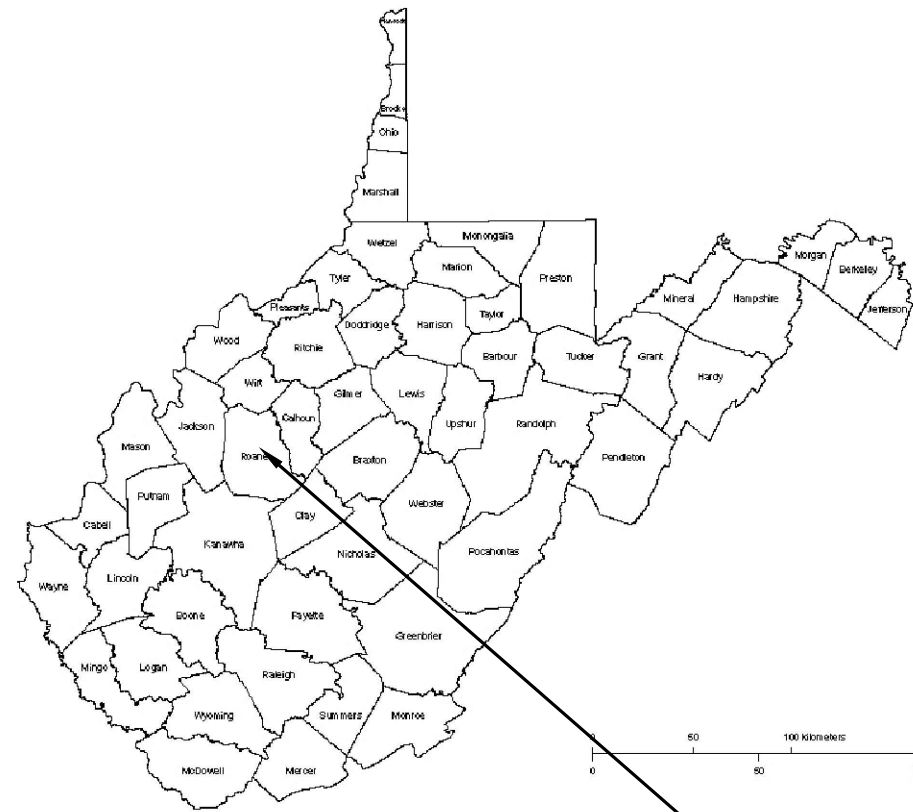








WEST VIRGINIA



STUDY AREA

VICINITY MAP

**TRIAD ENGINEERING, INC.**

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OFFICE LOCATIONS  
MARYLAND • PENNSYLVANIA • VIRGINIA • WEST VIRGINIA • OHIO

CADD FILE: spencer MAPS.dwg

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CHECKED BY: LLM

DATE: 05-31-2016

SCALE: 1:40,000

REV. # DATE DESCRIPTION

CITY OF SPENCER WATERWORKS  
SPENCER, ROANE COUNTY, WV

**SECONDARY ZCC**



SHEET NUMBER:

**FIG 4**

PROJECT No.: 04-15-0044

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## Wellhead Protection Area (WHPA) Map

## List of Locally Identified PSSCs



**Map of Locally Identified PSSCs**







## List of Regulated PSSCs

Figure 10 - List of Regulated PSSCs

PSSC #	ArcMap LAYER	SITE NAME	SITEDescription	LATITUDE	LONGITUDE	OWNER	Comments
1	AST Unique	HCI	044-00000196	38.763932	-81.365021	HEETER CONSTRUCTION INC.	fuel
7	AST Unique	BOGGS NATURAL GAS, FLP	044-00000143	38.759012	-81.364422	BOGGS NATURAL GAS FLP	Empty Tank
8	AST Unique	BOGGS NATURAL GAS, FLP	044-00000145	38.759037	-81.364444	BOGGS NATURAL GAS FLP	Empty Tank
9	AST Unique	BOGGS NATURAL GAS, FLP	044-00000150	38.759552	-81.364289	BOGGS NATURAL GAS FLP	YARD TANK
10	AST Unique	BOGGS NATURAL GAS, FLP	044-00000159	38.759217	-81.364447	BOGGS NATURAL GAS FLP	Empty Tank
11	AST Unique	BOGGS NATURAL GAS, FLP	044-00000160	38.758972	-81.364427	BOGGS NATURAL GAS FLP	WATER TANK
12	AST Unique	BOGGS NATURAL GAS, FLP	044-00000162	38.758986	-81.364388	BOGGS NATURAL GAS FLP	Empty Tank
13	AST Unique	BOGGS NATURAL GAS, FLP	044-00000172	38.759058	-81.364475	BOGGS NATURAL GAS FLP	Empty Tank
14	AST Unique	BOGGS NATURAL GAS, FLP	044-00000174	38.759189	-81.364294	BOGGS NATURAL GAS FLP	Empty Tank
15	AST Unique	BOGGS NATURAL GAS, FLP	044-00000175	38.759521	-81.361594	BOGGS NATURAL GAS FLP	ROCK QUARRY TANK
16	AST Unique	BOGGS NATURAL GAS, FLP	044-00000178	38.760193	-81.36389	BOGGS NATURAL GAS FLP	Empty Tank
17	AST Unique	Roane County HQ	044-00000208	38.784999	-81.358357	WVDOH-EQUIPMENT DIVISION	
18	AST Unique	Roane County HQ	044-00000209	38.78445	-81.358771	WVDOH-EQUIPMENT DIVISION	
19	AST Unique	Boggs Natural Gas	999-00000332	38.762088	-81.36553	BFS PETROLEUM PRODUCTS	
20	AST Unique	Boggs Natural Gas	999-00000333	38.762088	-81.36553	BFS PETROLEUM PRODUCTS	
21	AST Unique	STALNAKER ENERGY CORPORATION	044-00000244	38.763329	-81.321612	STALNAKER ENERGY CORPORATION	
23	AST Unique	Jordan #1	044-00000500	38.733399	-81.351124	B. V. WELL SERVICES, LLC	
33	AST Unique	R&S OIL & GAS LLC	044-00000705	38.72386	-81.29938	R & S OIL & GAS LLC	
34	AST Unique	R&S OIL & GAS LLC	044-00000711	38.73034	-81.29899	R & S OIL & GAS LLC	
35	AST Unique	R&S OIL & GAS LLC	044-00000712	38.732895	-81.298093	R & S OIL & GAS LLC	
36	AST Unique	Spencer	044-00000022	38.715664	-81.29323	HG ENERGY, LLC	
37	AST Unique	Spencer	044-00000023	38.716291	-81.293394	HG ENERGY, LLC	
38	AST Unique	Spencer	044-00000028	38.755348	-81.285983	HG ENERGY, LLC	
40	AST Unique	Spencer	044-00000038	38.73603	-81.289974	HG ENERGY, LLC	
41	AST Unique	Spencer	044-00000039	38.73605	-81.289947	HG ENERGY, LLC	
42	AST Unique	Spencer	044-00000042	38.741398	-81.287085	HG ENERGY, LLC	
43	AST Unique	Spencer	044-00000043	38.74382	-81.287393	HG ENERGY, LLC	
1	AST W/CHEMICAL	HCI	044-000000196	38.763932	-81.365021	HEETER CONSTRUCTION INC.	Used Oil
2	AST W/CHEMICAL	Hardrock Exploration	044-000000083	38.774264	-81.379584	STEPHENS, JAMES L	Crude oil
8	AST W/CHEMICAL	BOGGS NATURAL GAS, FLP	044-00000143	38.759012	-81.364422	BOGGS NATURAL GAS FLP	
9	AST W/CHEMICAL	BOGGS NATURAL GAS, FLP	044-00000145	38.759037	-81.364444	BOGGS NATURAL GAS FLP	
10	AST W/CHEMICAL	BOGGS NATURAL GAS, FLP	044-00000150	38.759552	-81.364289	BOGGS NATURAL GAS FLP	Crude oil
11	AST W/CHEMICAL	BOGGS NATURAL GAS, FLP	044-00000159	38.759217	-81.364447	BOGGS NATURAL GAS FLP	
12	AST W/CHEMICAL	BOGGS NATURAL GAS, FLP	044-00000160	38.758972	-81.364427	BOGGS NATURAL GAS FLP	Water
13	AST W/CHEMICAL	BOGGS NATURAL GAS, FLP	044-00000162	38.758986	-81.364388	BOGGS NATURAL GAS FLP	
14	AST W/CHEMICAL	BOGGS NATURAL GAS, FLP	044-00000172	38.759058	-81.364475	BOGGS NATURAL GAS FLP	
15	AST W/CHEMICAL	BOGGS NATURAL GAS, FLP	044-00000174	38.759189	-81.364294	BOGGS NATURAL GAS FLP	Water
16	AST W/CHEMICAL	BOGGS NATURAL GAS, FLP	044-00000175	38.759521	-81.361594	BOGGS NATURAL GAS FLP	
17	AST W/CHEMICAL	BOGGS NATURAL GAS, FLP	044-00000178	38.760193	-81.36389	BOGGS NATURAL GAS FLP	
18	AST W/CHEMICAL	Roane County HQ	044-00000208	38.784999	-81.358357	WVDOH-EQUIPMENT DIVISION	Calcium chloride (CaCl2)
19	AST W/CHEMICAL	Roane County HQ	044-00000209	38.78445	-81.358357	WVDOH-EQUIPMENT DIVISION	Calcium chloride (CaCl2)
20	AST W/CHEMICAL	Roane County HQ	044-00000209	38.78445	-81.358771	WVDOH-EQUIPMENT DIVISION	Diesel fuel
21	AST W/CHEMICAL	Roane County HQ	044-00000209	38.78445	-81.358771	WVDOH-EQUIPMENT DIVISION	GASOLINE, all grades
22	AST W/CHEMICAL	Boggs Natural Gas	999-00000332	38.762088	-81.36553	BFS PETROLEUM PRODUCTS	GASOLINE, all grades1
23	AST W/CHEMICAL	Boggs Natural Gas	999-00000333	38.762088	-81.36553	BFS PETROLEUM PRODUCTS	Fuel oil, no. 2
24	AST W/CHEMICAL	STALNAKER ENERGY CORPORATION	044-00000244	38.763329	-81.321612	STALNAKER ENERGY CORPORATION	Brine
26	AST W/CHEMICAL	Jordan #1	044-00000500	38.733399	-81.351124	B. V. WELL SERVICES, LLC	Brine, oil and gas
27	AST W/CHEMICAL	Jordan #1	044-00000500	38.733399	-81.351124	B. V. WELL SERVICES, LLC	Crude oil



PSSC #	ArcMap LAYER	SITE NAME	SITEDescription	LATITUDE	LONGITUDE	OWNER	Comments
46	AST W/CHEMICAL	R&S OIL & GAS LLC	044-00000705	38.72386	-81.29938	R & S OIL & GAS LLC	BRINE, CRUDE OIL
47	AST W/CHEMICAL	R&S OIL & GAS LLC	044-00000711	38.73034	-81.29899	R & S OIL & GAS LLC	BRINE; CRUDE OIL
48	AST W/CHEMICAL	R&S OIL & GAS LLC	044-00000712	38.732895	-81.29893	R & S OIL & GAS LLC	BRINE; CRUDE OIL
49	AST W/CHEMICAL	Spencer	044-00000022	38.715664	-81.29323	HG ENERGY, LLC	Crude oil
50	AST W/CHEMICAL	Spencer	044-00000023	38.716291	-81.29394	HG ENERGY, LLC	Crude oil
51	AST W/CHEMICAL	Spencer	044-00000028	38.755348	-81.285983	HG ENERGY, LLC	Crude oil
53	AST W/CHEMICAL	Spencer	044-00000038	38.73603	-81.289974	HG ENERGY, LLC	Crude oil
54	AST W/CHEMICAL	Spencer	044-00000039	38.73605	-81.289947	HG ENERGY, LLC	Crude oil
55	AST W/CHEMICAL	Spencer	044-00000042	38.741398	-81.287085	HG ENERGY, LLC	Crude oil
56	AST W/CHEMICAL	Spencer	044-00000043	38.74382	-81.287393	HG ENERGY, LLC	Crude oil
1	ERIS Well	RODGERS, PEARL	Oil and Gas Well	38.75648773	-81.28468765	EAST RESOURCES, INC.	
3	ERIS Well	RODGERS, PEARL	Oil and Gas Well	38.75648773	-81.28468765	EAST RESOURCES, INC.	
6	ERIS Well	GREATHOUSE, J. B.	Oil and Gas Well	38.79336393	-81.29577122	W. E. B. WELL TENDING SERVICE, IN	
8	ERIS Well	PRITCHARD, I. H.	Oil and Gas Well	38.73847906	-81.30038996	OPERATOR UNKNOWN	
9	ERIS Well	PRITCHARD, I. H.	Oil and Gas Well	38.73847906	-81.30038996	OPERATOR UNKNOWN	
14	ERIS Well	SWISHER, S., ETAL	Oil and Gas Well	38.73020626	-81.41166456	CABOT OIL & GAS CORPORATION	
15	ERIS Well	SWISHER, S., ETAL	Oil and Gas Well	38.73020626	-81.41166456	CABOT OIL & GAS CORPORATION	
19	ERIS Well	BUCHANAN, ORIS R.	Oil and Gas Well	38.77243968	-81.2975704	M & M DRILLING	
20	ERIS Well	VANDALE, GEORGE, ETAL	Oil and Gas Well	38.76421019	-81.30869661	OPERATOR UNKNOWN	
21	ERIS Well	BARTLETT, CAMMIE	Oil and Gas Well	38.75649947	-81.29840421	ARIES PETROLEUM CORP.	
22	ERIS Well	HOLSWADE, INEZ	Oil and Gas Well	38.76870595	-81.364168	ALLEGHENY & WESTERN ENERGY CORP	
24	ERIS Well	SIMMONS, D.	Oil and Gas Well	38.74138105	-81.28703255	EAST RESOURCES, INC.	
25	ERIS Well	LEWIS, ASBURY	Oil and Gas Well	38.73717303	-81.28610789	EAST RESOURCES, INC.	
31	ERIS Well	QUESTEL, MARLIN & JILL	Oil and Gas Well	38.76013046	-81.4266051	HARD ROCK EXPLORATION, INC.	
33	ERIS Well	CARPER, VELDA E.	Oil and Gas Well	38.72323969	-81.36888832	KEY OIL CO.	
34	ERIS Well	CARPER, VELDA E.	Oil and Gas Well	38.72323969	-81.36888832	KEY OIL CO.	
35	ERIS Well	KEFFER, I.B./LORA WARNER	Oil and Gas Well	38.73281893	-81.29927901	OPERATOR UNKNOWN	
36	ERIS Well	POST, J. E.	Oil and Gas Well	38.73369007	-81.29798368	OPERATOR UNKNOWN	
38	ERIS Well	SIMMONS, D.	Oil and Gas Well	38.74413864	-81.28703209	EAST RESOURCES, INC.	
40	ERIS Well	JORDAN, P. S.	Oil and Gas Well	38.73151186	-81.34057669	OPERATOR UNKNOWN	
41	ERIS Well	PRITCHARD, I. H.	Oil and Gas Well	38.73441444	-81.30260961	STONESTREET LANDS CO	
42	ERIS Well	SIMMONS, DAVID	Oil and Gas Well	38.74312341	-81.2890682	OPERATOR UNKNOWN	
44	ERIS Well	YOAK, JAMES B.	Oil and Gas Well	38.76608019	-81.41330093	PRIME OPERATING COMPANY	
45	ERIS Well	HARRIS, J. A.	Oil and Gas Well	38.75679409	-81.28691128	EAST RESOURCES, INC.	
46	ERIS Well	SWISHER, DOCIA	Oil and Gas Well	38.74544488	-81.38391022	OPERATOR UNKNOWN	
47	ERIS Well	SWISHER, DOCIA	Oil and Gas Well	38.74544488	-81.38391022	OPERATOR UNKNOWN	
166	ERIS Well	KEMMNER, JOHN & KATIE	Oil and Gas Well	38.77433667	-81.37936554	HARD ROCK EXPLORATION, INC.	
171	ERIS Well	CAMP, J. R.	Oil and Gas Well	38.7346259	-81.41240462	OPERATOR UNKNOWN	
174	ERIS Well	LEWIS, ASBURY	Oil and Gas Well	38.73833418	-81.28740236	EAST RESOURCES, INC.	
175	ERIS Well	LEWIS, ASBURY	Oil and Gas Well	38.73717376	-81.29128903	EAST RESOURCES, INC.	
176	ERIS Well	DOUGLAS, CYNTHIA	Oil and Gas Well	38.7170371	-81.29268883	EAST RESOURCES, INC.	
177	ERIS Well	DOUGLAS, CYNTHIA	Oil and Gas Well	38.7170371	-81.29268883	EAST RESOURCES, INC.	
179	ERIS Well	FETTY, JESS	Oil and Gas Well	38.72882401	-81.37147382	KEY OIL CO.	
50	ERIS Well	HOLSWADE, WENDALL	Oil and Gas Well	38.7809005	-81.3702041	JACKSON, LLOYD WELL SERVICE	
51	ERIS Well	STARR, JANICE	Oil and Gas Well	38.78188619	-81.30300011	HURT, CLINT, & ASSOC., INC.	
64	ERIS Well	THOMPSON, F. M.	Oil and Gas Well	38.72416246	-81.29996672	OPERATOR UNKNOWN	
69	ERIS Well	SIMMONS, D.	Oil and Gas Well	38.74936364	-81.28666289	EAST RESOURCES, INC.	
70	ERIS Well	HOLSWADE, WENDALL	Oil and Gas Well	38.7809005	-81.3702041	JACKSON RESOURCES CO	
71	ERIS Well	BRANNAN, J. S.	Oil and Gas Well	38.726869	-81.29409795	DALE, DAVID DBA DD OIL COMPANY	
72	ERIS Well	HOLSWADE, HARRY M.	Oil and Gas Well	38.77306256	-81.38018337	COLUMBIA NATURAL RESOURCES, LLC	
74	ERIS Well	CORBINO, FRANK J.	Oil and Gas Well	38.7170621	-81.3556358	RESERVE OIL & GAS, INC.	
75	ERIS Well	BRANNON, J. S.	Oil and Gas Well	38.72541737	-81.29187747	ROUZER OIL CO., INC.	
77	ERIS Well	CARPENTER, JERRY & WANDA	Oil and Gas Well	38.76330237	-81.32149502	STALNAKER ENERGY CORPORATION	

PSSC #	ArcMap LAYER	SITE NAME	SITEDescription	LATITUDE	LONGITUDE	OWNER	Comments
79	ERIS Well	WEBB, L. J.	Oil and Gas Well	38.7255627	-81.28851311	EAST RESOURCES, INC.	
80	ERIS Well	WEBB, L. J.	Oil and Gas Well	38.7255627	-81.28851311	EAST RESOURCES, INC.	
81	ERIS Well	SIMMONS, DAVID	Oil and Gas Well	38.75181564	-81.28889495	EAST RESOURCES, INC.	
90	ERIS Well	PURSLY, D. C. & OPAL	Oil and Gas Well	38.77638312	-81.2975983	HILDRETH, ROY G., JR. & SON	
94	ERIS Well	THOMPSON, F. M.	Oil and Gas Well	38.72460121	-81.29853608	OPERATOR UNKNOWN	
97	ERIS Well	BAILEY, EDIE	Oil and Gas Well	38.7367379	-81.2922248	EAST RESOURCES, INC.	
98	ERIS Well	STARCHER, RUBY	Oil and Gas Well	38.76873474	-81.40033459	PRIME OPERATING COMPANY	
101	ERIS Well	ROANE COUNTY SCHOOLS	Oil and Gas Well	38.77493422	-81.36666555	JACKSON RESOURCES CO	
104	ERIS Well	PRITCHARD, BLAKE	Oil and Gas Well	38.73798614	-81.30212647	OPERATOR UNKNOWN	
106	ERIS Well	YOUNG, WILDA V.	Oil and Gas Well	38.7199012	-81.36648195	PAULEY, JOSEPH E	
107	ERIS Well	HILDRETH, VAROY & ADA	Oil and Gas Well	38.76818225	-81.32509033	OPERATOR UNKNOWN	
110	ERIS Well	HARRIS, J. A.	Oil and Gas Well	38.75558456	-81.28550465	EAST RESOURCES, INC.	
111	ERIS Well	HOLSWADE, HARRY M.	Oil and Gas Well	38.77306256	-81.38018337	COLUMBIA NATURAL RESOURCES, LLC	
112	ERIS Well	LEWIS, ASBURY	Oil and Gas Well	38.7403659	-81.28573746	EAST RESOURCES, INC.	
113	ERIS Well	CAMP, J. R.	Oil and Gas Well	38.73746259	-81.41240462	OPERATOR UNKNOWN	
122	ERIS Well	JARVIS, D. M.	Oil and Gas Well	38.740075	-81.39945193	PAULEY, JOSEPH E	
123	ERIS Well	RYAN, ALICE - ET CON	Oil and Gas Well	38.76552	-81.38534954	PRIME OPERATING COMPANY	
124	ERIS Well	HARRIS, S. P. - HEIRS	Oil and Gas Well	38.72730402	-81.30853083	FICK, ALVIN & LYNN	
125	ERIS Well	NICHOLS, HERBERT G.	Oil and Gas Well	38.7776774	-81.33577095	B & R CONSTRUCTION INC	
137	ERIS Well	JORDAN, P. S.	Oil and Gas Well	38.73151186	-81.34057669	OPERATOR UNKNOWN	
138	ERIS Well	WESTFALL, DARRELL	Oil and Gas Well	38.72991618	-81.3988972	PAULEY, JOSEPH E	
139	ERIS Well	GREATHOUSE, J. B.	Oil and Gas Well	38.79336393	-81.29577122	W. E. B. WELL TENDING SERVICE, IN	
140	ERIS Well	BAYS, J. H.	Oil and Gas Well	38.71569332	-81.29631815	EAST RESOURCES, INC.	
143	ERIS Well	JORDON, WALTER	Oil and Gas Well	38.73339925	-81.35112454	CENTRAL PACIFIC GROUP, INC.	
144	ERIS Well	DANIEL, JAMES, ETAL	Oil and Gas Well	38.74326854	-81.42058031	ALLEGHENY & WESTERN ENERGY CORP	
145	ERIS Well	VANDALE, GEORGE, ETAL	Oil and Gas Well	38.76421019	-81.30869661	OPERATOR UNKNOWN	
149	ERIS Well	HERSMAN, A. M. - HRS.	Oil and Gas Well	38.7409458	-81.39057143	OPERATOR UNKNOWN	
151	ERIS Well	WEBB, LUCY J.	Oil and Gas Well	38.72701353	-81.2899938	EAST RESOURCES, INC.	
152	ERIS Well	WEBB, LUCY J.	Oil and Gas Well	38.72701353	-81.2899938	EAST RESOURCES, INC.	
153	ERIS Well	ROANE COUNTY SCHOOLS	Oil and Gas Well	38.77493422	-81.36666555	JACKSON, LOYD WELL SERVICE	
155	ERIS Well	HOLSWADE, J. M.	Oil and Gas Well	38.78507079	-81.35132717	ALLEGHENY & WESTERN ENERGY CORP	
156	ERIS Well	LAWRENCE, IRA, ETAL	Oil and Gas Well	38.75895969	-81.36305039	OPERATOR UNKNOWN	
157	ERIS Well	HERSMAN, A. M. - HRS.	Oil and Gas Well	38.7409458	-81.39057143	OPERATOR UNKNOWN	
159	ERIS Well	DOUGLAS, C.	Oil and Gas Well	38.71540259	-81.29187814	EAST RESOURCES, INC.	
160	ERIS Well	DOUGLAS, C.	Oil and Gas Well	38.71540259	-81.29187814	EAST RESOURCES, INC.	
163	ERIS Well	PRITCHARD, B.	Oil and Gas Well	38.74080123	-81.29798447	OPERATOR UNKNOWN	
183	ERIS Well	HILDRETH, VAROY & ADA	Oil and Gas Well	38.76818225	-81.32509033	OPERATOR UNKNOWN	
188	ERIS Well	FERREBEE, DAVID	Oil and Gas Well	38.71453132	-81.36148668	BARTRAM, I DAVID	
190	ERIS Well	PRITCHARD, B.	Oil and Gas Well	38.74080123	-81.29798447	OPERATOR UNKNOWN	
196	ERIS Well	LEWIS, ASBURY	Oil and Gas Well	38.7403659	-81.28573746	EAST RESOURCES, INC.	
197	ERIS Well	STARR, JANICE A. & P. F.	Oil and Gas Well	38.77617239	-81.30557539	OPERATOR UNKNOWN	
1	HPU	BOGGS NATURAL GAS FLP	WV1025406	38.76056	-81.363592	BOGGS NATURAL GAS FLP	
2	HPU	BOGGS NATURAL GAS FLP	WV1025406	38.762513	-81.364465	BOGGS NATURAL GAS FLP	
3	HPU	BOGGS NATURAL GAS FLP	WV1025406	38.762575	-81.364707	BOGGS NATURAL GAS FLP	
4	HPU	BOGGS NATURAL GAS FLP	WV1025406	38.760479	-81.363615	BOGGS NATURAL GAS FLP	
5	HPU	BOGGS NATURAL GAS FLP	WV022520	38.760089	-81.362897	BOGGS NATURAL GAS FLP	
1	LUST	SPIN CYCLE SUNOCO	Leaking underground storage tank	38.753806	-81.356	SPIN CYCLE SUNOCO	
1	OWRNPDDES	BAKER, WESLEY G	Septic Tank	38.733233	-81.377	DALE, DAVID DBA DD OIL COMPANY	
2	OWRNPDDES	MOWRY, ROBERT Y	Septic Tank	38.741388	-81.288055	COLUMBIA NATURAL RESOURCES, LLC	
4	OWRNPDDES	ICE, TOMMY N	Septic Tank	38.749444	-81.372777	ARIES PETROLEUM CORP.	
5	OWRNPDDES	MYERS, TRACIE L	Septic Tank	38.752777	-81.286666	RESERVE OIL & GAS, INC.	
7	OWRNPDDES	WILSON, CAROLYN	Septic Tank	38.724722	-81.299722	ROUZER OIL CO., INC.	
9	OWRNPDDES	HICKMAN, TIM	Septic Tank	38.744	-81.404833	OPERATOR UNKNOWN	

PSSC #	ArcMap LAYER	SITE NAME	SITEDescription	LATITUDE	LONGITUDE	OWNER	Comments
10	OWRNPDDES	SPEAR, MICHAEL & MICHELLE	Septic Tank	38.745266	-81.37365	STALMAKER ENERGY CORPORATION	
11	OWRNPDDES	COX, RANDY A	Septic Tank	38.736666	-81.377222	COX, RANDY A	
12	OWRNPDDES	SUNNY BANK FARM CHARITABLE TRUST	Septic Tank	38.7475	-81.417222	SUNNY BANK FARM CHARITABLE TRUST	
14	OWRNPDDES	PERSINGER, ELIZABETH	Sewage	38.767277	-81.365277	PERSINGER, ELIZABETH	
15	OWRNPDDES	MOUNTAINEER SEPTIC SERVICE	Sewage	38.742435	-81.305351	MOUNTAINEER SEPTIC SERVICE	
16	OWRNPDDES	STEWART, CHARLES O	Septic Tank	38.768333	-81.383055	STEWART, CHARLES O	
17	OWRNPDDES	NICHOLSON, LORENE A	Septic Tank	38.716633	-81.361883	NICHOLSON, LORENE A	
18	OWRNPDDES	RAINWATER, KENNETH & MARTHA	Septic Tank	38.726388	-81.369444	RAINWATER, KENNETH & MARTHA	
19	OWRNPDDES	BAKER, RAETTA	Septic Tank	38.725	-81.383888	BAKER, RAETTA	
20	OWRNPDDES	TRYON, DAVID D	Septic Tank	38.724388	-81.368833	TRYON, DAVID D	
21	OWRNPDDES	BOSSERT, MARK	Sewage	38.744166	-81.416944	BOSSERT, MARK	
22	OWRNPDDES	RICHARDSON, JOHN C	Septic Tank	38.7507	-81.31575	RICHARDSON, JOHN C	
23	OWRNPDDES	TITUS, MARY BETH	Septic Tank	38.785233	-81.346083	TITUS, MARY BETH	
24	OWRNPDDES	HALL, DOYLE	Septic Tank	38.759416	-81.321083	HALL, DOYLE	
25	OWRNPDDES	HENSON, WESLEY A	Septic Tank	38.725277	-81.388611	HENSON, WESLEY A	
26	OWRNPDDES	STRIMEL, DON & BETTY	Septic Tank	38.758888	-81.396944	STRIMEL, DON & BETTY	
28	OWRNPDDES	WEBB, LEONA FAYE	Septic Tank	38.746111	-81.285833	WEBB, LEONA FAYE	
30	OWRNPDDES	WRIGHT, DEBORAH K	Sewage	38.788055	-81.356944	WRIGHT, DEBORAH K	
31	OWRNPDDES	PARSONS, ELIZABETH	Sewage	38.755277	-81.368888	PARSONS, ELIZABETH	
32	OWRNPDDES	BARNETT, ROBERT	Septic Tank	38.7429	-81.38055	BARNETT, ROBERT	
33	OWRNPDDES	FRESHWATER, DAVID	Septic Tank	38.768611	-81.363055	FRESHWATER, DAVID	
35	OWRNPDDES	WHITE, JUDY & FREDDIE	Septic Tank	38.718055	-81.364166	WHITE, JUDY & FREDDIE	
36	OWRNPDDES	COMBS, DAVID & CLARA	Sewage	38.785136	-81.346516	COMBS, DAVID & CLARA	
37	OWRNPDDES	RODGERS, EMMIL	Sewage	38.743611	-81.38	RODGERS, EMMIL	
42	OWRNPDDES	SAUNDERS, JEFF & JENNIFER	Septic Tank	38.725194	-81.368361	SAUNDERS, JEFF & JENNIFER	
43	OWRNPDDES	SMITH, PHILLIP	Septic Tank	38.753166	-81.372972	SMITH, PHILLIP	
44	OWRNPDDES	WEST, CHARLES D JR	Septic Tank	38.748	-81.3726	WEST, CHARLES D JR	
45	OWRNPDDES	PRICE, THELMA	Septic Tank	38.7775	-81.364166	PRICE, THELMA	
46	OWRNPDDES	WEST, DEBRA	Sewage	38.744166	-81.318333	WEST, DEBRA	
48	OWRNPDDES	ST. JOHN'S UNITED METHODIST CHURCH	Industrial	38.784166	-81.360833	ST. JOHN'S UNITED METHODIST CHURCH	
49	OWRNPDDES	TAYLOR, CRAIG	Septic Tank	38.781944	-81.348888	TAYLOR, CRAIG	
50	OWRNPDDES	NICHOLS, JASON	Septic Tank	38.751583	-81.319197	NICHOLS, JASON	
52	OWRNPDDES	BAILEY, RONNIE & PATTY	Septic Tank	38.740111	-81.378277	BAILEY, RONNIE & PATTY	
53	OWRNPDDES	PAULEY, JOSEPH E	Septic Tank	38.715	-81.356305	PAULEY, JOSEPH E	
54	OWRNPDDES	MILLER, THOMAS & KATHY	Septic Tank	38.778472	-81.396527	MILLER, THOMAS & KATHY	
55	OWRNPDDES	ST. JOHN'S UNITED METHODIST CHURCH	Septic Tank	38.784722	-81.361388	ST. JOHN'S UNITED METHODIST CHURCH	
57	OWRNPDDES	CALLOW, TIM & STACY	Septic Tank	38.770833	-81.295833	CALLOW, TIM & STACY	
60	OWRNPDDES	GANDEE, JAMES	Sewage	38.764722	-81.363888	GANDEE, JAMES	
61	OWRNPDDES	WV DEPARTMENT OF TRANSPORTATION	Industrial	38.785277	-81.357222	WV DEPARTMENT OF TRANSPORTATION	
62	OWRNPDDES	HICKMAN, DWAYN & THERESA	Septic Tank	38.741833	-81.386	HICKMAN, DWAYN & THERESA	
63	OWRNPDDES	TAYLOR, MARK	Septic Tank	38.781111	-81.341944	TAYLOR, MARK	
65	OWRNPDDES	TAYLOR, ROBERT L	Septic Tank	38.780833	-81.344166	TAYLOR, ROBERT L	
66	OWRNPDDES	STARCHER, GERALD	Septic Tank	38.780833	-81.344	STARCHER, GERALD	
67	OWRNPDDES	HERSHMAN, WARREN C	Septic Tank	38.728611	-81.370833	HERSHMAN, WARREN C	
70	OWRNPDDES	WHITE, CARY	Septic Tank	38.74722	-81.304444	WHITE, CARY	
71	OWRNPDDES	SAUNDERS, GEORGE	Septic Tank	38.717433	-81.362966	SAUNDERS, GEORGE	
72	OWRNPDDES	NICHOLSON, LORENE A	Septic Tank	38.716666	-81.360277	NICHOLSON, LORENE A	
74	OWRNPDDES	HOWARD, PHILIP & BARBARA	Septic Tank	38.780847	-81.364041	HOWARD, PHILIP & BARBARA	
76	OWRNPDDES	HARPER, DARIS D	Septic Tank	38.724166	-81.368611	HARPER, DARIS D	
77	OWRNPDDES	BARNETT, ROBERT	Septic Tank	38.7425	-81.379722	BARNETT, ROBERT	
78	OWRNPDDES	GREATHOUSE, EDWARD N	Septic Tank	38.776666	-81.37222	GREATHOUSE, EDWARD N	
80	OWRNPDDES	MCCUNE, TIMOTHY H.	Sewage	38.780555	-81.304722	MCCUNE, TIMOTHY H.	
81	OWRNPDDES	DRENNEN, BOB	Industrial	38.785277	-81.409444	DRENNEN, BOB	

PSSC #	ArcMap LAYER	SITE NAME	SITEDescription	LATITUDE	LONGITUDE	OWNER	Comments
1	OWRNPDES OUTLET	Elizabeth Persinger residence	Home Aeration Unit General	38.76277	-81.365277	Elizabeth Persinger residence	
2	OWRNPDES OUTLET	Mark Bossert/Clerc Daniell	Home Aeration Unit General	38.744166	-81.416944	Mark Bossert/Clerc Daniell	
3	OWRNPDES OUTLET	Deborah K. Wright	Home Aeration Unit General	38.788055	-81.356944	Deborah K. Wright	
4	OWRNPDES OUTLET	Parsons, Elizabeth	Home Aeration Unit General	38.755277	-81.368888	Parsons, Elizabeth	
5	OWRNPDES OUTLET	David & Clara Combs	Home Aeration Unit General	38.785136	-81.346461	David & Clara Combs	
6	OWRNPDES OUTLET	Rodgers, Emmil E.	Home Aeration Unit General	38.743611	-81.38	Rodgers, Emmil E.	
7	OWRNPDES OUTLET	Debra West	Home Aeration Unit General	38.744166	-81.318333	Debra West	
10	OWRNPDES OUTLET	Jim Gandee property	Home Aeration Unit General	38.764722	-81.363888	Jim Gandee property	
11	OWRNPDES OUTLET	ROANE COUNTY HQ	WV DOH+MUN	38.785277	-81.357222	ROANE COUNTY HQ	
12	OWRNPDES OUTLET	ROANE COUNTY HQ	WV DOH+MUN	38.784444	-81.357777	ROANE COUNTY HQ	
13	OWRNPDES OUTLET	ROANE COUNTY HQ	WV DOH+MUN	38.784166	-81.358055	ROANE COUNTY HQ	
16	OWRNPDES OUTLET	Timothy H. McCune	Home Aeration Unit General	38.780555	-81.304722	Timothy H. McCune	
17	OWRNPDES OUTLET	D&D Enterprises	Storm Water Industrial (GP)	38.785277	-81.409444	D&D Enterprises	
18	OWRNPDES OUTLET	D&D Enterprises	Storm Water Industrial (GP)	38.785277	-81.409444	D&D Enterprises	
1	RCRA	CONTRACTOR SERVICES INC OF WV	929 CHARLESTON ROAD	38.7777	-81.364	CONTRACTOR SERVICES INC OF WV	
2	RCRA	PENNZOIL PRODUCTS CO SPENCER	805 CAPITOL ST	38.7962	-81.3538	PENNZOIL PRODUCTS CO SPENCER	
3	RCRA	PENNZOIL PRODUCTS CO	805 CAPITAL ST	38.794408	-81.353804	PENNZOIL PRODUCTS CO	
4	RCRA	WVDOH ROANE CO HDQS	RT 229 - 505 CHARLESTON RD	38.788825	-81.356254	WVDOH ROANE CO HDQS	
5	RCRA	SERVICE STATION SUNOCO	US ROUTE 33	38.785	-81.338056	SERVICE STATION SUNOCO	
6	RCRA	NORRIS INDUSTRIES INC AUTO TRIM DIV	ARNOLDSBURG RD	38.791667	-81.351944	NORRIS INDUSTRIES INC AUTO TRIM DIV	
7	RCRA	CRIFIELDS INC	ARNOLDSBURG RD	38.785	-81.338056	CRIFIELDS INC	
8	RCRA	DENBIGH-GARRETT INC	RTE 1 RIPLEY RD	38.785	-81.338056	DENBIGH-GARRETT INC	
11	RCRA	SPENCER ELEMENTARY	811 MADISON AVENUE	38.79358	-81.35461	SPENCER ELEMENTARY	
12	RCRA	BOGGS NATURAL GAS, FLP	882 CHARLESTON ROAD	38.77808	-81.36358	BOGGS NATURAL GAS, FLP	
13	RCRA	D&D ENTERPRISES	65 LION FORK ROAD	38.785388	-81.409243	D&D ENTERPRISES	
235	ERIS Well	HOLSWADE, J. M.	Oil and Gas Well	38.7777	-81.364	ALLEGHENY & WESTERN ENERGY CORP	
236	ERIS Well	LAWRENCE, IRA, ETAL	Oil and Gas Well	38.7962	-81.3538	OPERATOR UNKNOWN	
237	ERIS Well	HERSMAN, A. M. - HRS.	Oil and Gas Well	38.794408	-81.353804	OPERATOR UNKNOWN	
238	ERIS Well	HERSMAN, MRS. FLO	Oil and Gas Well	38.788825	-81.356254	KEY OIL COMPANY	
239	ERIS Well	DOUGLAS, C.	Oil and Gas Well	38.785	-81.338056	EAST RESOURCES, INC.	
240	ERIS Well	DOUGLAS, C.	Oil and Gas Well	38.791667	-81.351944	EAST RESOURCES, INC.	
241	ERIS Well	JARVIS, RICKIE W.	Oil and Gas Well	38.785	-81.338056	EAST RESOURCES, INC.	
242	ERIS Well	LEWIS, A.	Oil and Gas Well	38.785	-81.338056	EAST RESOURCES, INC.	
243	ERIS Well	PRITCHARD, B.	Oil and Gas Well	38.79358	-81.35461	OPERATOR UNKNOWN	
244	ERIS Well	YOAK, JAMES B.	Oil and Gas Well	38.77808	-81.36358	C. I. MCKOWN & SON, INC.	
245	ERIS Well	KAUFMAN, WILLIAM	Oil and Gas Well	38.785388	-81.409243	EAST RESOURCES, INC.	
246	ERIS Well	GREATHOUSE, J. B.	Oil and Gas Well	38.79471809	-81.2948176	EASTERN INTERIOR OIL CO.	
247	ERIS Well	HILDRETH, VAROY & ADA	Oil and Gas Well	38.76818225	-81.32509033	OPERATOR UNKNOWN	
248	ERIS Well	MCCLAIN, JOHN R. & KEATON,	Oil and Gas Well	38.71754641	-81.28607564	HG ENERGY, LLC	
249	ERIS Well	SIMMONS, DAVID	Oil and Gas Well	38.75358883	-81.27901045	EAST RESOURCES, INC.	
250	ERIS Well	GRANT, LUCY B.	Oil and Gas Well	38.7117735	-81.35389995	BARTRAM, I DAVID	
251	ERIS Well	STARR, JANICE	Oil and Gas Well	38.78028977	-81.31004385	CENTRAL PACIFIC GROUP, INC.	
252	ERIS Well	FERREBEE, DAVID	Oil and Gas Well	38.71453132	-81.36148668	BARTRAM, I DAVID	
253	ERIS Well	SOMMERS, DAVID	Oil and Gas Well	38.75097207	-81.28116611	EAST RESOURCES, INC.	
254	ERIS Well	PRITCHARD, B.	Oil and Gas Well	38.74080123	-81.29798447	OPERATOR UNKNOWN	
255	ERIS Well	SIMMONS, DAVID	Oil and Gas Well	38.74919521	-81.28318833	EAST RESOURCES, INC.	
256	ERIS Well	MCCLAIN, JOHN R. & KEATON,	Oil and Gas Well	38.71757334	-81.28612176	HG ENERGY, LLC	
257	ERIS Well	LOWE, OPIE C.	Oil and Gas Well	38.73847892	-81.35685992	PRIME OPERATING COMPANY	
258	ERIS Well	LEWIS, A.	Oil and Gas Well	38.73818911	-81.28332706	EAST RESOURCES, INC.	
259	ERIS Well	LEWIS, A.	Oil and Gas Well	38.73818911	-81.28333206	EAST RESOURCES, INC.	
260	ERIS Well	LEWIS, ASBURY	Oil and Gas Well	38.7403659	-81.28573746	EAST RESOURCES, INC.	
261	ERIS Well	STARR, JANICE A. & P. F.	Oil and Gas Well	38.77617239	-81.30557539	OPERATOR UNKNOWN	
262	ERIS Well	GREATHOUSE, O. W.	Oil and Gas Well	38.78907686	-81.2955048	C. I. MCKOWN & SON, INC.	

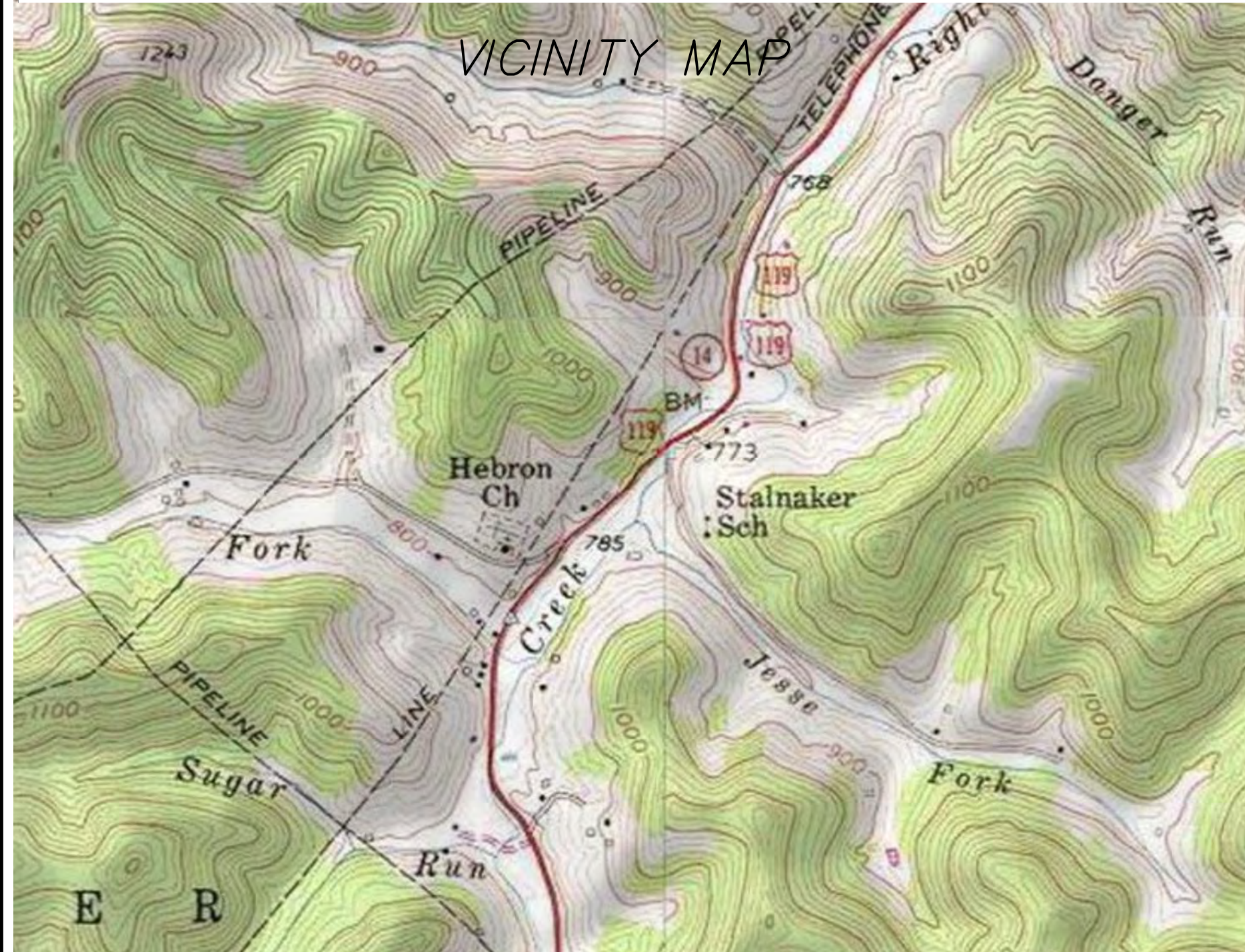
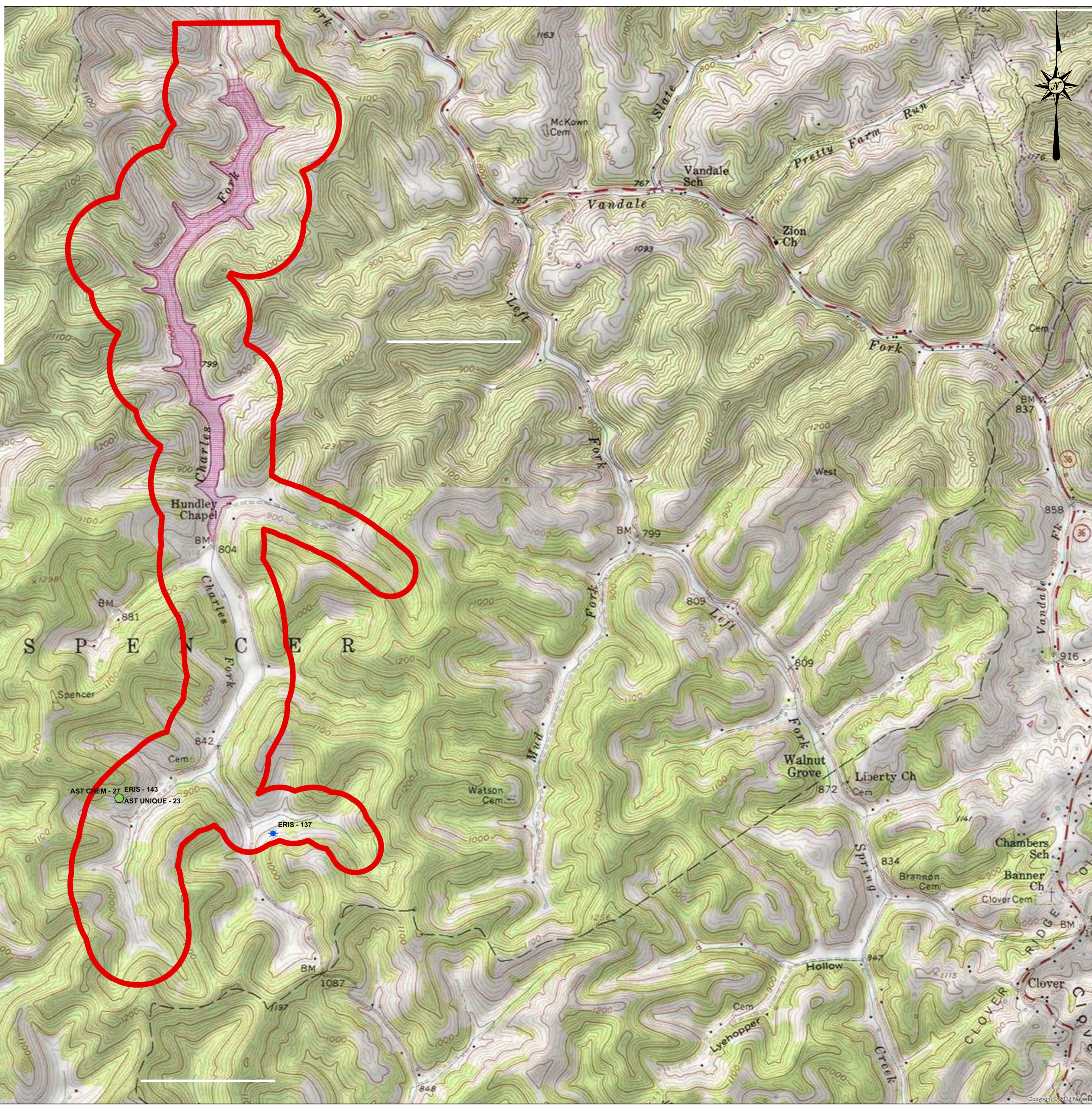
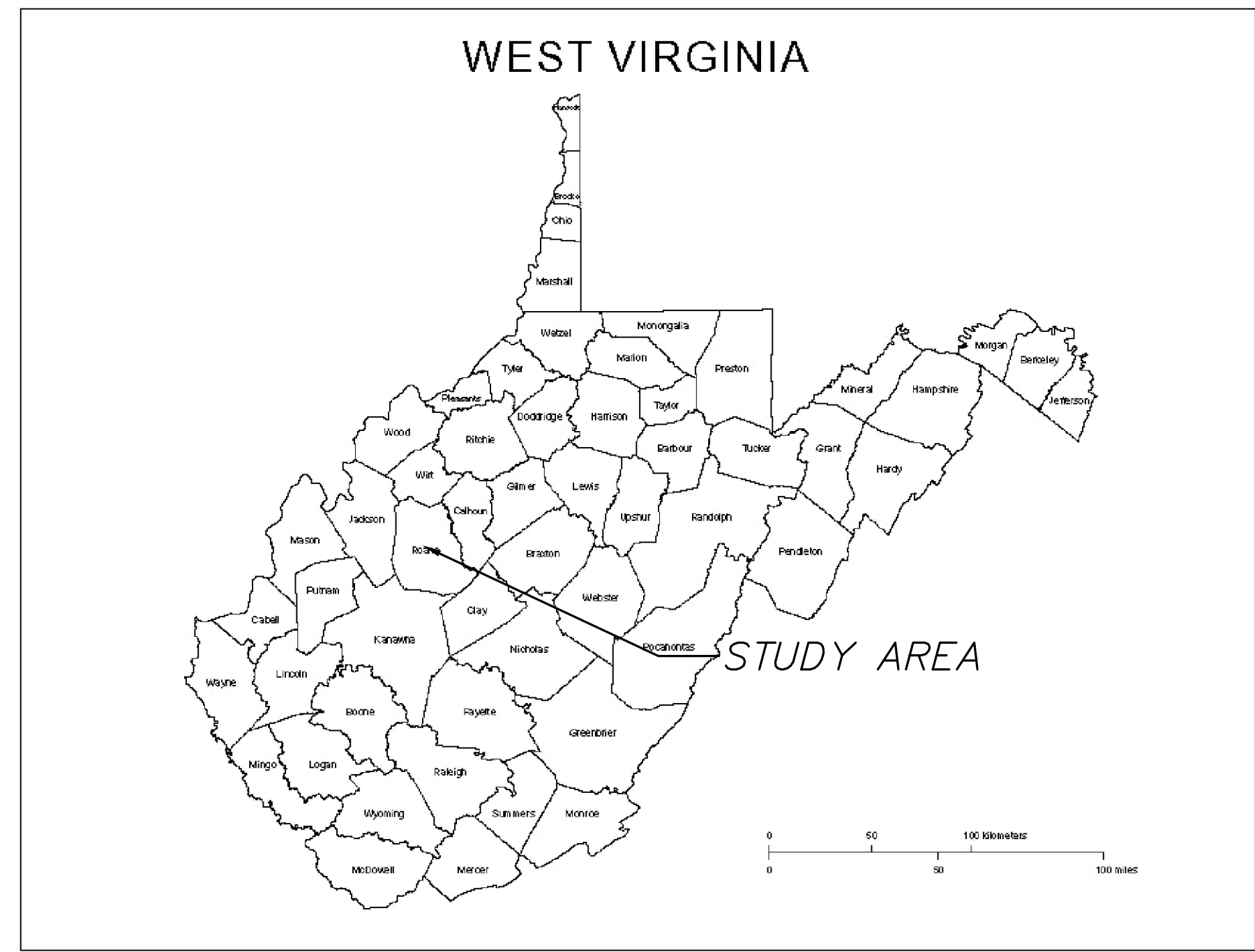
PSSC #	ArcMap LAYER	SITE NAME	SITEDescription	LATITUDE	LONGITUDE	OWNER	Comments
263	ERIS Well	SIMMONS, DAVID	Oil and Gas Well	38.7484931	-81.2822201	EAST RESOURCES, INC.	
264	HPU	BOGGS NATURAL GAS FLP	coal related discharge	38.76056	-81.363592	BOGGS NATURAL GAS FLP	
265	HPU	BOGGS NATURAL GAS FLP	coal related discharge	38.762513	-81.364465	BOGGS NATURAL GAS FLP	
266	HPU	BOGGS NATURAL GAS FLP	coal related discharge	38.762575	-81.364707	BOGGS NATURAL GAS FLP	
267	HPU	BOGGS NATURAL GAS FLP	coal related discharge	38.760479	-81.363615	BOGGS NATURAL GAS FLP	
268	HPU	BOGGS NATURAL GAS FLP	coal related discharge	38.760089	-81.362897	BOGGS NATURAL GAS FLP	
269	LUST	SPIN CYCLE SUNOCO	Leaking underground storage tank	38.78624004	-81.30633683	Dave Long	
270	OWRNPDDES	BAKER, WESLEY G	Septic Seal Permit	38.733233	-81.377	BAKER, WESLEY G	
271	OWRNPDDES	MOWRY, ROBERT Y	Septic Seal Permit	38.741388	-81.288055	MOWRY, ROBERT Y	
272	OWRNPDDES	COX, RANDY A	Septic Seal Permit	38.720133	-81.387066	COX, RANDY A	
273	OWRNPDDES	ICE, TOMMY N	Septic Seal Permit	38.749444	-81.372777	ICE, TOMMY N	
274	OWRNPDDES	MYERS, TRACIE L	Septic Seal Permit	38.755277	-81.286666	MYERS, TRACIE L	
275	OWRNPDDES	HARPER, DANNY	Septic Seal Permit	38.741388	-81.376111	HARPER, DANNY	
276	OWRNPDDES	WILSON, CAROLYN	Septic Seal Permit	38.724722	-81.299722	WILSON, CAROLYN	
277	OWRNPDDES	PARKINS, GRANT & MELINDA	Septic Seal Permit	38.78	-81.414	PARKINS, GRANT & MELINDA	
278	OWRNPDDES	HICKMAN, TIM	Septic Seal Permit	38.744	-81.404833	HICKMAN, TIM	
279	OWRNPDDES	SPEARS, MICHAEL & MICHELLE	Septic Seal Permit	38.745266	-81.37365	SPEARS, MICHAEL & MICHELLE	
280	OWRNPDDES	COX, RANDY A	Septic Seal Permit	38.736666	-81.377222	COX, RANDY A	
281	OWRNPDDES	SUNNY BANK FARM CHARITABLE TRUST	Septic Seal Permit	38.7475	-81.417222	SUNNY BANK FARM CHARITABLE TRUST	
282	OWRNPDDES	SANCHEZ, TERESIE	Septic Seal Permit	38.787777	-81.295277	SANCHEZ, TERESIE	
283	OWRNPDDES	PERSINGER, ELIZABETH	Home Aeration Unit General	38.767277	-81.365277	PERSINGER, ELIZABETH	
284	OWRNPDDES	MOUNTAINEER SEPTIC SERVICE	Sludge/Septic Land Disposal (GP)	38.742435	-81.305351	MOUNTAINEER SEPTIC SERVICE	
285	OWRNPDDES	STEWART, CHARLES O	Septic Seal Permit	38.768333	-81.383055	STEWART, CHARLES O	
286	OWRNPDDES	NICHOLSON, LORENE A	Septic Seal Permit	38.716633	-81.361883	NICHOLSON, LORENE A	
287	OWRNPDDES	RAINWATER, KENNETH & MARTHA	Septic Seal Permit	38.726388	-81.369444	RAINWATER, KENNETH & MARTHA	
288	OWRNPDDES	BAKER, RAETTA	Septic Seal Permit	38.725	-81.383888	BAKER, RAETTA	
289	OWRNPDDES	TRYON, DAVID D	Septic Seal Permit	38.724388	-81.368833	TRYON, DAVID D	
290	OWRNPDDES	BOSSERT, MARK	Home Aeration Unit General	38.744166	-81.416944	BOSSERT, MARK	
291	OWRNPDDES	RICHARDSON, JOHN C	Septic Seal Permit	38.7507	-81.31575	RICHARDSON, JOHN C	
292	OWRNPDDES	TITUS, MARY BETH	Septic Seal Permit	38.785233	-81.346083	TITUS, MARY BETH	
293	OWRNPDDES	HALL, DOYLE	Septic Seal Permit	38.759416	-81.321083	HALL, DOYLE	
294	OWRNPDDES	HENSON, WESLEY A	Septic Seal Permit	38.752777	-81.388611	HENSON, WESLEY A	
295	OWRNPDDES	STRIMEL, DON & BETTY	Septic Seal Permit	38.758888	-81.396944	STRIMEL, DON & BETTY	
296	OWRNPDDES	WALKER, DOUG & ANGELA	Septic Seal Permit	38.732944	-81.373166	WALKER, DOUG & ANGELA	
297	OWRNPDDES	WEBB, LEONA FAYE	Septic Seal Permit	38.746111	-81.285833	WEBB, LEONA FAYE	
298	OWRNPDDES	PERKINS, CHAD	Septic Seal Permit	38.7375	-81.376111	PERKINS, CHAD	
299	OWRNPDDES	WRIGHT, DEBORAH K	Home Aeration Unit General	38.788055	-81.356944	WRIGHT, DEBORAH K	
300	OWRNPDDES	PARSONS, ELIZABETH	Home Aeration Unit General	38.755277	-81.368888	PARSONS, ELIZABETH	
301	OWRNPDDES	BARNETT, ROBERT	Septic Seal Permit	38.7429	-81.38055	BARNETT, ROBERT	
302	OWRNPDDES	FRESHWATER, DAVID	Septic Seal Permit	38.768611	-81.363055	FRESHWATER, DAVID	
303	OWRNPDDES	HEBRON MEMORIAL CHURCH	Septic Seal Permit	38.740833	-81.3745	HEBRON MEMORIAL CHURCH	
304	OWRNPDDES	WHITE, JUDY & FREDDIE	Septic Seal Permit	38.718055	-81.364166	WHITE, JUDY & FREDDIE	
305	OWRNPDDES	COMBS, DAVID & CLARA	Home Aeration Unit General	38.785136	-81.346516	COMBS, DAVID & CLARA	
306	OWRNPDDES	RODGERS, EMMIL	Home Aeration Unit General	38.743611	-81.38	RODGERS, EMMIL	
307	OWRNPDDES	MUSTANG SURVIVAL MANUFACTURING INC.	Storm Water Industrial ( No Exposure )	38.7925	-81.3338611	MUSTANG SURVIVAL MANUFACTURING INC.	
308	OWRNPDDES	MESSINEO, JOSEPH	Septic Seal Permit	38.741666	-81.428333	MESSINEO, JOSEPH	
309	OWRNPDDES	RICHARDS, ROBERT C	Septic Seal Permit	38.7685	-81.322222	RICHARDS, ROBERT C	
310	OWRNPDDES	FLECK, RICHARD ALLEN	Septic Seal Permit	38.729166	-81.386666	FLECK, RICHARD ALLEN	
311	OWRNPDDES	SAUNDERS, JEFF & JENNIFER	Septic Seal Permit	38.725194	-81.368361	SAUNDERS, JEFF & JENNIFER	
312	OWRNPDDES	SMITH, PHILLIP	Septic Seal Permit	38.753166	-81.372972	SMITH, PHILLIP	
313	OWRNPDDES	WEST, CHARLES D JR	Septic Seal Permit	38.748	-81.3726	WEST, CHARLES D JR	
314	OWRNPDDES	PRICE, THELMA	Septic Seal Permit	38.7775	-81.364166	PRICE, THELMA	
315	OWRNPDDES	WEST, DEBRA	Home Aeration Unit General	38.744166	-81.318333	WEST, DEBRA	

PSSC #	ArcMap LAYER	SITE NAME	SITEDescription	LATITUDE	LONGITUDE	OWNER	Comments
316	OWRNPDDES	BFS PETROLEUM PRODUCTS	Storm Water Industrial (GP)	38.790833	-81.294444	BFS PETROLEUM PRODUCTS	
317	OWRNPDDES	ST. JOHN'S UNITED METHODIST CHURCH	Storm Water Construction (NOI)	38.784166	-81.360833	ST. JOHN'S UNITED METHODIST CHURCH	
318	OWRNPDDES	TAYLOR, CRAIG	Septic Seal Permit	38.781944	-81.348888	TAYLOR, CRAIG	
319	OWRNPDDES	NICHOLS, JASON	Septic Seal Permit	38.751583	-81.319197	NICHOLS, JASON	
320	OWRNPDDES	SHAMBLIN, JONES & GLORIA	Septic Seal Permit	38.715	-81.285277	SHAMBLIN, JONES & GLORIA	
321	OWRNPDDES	PAULEY, RONNIE & PATTY	Septic Seal Permit	38.740111	-81.378277	PAULEY, RONNIE & PATTY	
322	OWRNPDDES	PAULEY, JOSEPH E	Septic Seal Permit	38.715	-81.356305	PAULEY, JOSEPH E	
323	OWRNPDDES	MILLER, THOMAS & KATHY	Septic Seal Permit	38.778472	-81.396527	MILLER, THOMAS & KATHY	
324	OWRNPDDES	ST. JOHN'S UNITED METHODIST CHURCH	Septic Seal Permit	38.784722	-81.361388	ST. JOHN'S UNITED METHODIST CHURCH	
325	OWRNPDDES	HERSHMAN, CAROLYN	Septic Seal Permit	38.728333	-81.381944	HERSHMAN, CAROLYN	
326	OWRNPDDES	CALLOW, TIM & STACY	Septic Seal Permit	38.770833	-81.295833	CALLOW, TIM & STACY	
327	OWRNPDDES	BISSELL, JAMES & CAROLYN	Septic Seal Permit	38.735277	-81.284722	BISSELL, JAMES & CAROLYN	
328	OWRNPDDES	SIMMON, JAMES	Home Aeration Unit General	38.7325	-81.286666	SIMMON, JAMES	
329	OWRNPDDES	GANDEE, JAMES	Home Aeration Unit General	38.764722	-81.363888	GANDEE, JAMES	
330	OWRNPDDES	WV DEPARTMENT OF TRANSPORTATION	WV DOH+MUN	38.785277	-81.357222	WV DEPARTMENT OF TRANSPORTATION	
331	OWRNPDDES	HICKMAN, DWAYN & THERESA	Septic Seal Permit	38.741833	-81.386	HICKMAN, DWAYN & THERESA	
332	OWRNPDDES	TAYLOR, MARK	Septic Seal Permit	38.781111	-81.341944	TAYLOR, MARK	
333	OWRNPDDES	HARLESS, DAVID & SANDRA	Septic Seal Permit	38.723333	-81.376666	HARLESS, DAVID & SANDRA	
334	OWRNPDDES	TAYLOR, ROBERT L	Septic Seal Permit	38.780833	-81.344166	TAYLOR, ROBERT L	
335	OWRNPDDES	STARCHER, GERALD	Septic Seal Permit	38.780833	-81.344	STARCHER, GERALD	
336	OWRNPDDES	HERSHMAN, WARREN C	Septic Seal Permit	38.728611	-81.370833	HERSHMAN, WARREN C	
337	OWRNPDDES	ELMORE, TIMOTHY	Septic Seal Permit	38.773888	-81.359722	ELMORE, TIMOTHY	
338	OWRNPDDES	WILSON, ELLA MAE	Home Aeration Unit General	38.726958	-81.2857	WILSON, ELLA MAE	
339	OWRNPDDES	WHITE, CARY	Septic Seal Permit	38.774722	-81.304444	WHITE, CARY	
340	OWRNPDDES	SAUNDERS, GEORGE	Septic Seal Permit	38.717433	-81.362966	SAUNDERS, GEORGE	
341	OWRNPDDES	NICHOLSON, LORENE A	Septic Seal Permit	38.716666	-81.360277	NICHOLSON, LORENE A	
342	OWRNPDDES	SALISBURY, TOBLE D	Septic Seal Permit	38.730277	-81.368333	SALISBURY, TOBLE D	
343	OWRNPDDES	HOWARD, PHILIP & BARBARA	Septic Seal Permit	38.780847	-81.364041	HOWARD, PHILIP & BARBARA	
344	OWRNPDDES	COLE, TODD & AMY	Septic Seal Permit	38.795833	-81.301666	COLE, TODD & AMY	
345	OWRNPDDES	HARPER, DARIS D	Septic Seal Permit	38.724166	-81.368611	HARPER, DARIS D	
346	OWRNPDDES	BARNETT, ROBERT	Septic Seal Permit	38.7425	-81.379722	BARNETT, ROBERT	
347	OWRNPDDES	GREATHOUSE, EDWARD N	Septic Seal Permit	38.776666	-81.377222	GREATHOUSE, EDWARD N	
348	OWRNPDDES	GREATHOUSE, TERRY & DEBBIE	Home Aeration Unit General	38.7225	-81.391944	GREATHOUSE, TERRY & DEBBIE	
349	OWRNPDDES	MCCUNE, TIMOTHY H.	Home Aeration Unit General	38.780555	-81.304722	MCCUNE, TIMOTHY H.	
350	OWRNPDDES	DRENNEN, BOB	Storm Water Industrial (GP)	38.785277	-81.409444	DRENNEN, BOB	
351	NPDES OUTLET	Elizabeth Persinger residence	Home Aeration Unit General	38.767277	-81.365277	PERSINGER, ELIZABETH	
352	NPDES OUTLET	Mark Bossert/Clerc Daniell	Home Aeration Unit General	38.744166	-81.416944	BOSSERT, MARK	
353	NPDES OUTLET	Deborah K. Wright	Home Aeration Unit General	38.788055	-81.356944	WRIGHT, DEBORAH K	
354	NPDES OUTLET	Parsons, Elizabeth	Home Aeration Unit General	38.755277	-81.368888	PARSONS, ELIZABETH	
355	NPDES OUTLET	David & Clara Combs	Home Aeration Unit General	38.785136	-81.346461	COMBS, DAVID & CLARA	
356	NPDES OUTLET	Rodgers, Emmil E.	Home Aeration Unit General	38.743611	-81.38	RODGERS, EMMIL	
357	NPDES OUTLET	Debra West	Home Aeration Unit General	38.744166	-81.318333	WEST, DEBRA	
358	NPDES OUTLET	BFS PETROLEUM PRODUCTS-SPENCER	Storm Water Industrial (GP)	38.790833	-81.294444	BFS PETROLEUM PRODUCTS	
359	NPDES OUTLET	James Simmons	Home Aeration Unit General	38.7325	-81.286666	SIMMON, JAMES	
360	NPDES OUTLET	Jim Gande property	Home Aeration Unit General	38.764722	-81.363888	GANDEE, JAMES	
361	NPDES OUTLET	ROANE COUNTY HQ	WV DOH+MUN	38.785277	-81.357222	WV DEPARTMENT OF TRANSPORTATION	
362	NPDES OUTLET	ROANE COUNTY HQ	WV DOH+MUN	38.784444	-81.357777	WV DEPARTMENT OF TRANSPORTATION	
363	NPDES OUTLET	ROANE COUNTY HQ	WV DOH+MUN	38.784166	-81.358055	WV DEPARTMENT OF TRANSPORTATION	
364	NPDES OUTLET	Ella Mae Wilson	Home Aeration Unit General	38.726958	-81.2857	WILSON, ELLA MAE	
365	NPDES OUTLET	Terry & Debbie Greathouse	Home Aeration Unit General	38.7225	-81.391944	GREATHOUSE, TERRY & DEBBIE	
366	NPDES OUTLET	Timothy H. McCune	Home Aeration Unit General	38.780555	-81.304722	MCCUNE, TIMOTHY H.	
367	NPDES OUTLET	D&D Enterprises	Storm Water Industrial (GP)	38.785277	-81.409444	DRENNEN, BOB	
368	NPDES OUTLET	D&D Enterprises	Storm Water Industrial (GP)	38.785277	-81.409444	DRENNEN, BOB	

PSSC #	ArcMap LAYER	SITE NAME	SITEDescription	LATITUDE	LONGITUDE	OWNER	Comments
369	RCRA	CONTRACTOR SERVICES INC OF WV	929 CHARLESTON ROAD	38.7777	-81.364	CONTRACTOR SERVICES INC OF WV	
370	RCRA	PENNZOIL PRODUCTS CO SPENCER	805 CAPITOL ST	38.7962	-81.3538	PENNZOIL PRODUCTS CO SPENCER	
371	RCRA	PENNZOIL PRODUCTS CO	805 CAPITAL ST	38.794408	-81.353804	PENNZOIL PRODUCTS CO	
372	RCRA	WVDOH ROANE CO HDQS	RT 229 - 505 CHARLESTON RD	38.788825	-81.356254	WVDOH ROANE CO HDQS	
373	RCRA	SERVICE STATION SUNOCO	US ROUTE 33	38.785	-81.338056	SERVICE STATION SUNOCO	
374	RCRA	NORRIS INDUSTRIES INC AUTO TRIM DIV	ARNOLDSBURG RD	38.791667	-81.351944	NORRIS INDUSTRIES INC AUTO TRIM DIV	Remove from list. Bad lat/long
375	RCRA	CRIFIELDS INC	ARNOLDSBURG RD	38.785	-81.338056	CRIFIELDS INC	
376	RCRA	DENBIGH-GARRETT INC	RTE 1 RIPLEY RD	38.785	-81.338056	DENBIGH-GARRETT INC	
377	RCRA	NI IND. INC.	ROANE COUNTY INDUSTRIAL PARK	38.792088	-81.302241	NI IND. INC.	
378	RCRA	BFS PETROLEUM PRODUCTS-SPENCER	RT 33 AND 119 EAST	38.790888	-81.294241	BFS PETROLEUM PRODUCTS-SPENCER	
379	RCRA	SPENCER ELEMENTARY	811 MADISON AVENUE	38.79358	-81.35461	SPENCER ELEMENTARY	Downstream of intake.
380	RCRA	BOGGS NATURAL GAS, FLP	882 CHARLESTON ROAD	38.77808	-81.36358	BOGGS NATURAL GAS, FLP	
381	RCRA	D&D ENTERPRISES	65 LION FORK ROAD	38.785388	-81.409243	D&D ENTERPRISES	

**Map of Regulated PSSCs**





- ◆ AST\_Unique
- AST\_With\_Chemicals
- ERIS\_Wells
- ◆ HPU
- ◆ LUST\_Sites
- ◆ OWRNPDES
- ◆ OWRNPDES\_Outlets
- ◆ Superfund\_RCRA\_Facilities
- ◆ AML\_PlanningUnits
- ◆ Spencer\_Water\_Department\_Reservoir\_ZCC

**TRIAD ENGINEERING, INC.**  
 10541 TEAYS VALLEY ROAD  
 SCOTT DEPOT, WV 25560  
 PH: 304.755.0721 FAX: 304.755.1880

REV. #	DATE	DESCRIPTION

CADD FILE: spencer MAPS.dwg  
 DRAWN BY: LLM  
 CHECKED BY: LLM  
 DATE: 05-31-2016  
 SCALE: 1:15,000

CITY OF SPENCER WATERWORKS  
 SPENCER, ROANE COUNTY, WV

**PRIMARY ZCC WITH REGULATORY PSSCS**

**TRIAD**  
 TRIAD ENGINEERING, INC.  
 www.triadeng.com

SHEET NUMBER:  
**FIG 11**

PROJECT No.: 04-15-0044







## Appendix B. Early Warning Monitoring System Forms

### Appendix B-Form B

#### Proposed Early Warning Monitoring System Worksheet- Surface

<b>Describe the type of early warning detection equipment that could be installed, including the design.</b>
<p>An Advanced Water Quality Monitoring Platform connected to the riser is proposed. For the basis of this report, we evaluated and priced an EXO2 sonde (probe) with related appurtenances from YSI (xylem). The sonde can be moved up and down in the water column as needed. The system proposed includes:</p> <ul style="list-style-type: none"> <li>• Sensors for:             <ul style="list-style-type: none"> <li>○ Conductivity (to detect potential contaminants from oil and gas wells)</li> <li>○ Salinity (to detect potential contaminants from oil and gas wells (brine))</li> <li>○ Total Suspended Solids (TDS) (to detect potential contaminants from oil and gas wells)</li> <li>○ pH (Changes in pH provide information regarding potential heavy metals such as iron and manganese. This will be beneficial in detecting possible spills from Rt. 119)</li> <li>○ Turbidity (Total Suspended Solids) (this is a standard measurement for raw water sources. Several home aeration units are within the ZCC Bacteria such as e. coli and protozoa such as Giardia can attach themselves to the suspended solids and promote gastrointestinal disease).</li> </ul> </li> <li>• Central wiper – This wipes the sensors prior to each reading to remove algae or other biofouling)</li> <li>• Localized power (D batteries)</li> <li>• Connection to existing SCADA system at the water treatment plant</li> <li>• Mounting of the system to the riser</li> <li>• Initial training and set up</li> </ul>
<b>Where would the equipment be located?</b>
On the riser of the reservoir (Charles Fork Reservoir)
<b>What would the maintenance plan for the monitoring equipment entail?</b>
Occasional adjustment in elevation and replacement of batteries
<b>Describe the proposed sampling plan at the monitoring site.</b>
The monitoring system takes readings at user-defined intervals. To start, readings should be taken every hour, but can be adjusted as needed.
<b>Describe the proposed procedures for data management and analysis.</b>
The monitoring system will be connected to the water treatment plants system via SCADA. If SCADA is not available or feasible, the system internally logs and stores the data. The data will need to be downloaded to a memory card for evaluation by Spencer Water Department personnel.

## Appendix C. Communication Plan

# Communication Plan Template

For City of Spencer Waterworks

PWSID: WV3304405 District: St. Albans

Certified Operator: Mark Ray

Contact Phone Number: 304.927.1497

Contact Email Address: mray2@suddenlinkmail.com

Plan Developed On: 6/30/2016 Plan Update Due On: \_\_\_\_\_

## ACKNOWLEDGMENTS:

*This plan was developed by **Mark Ray, of the City of Spencer Waterworks** to meet certain requirements of the Source Water and Assessment Protection Program (SWAPP) and the Wellhead Protection Program (WHPP) for the State of West Virginia, as directed by the federal Safe Drinking Water Act (SDWA) and state laws and regulations.*

# Table of Contents

Introduction - 44
TIERS Reporting System - 44
Communication Team - 45
Communication Team Duties - 46
Incident / Event Communication Procedure - 47
TIERS Flow Chart - 48
Emergency Short Forms - 54
Emergency Contact Information - 57

## Introduction

Legislative Rule 64CSR3 requires public water systems to develop a Communication Plan that documents how public water suppliers, working in concert with state and local emergency response agencies, shall notify state and local health agencies and the public in the event of a spill or contamination event that poses a potential threat to public health and safety. The plan must indicate how the public water supplier will provide updated information, with an initial notification to the public to occur no later than thirty minutes after the supplier becomes aware that the spill, release or potential contamination of the public water system poses a potential threat to public health and safety.

The public water system has responsibility to communicate to the public, as well as to state and local health agencies. This plan is intended to comply with the requirements of Legislative Rule 64CSR3, and other state and federal regulations.

## TIERS Reporting System

This water system has elected to use the *Tiered Incident / Event Reporting System* (TIERS) for communicating with the public, agencies, the media, and other entities in the event of a spill or other incident that may threaten water quality. TIERS provides a multi-level notification framework, which escalates the communicated threat level commensurate with the drinking water system risks associated with a particular contamination incident or event. TIERS also includes a procedural flow chart illustrating key incident response communication functions and how they interface with overall event response / incident management actions. Finally, TIERS identifies the roles and responsibilities for key people involved in risk response, public notification, news media and other communication.

TIERS provides an easy-to-remember five-tiered **A-B-C-D-E** risk-based incident response communication format, as described below. Table 1 provides also associated risk levels. Example press releases are provided as attachments to this plan.

**A = Announcement.** The water system is issuing an announcement to the public and public agencies about an incident or event that may pose a threat to water quality. Additional information will be provided as it becomes available. As always, if water system customers notice anything unusual about their water, they should contact the water system

**B = Boil Water.** A boil water advisory has been issued by the water system. Customers may use the water for showering, bathing, and other non-potable uses, but should boil water used for drinking or cooking.

**C = Cannot Drink.** The water system asks that users not drink or cook with the water at this time. Non-potable uses, such as showering, bathing, cleaning, and outdoor uses are not affected.

**D = Do Not Use.** An incident or event has occurred affecting nearly all uses of the water. Do not use the water for drinking, cooking, showering, bathing, cleaning, or other tasks where water can come in contact with your skin. Water can be used for flushing commodes and fire protection.

**E=Emergency.** Water cannot be used for any reason.

Tier	Tier Category	Risk Level	Tier Summary
<b>A</b>	<b>A</b> nnouncement	Low	The water system is issuing an announcement to the public and public agencies about an incident or event that could pose a threat to public health and safety. Additional information will be provided as it becomes available.
<b>B</b>	<b>B</b> oil Water Advisory	Moderate	Water system users are advised to boil any water to be used for drinking or cooking, due to possible microbial contamination. The system operator will notify users when the boil water advisory is lifted.
<b>C</b>	<b>C</b> annot Drink	High	System users should not drink or cook with the water until further notice. The water can still be used for showering, bathing, cleaning, and other tasks.
<b>D</b>	<b>D</b> o Not Use	Very High	The water should only be used for flushing commodes and fire protection until further notice. More information on this notice will be provided as soon as it is available.
<b>E</b>	<b>E</b> mergency	Extremely High	The water should not be used for any purpose until further notice. More information on this notice will be provided as soon as it is available.

## Communication Team

The Communication Team for the water system is listed in the table below, along with key roles. In the event of a spill or other incident that may affect water quality, the water system spokesperson will provide initial information, until the team assembles (if necessary) to provide follow-up communication.

Water system communication team members, organizations, and roles.

Team Member Name	Organization	Phone	Email	Role
Rob Miller	City of Spencer	304.927.1654	Rmiller3@suddenlinkmail.com	Primary Spokesperson
Mark Ray	Spencer PSD	304.927.1497	Mray2@suddenlinkmail.com	Secondary Spokesperson
Melissa Gilbert	Roane County OES	304.927.0911	roaneco911@frontier.com	Member



In the event of a spill, release, or other incident that may threaten water quality, members of the team who are available will coordinate with the management staff of the local water supplier to:

- Collect information needed to investigate, analyze, and characterize the incident/event
- Provide information to the management staff, so they can decide how to respond
- Assist the management staff in handling event response and communication duties
- Coordinate fully and seamlessly with the management staff to ensure response effectiveness

## Communication Team Duties

The communication team will be responsible for working cooperatively with the management staff and state and local emergency response agencies to notify local health agencies and the public of the initial spill or contamination event. The team will also provide updated information related to any contamination or impairment of the source water supply or the system's drinking water supply.

**According to Legislative Rule 64CSR3, the initial notification to the public will occur no later than thirty minutes after the public water system becomes aware that the spill, release or potential contamination of the public water system poses a potential threat to public health and safety.**

As part of the group implementing the Source Water Protection Plan, team members are expected to be familiar with the plan, including incident/event response and communication tasks. Specifically, team members should:

- Be knowledgeable on elements of the Source Water Protection Plan and Communication Plan
- Attend team meetings to ensure up-to-date knowledge of the system and its functions
- Participate in periodic exercises that practice incident response and communication tasks
- Help to educate local officials, the media, and others on source water protection
- Cooperate with water supplier efforts to coordinate incident response communication
- Be prepared to respond to requests for field investigations of reported incidents
- Agree not to speak on behalf of the water supplier unless designated as the system's spokesperson

The primary spokesperson will be responsible for speaking on behalf of the water system to local agencies, the public, and the news media. The spokesperson should work with the management staff and the team to ensure that all communication is clear, accurate, timely, and consistent. The spokesperson may authorize and/or direct others to issue news releases or other information that has been approved by the system's management staff. The spokesperson is expected to be on call immediately when an incident or event which may threaten water quality occurs. The spokesperson will perform the following tasks in the event of a spill, release, or other event that threatens water quality:

- Announce which risk level (A, B, C, D, or E) will apply to the public notifications that are issued (see example press releases attached)
- Issue news releases, updates, and other information regarding the incident/event
- Use the news media, email, social media, and other appropriate information venues
- Ensure that news releases are sent to local health agencies and the public
- Respond to questions from the news media and others regarding the incident/event
- Appear at news conferences and interviews to explain incident response, etc.

## Incident / Event Communication Procedure

The flow chart in this section illustrates how the water system will respond when it receives a report that a spill, release, or other contamination event may have occurred. Key elements of the flow chart are described below.

### Communication with agencies, the public, and the media during threat incidents

Upon initial notification of the incident/event, system managers and staff will collect information and verify the need for further investigation. Only properly trained personnel will perform onsite investigations if permitted by emergency responders. If further investigation is warranted, and the initial facts support it, the water system spokesperson will issue a public communication statement consistent with the threat level. In addition, water system personnel and partners will be dispatched to conduct reconnaissance, a threat assessment, and a threat characterization, if present. This work may include:

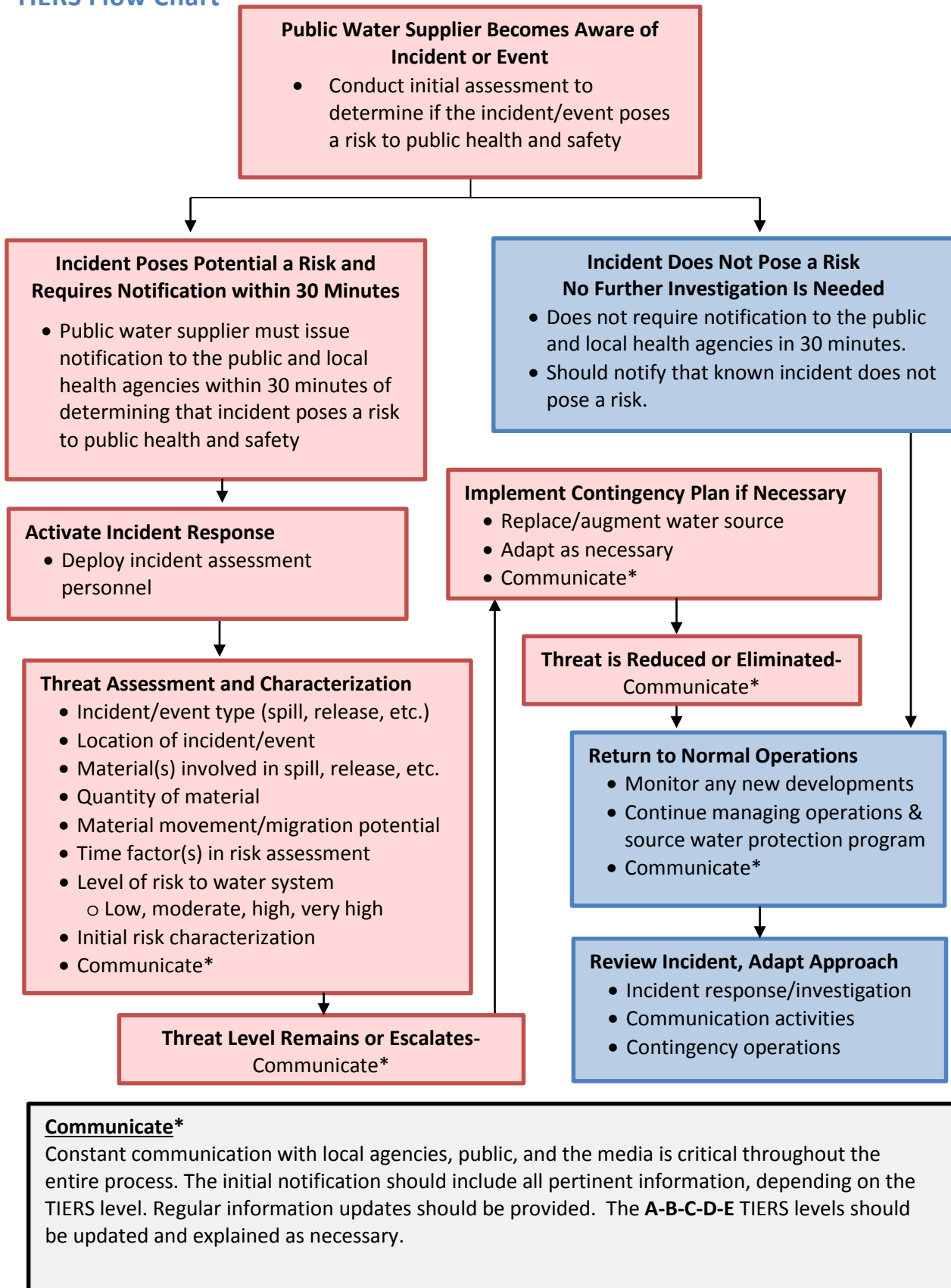
- Verification of the incident/event type (spill, release, etc.)
- Location of incident/event
- Type of material(s) involved in spill, release, etc.
- Quantity of material involved
- Potential of the material to move, migrate, or be transported
- Relevant time factor(s) in the risk assessment (e.g., downstream movement rate)
- Overall level of risk to water system, whether low, moderate, high, or very high
- Development of the initial risk characterization

As the flow chart indicates, several iterative cycles will occur after the initial threat assessment, including communication with local agencies and the public, further investigation of the incident, possible implementation of the water system's contingency plan, and eventual elimination of the threat and a return to normal operations. Communication activities during this period will include:

- The initial release (i.e., **Announcement, Boil Water, Cannot Drink, Do Not Use, or Emergency** attached)
  - Sent to local health agencies, the public, and the news media within 30 minutes
- Notification of the local water system's source water protection and communication teams
  - If warranted by initial findings regarding the spill, release, or incident
- Notification of the WV Bureau of Public Health
  - As required
- Periodic information updates, as incident response information is received
- Updates to the applicable A-B-C-D-E advisory tier, as necessary

If time permits and the need arises, after the threat level is reduced, and operations return to normal, the water system staff, the communication and source water protection teams, and their partners may conduct a post-event review and assessment. The purpose of the review is to examine the response to the incident, relevant communication activities, and overall outcomes. Plans and procedures may be updated, altered, or adapted based on lessons learned through this process.

## TIERS Flow Chart



**Press Release Attachments**

TIERS Levels A, B, C, D, and E

**UTILITY ISSUED NOTICE – LEVEL A  
PUBLIC WATER SYSTEM ANNOUNCEMENT  
A WATER SYSTEM INVESTIGATION IS UNDERWAY**

On \_\_\_\_\_ at \_\_\_\_:\_\_\_\_ AM/PM, the \_\_\_\_\_ Water System began investigating an incident that may affect local water quality.

The incident involves the following situation at this location:

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There are no restrictions on water use at this time. As always, if water system customers notice anything unusual about their water – such as abnormal odors, colors, sheen, etc. – they should contact the water system at \_\_\_\_\_.

At this time there is no need for concern if you have consumed or used the water.

Regular updates will be provided about this Announcement as water system staff continue their investigation. Again, there are no restrictions on water use at this time.

State Water System ID# \_\_\_\_\_ Date Distributed: \_\_\_\_\_

**UTILITY ISSUED NOTICE – LEVEL B**  
**BOIL WATER ADVISORY**  
**A BOIL WATER ADVISORY IS IN EFFECT**

On \_\_\_\_\_ at \_\_\_\_:\_\_\_\_ am/pm, a water problem occurred causing contamination of your water. The areas that are affected are as follows:

Entire Water System    or     Other: \_\_\_\_\_

CONDITIONS INDICATE THERE IS A HIGH PROBABILITY THAT YOUR WATER IS CONTAMINATED. TESTING HAS NOT OCCURRED TO CONFIRM OR DENY THE PRESENCE OF CONTAMINATION IN YOUR WATER.

**What should I do?**

- **DO NOT DRINK THE WATER WITHOUT BOILING IT FIRST.** Bring all water to a boil, let it boil for one minute, and let it cool before using, or use bottled water. Boiled or bottled water should be used for drinking, making ice, brushing teeth, washing dishes, bathing, and food preparation **until further notice**. Boiling kills bacteria and other organisms in the water.

**What happened?**

- The problem is related to \_\_\_\_\_

**What is being done?**

- The water system is taking the following action: \_\_\_\_\_  
\_\_\_\_\_

**What should a customer do if they have consumed or used the water?**

- \_\_\_\_\_

We will inform you when you no longer need to boil your water. We anticipate resolving the problem within \_\_\_\_\_ hours/days. For more information, please contact \_\_\_\_\_ at \_\_\_\_\_ or \_\_\_\_\_ at \_\_\_\_\_.

General guidelines on ways to lessen the health risk are available from the EPA Safe Drinking Water Hotline at 1 (800) 426-4791.

*Please share this information others who use this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.*

This notice was distributed by \_\_\_\_\_

State Water System ID# \_\_\_\_\_ Date Distributed: \_\_\_\_\_

**UTILITY ISSUED NOTICE – LEVEL C**  
**“CANNOT DRINK” WATER NOTIFICATION**  
**A LEVEL C WATER ADVISORY IS IN EFFECT**

On \_\_\_\_\_ at \_\_\_\_:\_\_\_\_ am/pm, a water problem occurred causing contamination of your water. The areas that are affected are as follows:

Entire Water System    or     Other: \_\_\_\_\_

CONDITIONS INDICATE THERE IS A HIGH PROBABILITY THAT YOUR WATER IS CONTAMINATED. TESTING HAS NOT OCCURRED TO CONFIRM OR DENY THE PRESENCE OF CONTAMINATION IN YOUR WATER.

**What should I do?**

- **DO NOT DRINK THE WATER.** You can't drink the water, but you can use it for showering, bathing, toilet-flushing, and other non-potable purposes.
- **BOILING WILL NOT PURIFY THE WATER.** Do not drink the water, even if it is boiled. The type of contamination suspected is not removed by boiling.

**What happened?**

- The problem is related to \_\_\_\_\_

**What is being done?**

- The water system is taking the following action: \_\_\_\_\_

**What should a customer do if they have consumed or used the water?**

- \_\_\_\_\_

We will inform you when the water is safe to drink. We anticipate resolving the problem within \_\_\_\_\_ hours/days. For more information – or to report unusual water conditions such as abnormal odors, colors, sheen, etc. – please contact \_\_\_\_\_ at \_\_\_\_\_ or \_\_\_\_\_ at \_\_\_\_\_.

*Please share this information others who use this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.*

This notice was distributed by \_\_\_\_\_

State Water System ID# \_\_\_\_\_ Date Distributed: \_\_\_\_\_

**UTILITY ISSUED NOTICE – LEVEL D**  
**“DO NOT USE” WATER NOTIFICATION**  
**A LEVEL D WATER ADVISORY IS IN EFFECT**

On \_\_\_\_\_ at \_\_\_\_:\_\_\_\_ am/pm, a water problem occurred causing contamination of your water. The areas that are affected are as follows:

Entire Water System or  Other: \_\_\_\_\_

CONDITIONS INDICATE THERE IS A HIGH PROBABILITY THAT YOUR WATER IS CONTAMINATED. TESTING HAS NOT OCCURRED TO CONFIRM OR DENY THE PRESENCE OF CONTAMINATION IN YOUR WATER.

**What should I do?**

- **DO NOT DRINK THE WATER.** The water is contaminated.
- **DO NOT SHOWER OR BATHE IN THE WATER.** You can't use the water for drinking, showering, or bathing. It can be used for toilet flushing and firefighting.
- **BOILING WILL NOT PURIFY THE WATER.** Do not use the water, even if it is boiled. The type of contamination suspected is not removed by boiling.

**What happened?**

- **The problem is related to** \_\_\_\_\_

**What is being done?**

- **The water system is taking the following action:** \_\_\_\_\_

**What should a customer do if they have consumed or used the water?**

- \_\_\_\_\_

We will inform you when the water is safe to drink. We anticipate resolving the problem within \_\_\_\_\_ hours/days. For more information – or to report unusual water conditions such as abnormal odors, colors, sheen, etc. – please contact \_\_\_\_\_ at \_\_\_\_\_ or \_\_\_\_\_ at \_\_\_\_\_.

*Please share this information others who use this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.*

This notice was distributed by \_\_\_\_\_

State Water System ID# \_\_\_\_\_ Date Distributed: \_\_\_\_\_

**UTILITY ISSUED NOTICE – LEVEL E  
EMERGENCY WATER NOTIFICATION  
A LEVEL E WATER ADVISORY IS IN EFFECT**

On \_\_\_\_\_ at \_\_\_\_:\_\_\_\_ am/pm, a water problem occurred causing contamination of your water. The areas that are affected are as follows:

Entire Water System or  Other: \_\_\_\_\_

CONDITIONS INDICATE THERE IS A HIGH PROBABILITY THAT YOUR WATER IS CONTAMINATED. TESTING HAS NOT OCCURRED TO CONFIRM OR DENY THE PRESENCE OF CONTAMINATION IN YOUR WATER.

**What should I do?**

- **DO NOT DRINK THE WATER.** The water is contaminated.
- **DO NOT USE THE WATER FOR ANY PURPOSE!** You can't use the water for drinking, showering, or bathing, or any other use – not even for toilet flushing.
- **BOILING WILL NOT PURIFY THE WATER.** Do not use the water, even if it is boiled. The type of contamination suspected is not removed by boiling.

**What happened?**

- **The problem is related to** \_\_\_\_\_

**What is being done?**

- **The water system is taking the following action:** \_\_\_\_\_

**What should a customer do if they have consumed or used the water?**

- \_\_\_\_\_

We will inform you when the water is safe to drink. We anticipate resolving the problem within \_\_\_\_\_ hours/days. For more information – or to report unusual water conditions such as abnormal odors, colors, sheen, etc. – please contact \_\_\_\_\_ at \_\_\_\_\_ or \_\_\_\_\_ at \_\_\_\_\_.

*Please share this information others who use this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.*

This notice was distributed by \_\_\_\_\_

State Water System ID# \_\_\_\_\_ Date Distributed: \_\_\_\_\_



## Emergency Short Forms

### Emergency Communication Information

	Name	Phone Number	Email	
<b>Designated spokesperson:</b>	Rob Miller	304.927.2300	Rmiller3@suddenlinkmail.com	
<b>Alternate spokesperson:</b>	Mark Ray	304.927.1497	Mray2@suddenlinkmail.com	
<b>Designated location to disseminate information to media:</b>	City Hall 116 Court St. Spencer, WV 25276			
<b>Methods of contacting affected residents:</b>	911 OES Call System through coordination with Melissa Gilbert of Roane County OES.			
Media contacts:	Name	Title	Phone Number	Email
	Multiple	WVRC 104.7 FM	304.927.3760	

### Emergency Services Contacts

	Name	Emergency Phone	Alternate Phone	Email
<b>Local Police</b>	City of Spencer Police	911	304.927.2300	
<b>Local Fire Department</b>	Rob Miller	911	304.927.2300	rmiller@suddenlinkmail.com
<b>Local Ambulance Service</b>	Danny Cronin	911	304.927.3725	dannycronin@roaneems.com

<b>Hazardous Material Response Service</b>	Rob Miller	911	304.927.1099	rmiller@suddenlinkmail.com
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**Key Personnel**

	<b>Name</b>	<b>Title</b>	<b>Phone</b>	<b>Email</b>
<b>Key staff responsible for coordinating emergency response procedures?</b>	Rob Miller	Director of Public Works	304.927.2300	Rmiller3@suddenlinkmail.com
<b>Staff responsible for keeping confidential PSSC information and releasing to emergency responders:</b>	Rob Miller	Director of Public Works	304.927.2300	Rmiller3@suddenlinkmail.com

**Sensitive Populations**

<b>Other communities that are served by the utility:</b>	Town of Reedy Clover PSD		
<b>Major user/sensitive population notification:</b>	<b>Name</b>	<b>Emergency Phone</b>	<b>Alternate Phone</b>
	Roane County Schools	304.927.6400	
	Miletree Center (nursing home)	304.927.1007	
	Roane General Hospital	304.927.4444	

<b>EED District Office Contact:</b>	<b>Name</b>	<b>Phone</b>	<b>Email</b>	
	Richard Snyder	304.722.0611	<a href="mailto:Richard.c.snyder@wv.gov">Richard.c.snyder@wv.gov</a>	
<b>OEHS Readiness Coordinator</b>	Warren Von Dollen	304-356-4290 (main) 304-550-5607 (cell)	<a href="mailto:warren.r.vondollen@wv.gov">warren.r.vondollen@wv.gov</a>	
<b>Downstream Water Contacts:</b>	<b>Water Department</b>	<b>Contact Name</b>	<b>Emergency Phone</b>	<b>Alternate Phone</b>
	Claywood Park PSD	Todd Grinstead	304.422.6042	304.422.6042
<b>Are you planning on implementing the TIER system?</b>		Yes		

### Emergency Response Information

<b>Has the utility developed a detailed Emergency Response Plan in accordance with the Public Health Security Bioterrorism Preparedness and Response Pan Act of 2002?</b>	Yes
<b>When was the Emergency Response Plan developed or last updated?</b>	9/7/2004

## Emergency Contact Information

### **State Emergency Spill Notification**

1-800-642-3074

### **Office of Emergency Services**

<http://www.wvdhsem.gov/>

Charleston, WV- (304) 558-5380

### **WV Bureau for Public Health Office of Environmental Health Services (OEHS)**

[www.wvdhhr.org/oehs](http://www.wvdhhr.org/oehs)

*Readiness Coordinator- Warren Von Dollen*

Phone; 304-356-4290

Cell; 304-550-5607

e-mail; [warren.r.vondollen@wv.gov](mailto:warren.r.vondollen@wv.gov)

*Environmental Engineering Division Staff*

Charleston, Central Office (304) 558-2981

Beckley, District 1 (304) 256-6666

St. Albans, District 2 (304) 722-0611

Kearneysville, District 4 (304) 725-9453

Wheeling, District 5 (304) 238-1145

Fairmont, District 6 (304) 368-2530

### **National Response Center - Chemical, Oil, & Chemical/Biological Terrorism**

1-800-424-8802

### **WV State Fire Marshal's Office**

1-800-233-3473

### **West Virginia State Police**

1-304-746-2100

### **WV Watch – Report Suspicious Activity**

1-866-989-2824

### **DEP Distance Calculator**

<http://tagis.dep.wv.gov/pswicheck/>

## Appendix D. Single Source Feasibility Study

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## Single Source Feasibility Study

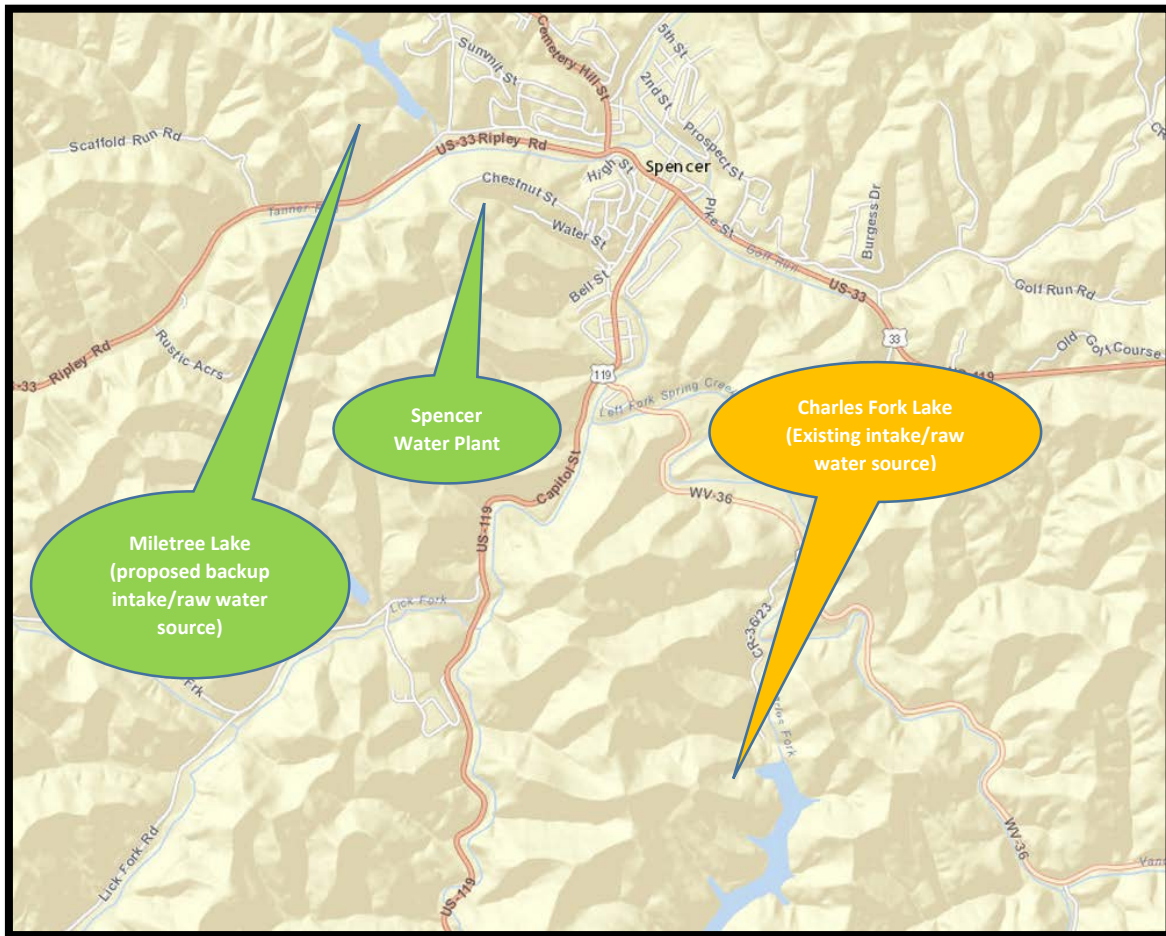
**Discussion** - According to 64 CSR 77 (WVDHHR Water System Design Standards) in an emergency, a secondary source must be able to provide 300 gpd for each customer, plus fire flow, if applicable, for at least two days. Also according to 64 CSR 77, fire flow can be calculated at 250 gpm for two hours (total of 30,000 gallons). Pressure evaluations and calculations are not a part of this project and pressure is assumed to be adequate. The Spencer Water Department currently serves approximately 2,201 customers directly, 156 customers indirectly through the Town of Reedy and 331 customers from Clover PSD (from Spencer Water Department Annual Report, 2014). Therefore, the required volume can be estimated as follows:

$$((2,201 + 156 + 331) \times 300) \times 2 \text{ days} + 30,000 = \mathbf{1,642,800 \text{ gallons}}$$

### **Backup Intake**

*Introduction* - One secondary source option for Spencer Water Department is the construction or establishment of a secondary or backup intake which draws water supplies from a substantially different location or water source.

*Exploration* – Windshield surveys were performed, and discussions were held with Rob Miller of Spencer Water Department to better ascertain the feasibility of establishing a backup intake at an existing water source or constructing a backup intake. It was discovered that Miletree Lake was formerly utilized as a raw water source complete with an intake and pump station. However, due to deterioration the infrastructure (intake, pump station, etc.) has since been removed and/or abandoned in place. Spencer Water Department still owns property and has an active right of way agreement to reinstall the infrastructure and utilize Miletree Lake as a second reservoir/intake.



*Evaluation* – The backup intake was evaluated for three criteria: Economic, Technical and Environmental. It must be stated that geographical location of a secondary reservoir greatly affects the feasibility of these criteria.

- Economics
  - Operations and Maintenance Costs – Operations and maintenance costs would include operation and maintenance of a source water intake system, early warning detection system, pump station and approximately 6,000 feet of 8” PVC waterline. In addition, the reservoir would be subject to bi-annual inspections by a licensed engineer for submission to West Virginia Department of Environmental Protection – Dam Safety Division. O & M costs are estimated on the following table:

Item	Unit	Quantity	Unit Cost	Total Item Cost	Notes
Personnel	HR	260	\$ 30	\$ 7,800	Assume 1 hour a day, 5 days a week, 52 weeks a year
Power	LS	1	\$ 5,109	\$ 5,109	Based on 10% of power usage for Water Department
Replacement Parts, Supplies	LS	1	\$ 16,200	\$ 19,500	Based on 5% of capital costs.
				\$ 32,409	

This results in an Operations and Maintenance cost of \$32,409/173,125,000 gallons, or \$0.19/kgal.

- Capital Costs – Capital funds would be required for the construction of a raw water intake system, early warning system and pump station to pump the raw water to the existing treatment plant.

Based on a life of 15 years, 8% annual interest and the following cost opinion, the annualized capital cost to implement the alternative was calculated to be \$390,000/173,125,000 gallons, or \$2.25/kgal.

Item	Unit	Quantity	Unit Cost	Total Item Cost	Notes
8" PVC Waterline	LF	6000	\$ 20	\$ 120,000	Run line to current waterworks.
Pump Station	LS	1	\$ 250,000	\$ 250,000	Pump water to current waterworks. Following conversations with Walton PSD, it was estimated that a similar pump system to that currently in service at Charles Fork Lake would be appropriate. This cost is listed as the replacement cost for the existing pump station in the Annual Report, 2010)
Early Warning System	LS	1	\$ 20,000	\$ 20,000	From Early Warning System specified for existing intake
				<b>\$ 390,000</b>	

- Technical
  - Permitting – A permit from WVDEP Erosion and Sediment Control for erosion and sediment control during construction is required. In addition, a permit from West Virginia Bureau of Public Health is needed for significant improvement to water supply system, and potentially WVDOH for work within the public road right of way. Obtaining these permits will involve a moderate amount of effort, and approval from these agencies is likely.
  - Resilience/Flexibility – A secondary reservoir provides additional resilience to the water system, as it is a totally separate source. In addition, the earthen embankment can be raised as needed to increase capacity.
  - Institutional Requirements – There are currently no development or planning restrictions in place as a barrier to this alternative.
- Environmental
  - Environmental Impacts – The reservoir to be utilized already exists, so there should be no significant environmental impacts.
  - Aesthetic Impacts – The reservoir to be utilized already exists, so there should be no significant aesthetic impacts.
  - Stakeholder Issues – No significant stakeholder issues have been identified for this alternative at this time.



## **Interconnect**

*Introduction* - One secondary source option for Spencer Water Department is establishing an operational interconnection with another PWSU to allow the utility to receive its water from a different source of supply.

*Exploration* - The system is currently interconnected with Walton PSD. However, Walton PSD is much smaller than the Spencer system and cannot meet the required demands. Following discussions with Spencer Water Department personnel and other stakeholders, it was determined that interconnection is not feasible. There is not another water system within range for interconnection to be a realistic option.

## Treated Water Storage

*Introduction* - One secondary source option for Spencer Water Department is establishing/constructing enough treated water storage for use during a shutdown of the currently used water intake.

*Exploration* – Spencer Water Department currently owns and operates five water storage tanks and one masonry covered reservoir totaling 2,200,000 gallons:

Tank	Capacity (gal)	Size	Material
Colt Ridge	500,000	46'Ø x 40' H	Steel
Hassig Addition	250,000	46'Ø x 40' H	Steel
Stockpen	500,000	39'Ø x 56' H	Steel
Ward Tank	100,000	24'Ø x 24' H	Steel
Rt. 119 Missouri Fork	100,000	27'Ø x 30' H	Steel
Chestnut St (concrete reservoir)	750,000	10' x 8' x 176'	Masonry
<b>Total</b>	<b>2,200,000</b>		

*Data from Spencer Water Department "Annual Report" for year ending 2014*

By reason that the current treated water storage is 2,200,000, Spencer Water Department has adequate treated water storage to be considered a secondary source with the following stipulations:

- The water intake must be closed quickly enough to prevent contamination of the treated water stored in the tanks.
- The tanks will need to be full prior to the emergency event.
- Proper circulation of the treated water stored in the tanks must be considered and evaluated for proper turn-over requirements.

*Evaluation* – The treated water storage was evaluated for three criteria: Economic, Technical and Environmental.

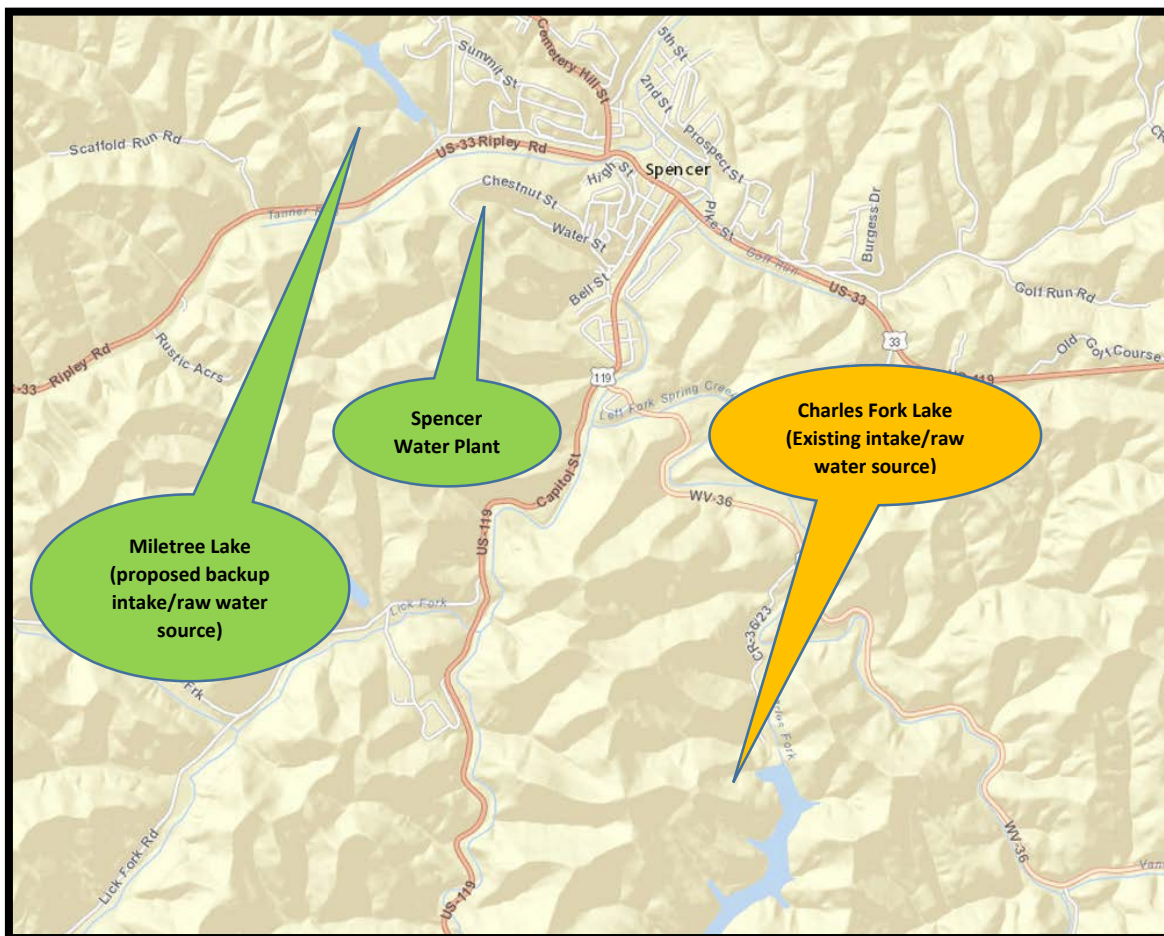
- Economics
  - Operations and Maintenance Costs – The storage tanks are currently a part of the system and are operated and maintained under the current budget. Therefore, no additional operations and maintenance costs are anticipated.
  - Capital Costs – The storage tanks are currently a part of the system. Therefore, no additional capital costs are anticipated.
- Technical
  - Permitting – The storage tanks are currently a part of the system. Therefore, no additional permits are anticipated.
  - Resilience/Flexibility – Five existing treated water storage tanks at different locations throughout the system provides Spencer Water Department with flexibility during normal operations.

- Institutional Requirements – The storage tanks are currently a part of the system. Therefore, no institutional requirements are anticipated.
- Environmental
  - Environmental Impacts – The storage tanks are currently a part of the system. Therefore, no additional environmental impacts are anticipated.
  - Aesthetic Impacts – The storage tanks are currently a part of the system. Therefore, no aesthetic impacts are anticipated.
  - Stakeholder Issues – The storage tanks are currently a part of the system. Therefore, no stakeholder issues are anticipated.

## Raw Water Storage

*Introduction* - One secondary source option for Spencer Water Department is the construction or establishment of a secondary or backup intake which draws water supplies from a substantially different location or water source.

*Exploration* – Windshield surveys were performed, and discussions were held with Rob Miller of Spencer Water Department to better ascertain the feasibility of establishing a backup intake at an existing water source or constructing a backup intake. It was discovered that Miletree Lake was formerly utilized as a raw water source complete with an intake and pump station. However, due to deterioration the infrastructure (intake, pump station, etc.) has since been removed and/or abandoned in place. Spencer Water Department still owns property and has an active right of way agreement to reinstall the infrastructure and utilize Miletree Lake as a second reservoir/intake.



*Evaluation* – The backup intake was evaluated for three criteria: Economic, Technical and Environmental. It must be stated that geographical location of a secondary reservoir greatly affects the feasibility of these criteria.

- Economics
  - Operations and Maintenance Costs – Operations and maintenance costs would include operation and maintenance of a source water intake system, early warning detection system, pump station

and approximately 6,000 feet of 8” PVC waterline. In addition, the reservoir would be subject to bi-annual inspections by a licensed engineer for submission to West Virginia Department of Environmental Protection – Dam Safety Division. O & M costs are estimated on the following table:

Item	Unit	Quantity	Unit Cost	Total Item Cost	Notes
Personnel	HR	260	\$ 30	\$ 7,800	Assume 1 hour a day, 5 days a week, 52 weeks a year
Power	LS	1	\$ 5,109	\$ 5,109	Based on 10% of power usage for Water Department
Replacement Parts, Supplies	LS	1	\$ 16,200	\$ 19,500	Based on 5% of capital costs.
				\$ 32,409	

This results in an Operations and Maintenance cost of \$32,409/173,125,000 gallons, or \$0.19/kgal.

- Capital Costs – Capital funds would be required for the construction of a raw water intake system, early warning system and pump station to pump the raw water to the existing treatment plant. Based on a life of 15 years, 8% annual interest and the following cost opinion, the annualized capital cost to implement the alternative was calculated to be \$390,000/173,125,000 gallons, or \$2.25/kgal.

Item	Unit	Quantity	Unit Cost	Total Item Cost	Notes
8" PVC Waterline	LF	6000	\$ 20	\$ 120,000	Run line to current waterworks.
Pump Station	LS	1	\$ 250,000	\$ 250,000	
Early Warning System	LS	1	\$ 20,000	\$ 20,000	From Early Warning System specified for existing plant
				\$ 390,000	

- **Technical**
  - Permitting – A permit from WVDEP for erosion and sediment control during construction is required. In addition, a permit from West Virginia Bureau of Public Health is needed for significant improvement to water supply system, and potentially WVDOH for work within the public road right of way. Obtaining these permits will involve a moderate amount of effort, and approval from these agencies is likely.
  - Resilience/Flexibility – A secondary reservoir provides additional resilience to the water system, as it is a totally separate source. In addition, the earthen embankment can be raised as needed to increase capacity.
  - Institutional Requirements – There are currently no development or planning restrictions in place as a barrier to this alternative.
- **Environmental**
  - Environmental Impacts – The reservoir to be utilized already exists, so there should be no significant environmental impacts.
  - Aesthetic Impacts – The reservoir to be utilized already exists, so there should be no significant aesthetic impacts.

- Stakeholder Issues – No significant stakeholder issues have been identified for this alternative at this time.

Alternative Strategy Description	Economic Criteria				Technical Criteria						Environmental Criteria					Final Score	Total Capital Cost	Comments				
	Operation and Maintenance Costs	Capital Costs	Total	Total %	Weighted Total	Permitting	Flexibility	Resilience	Institutional Requirements	Total	Total %	Weighted Total	Environmental Impacts	Aesthetic Impacts	Stakeholder Issues				Total	Total %	Weighted Total	
Backup Intake	2.0	1.0	3.0	50.0%	20.0%	2.2	2.5	3.0	3.0	3.0	10.7	89.2%	35.7%	3.0	3.0	3.0	9.0	100.0%	20.0%	75.7%	\$390,000.0	Miletree Lake was previously used as secondary intake. The infrastructure for the intake (pump station, pipes, etc.) were in disrepair and removed/abandoned. Right of way and easements still exist for Spencer's use.
Interconnect	0.0	0.0	0.0	0.0%	0.0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0%	0.0%	0.0	0.0	0.0	0.0	0.0%	0.0%	0.0%	\$0.0	No adequate water systems are located within reasonable distance to Spencer Water Department
Treated water storage	3.0	3.0	6.0	100.0%	40.0%	3.0	3.0	2.0	3.0	3.0	11.0	91.7%	36.7%	3.0	3.0	3.0	9.0	100.0%	20.0%	96.7%	\$0.0	Spencer Water Department currently has 5 treated water storage tanks and a concrete reservoir that provide 2,200,000 gallons of treated storage, which is enough to meet demands. Proper circulation of the treated water stored in the tank must be further
Raw Water Storage	2.0	1.0	3.0	50.0%	20.0%	2.2	2.5	3.0	3.0	3.0	10.7	89.2%	35.7%	3.0	3.0	3.0	9.0	100.0%	20.0%	75.7%	\$390,000.0	Miletree Run Lake has existing property and rights of way but no existing pumpstation.
Other-(Name of Alternative)	0.0	0.0	0.0	0.0%	0.0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0%	0.0%	0.0	0.0	0.0	0.0	0.0%	0.0%	0.0%	\$0.0	

**Scoring:**

- 0 – Not feasible. Criterion cannot be met by this alternative and removes the alternative from further consideration.
- 1 – Feasible but difficult. Criterion represents a significant barrier to successful implementation but does not eliminate it from consideration.
- 2 – Feasible. Criterion can be met by the alternative.
- 3 – Very Feasible. Criterion can be easily met by the alternative

Feasibility Matrix		Spencer PSD		PWSID: [PWSID #]		30-Jun		Matrix Completed By:		Lee McCoy, Triad Engineering, Inc.	
Criteria	Question	Backup Intake	Feasibility	Interconnect	Feasibility	Treated Water Storage	Feasibility	Raw Water Storage	Feasibility	Other-(Name of Alternative)	Feasibility
<b>Economic Criteria</b>											
What is the total current budget year cost to operate and maintain the PWSU (current budget year)?		\$3.10		\$3.10		\$3.10		\$3.10		\$3.10	
O and M Costs	Describe the major O&M cost requirements for the alternative?	Pump station to pump water to current treatment plant, maintain riser, intake structure, early warning system.	2	This alternative is not feasible	0	Tanks providing adequate storage already exist on the system. Therefore, no additional O&M costs.	3	Pump station to pump water to current treatment plant, maintain riser, intake structure, early warning system.	2	[Describe]	0
	What is the incremental cost (\$/gal) to operate and maintain the alternative?	\$0.19	2	\$0.00	0	\$0.00	3	\$0.19	2	\$0.00	0
	Cost comparison of the incremental O&M cost to the current budgeted costs (%)	6.13%	2	0.00%	0	0.00%	3	6.13%	2	0.00%	0
<b>O and M-Feasibility Score</b>			<b>2.0</b>		<b>0.0</b>		<b>3.0</b>		<b>2.0</b>		<b>0.0</b>
Describe the capital improvements required to implement the alternative.		Construction of pump station at existing reservoir, a new intake with early detection system and approx. 6,000 LF of 8" PVC				None. The tanks exist.		Purchase of property, construction of dam, construction of intake structure, construction of 3,200 feet of pipe.		[Describe]	
Capital Costs	What is the total capital cost for the alternative?	\$390,000.00	1	\$0.00	0	\$0.00	3	\$390,000.00	1	\$0.00	0
	What is the annualized capital cost to implement the alternative, including land and easement costs, convenience tap fees, etc. (\$/gal)	\$0.26	1	\$0.00	0	\$0.00	3	\$2.25	1	\$0.00	0
	Cost comparison of the alternatives annualized capital cost to the current budgeted costs (%)	8.39%	1	0.00%	0	0.00%	3	72.58%	1	0.00%	0
<b>Capital Cost-Feasibility Score</b>			<b>1.0</b>		<b>0.0</b>		<b>3.0</b>		<b>1.0</b>		<b>0.0</b>
<b>Technical Criteria</b>											
Permitting	Provide a listing of the expected permits required and the permitting agencies involved in their approval.	Dam Safety - for construction of earthen dam, USACE - for work within a waterway, WVDNR - for work within a waterway, WVDEP	2	NA	0	None. The tanks exist.	3	Dam Safety - for construction of earthen dam, USACE - for work within a waterway, WVDNR - for work within a waterway, WVDEP	2	-[List and Describe]	0
	What is the timeframe for permit approval for each permit?	Dam Safety - 1 year, USACE, 1 year, WVDNR - 6 months, WVDEP NPDES - 6 months, WVDH - 6 months	2	NA	0	NA	3	Dam Safety - 1 year, USACE, 1 year, WVDNR - 6 months, WVDEP NPDES - 6 months, WVDH - 6 months	2	-[List the timeframe for approval for each permit listed above]	0
	Describe the major requirements in obtaining the permits (environmental impact studies, public hearings, etc.)	USACE and Dam Safety will require public hearings. Comments during the hearings will need to be adequately addressed.	2	NA	0	NA	3	USACE and Dam Safety will require public hearings. Comments during the hearings will need to be adequately addressed.	2	-[Describe all major requirements for approval for the listed permits]	0
	What is the likelihood of successfully obtaining the permits?	likely	2	NA	0	NA	3	likely	2	[Describe]	0
	Does the implementation of the alternative require regulatory exceptions or variances?	No	3	NA	0	No	3	No	3	[Yes/No-Describe]	0
<b>Permitting-Feasibility Score</b>			<b>2.2</b>		<b>0.0</b>		<b>3.0</b>		<b>2.2</b>		<b>0.0</b>
Flexibility	Will the alternative be needed on a regular basis or only used intermittently?	intermittantly	2	NA	0	intermittantly	3	intermittantly	2	[Describe]	0
	How will implementing the alternative affect the PWSU's current method of treating and delivering potable water including meeting Safe Drinking Water Act regulations? (ex. in the case of storage, will the alternative increase the likelihood of disinfection byproducts?)	This alternative will have little to no affect on the current method of treating and delivering potable water	3	NA	0	No affect	3	This alternative will have little to no affect on the current method of treating and delivering potable water	3	[Describe]	0
<b>Flexibility-Feasibility Score</b>			<b>2.5</b>		<b>0.0</b>		<b>3.0</b>		<b>2.5</b>		<b>0.0</b>
Resilience	Will the alternative provide any advantages or disadvantages to meeting seasonal changes in demand?	Advantages. This alternative will provide a totally separate source.	3	NA	0	Advantages	3	Advantages. This alternative will provide a totally separate source.	3	[Yes/No]	0
	How resistant will the alternative be to extreme weather conditions such as drought and flooding?	Somewhat Resistant	3	NA	0	Very Resistant	3	Somewhat Resistant	3	[Yes/No]	0
	Will the alternative be expandable to meet the growing needs of the service area?	Yes. The embankment could be raised if needed.	3	NA	0	No	0	Yes. The embankment could be raised if needed.	3	[Describe]	0
<b>Resilience-Feasibility Score</b>			<b>3.0</b>		<b>0.0</b>		<b>2.0</b>		<b>3.0</b>		<b>0.0</b>
Institutional Requirements	Identify any agreements or other legal instruments with governmental entities, private institutions or other PWSU required to implement the alternative.	None	3	NA	0	None. The tanks exist.	3	None	3	[Describe]	0
	Are any development/planning restrictions in place that can act as a barrier to the implementation of the alternative.	No	3	NA	0	None. The tanks exist.	3	No	3	[Yes/No]	0
	Identify potential land acquisitions and easements requirements.	None. Spencer Water Department has necessary easements and rights of way.	3	NA	0	None. The tanks exist.	3	None. Spencer Water Department has necessary easements and rights of way.	3	[Describe]	0
<b>Institutional Requirements-Feasibility Score</b>			<b>3.0</b>		<b>0.0</b>		<b>3.0</b>		<b>3.0</b>		<b>0.0</b>
<b>Environmental Criteria</b>											
Environmental Impacts	Identify any environmentally protected areas or habitats that might be impacted by the alternative.	None	3	NA	0	None. The tanks exist.	3	None	3	[Describe]	0
<b>Environmental Impacts-Feasibility Score</b>			<b>3.0</b>		<b>0.0</b>		<b>3.0</b>		<b>3.0</b>		<b>0.0</b>
Aesthetic Impacts	Identify any visual or noise issues caused by the alternative that may affect local land uses?	None	3	NA	0	None. The tanks exist.	3	None	3	[Describe]	0
	Identify any mitigation measures that will be required to address aesthetic impacts?	None	3	NA	0	None. The tanks exist.	3	None	3	[Describe]	0
<b>Aesthetic Impacts-Feasibility Score</b>			<b>3.0</b>		<b>0.0</b>		<b>3.0</b>		<b>3.0</b>		<b>0.0</b>
Stakeholder Issues	Identify the potential stakeholders affected by the alternative.	None	3	NA	0	None. The tanks exist.	3	None	3	[Describe]	0
	Identify the potential issues with stakeholders for and against the alternative.	None	3	NA	0	None. The tanks exist.	3	None	3	[Describe]	0
	Will stakeholder concerns represent a significant barrier to implementation (or assistance) of the alternative?	No	3	NA	0	None. The tanks exist.	3	No	3	[Yes/No]	0
<b>Stakeholder Issues-Feasibility Score</b>			<b>3.0</b>		<b>0.0</b>		<b>3.0</b>		<b>3.0</b>		<b>0.0</b>
Comments		Miletree Lake was previously used as secondary intake. The infrastructure for the intake (pump station, pipes, etc.) were in disrepair and removed/abandoned. Right of way and easements still exist for Spencer's use.		No adequate water systems are located within reasonable distance to Spencer Water Department		Spencer Water Department currently has 5 treated water storage tanks and a concrete reservoir that provide 2,200,000 gallons of treated storage, which is enough to meet demands. Proper circulation of the treated water stored in the tank must be further studied to verify proper turn-over requirements are met.		Miletree Run Lake has existing property and rights of way but no existing pumpstation.		Comments	



## Appendix E. Supporting Documentation

## Documents Referenced

- Source Water Assessment Report  
<http://www.wvdhhr.org/oehs/eed/swap/get.cfm?id=3304405>
- Source Water Protection Plan Instructions and Supplemental Guides [http://www.wvdhhr.org/oehs/eed/swap/Draft\\_Template.asp](http://www.wvdhhr.org/oehs/eed/swap/Draft_Template.asp)
- Consumer Confidence Report [https://ofmpub.epa.gov/apex/safewater/f?p=136:103:0::NO:RP,103:P103\\_STATE:WV](https://ofmpub.epa.gov/apex/safewater/f?p=136:103:0::NO:RP,103:P103_STATE:WV)
- City of Spencer Waterworks Annual Report for year ending 2014
- Source Water Protection Plan, by Potesta, dated October 27, 2010

Personal Invitations and follow-up phone calls and emails were made to the following potential Protection Team Members:

Organization	Name	Address	Phone	Email
Roane County NRCS	Jason Crislip	677 Ripley Road, Spencer, WV 25276	304.927.1022	jason.crislip@wv.usda.gov
Roane County Sheriff	L. Todd Cole	Street Spencer, WV 25276	304.927.3410	tcole.rcsd@yahoo.com, ljirles@sheriff.state.wv.us
Roane County Emergency Medical Services (EMS)	Danny Cronin	200 East Main Street, Spencer, WV 25276	304.927.3725	dannycronin@roaneems.com
Roane Office of Emergency Services (OES)	Melissa Gilbert	205 East Main Street , Spencer, WV 25276	304.927.0911	
Roane County Building Commission	Jen Rand	200 East Main Street, Spencer, WV 25276	304.927.0078	jenrand@commission.state.wv.us
Camp Sheppard Advisory Committee	Gary Mace	200 East Main Street, Spencer, WV 25276	304.927.3101	<a href="mailto:maceg@nationwide.com">maceg@nationwide.com</a>
Roane County Economic Development Authority	Mark W. Whitley	207 Court Street Spencer, WV 25276	304.927.5189	<a href="mailto:director@roanecountyeda.org">director@roanecountyeda.org</a>
Roane County Schools	Jerry Gardner	P.O. Box 609, Spencer, WV 25276	304.927.6400	
Mid-Ohio Valley Health Department	Drema Mace	Parkersburg, WV 26101	304.485.7374	
Roane General Hospital	Doug Bentz	201 Hospital Drive, Spencer, WV 25276	304.927.4444	
Spencer Police	Greg Nichols	116 Court Street, Spencer, WV 25276	304.927.2392	

Protection Team/Public Meeting announcements were posted at public buildings and was advertised in the Times Herald on April 7, 2016 and April 14, 2016:

ESTATE NUMBER: 1035  
ESTATE NAME: DENNIE LEE SMITH  
ANCILLARY ADMINISTRATOR: ORTON A JONES  
P.O. BOX 7  
SPENCER, WV 25276-0007  
Subscribed and sworn to before me on 03/31/2016

Clerk of the Roane County Commission  
By Lynn Webb  
Deputy Clerk

2t 4/7-14/16 B

**PUBLIC MEETING  
ANNOUNCEMENT**

**Tuesday, April 19, 2016,  
2:00 P.M.**

**Spencer Municipal Building  
City of Spencer Waterworks  
Source Water Assessment  
and Protection Plan**

The City of Spencer Waterworks is supplied by a surface water source. Improper use, disposal and or management of chemicals and other potential pollutants can contaminate the surface water supply.

The City of Spencer Waterworks is asking all residents and businesses to follow all regulations as required by state and federal laws, report any spills to appropriate officials, and implement best management practices within operations to prevent the improper management of any materials that could contaminate the surface water resources.

The City of Spencer Waterworks invites the public to attend a public meeting on Tuesday, April 19, 2016 to discuss the Source Water Assessment and Protection Plan and to solicit members for a "Protection Team." The role of the Protection Team is to contribute information to the development of the Source Water Protection Plan, to review draft plans and make recommendations and when possible contribute to implementation and maintenance of the plan.

2t 4/7-14/16 B

**ORDER OF PUBLICATION  
IN THE MAGISTRATE**

the residence and whereabouts of said defendant(s) without effect.

It is ordered that defendant(s) do serve upon RONALD WHITE, magistrate, whose address is, 201 Main Street, Spencer WV 25276, an answer or other defense to the complaint filed in this action on or before May 16, 2016 otherwise judgment by default will be taken against defendant(s) at any time thereafter. A copy of said complaint can be obtained from the undersigned Clerk at her office.

Entered by the Clerk of said Court March 23, 2016.

Rita Helbig, BU

Magistrate Court Clerk

2t 4/7-14/16 TR

**NOTICE**

Notice is hereby given that the following fiduciary accounts are before me for settlement:

Thomas N. Whittier, Administrator CTA of the Estate of Harry Clay Boggs, deceased, for the periods: November 30, 2012 to November 30, 2013; December 1, 2013 to November 30, 2014; December 1, 2014 to November 30, 2015.

Given under my hand March 31, 2016.

DREW PATTON

FIDUCIARY COMMISSIONER

ROANE COUNTY, WEST VIRGINIA

2t 4/7-14/16 RCR

**PUBLIC SERVICE  
COMMISSION  
OF WEST VIRGINIA  
CHARLESTON**

CASE NO. 15-1673-E-T

*Duffield, Lovejoy*

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Truck Wrecks • Mining/Industrial Accidents  
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1,000  
\$40,173

Subscribed and sworn to before me on 03/31/2016

Clerk of the Roane County Commission  
By Lynn Webb  
Deputy Clerk

2t 4/7-14/16 B

hereby certify that

Hollie Cherry  
Recorder

**tors**

opened for probate  
ET, SPENCER, WV  
a will must make  
ginia Code 41-5-11  
cations of the per-  
rt, shall file notice  
ys after the date of  
notice, whichever is  
er barred. Any per-  
hem in accordance

ent(s) will proceed  
n 60 days from the  
party of interest or

**PUBLIC MEETING  
ANNOUNCEMENT  
Tuesday, April 19, 2016,  
2:00 P.M.**

**Spencer Municipal Building  
City of Spencer Waterworks  
Source Water Assessment  
and Protection Plan**

The City of Spencer Waterworks is  
supplied by a surface water source.  
Improper use, disposal and or man-  
agement of chemicals and other po-  
tential pollutants can contaminate  
the surface water supply.

The City of Spencer Waterworks is  
asking all residents and businesses  
to follow all regulations as required  
by state and federal laws, report any

spills to appropriate officials, and im-  
plement best management practices  
within operations to prevent the im-  
proper management of any materials  
that could contaminate the surface  
water resources.

The City of Spencer Waterworks in-  
vites the public to attend a public  
meeting on Tuesday, April 19, 2016  
to discuss the Source Water Assess-  
ment and Protection Plan and to so-  
licit members for a "Protection Team."  
The role of the Protection Team is to  
contribute information to the devel-  
opment of the Source Water Protec-  
tion Plan, to review draft plans and  
make recommendations and when  
possible contribute to implementa-  
tion and maintenance of the plan.

2t 4/7-14/16 B

Sign in list for Protection Team/Public Meeting:

SPENCER WATER DEPARTMENT  
SOURCE WATER ASSESSMENT & PROTECTION PLAN  
PROTECTION TEAM DEVELOPMENT MEETING  
April 19, 2016

	Name	Company	Email Address	Phone Number	Would you like to be a Team Member?
1.	Rob Miller	City of Spencer	rm.miller3@suddenlink.net	304-922-0300	
2.	Mike Mace		Mike.Maces@ameri.com	304-920-5609	
3.	Carlynn Mace				
4.	Phyllis Ray	City of Spencer	phray2@suddenlink.net	304-929-1489	
5.	Andrea Westfall	Rane General Hospital	awestfall@rgkwu.org	304-921-6845	
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