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 **Appendix B**). 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 Berkeley Springs 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/). Berkeley Springs has analyzed its ability to effectively respond to emergencies and this information is provided in **Table 11**.

Table 11. Water Shortage Response Capability

Can the utility isolate or divert contamination from the intake or groundwater supply?	No
Describe the utility's capability to isolate or divert potential contaminants:	N/A
Can the utility switch to an alternative water source or intake that can supply full capacity at any time?	No
Describe in detail the utility's capability to switch to an alternative source:	N/A
Can the utility close the water intake to prevent contamination from entering the water supply?	Yes, the utility can shut down the raw water intake pumps
How long can the intake stay closed?	Approx. 3.5 Days based on average production
Describe the process to close the intake:	N/A
Describe the treated water storage capacity of the water system:	The system currently has five (5) treated water storage tanks totaling 1,086,000 gallons. At the time of this report, Berkeley Springs was operating at 100% treated water storage capacity.
Is the utility a member of WVRWA Emergency Response Team?	Yes
Is the utility a member of WV-WARN?	No
List any other mutual aid agreements to provide or receive assistance in the event of an emergency:	N/A

It is suggested that, if the utility does not have the capability to divert contamination from the surface water intake, pre-cast concrete bases are constructed around the raw water intake to drop booms into the water and physically divert surface contaminants from entering the raw water intake.

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**. The utility's standby capacity would have the capability to provide power to the system as if normal power conditions existed. The utility's emergency capacity would have the capability to provide power to only the essential equipment and treatment processes to provide water to the system. Information regarding the emergency generator capacity for each utility was calculated by the WV BPH and can be found in **Appendix E**.

Table 12. Generator Capacity

What is the type and capacity of the generator needed to operate during a loss of power?	The emergency generator capacity for the treatment facility is 240 kW.	
Can the utility connect to generator at the intake/wellhead? If yes, select a scenario that best describes system.	Yes; the intake is connected to a 240 kW generator at the treatment facility.	
Can the utility connect to generator at the treatment facility? If yes, select a scenario that best describes system.	Yes; the treatment facility is connected to a 240 kW generator.	
Can the utility connect to a generator in distribution system? If yes, select a scenario that best describes system.	No; there are two (2) booster stations in the distribution system that would require electrical service upgrades to connect to a generator.	
Does the utility have adequate fuel on hand for the generator?	Yes	
What is your on-hand fuel storage and how long will it last operating at full capacity?	**Gallons**	**Duration**
	300	7 days

Table 12. Generator Capacity (*Continued*)

		Supplier	Contact Name	Phone Number
Provide a list of suppliers that could provide generators and fuel in the event of an emergency:	**Generator**	N/A	N/A	N/A
	Fuel	Roach Oil	Martinsburg, WV	
Does the utility test the generator(s) periodically?		Yes; the generator is tested on Mondays at 7:00AM.		
Does the utility routinely maintain the generator?		Yes; the utility routinely changes the oil and filters every six (6) months.		
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:		N/A		

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. Berkeley Springs 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

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.	Yes; there is little to no increase expected in the customer demand within the next five (5) years for Berkeley Springs. The Route 9 East and Route 522 South line extensions could potentially add approximately 200 customers, but the treatment facility is expected to remain under the maximum treatment capacity.
If not, describe the circumstances and plans to increase production capacity:	N/A

Water Loss Calculation

In any public water system, there is a certain percentage of the total treated water that does not reach the customer distribution system. Some of this water is used in treatment plant processes such as backwashing filters or flushing piping, but there is usually at least a small percentage unaccounted. 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 estimated include water used by fire departments for fires or training, un-metered bulk sales, 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 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 Berkeley Springs PSC Annual Report.

Table 14. Water Loss Information

Total Water Pumped (gal.)		120,553,000
Total Water Purchased (gal.)		0
Total Water Pumped and Purchased (gal.)		120,553,000
Water Loss Accounted for Except Main Leaks (gal.)	**Mains, Plants, Filters, Flushing, etc.**	0
	Fire Department	0
	Back Washing	~~365,000~~ 3,800,399*
	Blowing Settling Basins	0
Total Water Loss Accounted For Except Main Leaks		3,800,399
Water Sold- Total Gallons (gal)		95,808,000
Unaccounted For Lost Water (gal)		20,944,601
Water lost from main leaks (gal)		0
Total gallons of Unaccounted for Lost Water and Water Lost from Main Leaks (gal.)		20,944,601
Total Percent Unaccounted For Water and Water Lost from Main Leaks (%)		17.37 %
If total percentage of Unaccounted for Water is greater than 15%, please describe any measures that could be taken to correct this problem:		The utility is conducting leak detection and making necessary repairs to reduce unaccounted for water.

* *The value for the back washing water lost was found using the monthly operating reports provided by the utility and using for a 12-month time period (See **Appendix E**)*

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, state and local emergency response agencies, surrounding water utilities, and the public. Communication plays an important role in knowing how to interpret data and how to respond.

Berkeley Springs 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

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?	The utility receives spill notifications from the WV Health Department and the WV Department of Environmental Protection.		
Are you aware of any facilities, land uses, or critical areas within your protection areas where chemical contaminants could be released or spilled?	Yes		
Are you prepared to detect potential contaminants if notified of a spill?	No		
List laboratories (and contact information) on which you would rely to analyze water samples in case of a reported spill.	**Laboratories**		
	Name	**Contact**	
	REI Consultants	(304) 255-2500	
	WV Office of Lab Services	(304) 558-3530	
Do you have an understanding of baseline or normal conditions for your source water quality that accounts for seasonal fluctuations?	Yes		
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?	Yes		
Provide or estimate the capital and O&M costs for your current or proposed early warning system or upgraded system.	**Capital**	$50,000	
	Yearly	$750	
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.	No		

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 contingency 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 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 raw or treated water storage, interconnections with neighboring systems, or other options identified on a local level.

In order 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 scoring matrix. By completing the matrix, utilities will demonstrate the process used to examine the feasibility of each alternative and document scores that compare the alternatives. The scoring matrix is then summarized in the Feasibility Study matrix which is weighted to display the most suitable alternative for the utility. Analysis of the evaluated alternatives and summary of the results are presented in an alternatives feasibility study attached as **Appendix D**.

Berkeley Springs evaluated the technical and economic feasibility of the following four (4) alternatives to provide continued safe and reliable public water service in the event Berkeley Springs State Park is detrimentally affected by contamination, release, spill or other reason.

Backup Intake

Berkeley Springs currently uses the springs at Berkeley Springs State Park as their primary source of surface water. Warm Springs Run was considered was considered for an alternative water source; however during low flow conditions, Warm Springs Run cannot supply the average water demand of Berkeley Springs. Warm Springs Run was not considered in the feasibility analysis due to its unreliable stream flow characteristics.

The Potomac River has adequate supply to provide the average water demand of Berkeley Springs. The backup intake would be located on the Potomac River near the location shown on the map in **Appendix E** and will require 14,000 feet of 6" raw water line from the intake to the water treatment facility.

[†] *A secondary water source would draw water supply from a substantially different location or water source.*

Interconnection

Berkeley Springs is currently not interconnected with another utility. The Town of Paw Paw water system is located approximately 20 miles from the Berkeley Springs system, and the Warm Springs Public Service District (PSD) system is located approximately 11 miles from the Berkeley Springs system at the Industrial Park on U.S. Route 522 south of Berkeley Springs. The Warm Springs PSD water treatment facility would only be able to provide to a small amount to Berkeley Springs in the event that Berkeley Springs would be fully reliant on Warm Springs PSD for water supply. This alternative was not analyzed in the feasibility analysis.

Existing Water Storage

Berkeley Springs currently has a water storage capacity of 1,106,000 gallons comprised of five (5) treated water storage tanks and (1) raw water storage tank. Senate Bill 373 requires that each utility maintain at least two (2) days of system storage based on the maximum level of production experienced within the past year. The maximum amount of water produced by Berkeley Springs within the past year was 521,400 gallons, therefore 1,042,800 gallons of total water storage is required to comply with Senate Bill 373. Berkeley Springs meets the minimum required water storage capacity. The use of existing water storage was analyzed in the feasibility matrix.

Additional Water Storage

The WV BPH requires that all distribution tanks be controlled to provide an adequate turn-over of at least twenty percent (20%) of the total volume each 24 period, i.e., no more than five (5) days of treated water storage based on average production. Berkeley Springs has capacity to construct additional water storage and maintain compliance with WV BPH design requirements. The construction of additional water storage was evaluated in the feasibility matrix.

Based on the evaluation of the water system, the most feasible alternative for Berkeley Springs is the use of existing treated water storage to continue water service until the threat of contamination has subsided. Additional detail of the selection of this alternative is provided in **Appendix D**.

COMMUNICATION PLAN

Berkeley Springs 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. Berkeley Springs 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 Berkeley Springs 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.

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 Communication Plan by providing quick access to important information about emergency response and is to be used for internal review and planning purposes only.

CONCLUSION & RECOMMENDATIONS

This report represents a detailed explanation of the required elements of the Berkeley Springs'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 are 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 contingency plan, and a multi-faceted approach is the only way to ensure that a system is as protected as possible against source water degradation.

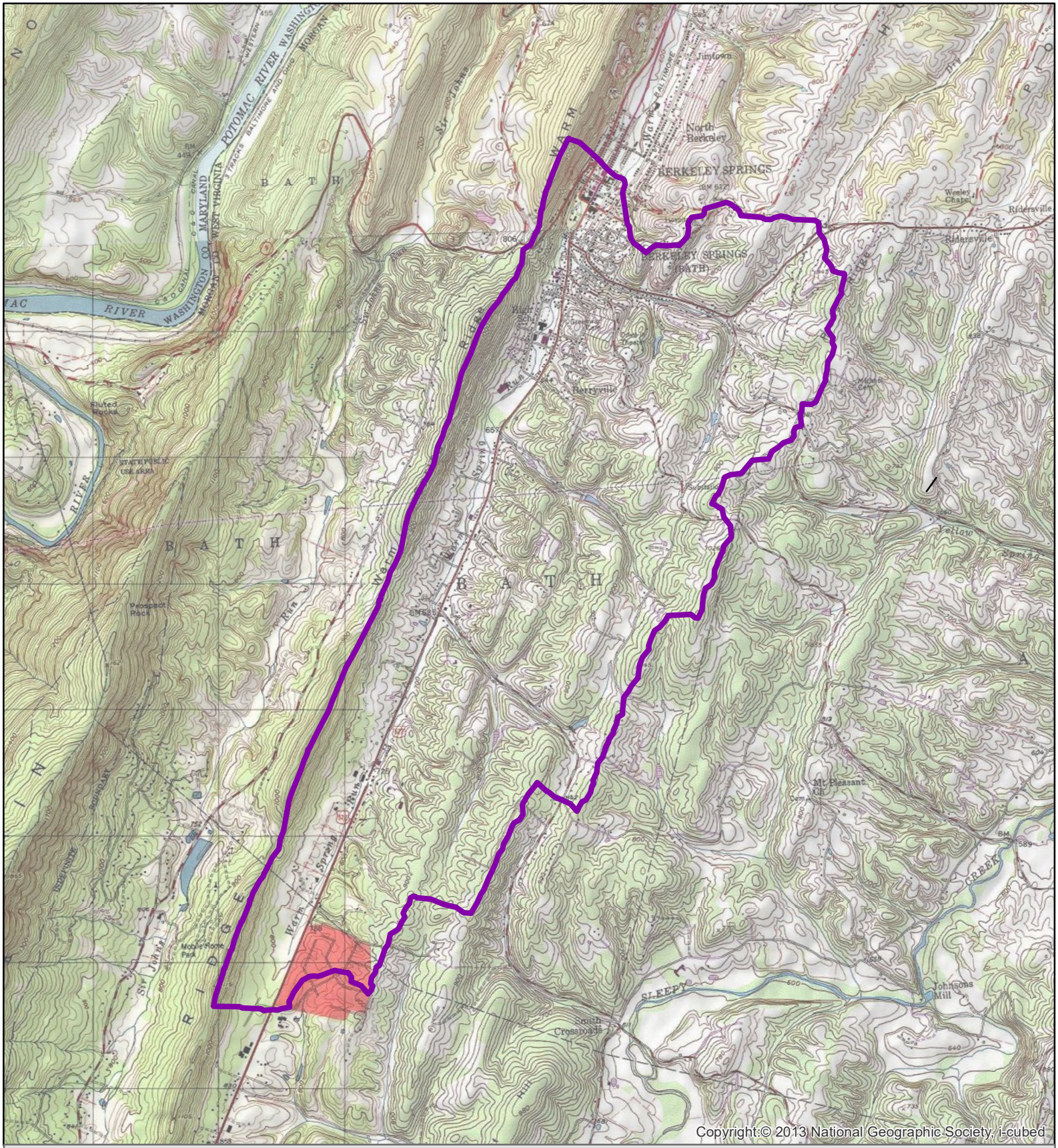
After evaluation, Berkeley Springs currently maintains 2.12 days of water storage based on maximum production, compliant with Senate Bill 373. As such, the most feasible alternative for Berkeley Springs to continue water service during a contingent event is the use of existing water storage. It is also recommended that the Berkeley Springs install an early warning monitoring system upstream of the surface water intake on Lord Fairfax Spring as described in **Appendix B**. The early warning system shall protect the system from potential contaminants detected in the primary surface water source, which would also provide source water protection for the Berkeley Springs raw water intake.

This recommendation is based on an evaluation of the three alternatives. The evaluation consisted of operation and maintenance impacts, capital costs, environmental impacts, along with other criteria. A detailed analysis including supporting documentation is included in the Appendices of this report.

Recommended Alternative Cost Estimate

Description	Qty.	Unit Price	Total Cost
Early Warning Detection Equipment	1 LS	$50,000.00	$50,000.00
Operation & Maintenance for Early Warning System	1 LS	$750.00	$750.00
TOTAL			$50,750.00

APPENDIX A. FIGURES



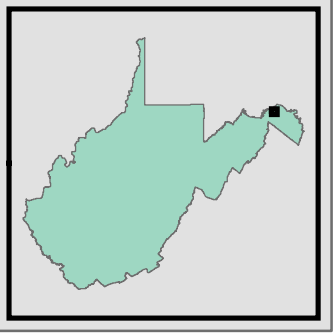
Berkeley Springs Water Works

Watershed delineation area
5/30/2016

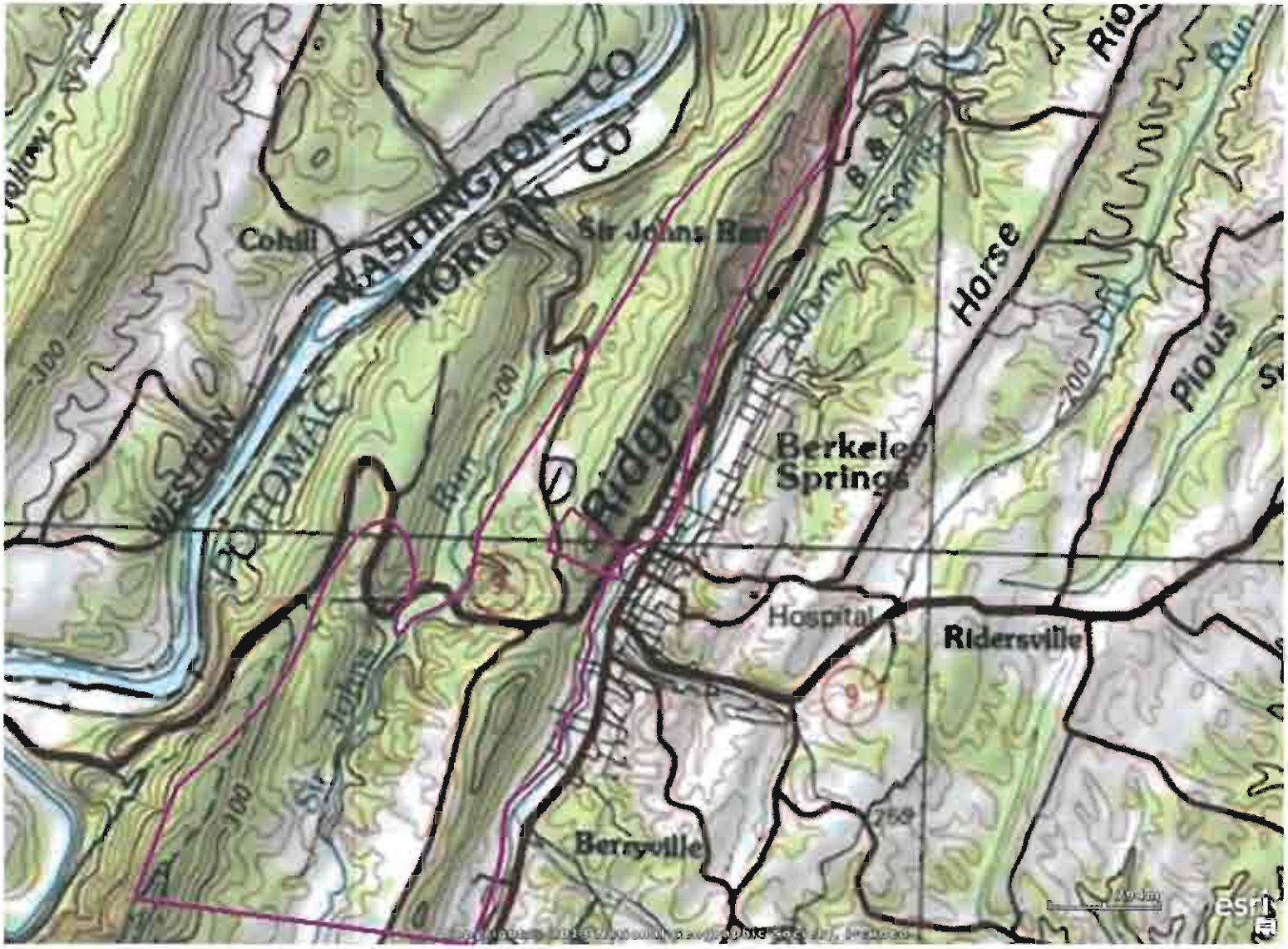
BerkeleySprings Watershed

N

0 0.5 1 2 Miles



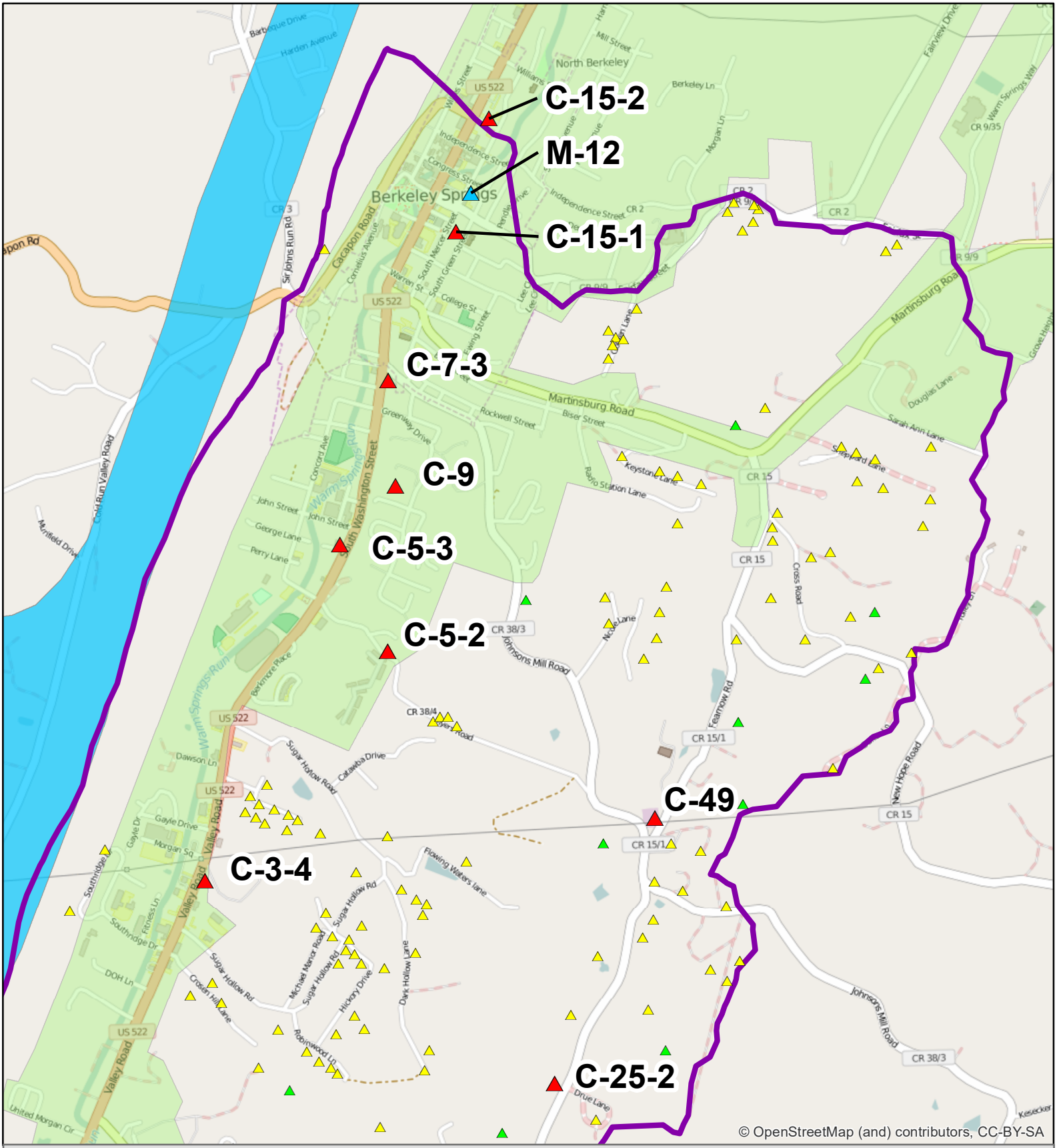
BSWW WHPA


WASHINGTON CO
MORGAN CO
Cohill
Sir Johns Run
Horse
Pious
Ridge
Berkeley Springs
Hospital
Ridersville
Berryville
WESTERN
POTOMAC
300
200
100
esri

List of Locally Identified PSSCs

Map Code	Site Name	Site Description	Comments	BPH Risk
See attached map location	U.S.Silica Company	Mining	Quarry only -Sandstone & Limestone Quarry WV0005487 Quarry only – U. S. Silica Co. Berkeley Springs Plant WV1023691 General Quarry -- Berkeley Springs Operation WVG022519	1.8—2.2
Rt. 522 & Winchester Grade Rd.	New Sheetz store under construction	Auto Service Station	Oils, antifreeze, and other automobile fluids	3.0 – 4.6
C-10-3	Tractor Supply	Tractor Supply store	Solvents, asbestos, paints, adhesives, waste insulation, lacquers, tars, sealants, epoxy waste, chemical wastes	2.6 – 3.5
See attached location map	Roy's Service Center	Auto Service Station	Oils, antifreeze, and other automobile fluids	3.0 – 4.6
C-15-1	Hunter-Anderson Funeral Home	Funeral home	Formaldehyde; wetting agents; fumigants; solvents	1.7
C-15-2	Hesley Funeral Home	Funeral home	Formaldehyde; wetting agents; fumigants; solvents	1.7
C-25-2	Junkyard	Formerly Ours Auto Sales, currently a junkyard.	Oils, antifreeze, and other automobile fluids	3.4 – 3.6
C-3-4	Pit Stop Service Center	Auto repair and service station	Oils, antifreeze, and other automobile fluids	2.7
C-47	Eddy's Tire Service	Many old tires, stored oil onsite	Metals	2.4 – 2.8
C-49	Utility substation	Power substation	PCBs, oils, solvents, wood preservatives, sludges, acid solution, metal plating solutions, and herbicides	2.7 – 2.9
C-5-2	Steve's Autobody	Auto body shop	Waste oils, solvents; acids, paints, automotive wastes, miscellaneous cutting oils	2.1 – 2.8
C-5-3	Napa Auto Parts	Auto parts store	Waste oils, solvents; acids, paints, automotive wastes, miscellaneous cutting oils	2.1 – 2.9
C-7-3	Douglas Auto Sales	Car dealership	Automotive wastes, waste oils, solvents, miscellaneous wastes	1.2 – 1.3
C-9	Cemetery	Cemetery	Leachate; arsenic; lawn and garden maintenance chemicals	1.2 – 1.8

Map Code	Site Name	Site Description	Comments	BPH Risk
M-27-2	Apple Valley Waste	Trash removal and recycling	Residential and commercial solid waste residues	2.2 – 2.3
M-6	Berkeley Springs VFD	Fire station	Petroleum hydrocarbons and volatile organic compounds	1.2 – 1.3
Not labeled individually	Agricultural Land Use	13 sites, small-scale crops, pastures, and ponds	• Pesticides and other chemicals used for farm operations • Disposal of animal waste or burying dead livestock Increased nutrient load from these sources in surface water may result in algal growth. Algal presence may result in taste and odor issues. If stressed some algae also releases toxic chemicals that could cause a threat to human health	Variable
Not labeled individually	Residences	197 residences not served by public sewer	Common household products, wall and furniture treatments, mechanical repair and maintenance products	2.3



Berkeley Springs Water Works

Locally identified Potential Sources of Contamination 5/30/2016

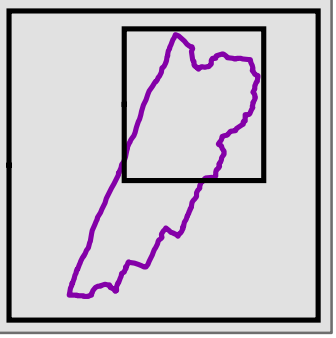
Locally identified PSSCs

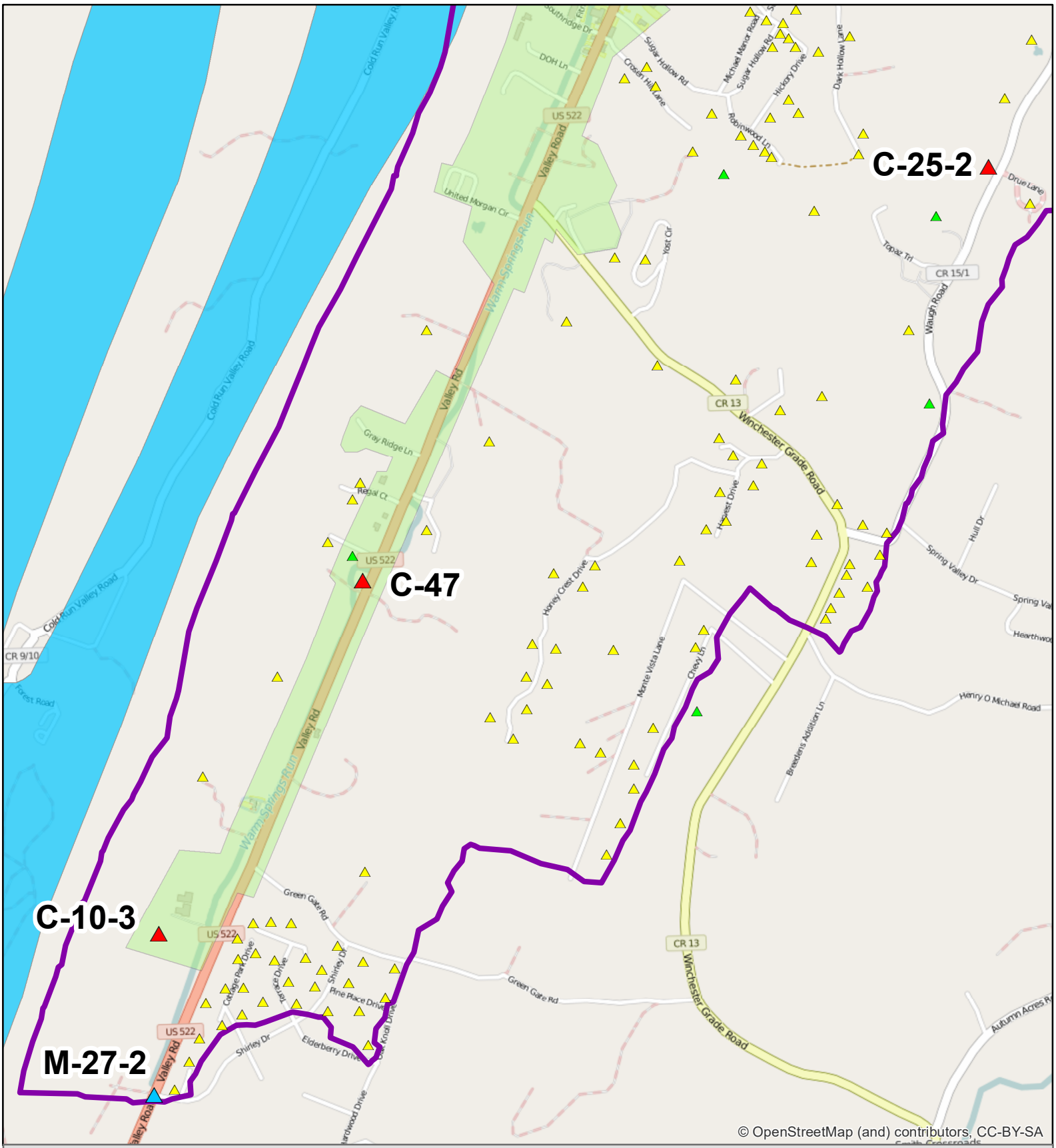
- Agricultural
- Commercial
- Industrial
- Municipal
- Residential
- BerkeleySprings Watershed
- Karst
- Warm Springs public sewer service

Note: Single family homes located outside areas served by public sewer and small-scale agricultural facilities are not labeled individually on the map.

N

0 0.125 0.25 0.5 Miles





Berkeley Springs Water Works

Locally identified Potential Sources of Contamination 5/30/2016

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- Agricultural
- Commercial
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- Municipal
- Residential
- BerkeleySprings Watershed
- Karst
- Warm Springs public sewer service

Note: Single family homes located outside areas served by public sewer and small-scale agricultural facilities are not labeled individually on the map.

N

0 0.125 0.25 0.5 Miles

Google Earth

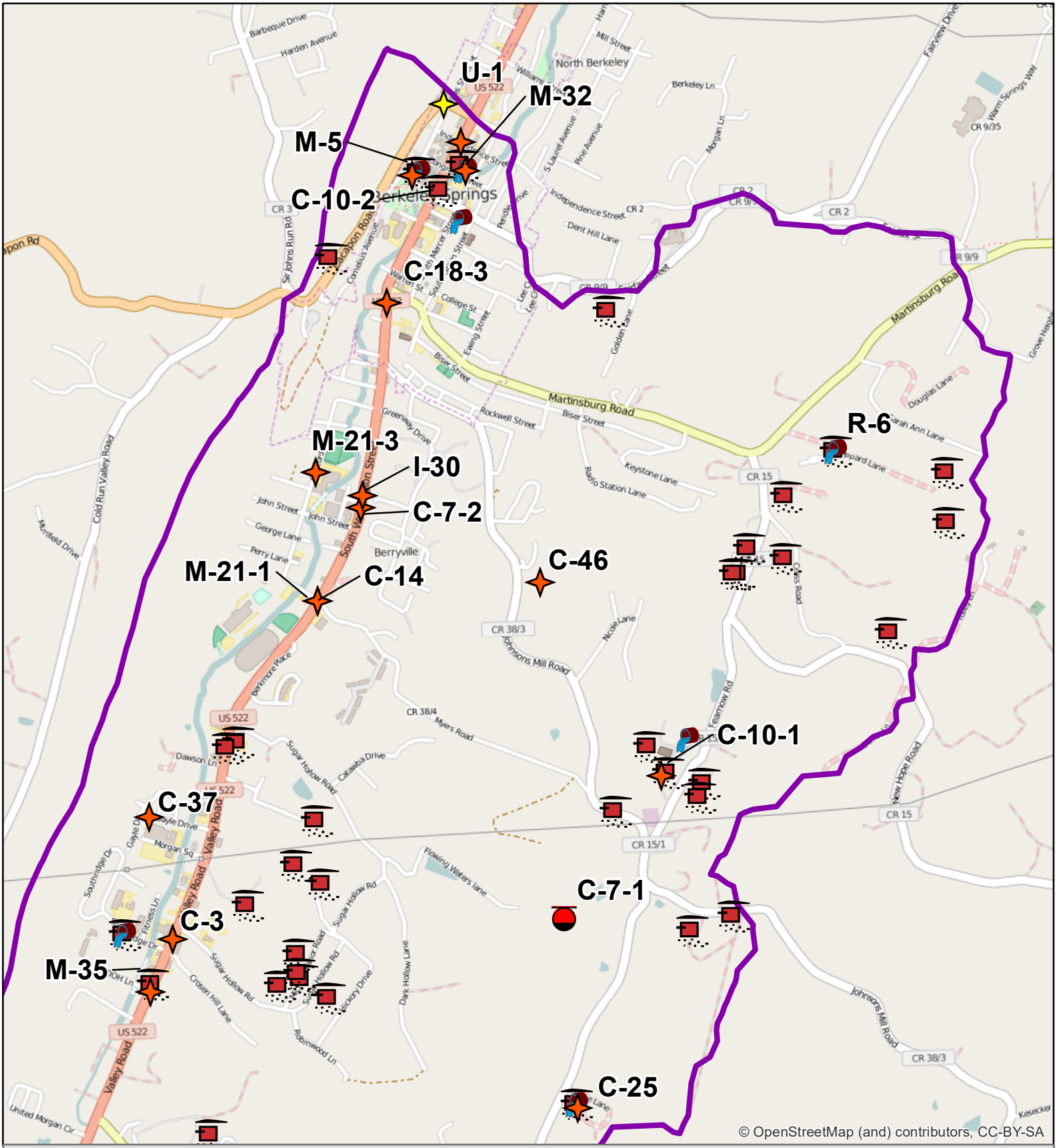
miles 3
km 5

Google Earth

feet 700
meters 200

List of Regulated PSSCs

Map Code	Facility Name	Site Description	Permit ID	Database	BPH Risk
C-10-1	Fearnow Road property	First United Methodist Church	WVR104738	NPDES, Superfund/RCRA	2.6 – 3.5
C-10-2	Phase III Water System Replacements	Utility Construction	WVR107151	NPDES, Superfund/RCRA	2.6 – 3.5
C-14	Morgan County School Bus Garage	School Bus Garage		Superfund/RCRA	2.9 – 3.7
C-18-1	Berkeley Springs Shell Station	Service Station		Superfund/RCRA	2.7 – 2.9
C-18-2	Southern Belle Truck Stop	Truck Stop		Superfund/RCRA	2.7 –2.9
C-18-3	Sheetz Store #126	Service Station		Superfund/RCRA	2.7 – 2.9
C-25	Timmons Salvage	Salvage yard	WVG611525	NPDES, Superfund/RCRA	3.4 –3.6
C-3	Wheat's Repair Service	Auto repair		Superfund/RCRA	2.7
C-37	Rite Aid #2289			Superfund/RCRA	0.7 – 1.1
C-46	Michael Lumber Co.	Sawmill		Superfund/RCRA	2.2 – 3.1
C-7-1	Barker Auto Sales	Underground Storage Tank		LUST	1.2 – 1.3
C-7-2	Lawyer Motor Co.	Car Dealership & Service Station		Superfund/RCRA	1.2 – 1.3
I-30	Verizon WV Inc., Berkeley Springs Co.	RCRA facility		Superfund/RCRA	3.0 – 3.1
M-21-1	Widmyer Elementary School	RCRA facility		Superfund/RCRA	1.4 – 1.5
M-21-2	Seventh Day Adventist School	RCRA facility		Superfund/RCRA	1.4 – 1.5
M-21-3	Berkeley Springs High School	RCRA facility		Superfund/RCRA	1.4 – 1.5
M-27	Morgan County Solid Waste Authority	Waste Disposal	WVRNE0077	NPDES, Superfund/RCRA	1.8 – 2.2
M-32	Morgan County Courthouse	Air Conditioning Discharge	WV0116394	NPDES, Superfund/RCRA	
M-35	Morgan County Headquarters	DOH Garage, UST	WVG980147	NPDES	3.0 – 3.6
M-5	Berkeley Springs Drinking Water Plant	Water Treatment Plant	WVG640088	NPDES, Superfund/RCRA	1.2 – 1.5
R-6	Ford's Mobile Home Park	Septic (Drain Field Disposal)	1297-09-065	NPDES	2.5 – 6.1
U-1	Vernon Close Property	Volunteer Remediation Project, petroleum contamination	VRP 07650	Volunteer Remediation	



Berkeley Springs Water Works

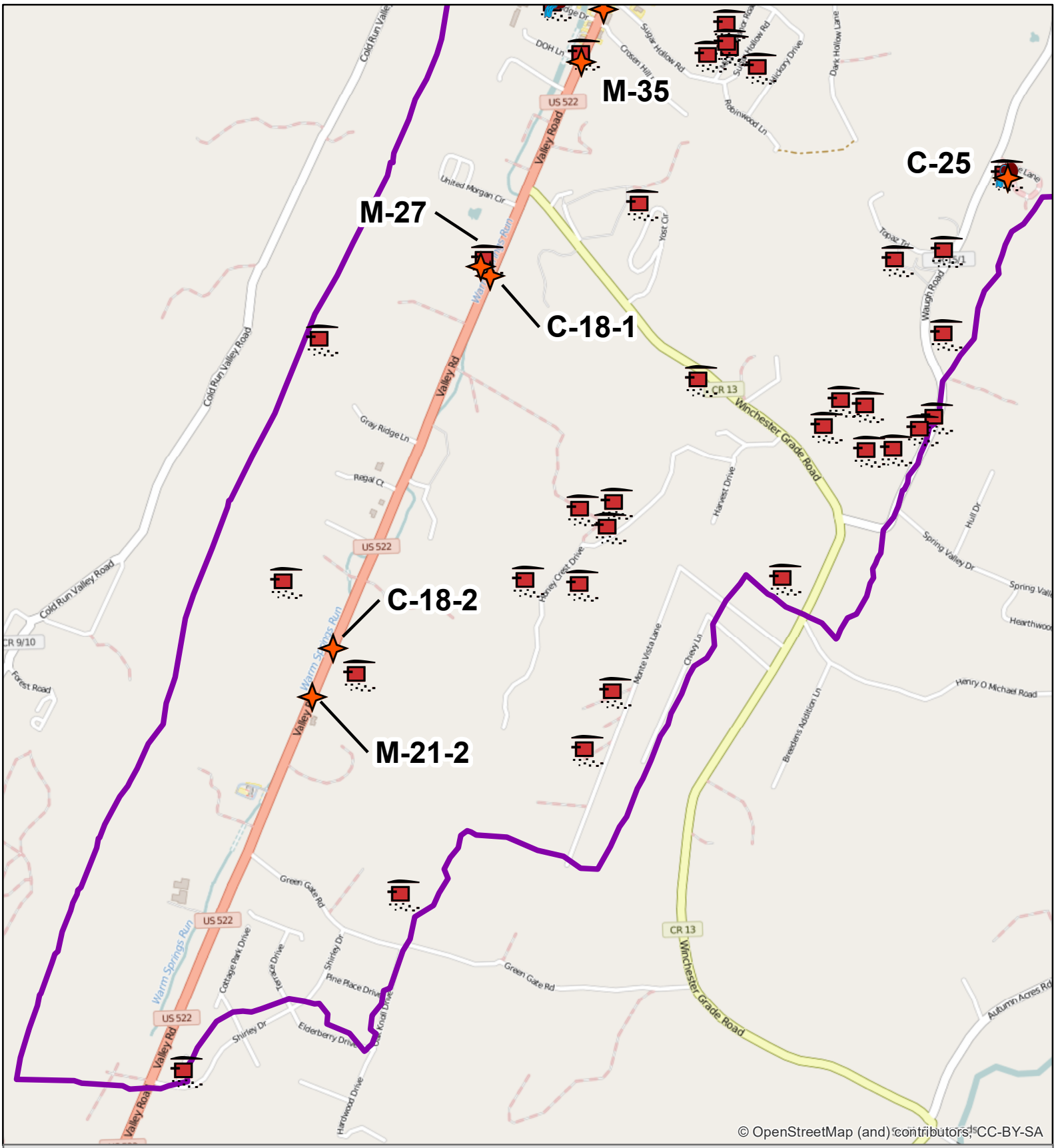
Regulated Potential Sources of Contamination
5/30/2016

- BerkeleySprings Watershed
- NPDES
- NPDES Outlets
- Superfund/RCRA Facilities
- Volunteer Remediation Sites
- LUST Sites

Note: NPDES septic seal pemits are not labeled individually on the map. Some facilities exist in more than database and therefore, are shown with multiple symbols on the map.

N

0 0.125 0.25 0.5 Miles



Berkeley Springs Water Works

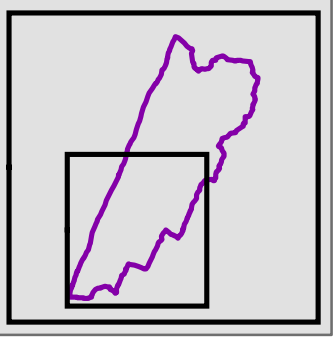
Regulated Potential Sources of Contamination
5/30/2016

- BerkeleySprings Watershed
- NPDES
- NPDES Outlets
- Superfund RCRA Facilities

Note: NPDES septic seal pemits are not labeled individually on the map. Some facilities exist in more than database and therefore, are shown with multiple symbols on the map.

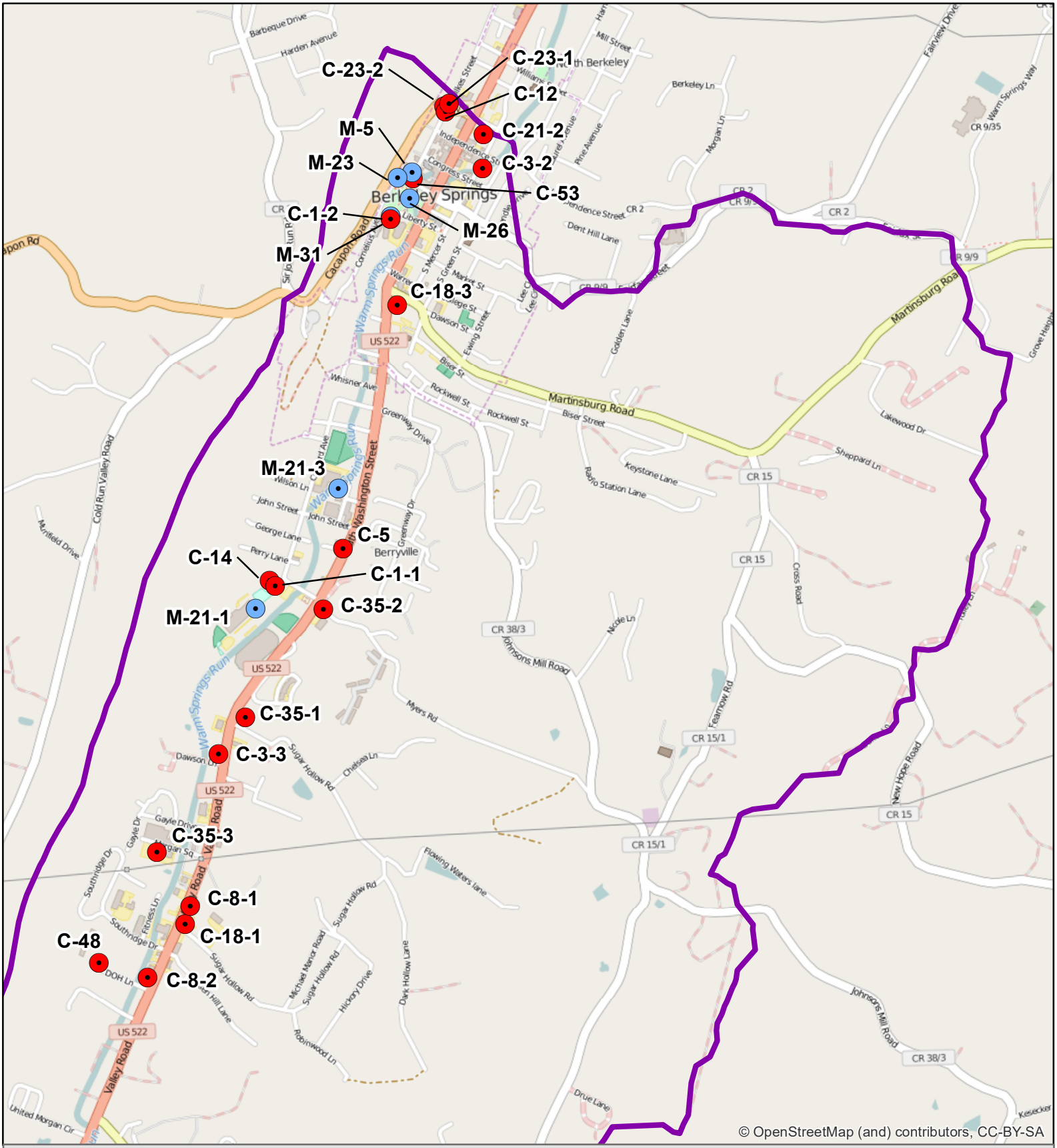
N

0 0.125 0.25 0.5 Miles



Source Water Assessment Program PSSCs

Map Code	Facility Name	Site Description	BPH Risk
A-18	Cattle farm	Pasture	2.6 – 7.5
C-1-1	Berkeley Springs school bus garage and parking lot	Aboveground storage tanks	2.9 – 3.7
C-1-2	State park bath house	ASTs, not listed in the current EPA Database Storage	2.7 – 2.9
C-12	Historic Dry Cleaners	Dry cleaners	2.7 – 2.9
C-14	Berkeley Springs school bus garage	School Bus Garage	1.2 – 1.7
C-18-1	Rocs Shell Gas station and store	Service Station	3.0 – 4.6
C-18-3	Sheetz gas station	Service Station	3.0 – 4.6
C-21-2	Hunter Pro Hardware	Hardware Store	3.0 – 4.6
C-23-1	Historic gas station	Historic Gas Stations	2.7 – 2.7
C-23-2	Historic gas station	Historic Gas Stations	2.7 – 2.7
C-23-3	Mountain State Restaurant	Historic Gas Stations	1.3 – 1.5
C-3-2	Mike's Service Center	Auto Repair Shops	1.3 – 1.5
C-3-3	Skeeter's	Auto Repair Shops	1.3 – 1.5
C-35-1	RT. 522 Shopping Center Sediment Pond	Parking Lots/Malls	3.0 – 7.5
C-35-2	Sediment Basin next to Dollar General Parking	Parking Lots/Malls	2.1 – 2.8
C-35-3	Morgan Square shopping center	Parking Lots/Malls	–
C-48	Morgan County Headquarters	DOH Garage, Underground Storage	2.7 – 2.9
C-5	Gates Automotive	Body shops	1.4 – 1.7
C-53	Antique Mall	Former car dealership	1.4 – 1.7
C-18-2	Southern Belle Truck Stop	Truck Stop with Septic Tank	1.4 – 1.5
C-8-1	Splish Splash Auto Bath	Car Wash	1.4 – 1.5
C-8-2	Car Wash	Car Wash	6.0 – 6.0
M-21-1	Widmyer Elementary School	School	0.6 – 0.6
M-21-3	Berkeley Springs High School Complex	School	–
M-23	Busted Sewer Line	Sewer Line	1.2 – 1.5
M-26	State Park Swimming Pool	Swimming Pool	2.3 – 2.4
M-32	State Park Spring Supplying Bathhouse	Water Supply Well	2.3 – 2.4
M-5	Berkeley Springs Drinking Water Treatment Plant	Drinking Water Treatment Plant	2.3 – 2.4
R-4	House	Residential (single family homes)	2.3 – 2.4
R-4	House	Residential (single family homes)	
R-4	House	Residential (single family homes)	
R-4	House	Residential (single family homes)	



Berkeley Springs Water Works

Source Water Assessment Program (SWAP) Potential Sources of Contamination 5/30/2016

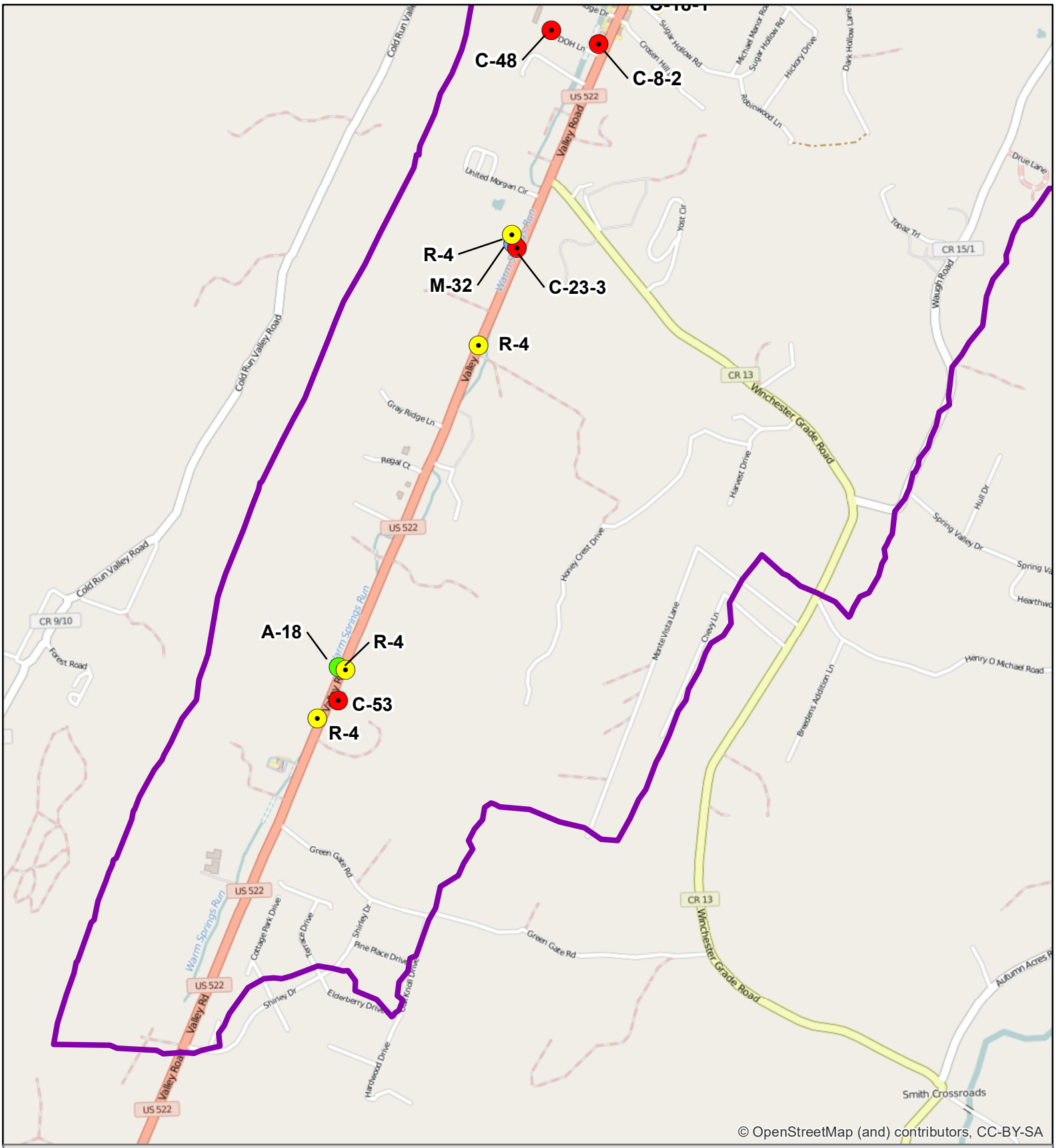
BerkeleySprings Watershed

SWAP potential contaminant sources

- Agriculture
- Commercial
- Industrial
- Municipal
- Residential

N

0 0.125 0.25 0.5 Miles



Berkeley Springs Water Works

Source Water Assessment Program (SWAP) Potential Sources of Contamination 5/30/2016

BerkeleySprings Watershed

SWAP potential contaminant sources

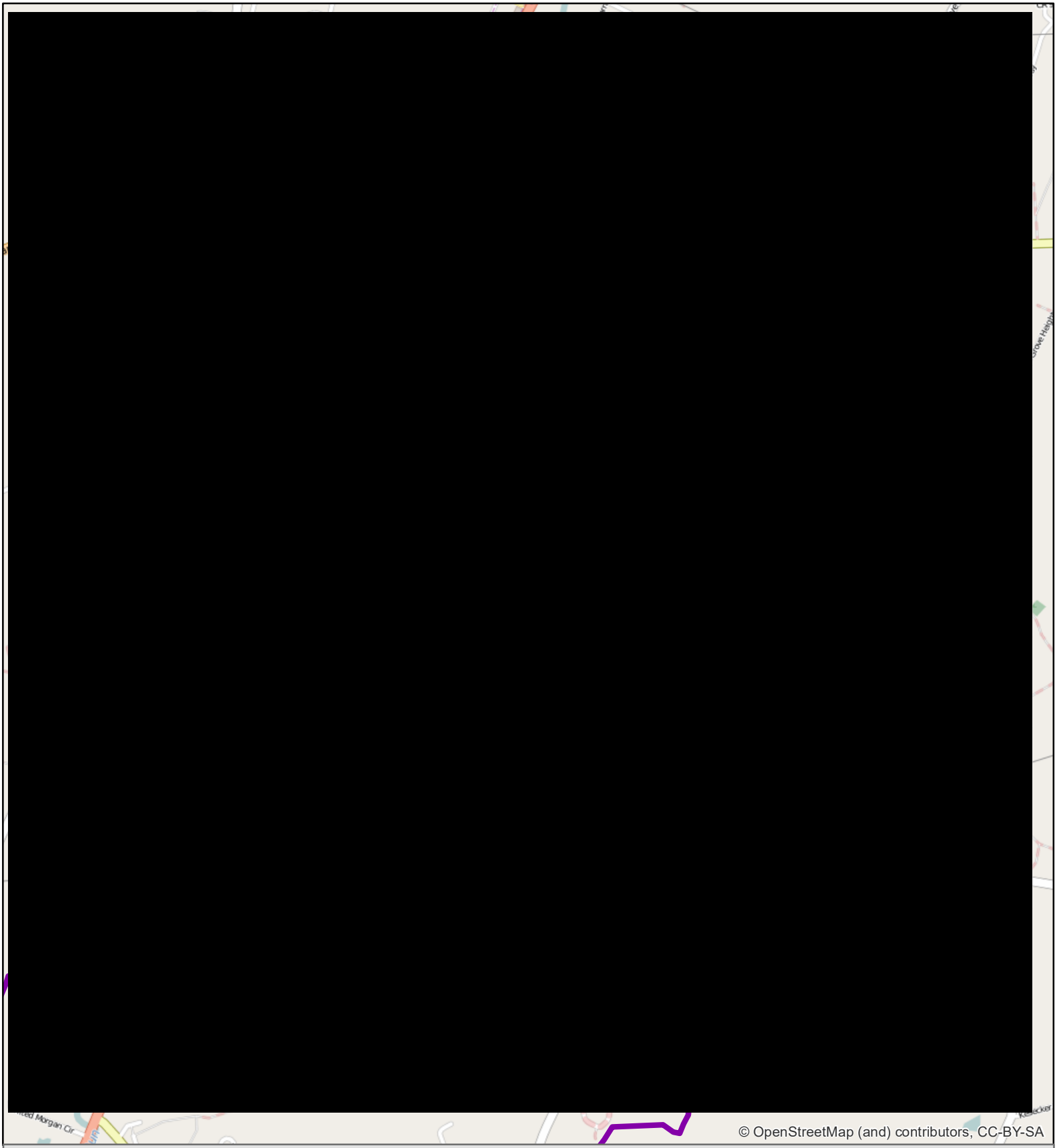
- Agriculture
- Commercial
- Industrial
- Municipal
- Residential

N

0 0.125 0.25 0.5 Miles

List of Above Ground Storage Tanks

Map Code	Tank Owner	Facility Name	Tank Capacity (gal.)	Contents	Tank ID
AST-1	Town of Bath	Berkeley Springs Water Works	[redacted]	[redacted]	007732-18-5
AST-2	Town of Bath	Berkeley Springs Water Works			007732-18-5
AST-3	Town of Bath	Berkeley Springs Water Works			007732-18-5
AST-4	Town of Bath	Berkeley Springs Water Works			007732-18-5
AST-5	Morgan County BoE	Schools Bus Garage			068476-30-2
AST-6	Morgan County BoE	Schools Bus Garage			86290-81-5
AST-7	WVDOH-Equipment Division	Morgan County Headquarters			007647-14-5
AST-8	WVDOH-Equipment Division	Morgan County Headquarters			68476-34-6
AST-9	WVDOH-Equipment Division	Morgan County Headquarters			86290-81-5
AST-10	WVDOH-Equipment Division	Morgan County Headquarters			010043-52-4



Berkeley Springs Water Works

Aboveground storage tanks (AST) registered with the WV Department of Environmental Protection
5/30/2016

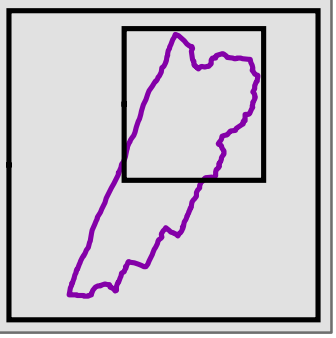
BerkeleySprings Watershed

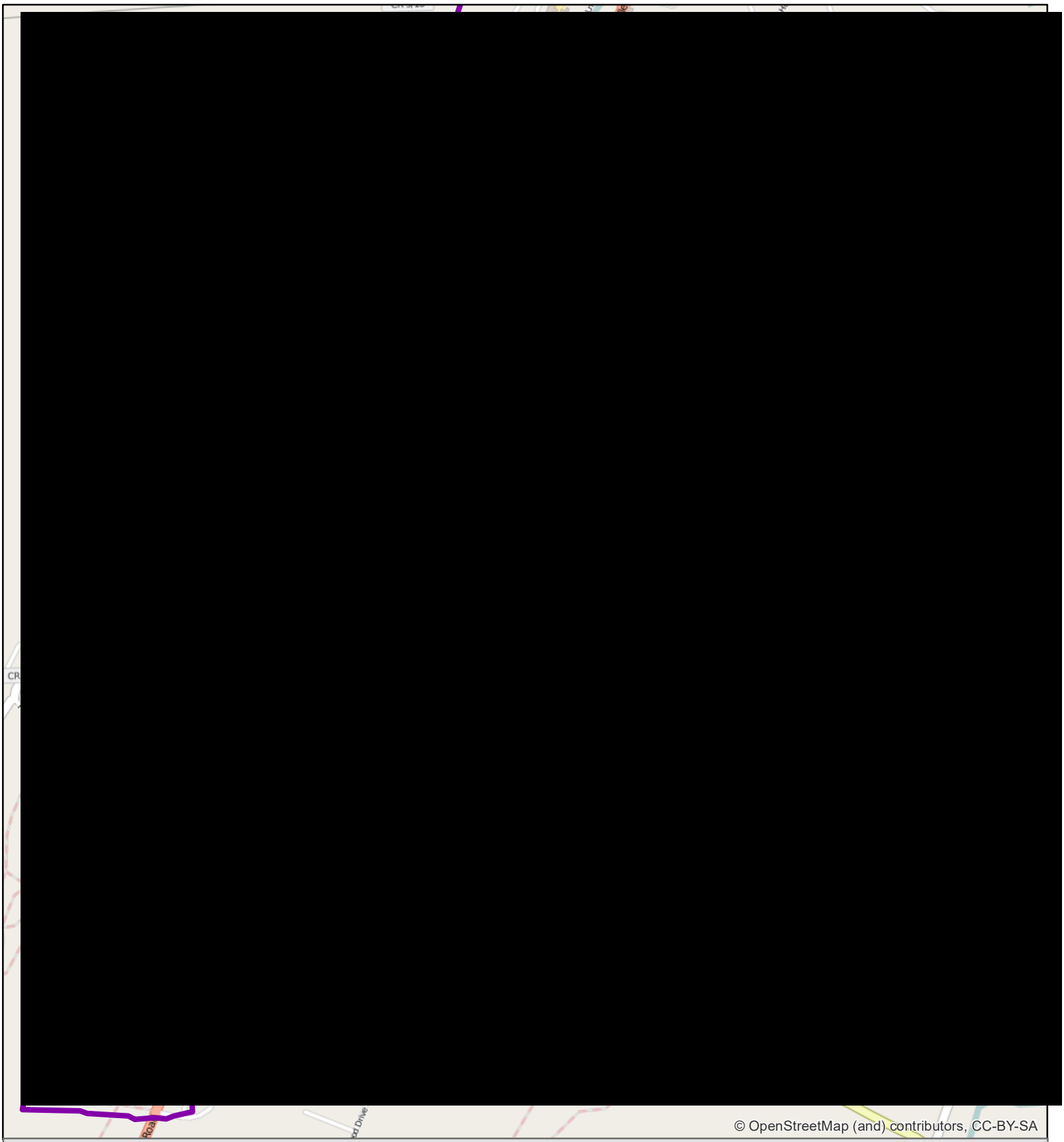
AST With Chemicals

AST Unique

N

0 0.125 0.25 0.5 Miles





Berkeley Springs Water Works

Aboveground storage tanks (AST) registered with the WV Department of Environmental Protection
5/30/2016

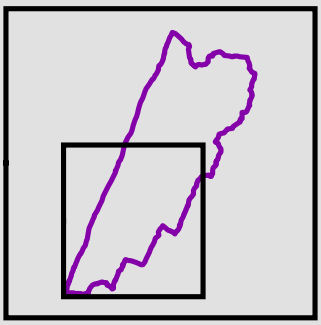
BerkeleySprings Watershed

AST With Chemicals

AST Unique

N

0 0.125 0.25 0.5 Miles



WV3303301 BERKELEY SPRINGS CITY

Above Ground Storage Tank
Mining Outlets
Leaking Underground Storage Tank
Volunteer Remediation

[redacted]

WV0005487

04159

round Storage Tank
utlet
Underground Storage Tank
r Remediation

0.5 1 Miles

N

WVDHHR GISTA
CR Nov. 2016

AST WITH CHEMICALS

OBJECTID *	RESPONSIBLE	FACILITY_N	TANK_LABEL	TANK YEAR	CAPACITY	ZCC	WPA	COUNTY_COD	REGULATION	PGM_ID	REG_REQUIR	NONCAS_CHE	COMMENTS	SECONDARY_	SPILL_PLAN	INSP_CERT	PUBGW_WINT
1	WVDOH-EQ DIV	Morgan CO HQ	033-000000 12	2008	[redacted]	In	In	3	NPDES	WV0116246	GPP	[redacted]		Dike	Yes		PANORAMA AT THE PEAK LTD
2	BATH, TOWN OF	BSWW	033-000000 05	2000	[redacted]	In	In	3				[redacted]		Unknown	Yes	Yes	BERKELEY SPRINGS CITY OF
3	WVDOH-EQ DIV	Morgan CO HG	033-000000 11	2013	[redacted]	In	In	3	NPDES	WV0116246	SPCC GPP	[redacted]		Double Walled Tank	Yes		PANORAMA AT THE PEAK LTD
4	MORGAN CO BOE	Morgan CO Schools Bus Garage	033-000000 09	1990	[redacted]	n	In	3	EPCRA/ Tier 2	WV Emergency Rescue Commission	File yearly with the WV Emergency Response Commission form number EPA Form No. 8700-30.	[redacted]		Dike	Yes	Yes	BERKELEY SPRINGS CITY OF
5	WVDOH-EQ DIV	Morgan CO HQ	033-000000 11	2013	[redacted]	In	In	3	NPDES	WV0116246	SPCC GPP	[redacted]		Double Walled Tank	Yes		PANORAMA AT THE PEAK LTD
6	BATH, TOWN OF	BSWW	033-000000 06	1998	[redacted]	n	In	3				[redacted]		Unknown	Yes	Yes	BERKELEY SPRINGS CITY OF
7	WVDOH-EQ DIV	Morgan CO HQ	033-000000 10	2009	[redacted]	In	In	3	NPDES	WV0116246	GPP	[redacted]		Double Walled Tank	Yes		PANORAMA AT THE PEAK LTD

8	MORGAN CO BOE	Morgan County Schools Bus Garage	033-000000 08	1980	[redacted]	In	In	3	EPCRA/ Tier 2	West Virginia Emergency Respon	Identify tanks yearly and what we store in these tanks. This is reported to the West Virginia Emergency Response Commission. EPA Form No. 8700-30.	[redacted]		Dike	Yes	Yes	BERKELEY SPRINGS CITY OF

OBJECTID *	STATES	NFHAP_UNIT	PU_NUMB	SHAPE_Leng	Shape.STArea()	Shape.STLength()	Shape_Length	Shape_Area
1	MD,WV	Sir Johns Run-Potomac River	0	46992.27814	54000989.94	46992.27814	18967.5142	6504467.406
2	WV	Connor Hollow-Cacapon River	0	51021.27607	84948074.88	51021.27607	1051.263055	34514.19029
3	WV	Warm Spring Run	0	39313.56654	38874740.97	39313.56654	15244.58173	2395819.29

OBJECTID *	STATES	NFHAP_UNIT	SHAPE_Leng	Shape.STArea()	Shape.STLength()	Shape_Length	Shape_Area
1	MD,WV	Sir Johns Run-Potomac River	46992.27814	54000989.94	46992.27814	18967.5142	6504467.41
2	WV	Connor Hollow-Cacapon River	51021.27607	84948074.88	51021.27607	1051.263055	34514.1903
3	WV	Warm Spring Run	39313.56654	38874740.97	39313.56654	15244.58173	2395819.29

OBJECTID	office	permit	resp_party	type	insp_type	stat_flag	stat_code	latitude	longitude	insp_unit
1	HPU	WV0005487	U S SILICA COMPANY	HPUQ	OUTLT	C	RC	39.643981	-78.218618	3