Source Water Protection Plan

BERKELEY COUNTY PSWD

POTOMAC RIVER PLANT

PWSID WV3300218

BERKELEY COUNTY

May 24, 2016

Prepared by:

The Berkeley County Public Service Water District and Advanced Land and Water, Inc.

Prepared By:

Advanced Land and Water, Inc

Title of Preparer:

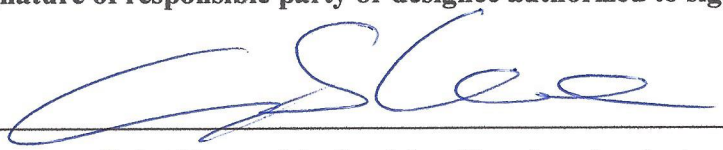
Operations Manager / Senior Scientist

Name of Contractor(s)/Consultant(s) (if used):

Raudenbush Engineering, Inc.

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

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



Print Name of Authorizing Signatory (see instructions):

Chairman

Title of Authorizing Signatory:

Date of Submission (mm/dd/yyyy):

05/24/2016

Table of Contents

List of Tables

Appendices

Acronyms

GWUDI – Groundwater Under Direct Influence of Surface Water

PSSC – Potential Significant Source of Contamination

PWS – Public Water System

SWAP Program – Source Water Assessment and Protection Program

SWAR – Source Water Assessment Report

SWPA – Source Water Protection Area

SWPP – Source Water Protection Plan

WHPA – Wellhead Protection Area

WSDA – Watershed Delineation Area

WTP – Water Treatment Plant

WVBPH – West Virginia Bureau for Public Health

WVDEP – West Virginia Department of Environmental Protection

ZCC – Zone of Critical Concern

ZPC – Zone of Peripheral Concern

Purpose

The goal of the West Virginia Bureau for 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 at a local level. Many aspects of source water protection are best addressed by engaging local stakeholders and local government officials.

The intent of this document is to describe what the Berkeley County Public Service Water District (BCPSWD) has done, is currently doing, and plans to do to protect its sources of drinking water serving the Potomac River Water Treatment Plant (WTP). BCPSWD owns and operates the Potomac River WTP. Although this water system treats water to meet federal and state drinking water standards, conventional treatment does not fully eradicate all potential contaminants. Treatment that goes beyond conventional methods is often very expensive to implement, maintain and operate. By completing this plan, BCPSWD acknowledges that implementing measures to prevent contamination of system water sources can be a relatively economical way to help protect drinking water in ways that it can continue to be provided to customers, reliably and safely.

What are the benefits of preparing a Source Water Protection Plan (SWPP)?

- Fulfills the West Virginia state requirement for the public water utilities to complete or update their source water protection plan.
- Provides a means for identification and prioritization of potential threats to sources of drinking water; and the establishment of strategies to minimize the threats.
- Establishes plans for emergency response to incidents that may come to compromise the water supply source(s) by contamination or depletion, and includes the manner in which the public, state, and local agencies will be notified of such an occurrence.
- Evaluates and establishes plans for future expansion and development of water resources, including the need to identify secondary sources of water.
- Ensures optimal treatment conditions exist to provide the safest and highest quality drinking water to customers at the lowest possible cost.
- Provides opportunities for funding to improve water system infrastructure, purchase land in the protection area, and for other improvements to either the sources, or their associated Source Water Protection Areas (SWPAs).

Background: WV Source Water Assessment and Protection Program

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

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 (both surface water and groundwater sources). As part of this initiative, states must explain how protection areas for each public water system are delineated, how potential contaminant sources are inventoried, and how susceptibility ratings are established.

In 1999, the WVBPH published the West Virginia SWAP 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 the BCPSWD Potomac River WTP 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 outline specific requirements for public water utilities that draw water from surface water sources or Ground Water Under the Direct Influence of Surface Water (GWUDI) sources.

Under the amended and newly added codes, each existing public water utility operating surface water and/or GWUDI sources must have completed or updated a Source Water Protection Plan (SWPP) by July 1, 2016, and must continue to update their plan every three years. Existing SWPPs have been developed for many public water utilities in the past. If available, these SWPPs were reviewed and considered in the development of this updated plan. Any new water system established after July 1, 2016 must submit a SWPP before operations commence. A new plan is also required when there is a significant change in the Potential Sources of Significant Contamination (PSSC) within the Source Water Protection Area (SWPA), which includes the Zone of Critical Concern (ZCC) for surface sources. The concepts of PSSCs and SWPAs are expanded upon in later sections of this SWPP.

The code also requires that public water utilities include details regarding PSSCs, protection measures, system capacities, contingency plans, and communication plans in their SWPP. Before a SWPP can be approved, the local health department and public will be invited to contribute information and provide comments for consideration. In some instances, public water utilities may be asked to conduct independent studies of the SWPA and specific threats within their SWPA to gain further insight about the origin of their water for the purpose of developing strategies to better protect these vital resources.

System Information

The BCPSWD Potomac River WTP 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, 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 the BCPSWD Potomac River WTP

<table>
<tr><td colspan="2">Administrative office location:</td><td colspan="2">251 Caperton Boulevard
Martinsburg, WV 25403</td></tr>
<tr><td colspan="2">Is the system a public utility, according to the Public Service Commission rule?</td><td colspan="2">Yes</td></tr>
<tr><td colspan="2">Date of Most Recent Source Water Assessment Report (SWAR):</td><td colspan="2">August 2004 (Potomac River Intake) & 2014 (Groundwater Wells A,B,D)</td></tr>
<tr><td colspan="2">Date of Most Recent Source Water Protection Plan (SWPP):</td><td colspan="2">Unknown date for Groundwater Wells A, B and D. A SWPP does not yet exist for the Potomac River Intake.</td></tr>
<tr><td colspan="2">Population served directly:</td><td colspan="2">22,396</td></tr>
<tr><td rowspan="3">Bulk Water Purchaser Systems:</td><td>System Name</td><td>PWSID Number</td><td>Population</td></tr>
<tr><td>None</td><td></td><td></td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td colspan="2">Total Population Served by the Utility:</td><td colspan="2">22,396</td></tr>
<tr><td colspan="2">Does the utility have multiple source water protection areas (SWPAs)?</td><td colspan="2">Yes</td></tr>
<tr><td colspan="2">How many SWPAs does the utility have?</td><td colspan="2">2; a WHPA for the three system groundwater wells and a ZCC for the Potomac River Intake.</td></tr>
</table>

Water Treatment and Storage

As required, the BCPSWD Potomac River WTP 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 water source from which the BCPSWD Potomac River WTP draws water can be found in **Table 3**. The Potomac River WTP also receives water from three groundwater wells, the information for which can be found in **Table 4**.

Table 2. The BCPSWD Potomac River WTP Water Treatment Information

Water Treatment Processes (List All Processes in Order)	Coagulation Flocculation Sedimentation Membrane Filtration Disinfection Fluoridation
Current Treatment Capacity (gal/day)	6,000,000
Current Average Production (gal/day)	2,400,000
Maximum Quantity Treated and Produced (gal)	4,000,000
Minimum Quantity Treated and Produced (gal)	800,000
Average Hours of Operation	13.7
Maximum Hours of Operation in One Day	16
Minimum Hours of Operation in One Day	8
Number of Storage Tanks Maintained	7 Gravity Storage Tanks, not including Plant Clearwell #2
Total Gallons of Treated Water Storage (gal)	5,250,000, not including Plant Clearwell #2 (1.5 MG)
Total Gallons of Raw Water Storage (gal)	None

Table 3. The BCPSWD Potomac River WTP Surface Water Sources

Source Name	SDWIS #	Local Name	Describe Intake	Name of Water Source	Date Constructed/ Modified	Frequency of Use (Primary/ Backup/ Emergency)	Activity Status
Potomac River Intake	TP1	Potomac River	200 feet off-shore, w/ two 30'' lines to wet well. Intake has two 3 foot diameter x 10.7 foot L Hendrick screens (0.125''slot)	Potomac River	2008	Primary	Active

Table 4. The BCPSWD Potomac River WTP Groundwater Sources

Does the utility blend with groundwater?	Yes; while the utility primarily uses surface water, groundwater is withdrawn from three system wells and treated at the same treatment plant, to the same standards as the surface water source.

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)
Well A	TP1	Well A	2009	No	412	404	Yes	Primary	Active
Well B	TP1	Well B	2009	No	535	195	Yes	Primary	Active
Well D	TP1	Well D	2009	No	400	107	Yes	Primary	Active

Delineations

For surface water systems, defining a Watershed Delineation Area (WSDA) entails identifying and mapping the drainage basin that potentially supplies water to a point of interest. For surface water sources, this corresponds to a surface water intake. Oftentimes, watershed delineations are based on topographic maps, and are created by tracing and mapping the topographic high points that act as surface water and, presumably, groundwater divides relative to other drainage basins. Surface water sources are susceptible to contamination because they are exposed to the atmosphere and other sources of pollution located at the land surface. Unlike most groundwater sources, they also lack a natural, subsurface protective barrier from contamination, such as soil media that might filter or retain some pollutants. Accidental spills, releases, sudden precipitation events that result in overland runoff, or storm sewer discharges can allow pollutants at the land surface to readily enter surface water bodies and potentially contaminate the source of drinking water at the intake. For regulatory purposes, the SWPA for surface water sources is distinguished as the Zone of Critical Concern (ZCC).

The WSDA includes the entire watershed area upgradient of the intake, to either the political boundary that is the West Virginia state line, or a topographic divide. 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 topography. The length of the ZCC is based on a five-hour time-of-travel of water in the streams (and associated tributaries) to the surface water intake, plus an additional one-quarter mile below the water intake. The width of the ZCC is 1,000 feet measured horizontally from each bank of the principal stream and 500 feet measured horizontally from each bank of the tributaries draining into the principal stream.

The ZPC for a public surface water 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 topography. The length of the ZPC is based on an additional five-hour time-of-travel of water in the streams beyond the perimeter of the ZCC, which creates a

protection zone of ten hours above the water intake. The width of the ZPC is 1,000 feet measured horizontally from each bank of the principal stream and 500 feet measured horizontally from each bank of the tributaries draining into the principal stream.

For groundwater supplies, BPH makes use of two types of SWPA delineations: 1) wellhead delineations and 2) conjunctive delineations. Conjunctive delineations are developed for supplies identified as GWUDI sources. A Wellhead Protection Area (WHPA) 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 WHPA for the hydrogeologic recharge area (five-year time of travel) and an additionally connected area surrounding a surface water body that contributes water to a groundwater source. Conjunctive delineations, therefore, have been created for GWUDI sources.

Information and maps of the WHPA (which will be referred to as the SWPA in this document), for this public water supply were provided to the utility and are attached to this report. See figures provided in **Appendix A** for maps of the SWPA and ZCC**.** Other information pertaining to these areas is shown in **Table 5**.

Table 5. Watershed Delineation Information

Size of WSDA (Acres)	Approximately 3,500,000
River Watershed Name (8-digit HUC)	Conococheague-Opequon (HUC 02070004)
Size of Zone of Critical Concern (Acres)	9,389
Size of Zone of Peripheral Concern (Acres) (Include ZCC area)	27,095
Method of Delineation for Groundwater Sources	A delineation was defined by WVDHHR for the (Groundwater Source) SWPP. The delineation used hydrogeologic mapping based on local geologic structure, probable direction of groundwater flow, limited dye tracing studies, etc.
Area of Wellhead Protection Area (Acres)	4,940

Protection Team

Communities with successful SWPPs form a Protection Team to help develop and implement management and protection strategies. A Protection Team provides a broader level of oversight of the source water protection effort and includes individuals familiar with protective strategies. Active team members for the Potomac River WTP include: water supply staff (including the executive director and chief operator), the Office of Homeland Security and Emergency Management (OHSEM) representatives and other local government officials, including the director of the planning department. A complete list of Protection Team members can be found in **Table 6**. Some government and business agencies were unable to participate in this iteration of the source water protection effort. Their participation should be sought in future iterations of the SWPP, which is updated at least every three years or as significant changes occur within the SWPA (i.e., changes to PSSCs or sources of water).

With BCPSWD oversight and approval, Advanced Land and Water, Inc. (ALWI) assembled the Protection Team. Members were provided the opportunity to contribute to the development of the SWPP. The Protection Team reviewed the system's existing Source Water Assessment Reports (SWARs), included as **Appendix F-3** of this report, as well as newly-collected PSSC data to make informed decisions on potential threats, protective measures, and implementation actions. The Protection Team will continue to be responsible for updating the SWPP in the future and documenting their efforts to engage local stakeholders.

Table 6. Protection Team Member and Contact Information

Name	Representing	Title	Phone Number	Email
Chris Thiel	Berkeley County PSWD	Executive Director		
Steve DeRidder	Berkeley County PSWD	Chief Operator		
Mike Thompson	Berkeley County Council	Planning Department Director		
Eddie Gochenour	Berkeley County Council	OHSEM Director		
Alana Hartman	WV DEP Division of Water and Waste Management (Nonpoint Section)	Environmental Resources Analyst		
Jennifer O'Brien	Eastern Panhandle Regional Planning & Development Council	Assistant Director		
Bill Clark	Eastern Panhandle Regional Planning & Development Council	Director		
*Regina (Suzy) Lucas	West Virginia Conservation Agency	Conservation Specialist		
*Joseph A. Castaldo	Department of Transportation	Berkeley County Supervisor		
Date of first protection Team Meeting		November 19, 2015		
Efforts to inform and engage local stakeholders and explain absence of recommended stakeholders:		A list of local stakeholders invited to join the Protection Team is provided in Appendix F-4. Reasons for their absence are explained therein.		

*These representatives could not attend the first Protection Team meeting, but have expressed interest in assisting with the source water protection effort.

Potential Significant Sources of Contamination

This SWPP provides a comprehensive list of the Potential Sources of Significant Contamination (PSSCs) contained within the SWPAs, based upon information obtained from the Department of Environmental Protection (WVDEP), the WVBPH and the Division of Homeland Security and Emergency Management. 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. This does not necessarily indicate that any release has occurred, presently or historically.

The database information that utilities received of PSSCs located in their SWPAs 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 SWARs and SWPPs. Typical means of identifying and/or confirming the existence of previously identified PSSCs involves performing a desktop Geographic Information System (GIS) analysis, in which a group performs a digital, desktop "reconnaissance" of potential hazards that can be identified and/or verified using a combination of recent orthophotography and state-provided PSSC database information. Regulated PSSCs are derived by state agencies from federal and state regulated databases, and may include data from WVDEP, US Environmental Protection Agency, Division of Homeland Security and Emergency Management, and out-of-state data sources.

Confidentiality of PSSCs

A list of the PSSCs contained within the SWPAs is included in this SWPP. However, the exact location, characteristics and approximate quantities of contaminants only were made known to a select designee of the public water utility. This representative has maintained, and will continue to maintain this information in a confidential manner. In the event of a chemical spill, release or related emergency, information pertaining to such an event will immediately be disseminated to appropriate emergency responders. The designee is identified in the communication plan section of this SWPP.

PSSC data from some agencies (e.g., Division of Homeland Security and Emergency Management, WVDEP, etc.) may be restricted due to the confidential nature of the data. However, geospatial data has been provided to the public water utility's selected designee. On behalf of the system, ALWI

contacted the Berkeley County OHSEM office in regards to identifying facilities within the SWPA which are subject to TIER II reporting. The results of this inquiry remained outstanding as of this reporting; BCPSWD will follow up with communications to the Berkeley County OHSEM and the local emergency planning commission (LEPC) in this regard. To obtain specific details regarding contaminants (such as information included on Tier II reports), the water utility will continue to contact local emergency agencies, directly. Maps and lists of the Non-Confidential SWAP and Regulated PSSCs are provided in **Appendix A Figures**.

Local and Regional PSSCs

For the purposes of this SWPP, local PSSCs are those that are identified by the Potomac River WTP Protection Team, consultants to BCPSWD, or local stakeholders, in addition to the PSSCs lists distributed by the WVBPH and other agencies. Local PSSCs may be identified 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 conduct periodic investigations of their protection area for local PSSCs. In completing a PSSC inventory, public water utilities strive to identify all contaminant sources and land uses in the delineated SWPAs. The second reason local PSSCs are identified is because public water utilities may consider expanding the PSSC inventory effort outside of the SWPAs, if necessary, to properly identify threats that could impact their drinking water supply source(s). As the utility considers threats in the watershed they may consider collaborating with nearby communities to identify and manage regional PSSCs.

When conducting local and regional PSSC inventories, some sources are or may be obvious, such as above ground storage tanks, landfills, livestock confinement areas, highway or railroad rights-of-way, and sewage treatment facilities. Others potential hazards may be more difficult to locate, such as abandoned cesspools, underground tanks, French drains, dry wells, or old dumps and mines.

ALWI completed a desktop GIS survey of the SWPAs to verify the existence of PSSCs previously identified in agency databases and historic documentation. ALWI also reviewed the SWPAs to locate new PSSCs. Information on new or updated PSSCs can be found in **Table 7**.

Table 7. New Locally Identified Potential Significant Sources of Contamination

PSSC Number	Map Code	Site Name	Site Description	Comments
1	C-3	CONFIDENTIAL	Automotive Repair	Automotive repair shop; exact services not known with certainty. Potential for vehicular fluid replacement, storage and/or disposal.
2	C-3	CONFIDENTIAL	Automotive Repair	Automotive repair shop; exact services not known with certainty. Potential for vehicular fluid replacement, storage and/or disposal.

Prioritization of Potential Threats and Management Strategies

The identified PSSCs have been prioritized by potential threat based on water quality concerns, proximity to system water sources, and other local concerns. In addition to identifying and prioritizing PSSCs within the SWPA, local source water concerns may also focus on critical areas. For purposes of this SWPP, a critical area is defined as an area, identified by local stakeholders, within or outside of the SWPA, that may contain one or more PSSC(s), and/or within which immediate response would be necessary to address the incident and to protect source waters.

The highest priority PSSCs or critical areas will be addressed first in the management plan. It may not be feasible to develop management strategies for all of the PSSCs within the SWPA, depending on the total number identified. Lower ranked PSSCs will be addressed in the future as time and resources allow. To assess potential threats to source waters, the BCPSWD Potomac River WTP Protection Team and ALWI have considered information regarding each PSSC.

After identifying local concerns, the BCPSWD Potomac River WTP Protection Team developed and prioritized management strategies to protect the source water from contamination, in cooperation with the WVBPH, local health departments, local emergency responders, OHSEM and other agencies and organizations. This task was completed at the BCPSWD Protection Team meeting, hosted at BCPSWD's main office on November 19, 2015. A list of local representatives involved in the decision making process is provided in **Table 6**. Source management strategies are any actions taken to protect the source water from specific PSSCs, categories of PSSCs (agricultural, commercial, etc.), and critical areas. It is advisable to focus source management strategies on high-priority PSSCs, with a particular focus on those that are within the utility's jurisdiction. However, the utility can protect against contaminant sources outside of its jurisdiction by working with the officials of the entities within which the sources and/or PSSC(s) are located. In this regard, BCPSWD is now a member of the Potomac River Basin Source Water Protection Partnership (PRBSWPP). The PRBSWPP is a voluntary association of water suppliers and government agencies focused on protecting sources of drinking water in the Potomac River basin. Through quarterly meetings, focused work groups, and topical information sessions, the Partnership is identifying a strategy for carrying forward source water protection. Also, if watershed groups are active in the area of concern, the utility may be able to partner with them.

Table 8 presents a list of priority PSSCs and critical areas that were selected and ranked by the BCPSWD Potomac River Plant Protection Team. This list reflects the concerns of BCPSWD and local government representatives and may contain PSSCs not previously identified and not within the SWPAs. It contains a description of why each critical area or PSSC is considered a threat.

Implementation Plan for Management Strategies

Source management strategies are any actions taken to protect source waters from specific PSSCs, categories of PSSCs, and critical areas. For example, prohibitions of certain land uses or facilities, design standards, best management practices, operating standards, and reporting requirements are typical source management strategies. Land purchases, conservation easements, and purchase of development rights are also considered source management strategies. As a management strategy, water utilities may also consider notification to and coordination with government agencies during a water supply impairment event. Finally, one strategy all water utilities should implement is periodic surveys of their SWPAs to maintain an active and updated inventory and awareness of potential threats.

For source management and education/outreach strategies, this utility has considered how the strategies will be implemented. The initial step in implementation is to discuss responsible parties and timelines for implementation of strategies. The Protection Team members will 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 SWPP. A system of regular updates should be included in every implementation plan.

Proposed commitments and schedules related to both protection strategies and education/outreach strategies may change. The BCPSWD Potomac River WTP Protection Team has developed an implementation plan **(Table 9)** for each PSSC that is listed in the Prioritization of Threats section **(Table 8)**. The responsible team member, timeline and any additional comments for each management strategy are presented in **Table 9**.

Table 8. Priority PSSCs or Critical Areas

PSSC or Critical Area	Priority Number	Reason for Concern
Highways (I-81 & Route 11)	1	Both the Potomac River Intake and 3 groundwater supply wells serving the System are susceptible to accidental leaks and spills of vehicle fluids or hazardous freight. I-81 and Route 11 cross the Potomac River approximately 5 and 6 miles up-gradient of the Potomac River Intake, respectively. The area is underlain by karst terrain which puts groundwater sources at a higher risk from surficial contaminants as well. Both the I-81 Corridor and Route 11 also pass through the SWPA associated with the 3 groundwater supply wells serving the System.
Railroad	2	Railroads present a potential threat to surface water and shallow karst aquifers due to the possibility of spills and train derailments. The Winchester and Western Railroad crosses the Potomac River less than 4 miles upstream of the Potomac River Intake. The Railroad also runs through the ZCC along the Potomac River for approximately 4 miles until it turns South below Falling Waters, WV. It then passes through the SWPA associated with the 3 Potomac River Plant groundwater wells.
Wastewater Treatment Plants	3	There are several Wastewater Treatment Plants within and just outside the ZCC associated with the Potomac River Intake. Wastewater discharge poses a threat due to the introduction of nutrients (which may contribute to eutrophication) and pathogens.
Surface Mines & Fly Ash Pits	4	The Potomac River Intake is potentially threatened by heavy metals, which may leach from fly ash ponds and pits into nearby surface water bodies and shallow groundwater aquifers. These operations present a potential hazard through slow seepage of contaminated groundwater into the Potomac River via recharge pathways, or by the potential for ponds to rupture or burst, rapidly releasing potentially contaminated water into the Potomac River or shallow groundwater aquifer. There are several Fly Ash Pits and Surface Mining operations within the ZCC for the Potomac River Intake.
Commercial & Industrial Activities	5	Facilities such as gas stations and auto repair shops lie within and just outside both the ZCC and SWPA for the Potomac River WTP and pose a threat due to the potential for accidental leaks, spills, improper disposal of petroleum products and other wastes, or improperly managed stormwater runoff.
Sinkholes	6	When sinkholes occur a direct conduit from the surface to groundwater is created and natural soil filtration processes are bypassed. Water quality threats are dependent on land use. This hazard is applicable to the three groundwater supply wells serving the system.
Septic Systems & Public Sewer	7	The status of some older septic systems is unknown and failures and leaks are possible. Unlike other areas, in karst terrain a septic tends to fail downwards and can therefore be virtually undetectable. Public sewer expansion is more favorable, but sinkhole monitoring and leak detection are encouraged.
Agricultural Activities	8	Due to agricultural land use in the area, nutrient levels can become elevated in surrounding surface water bodies and/or the underlying groundwater system.

Table 9. Priority PSSC Management Strategies

PSSC or Critical Area	Management Activity	Responsible Protection Team Member	Status / Schedule	Comments	Estimated Cost
Highways (I-81 & Route 11)	BCPSWD, in conjunction with Berkeley County OHSEM, will work with the Department of Transportation (DOT) to explore opportunities to create and manage pre-stocked emergency spill response kits at state operated facilities along highway and railroad corridors (including the facility at Tabler Station Road). Alternative plans will be arranged should an agreement not be reached by these entities. The county currently possesses 25 bags of absorbent on hand with the possibility of acquiring up to 50 additional bags from neighboring emergency response entities. These entities may contact Frederick County, VA for additional emergency response & coordination of emergency equipment. OHSEM will work with LEPC coordinators and other emergency personnel to ensure that BCPSWD receives timely notification in the event of highway or other roadway spills within SWPAs. BCPSWD and OHSEM will work with the DOT to explore traffic regulation options for key highway corridors, and revisit postings of source water protection signs along these roadways.	Mr. Eddie Gochenour	Mid-term (2+ years)		Staff time involving members from BCPSWD, DOT, and OHSEM. Material costs for additional spill response kits/absorbent bags.
Railroad	Berkeley County OHSEM will work with LEPC and other local emergency responders to utilize the training materials provided by CSX railways (i.e., planning guides and in-person/on-site trainings, featuring a safety rail car) and their short line partners, which include Winchester and Western. OHSEM and emergency responders will also work with CSX to inquire about the Rail Respond program, which provides easy mobile access to critical information about what's traveling on CSX rails. Information regarding these programs is provided in **Appendix F-7**. Emergency personnel have also expressed interest in performing routine Emergency Response drills for Highway and Railroad spills. BCPSWD will work with WV DEP or BPH to perform a Hazmat Re-route request to prevent specific potential contaminants from being transported through system SWPAs. These entities, along with OHSEM, will work with railroad companies to discuss safety measures, emergency plans and inspection routine(s).	Mr. Eddie Gochenour	Within 2 years	The Berkeley County OHSEM Director has already started a dialogue with CSX to request training materials and the use of the CSX training car within the next two years.	Staff time involving members from BCPSWD, DOT, OHSEM, other LEPC agencies and BPH and/or WV DEP. Staff time at the LEPC level, and for members of local emergency response stations (e.g., local fire department, police department, etc.).
Wastewater Treatment Plants	This potential threat might become less of an issue if the Potomac River Intake remained closed during stormflow events. BCPSWD will map the nearest WWTPs, assess time of travel, and establish communication pathways to receive notifications of failures.	BCPSWD	Mid-term (2+ years)		BCPSWD staff time assessing time of travel and communicating with wastewater treatment operators

PSSC or Critical Area	Management Activity	Responsible Protection Team Member	Status / Schedule	Comments	Estimated Cost
Mining Operations & Fly Ash Pits	BCPSWD will conduct a cost estimate and feasibility study of implementing an Early Warning Monitoring System to be located downgradient of these hazards, which would analyze water quality parameters indicative of a release from these facilities.	BCPSWD	Ongoing		
Industrial & Commercial Activity	BCPSWD will request Groundwater Protection Plans (GPPs) and/or stormwater management plans from WV DEP for commercial and industrial facilities located within the SWPAs. From these the utility will investigate what (if any) preventative pollution measures are already in place for these facilities. This will permit the utility to better understand protection strategies already in place at these facilities and more accurately determine the threat posed by specific facilities. BCPSWD will educate facility owners on the potential threat of sinkhole development caused by improper stormwater management. BCPSWD will distribute site-specific Best Management Practice lists, along with advanced hazardous materials containment options to facilities (which will include vaulted Above ground Storage Tanks) on an as-needed basis.	BCPSWD	Mid- term (2+ years)	Education outreach and voluntary strategies such as these are the most effective means of source water protection for this hazard at this time, as more restrictive localized regulations cannot be implemented.	BCPSWD staff time putting together information packets/materials for commercial business owners, as well as research time to pull GPPs from WV DEP records.
Sinkholes	Region 9 will be researching available funding opportunities to create a SWPA-specific sinkhole management program. Currently, sinkholes that develop in the County are the responsibility of private land owners and other similar entities (including homeowner's associations). The goal of the sinkhole management program will be to assign responsibility for mitigation and repair to relevant parties, encourage routine investigations along key travel corridors and provide advice and funding opportunities for sinkholes that develop on lands within the SWPA. Implementation of this task will take many years and cooperation from multiple public and private entities. The recommended sinkhole management plan is broadly based upon the Carroll County, MD sinkhole management plan.	Region 9	10+ years	Currently, there is not a specific government entity that oversees sinkhole mitigation and repair once lands have been developed. The Planning Department only has regulations in place to address existing sinkholes on lands that have not been developed.	Region 9 staff time researching available grant funding opportunities. BCPSWD staff time for utilizing funding information provided by Region 9. County Council, BCPSWD and DEP staff time for determining how best to allocate potentially available funds.

PSSC or Critical Area	Management Activity	Responsible Protection Team Member	Status / Schedule	Comments	Estimated Cost
Septic Systems & Public Sewer	BCPSWD will work with Public Sewer to develop a leak detection protocol and recommend areas which would benefit from incorporation into the public sewer system, as development occurs. BCPSWD will work with the Health Department, to the degree feasible, to encourage homeowners to maintain and routinely inspect their septic systems or replace old or failing septic systems with Best Available Technologies (BATs).	BCPSWD	Pending	BCPSWD will pursue this recommendation at the time of the next Sewer Expansion Plan update. Extending the gravity sanitary sewer system to every resident in the county is not feasible.	BCPSWD staff time and public sewer staff time to determine priority sewer expansion areas. Material costs associated with expansion of sewers. Staff time providing informational materials.
Agricultural Activities	BCPSWD will work with the County Extension Service, the Soil and Water Conservation District, and/or Natural Resources Conservation Service (NRCS) to encourage agricultural land owners to participate in nutrient management planning, forest conservation, land retirement and management programs (including riparian zone preservation or restoration) within the SWPA. Efforts here will focus on education and outreach measures.	BCPSWD	Long Term (5+ years)	Nutrient management plans are not required for agricultural facilities within Berkeley County but are provided at no cost by the USDA NRCS.	BCPSWD staff time associated with raising local awareness of the existence of these programs.
Previous Plan Status	There were seven management strategies recommended in the existing BCPSWD Potomac River (Groundwater Source) SWPP. Two of these strategies have been undertaken. Five of these are ongoing or continue to be a concern, and have been addressed in the management recommendations presented above. In some instances, previous recommended management strategies were revised to reflect changes in latest technologies and methods available to achieve improved source water protection strategies. The previous SWPP, with the original management activities, is provided in Appendix F-3.	BCPSWD	Starting or ending in 2014 (See Appendix F-3)	No comments were provided in the previous SWPP.	No cost estimates were provided in the previous SWPP.

Education and Outreach Strategies

The goals of education and outreach strategies are to raise awareness of the need to protect drinking water supplies and build support for implementation strategies. Education and outreach activities will also help ensure that affected citizens and other local stakeholders remain informed and are provided an opportunity to contribute to the development of the SWPP. The BCPSWD Potomac River WTP has created an Education and Outreach plan to keep the local community involved in protecting their sources of drinking water in the future. 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
Become an PRBSWPP member	At the outset of this SWAP, we recommended that BCPSWD become a member of the PRBSWPP (Potomac River Basin Source Water Protection Partnership), which is an interstate program that provides SWP education and outreach opportunities, among various other services oriented towards protecting and improving the quality of water for the Potomac River. BCPSWD has since joined this organization and participates in quarterly meetings and training/educational opportunities as they occur.	BCPSWD	Ongoing	BCPSWD is now an active member of the PRBSWPP.	Staff time attending and contributing to meetings.
General Information Dissemination	BCPSWD will include educational information on the following topics on their website for public use: source water protection, water conservation, household hazardous materials disposal, pharmaceuticals disposal, observing and reporting spills/leaks.	BCPSWD	Short Term (1-2 years)		Staff time pulling together information and making it available to public.
BMP lists	Distribute lists of industry specific BMPs to the owners of (1) Gas Stations, (2) Car Repair Shops, (3) Agricultural Lands/Facilities within the SWPA (Future Farmers, etc.). Provide SWPP education materials.	BCPSWD	Short Term (1-2 years)		Staff time creating BMP lists using published/provided materials
Public Workshops	Present Source Water Protection information at already scheduled public meetings (i.e. utility board meetings) and/or plan a Source Water specific Public Presentation.	BCPSWD	Pending	Status / Schedule will be evaluated based on participation and perceived need.	Staff time preparing for and hosting workshops

Education and Outreach Strategy	Description of Activity	Responsible Protection Team Member	Status / Schedule	Comments	Estimated Cost
Clean Up Events	Coordinate with local Clean Up efforts and publicize projects. Work closely with Watershed Associations in this regard.	BCPSWD	Long Term (5+ years)		Staff time associated with watershed group coordination
Early Education	Work with area schools to include source water protection information into the curriculum, or present information at assemblies or in classroom events (e.g., environmental science class).	BCPSWD	Long Term (5+ years)		Staff time providing information to school system or attending events/classes
Display Information	Include informational materials (i.e., brochures, maps, etc.) in county government offices and other public places (i.e., local fairs). Host non-confidential SWPP online for public review and comment. Work with DOT for protection area sign expansion/coverage.	BCPSWD, Region 9 & WV BPH	Ongoing / As local events occur		Staff time creating and displaying relevant information

Contingency Plan

The goal of contingency planning is to identify and document how the utility will prepare for and respond to drinking water shortages or emergencies that may occur due to short and long term water interruption, or incidents of contamination resulting from spills or other events. BCPSWD staff examined the Potomac River WTP's capability to protect their sources, treatment, and distribution system from contamination. They also reviewed their ability to use alternative water sources and minimize water loss, as well as their ability to operate during power outages. In addition, the utility has reported on the feasibility of establishing an early warning monitoring system and meeting future water demands.

Isolating or diverting possibly contaminated water from a surface water intake for a public water system is an important strategy in the event of an emergency. One commonly used method of diverting contaminated water 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, such as hydrocarbons. 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 also should 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. BCPSWD's Water Shortage Response Capability is detailed in **Table 11** and addresses many of the points raised above. The longer an intake can remain closed in such a case, the better.

For groundwater sources, such as Wells A, B and D for the Potomac River WTP, diverting or removing contaminated groundwater can be extremely difficult and costly. It may involve removing contaminated groundwater via pump and treat methods, or by implementing other remediation technologies. Systems have contingency plans in place to protect each source and treatment facility during contaminant events. The BCPSWD Potomac River WTP can protect their sources by turning off pumps and closing valves to prevent contamination of the treatment plant and/or distribution system. The amount of time that a source can remain offline depends, in part, on the water infrastructure, and should be determined by the utility before an emergency occurs. For groundwater sources, other factors, such as geologic strata orientation and configuration, contaminant type, contaminant viscosity, and retention also affect the period of time over which a groundwater source (or sources) may not be usable. The longer a source (or sources) can remain offline in such a case via interconnections and backup sources, the better equipped and flexible a water system will be for responding to emergency events. Incorporation of advanced treatment options into the water system, while expensive, may also offer additional options during contamination events, with the specific treatment methods dependent on the type of contaminant introduced into the groundwater supply.

Treated water storage capacity also becomes important in the event of an emergency or contaminant release. Storage capacity can directly determine how well a water system can respond to a contamination event and how long a source can remain offline. Information regarding the water shortage response capability of the BCPSWD Potomac River WTP 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/). The BCPSWD Potomac River WTP has analyzed its ability to effectively respond to emergencies and this information is provided in **Table 11**.

Table 11.The BCPSWD Potomac River WTP Water Shortage Response Capability

Can the utility isolate or divert contamination from the intake or groundwater supply?	No for groundwater and surface water sources.
Describe the utility's capability to isolate or divert potential contaminants:	CONFIDENTIAL
Can the utility switch to an alternative water source or intake that can supply full capacity at any time?	Yes
Describe in detail the utility's capability to switch to an alternative source:	CONFIDENTIAL
Can the utility close the water intake to prevent contamination from entering the water supply?	Yes
How long can the intake stay closed?	Approximately two days, relies upon storage tanks for system demand.
Describe the process to close the intake:	CONFIDENTIAL

Describe the treated water storage capacity of the water system:	**Marlowe**	**GM**	**Duke Street**	**Cumbo**
	1.0 MG	0.5 MG	0.75 MG	2.0 MG
	Ridge	**Mountain**	**Ferrell Ridge**	**Total**
	0.25 MG	0.5 MG	0.25 MG	5.25 MG
Is the utility a member of WVRWA Emergency Response Team?	Yes			
Is the utility a member of WV-WARN?	Yes			
List any other mutual aid agreements to provide or receive assistance in the event of an emergency:	BCPSWD has a purchase agreement with the City of Martinsburg for up to 1,000,000 gpd; they currently purchase 225,000 gpd. BCPSWD also has interconnections with their Bunker Hill WTP.			

Operation During Loss of Power

The BCPSWD Potomac River Water System 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

What is the type and capacity of the generator needed to operate during a loss of power?	CONFIDENTIAL			
Can the utility connect to generator at intake/wellhead? If yes, describe a scenario that best describes system.	Yes, CONFIDENTIAL.			
Can the utility connect to generator at treatment facility? If yes, describe a scenario that best describes system.	No, CONFIDENTIAL.			
Can the utility connect to a generator in distribution system? If yes, describe a scenario that best describes system.	Yes, CONFIDENTIAL.			
Does the utility have adequate fuel on hand for the generator?	The water district has adequate fuel storage on site for the district's portable generator.			
What is your on-hand fuel storage and how long will it last operating at full capacity?	**Gallons**	**Hours**		
	CONFIDENTIAL	CONFIDENTIAL		
Provide a list of suppliers that could provide generators and fuel in the event of an emergency:	**Supplier**		**Contact Name**	**Phone Number**
	Generator	Allegheny Power	Customer Service Rep	888-254-6359
	Generator	WV National Guard	Garrison Commander	304-267-2772
	Fuel	Roach Oil	Associate	304-263-3329
	Fuel	Griffith Energy	Associate	888-721-5707
Does the utility test the generator(s) periodically?	Yes, the water district tests the portable generator monthly.			
Does the utility routinely maintain the generator?	Yes, the district performs annual maintenance on the portable generator by its in-house staff.			
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:	At the Potomac River plant, there is not a quick connect for a portable generator. The facility is designed so that the power system is wired through two independent control panels on two separate power grids. If power goes out on one grid, the panel that is wired to the powered grid will automatically come online and will provide power to the facility. In the instance that both grids would be out, a portable generator would have to be hardwired into the facility **OR** the City of Martinsburg and the Bunker Hill interconnection be utilized after the utility's storage capacity has been depleted.			

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 (future demand). This could

mean expanding current sources (e.g., removing water at greater rates than present) or developing new sources in the near future. This can be an expensive and time consuming process, and the water utility should take this into account when determining emergency preparedness. The BCPSWD Potomac River WTP 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 the BCPSWD Potomac River WTP

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, the Potomac River WTP has a capacity of 6 MGD, while the current maximum production is 4 MGD. There is currently a production capacity analysis study occurring due to a new large usage customer on the system (Proctor & Gamble). The SWPP should be updated to reflect these changes once P&G is added to BCPSWD's customer base.
If not, describe the circumstances and plans to increase production capacity:	Once the production and analysis study is complete, the BCPSWD will assess any and all system capacity options/upgrades.

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 due to the presence of leaks in the distribution system. 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 typically 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 Public Service Commission, utilities typically account for known water main breaks by estimating the amount of water lost. However, for the purposes of the SWPP, 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. Therefore, these

circumstances are included in the calculation of percentage of water loss for purposes of the SWPP. The data in **Table 14** were taken from the most recently submitted BCPSWD combined system Annual Report; the data were not available in a manner that isolates water loss by WTP.

Table 14. Water Loss Information

Total Water Pumped (gal)		1,695,168,000
Total Water Purchased (gal)		82,390,000
Total Water Pumped and Purchased (gal)		1,777,558,000
Water Loss Accounted for Except Main Leaks (gal)	**Mains, Plants, Filters, Flushing, etc.**	58,434,000
	Fire Department	1,890,000
	Back Washing	16,740,000
	Blowing Settling Basins	N/A
Total Water Loss Accounted For Except Main Leaks		77,064,000
Water Sold- Total Gallons (gal)		1,348,394,000
Unaccounted For Lost Water (gal)		352,100,000
Water lost from main leaks (gal)		1,137,000
Total gallons of Unaccounted for Lost Water and Water Lost from Main Leaks (gal)		353,237,000
Total Percent Unaccounted For Water and Water Lost from Main Leaks (gal)		19.9%
If total percentage of Unaccounted for Water is greater than 15%, please describe any measures that could be taken to correct this problem:	The BCPSWD Potomac River WTP utilizes a leak noise correlation system that listens to the distribution system and produces a report indicating potential leak noise. If the system were also to install meter pits throughout the system, the flow could be monitored by systematically closing valves in designated areas and inspecting the system's master meter to note when flow decreases (See **Appendix F-6 Engineering Evaluation** for more information).	

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 specific threats to source waters. 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 which conditions are indicative of baseline water quality results and which are indicative of a contamination event. Continuous monitoring provides results for a predetermined list of water quality parameters. The more parameters being monitored, the more sophisticated the monitoring equipment will be. When establishing continuous monitoring systems, a utility considers the logistics of placing and maintaining the equipment, and receiving output data from the equipment.

Alternately, or additionally, a utility may also pull periodic grab samples on a regular basis, or when contaminant incidents occur. The grab samples often are analyzed for specific contaminants, either to help ensure that water quality parameters are within baseline levels, or to assess abnormalities in water quality results that may be spurred by contaminant events. A utility should examine their PSSCs to determine which contaminants could pose a threat to the water sources. If possible, the utility should plan in advance for how those contaminants will be measured and detected. Consideration should be given for where samples will be collected, the preservations and hold times for samples, laboratories available 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 that poses a threat to water quality should incorporate communication with facility owners and operators, with state and local emergency response agencies, with surrounding water utilities, and with the system's customers. Communication plays an important role in knowing how to interpret data and how to respond.

The BCPSWD Potomac River WTP 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

<table>
<tr><td colspan="2">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?</td><td colspan="2">Yes; notifications received from the West Virginia Department of Environmental Protection and Local Fire and Police Stations. The Department of Health and Human Resources Bureau for Public Health also sends out emails regarding spills reported throughout the County.</td></tr>
<tr><td colspan="2">Are you aware of any facilities, land uses, or critical areas within your protection areas where chemical contaminants could be released or spilled?</td><td colspan="2">Yes, details may be found in Table 8 of this report and Appendix A.</td></tr>
<tr><td colspan="2">Are you prepared to detect potential contaminants if notified of a spill?</td><td colspan="2">Yes, water chemistry is tested every 4 hours through raw water grab samples taken from a raw water tap within the Treatment Plant. The utility implements monitoring of turbidity, pH, manganese and temperature parameters. Monitoring for VOCs and SOCs are completed through Reliance Laboratories, Inc. If any parameter is close or above the specified MCL, an investigation into the cause will occur and the appropriate actions will be authorized. The utility continuously monitors pH and manganese for the system effluent.</td></tr>
<tr><td rowspan="4">List laboratories (and contact information) on which you would rely to analyze water samples in case of a reported spill.</td><td colspan="3">Laboratories</td></tr>
<tr><td>Name</td><td colspan="2">Contact</td></tr>
<tr><td>CONFIDENTIAL</td><td colspan="2"></td></tr>
<tr><td>CONFIDENTIAL</td><td colspan="2"></td></tr>
<tr><td colspan="2">Do you have an understanding of baseline or normal conditions for your source water quality that accounts for seasonal fluctuations?</td><td colspan="2">Yes; turbidity, temperature, Manganese, and pH are monitored and recorded on a daily basis.</td></tr>
</table>

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 turbidity, temperature, Manganese, and pH are monitored and recorded on a daily basis prior to treatment.	
Provide or estimate the capital and O&M costs for your current or proposed early warning system or upgraded system.	**Capital**	CONFIDENTIAL
	Yearly O & M	CONFIDENTIAL
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 for a surface water supply source or a GWUDI source, the submitted SWPP 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 from a chemical release or spill event, or other reasons (including drought). These alternatives may include a secondary source, raw or treated water storage, interconnection with neighboring systems, or other options identified on a local level. A secondary water supply source should draw water from a substantially different location or water source to best prevent contamination of both sources.

The BCPSWD Potomac River WTP is actively supplied by more than one source. If a contamination event were to impact the Potomac River intake, the system could rely on the three groundwater wells (Wells A, B, and D) and its interconnection with the City of Martinsburg. Should the groundwater wells become contaminated, the utility could rely on the surface water intake and their connection with the City of Martinsburg to supply its customers. The BCPSWD has a purchase agreement with the City of Martinsburg (PWSID #WV3300212) for up to 1 million gallons per day. As a result, completion of the Feasibility Study Matrix spreadsheet was not required for this system; however, a brief narrative is attached **(Appendix E)** which describes the alternatives already in place.

Communication Plan

The Protection Team for this water system also has 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 a spill or contamination event, and provide updated information related to any contamination or impairment of the system's sources or the system's drinking water supply. The initial notification to the public for any such event will occur no later than 30 minutes after the public water system becomes aware of the spill, release, or potential contamination of the public water system. The Protection Team will update the Communication Plan continually to ensure contact information is up to date.

The water system has procedures in place for various types of significant spills or other emergencies that can reasonably be predicted at the source location or within the SWPA. The chain-of-command, notification procedures and response actions are known by water system employees, and BCPSWD will be working with OHSEM and emergency response personnel to improve the communication and first response systems over the next two years.

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; BCPSWD Potomac River WTP has opted to utilize this procedure. The Communication Plan for the BCPSWD Potomac River WTP is included in **Appendix C**.

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

Emergency Response Short Form

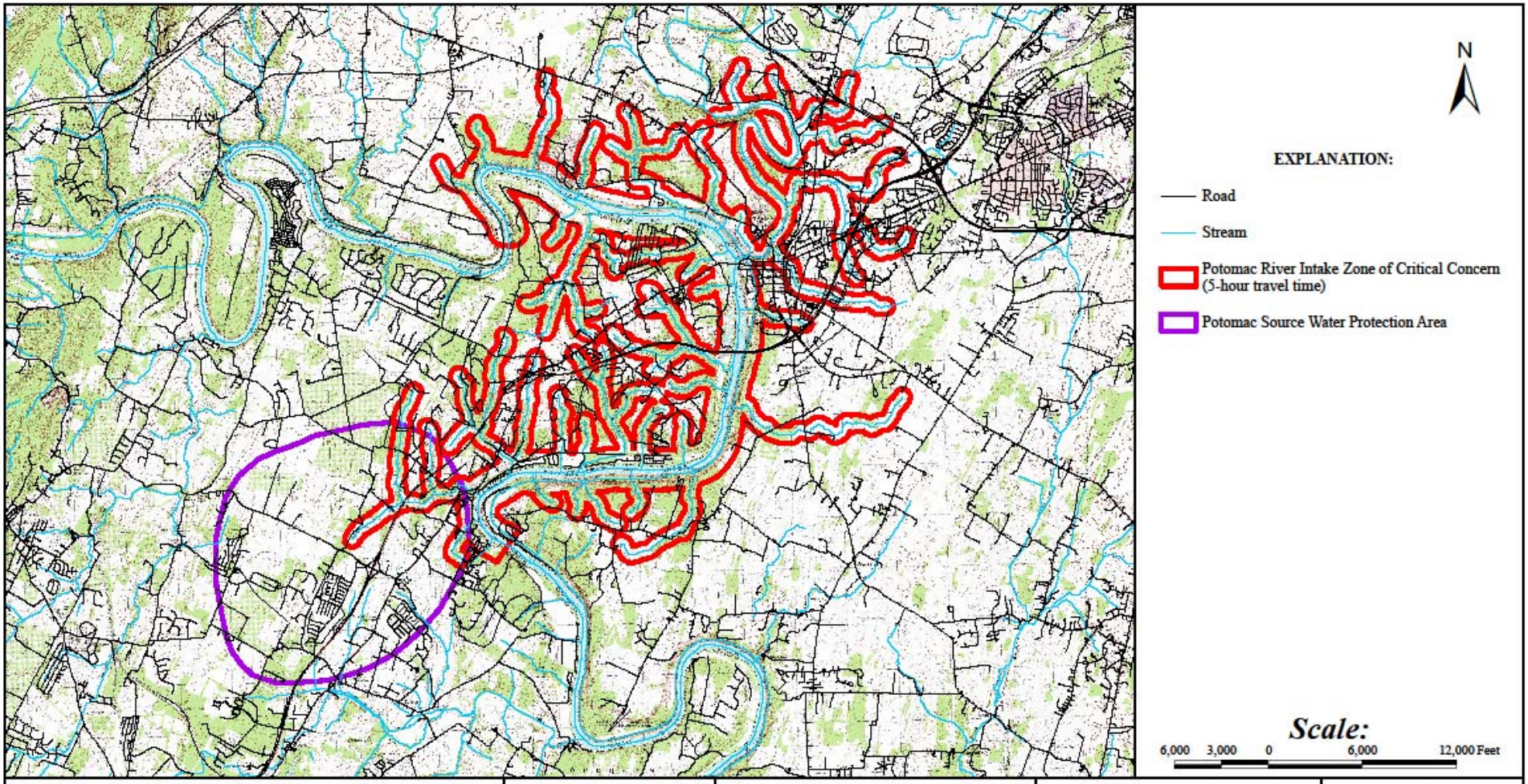
A public water utility must be prepared for any number of emergency scenarios and events that would require immediate response. It is imperative that information about key contacts, emergency services, and downstream water systems be posted and readily available in the event of an emergency. Elements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

Conclusion

This report represents a detailed explanation of the required elements of the BCPSWD Potomac River WTP's SWPP. Any supporting documentation or other materials that the utility considers relevant to their plan can be found in the **Appendices** of this report.

This SWPP is intended to help prepare BCPSWD to properly handle emergencies that might compromise the quality of the system's source water supply. It is imperative that this SWPP be 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. The community taking local responsibility for the quality of their source water is the most effective way to prevent contamination and protect the water system against contaminated source water. Community cooperation, sufficient preparation, and accurate and reliable monitoring are all critical components of this SWPP, and a multi-faceted approach is the only way to ensure that a system is best protected against source water contamination.

Appendix A. Figures



Notes:
1. Source Water Protection Area delineation provided by West Virginia Bureau for Public Health.
2. Stream data, road data and topographic base map from National Resource Conservation Service.
3. This figure is integral to an accompanying protection plan and should only be used in that context.
4. This figure is not intended to be used for boundary verification or survey control purposes.

Client:
BERKELEY COUNTY PUBLIC SERVICE WATER DISTRICT

PROJECT NO. WV7S619

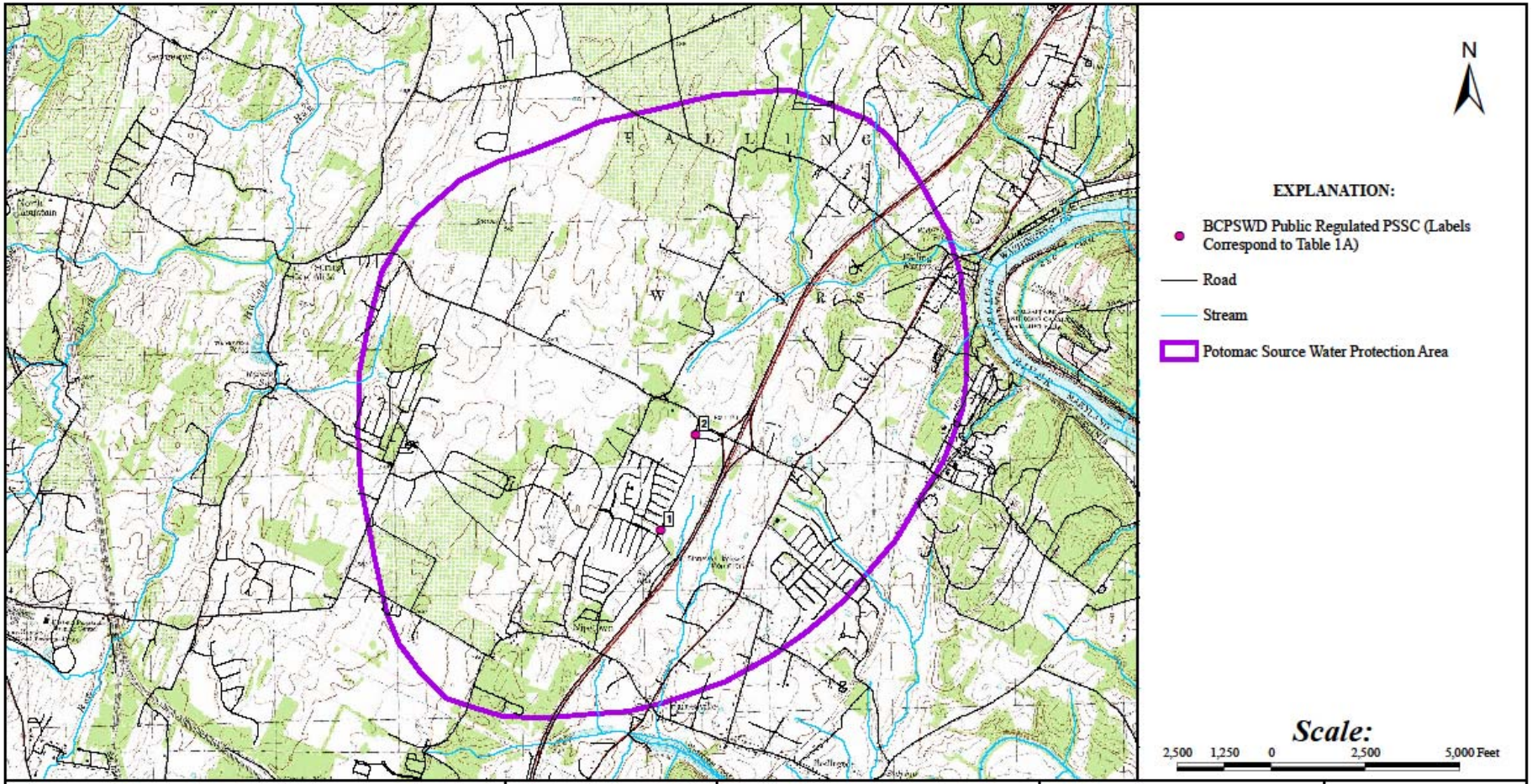
Project:
Berkeley County Public Service Water District- Potomac River Plant Source Water Protection Plan

Berkeley County, West Virginia

ADVANCED Land and Water, Inc.

Figure 1A:
Potomac River Plant Wellhead Protection Area and Zone of Critical Concern

April 8, 2016



Notes:
1. Source Water Protection Area delineation provided by West Virginia Bureau for Public Health.
2. Stream data, road data and topographic base map from National Resource Conservation Service.
3. This figure is integral to an accompanying protection plan and should only be used in that context.
4. This figure is not intended to be used for boundary verification or survey control purposes.

Client:
BERKELEY COUNTY PUBLIC SERVICE WATER DISTRICT

PROJECT NO. WV7S619

Project:
Berkeley County Public Service Water District - Potomac River Plant Source Water Protection Plan

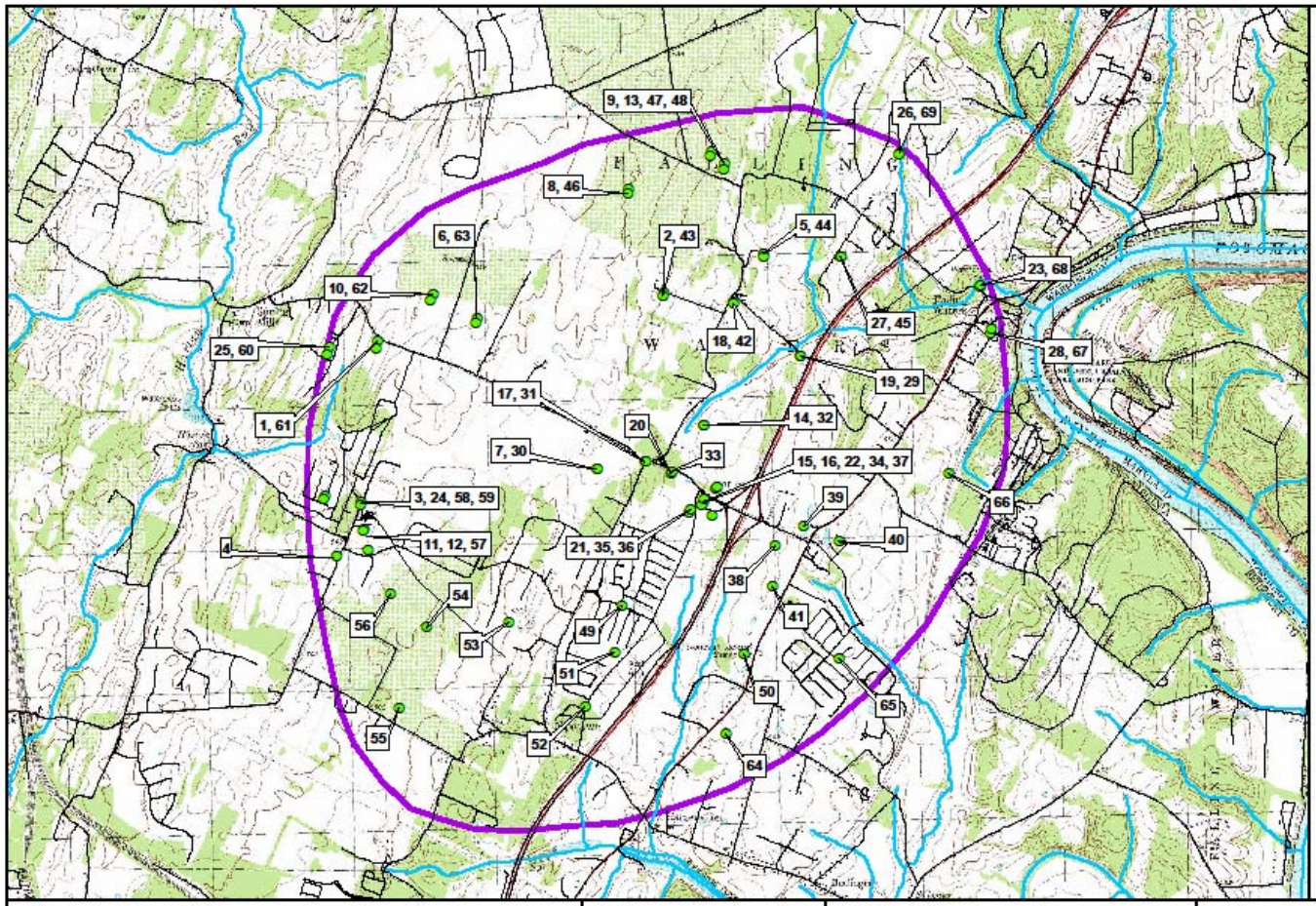
Berkeley County, West Virginia

ADVANCED Land and Water, Inc.

Figure 2A:
Public Regulated Potential Significant Source of Communication in Wellhead Protection Area (Groundwater Sources)
April 8, 2016

Table 1A: List of Regulated PSSCs (Groundwater SWPA)

Map Label	Site Description	PSSC Type
1	CONFIDENTIAL	Resouce Conservation and Recovery Act Facility of Interest
2	CONFIDENTIAL	Resouce Conservation and Recovery Act Facility of Interest



N

EXPLANATION:

- BCPSWD SWPP PSSC (Lables Correspond to Tables 2A)
- Road
- Stream
- Potomac Source Water Protection Area (Wells A, B and D)

Scale:

2,500 1,250 0 2,500 5,000 Feet

Notes:

1. Source Water Protection Area and Zone of Critical Concern delineations provided by West Virginia Bureau for Public Health.
2. Stream data, road data and topographic base map from National Resource Conservation Service.
3. This figure is integral to an accompanying protection plan and should only be used in that context.
4. This figure is not intended to be used for boundary verification or survey control purposes.

Client:

BERKELEY COUNTY PUBLIC SERVICE WATER DISTRICT

PROJECT NO. WV7S619

Project:

Berkeley County Public Service Water District - Potomac River Plant Source Water Protection Plan

Berkeley County, West Virginia

ADVANCED Land and Water, Inc.

Global Environmental Solutions

Figure 3A:
Previous SWPP Potential Significant Source of Contamination in Wellhead Protection Area (Groundwater Sources)

April 8, 2016

Table 2A: List of SWAP PSSCs (Groundwater SWPA)

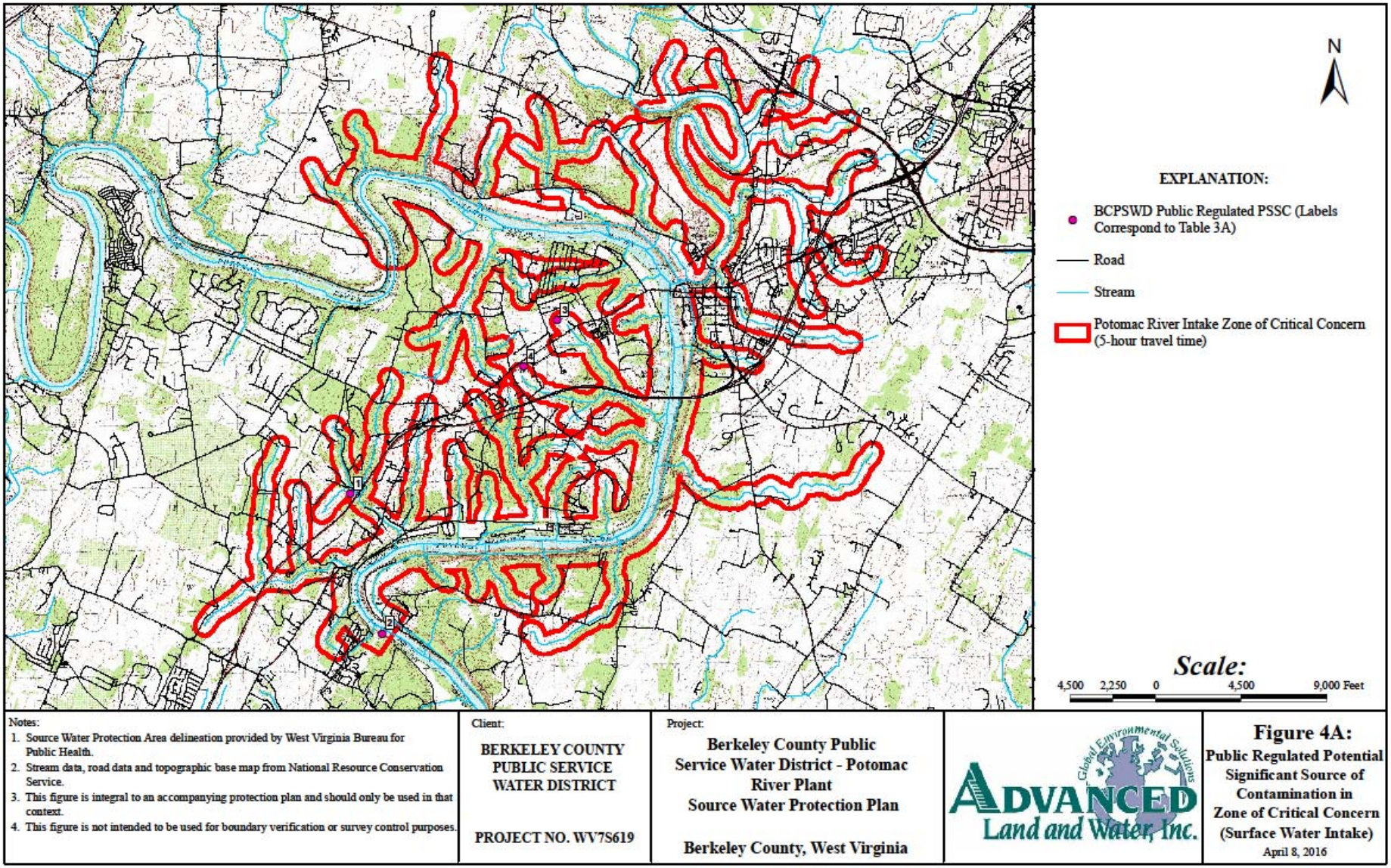
Map Label	Source Name	Source Description	Type	Map Code	Associated Chemicals	Threat to GW	Threat to SW
1	CONFIDENTIAL	Farm machinery areas	Agriculture	A-12	PH, VOC	L	L
2	CONFIDENTIAL	Other animal facilities	Agriculture	A-17	MP	L	L
3	CONFIDENTIAL	Other animal facilities	Agriculture	A-17	MP	L	L
4	CONFIDENTIAL	Pasture	Agriculture	A-18	MP, SOC	L	L
5	CONFIDENTIAL	Animal Feedlots	Agriculture	A-2	NN, MP, TO	H	H
6	CONFIDENTIAL	Crops, corn, soybean, wheat	Agriculture	A-5	NN, SOC, MP	L	L
7	CONFIDENTIAL	Crops, corn, soybean, wheat	Agriculture	A-5	NN, SOC, MP	L	L
8	CONFIDENTIAL	Crops, corn, soybean, wheat	Agriculture	A-5	NN, SOC, MP	L	L
9	CONFIDENTIAL	Crops: orchards	Agriculture	A-6	NN, SOC	L	L
10	CONFIDENTIAL	Crops: orchards	Agriculture	A-6	NN, SOC	L	L
11	CONFIDENTIAL	Crops: orchards	Agriculture	A-6	NN, SOC	L	L
12	CONFIDENTIAL	Crops: other	Agriculture	A-7	NN, MP, SOC	L	M
13	CONFIDENTIAL	Crops: other	Agriculture	A-7	NN, MP, SOC	L	M
14	CONFIDENTIAL	Construction areas	Commercial	C-10	M, T, PH, VOC, SOC, HM	M	H
15	CONFIDENTIAL	Gas Stations	Commercial	C-18	PH, M, VOC, SOC	H	M
16	CONFIDENTIAL	Gas Stations	Commercial	C-18	PH, M, VOC, SOC	H	M
17	CONFIDENTIAL	Auto repair shops	Commercial	C-3	PH, M, VOC, HM, SOC	H	M
18	CONFIDENTIAL	Auto repair shops	Commercial	C-3	PH, M, VOC, HM, SOC	H	M
19	CONFIDENTIAL	Auto repair shops	Commercial	C-3	PH, M, VOC, HM, SOC	H	M
20	CONFIDENTIAL	Medical/dental offices/clinics	Commercial	C-31	MP, D, R	M	L
21	CONFIDENTIAL	Medical/dental offices/clinics	Commercial	C-31	MP, D, R	M	L
22	CONFIDENTIAL	Parking lots/malls	Commercial	C-35	VOC, PH	L	M
23	CONFIDENTIAL	Lagoon/Pond/Pit	Industrial	I-16	VOC, PH, SOC	H	M
24	CONFIDENTIAL	Residential (single family homes)	Residential	R-4	VOC, SOC, NN	H	H
25	CONFIDENTIAL	Residential (single family homes)	Residential	R-4	VOC, SOC, NN	H	H
26	CONFIDENTIAL	Residential (single family homes)	Residential	R-4	VOC, SOC, NN	H	H
27	CONFIDENTIAL	Residential (single family homes)	Residential	R-4	VOC, SOC, NN	H	H

Table 2A: List of SWAP PSSCs (Groundwater SWPA)

Map Label	Source Name	Source Description	Type	Map Code	Associated Chemicals	Threat to GW	Threat to SW
28	CONFIDENTIAL	Residential (single family homes)	Residential	R-4	VOC, SOC, NN	H	H
29	CONFIDENTIAL	Auto Repair Shop	Commercial	C-3	PH, M, VOC, HM, SOC	H	M
30	CONFIDENTIAL	Construction Area	Commercial	C-10	M, T, PH, VOC, SOC, HM	M	H
31	CONFIDENTIAL	Crops Corn Soybean Wheat	Agriculture	A-5	NN, SOC, MP	L	L
32	CONFIDENTIAL	Auto Repair Shop	Commercial	C-3	PH, M, VOC, HM, SOC	H	M
33	CONFIDENTIAL	Medical/Dental Office/Clinics	Commercial	C-31	MP, D, R	M	L
34	CONFIDENTIAL	Parking Lot	Commercial	C-35	VOC, PH	L	L
35	CONFIDENTIAL	Gas Station	Commercial	C-18	PH, M, VOC, SOC	H	M
36	CONFIDENTIAL	Medical/Dental Office/Clinics	Commercial	C-31	MP, D, R	M	L
37	CONFIDENTIAL	Residential (multi-unit)	Residential	R-3	VOC, NN, TO, MP	L	L
38	CONFIDENTIAL	Gas Station/Parking Lot	Commercial	C-18	PH, M, VOC, SOC	H	M
39	CONFIDENTIAL	Gas Station	Commercial	C-18	PH, M, VOC, SOC	H	M
40	CONFIDENTIAL	Residential (multi-unit)	Residential	R-3	VOC, NN, TO, MP	L	L
41	CONFIDENTIAL	AST	Commercial	C-1	PH, VOC	L	L
42	CONFIDENTIAL	Auto Repair Shop	Commercial	C-3	PH, M, VOC, HM, SOC	H	M
43	CONFIDENTIAL	Other Animal Facilities	Agriculture	A-17	MP	L	L
44	CONFIDENTIAL	Animal Feedlots	Agriculture	A-17	NN, MP, TO	H	H
45	CONFIDENTIAL	Residential (single family homes)	Residential	R-4	VOC, SOC, NN	H	H
46	CONFIDENTIAL	Crops Corn Soybean Wheat	Agriculture	A-5	NN, SOC, MP	L	L
47	CONFIDENTIAL	Crops Other	Agriculture	A-5	NN, MP, SOC	L	M
48	CONFIDENTIAL	Crops Orchards	Agriculture	A-7	NN, SOC	L	L
49	CONFIDENTIAL	Residential (single family homes)	Residential	R-4	VOC, SOC, NN	H	H
50	CONFIDENTIAL	Farm Chemical Distributor	Agriculture	A-11	NN, VOC, SOC, PH	L	L

Table 2A: List of SWAP PSSCs (Groundwater SWPA)

Map Label	Source Name	Source Description	Type	Map Code	Associated Chemicals	Threat to GW	Threat to SW
51	CONFIDENTIAL	Residential (single family homes)	Residential	R-4	VOC, SOC, NN	H	M
52	CONFIDENTIAL	Residential (multi-units)	Residential	R-4	VOC, NN, TO, MP	L	H
53	CONFIDENTIAL	Pasture	Agriculture	R-3	MP, SOC	L	L
54	CONFIDENTIAL	Crops orchards	Agriculture	A-18	NN, SOC	L	L
55	CONFIDENTIAL	Crops: orchards	Agriculture	A-6	NN, SOC	L	L
56	CONFIDENTIAL	Crops Other	Agriculture	A-6	NN, MP, SOC	L	M
57	CONFIDENTIAL	Crops other	Agriculture	A-7	NN, MP, SOC	L	M
58	CONFIDENTIAL	Other animal facilities	Agriculture	A-7	MP	L	L
59	CONFIDENTIAL	Residential (single family homes)	Residential	R-4	VOC, SOC, NN	H	H
60	CONFIDENTIAL	Residential (single family homes)	Residential	R-4	VOC, SOC, NN	H	H
61	CONFIDENTIAL	Farm Machinery Areas	Agriculture	A-12	PH, VOC	L	L
62	CONFIDENTIAL	Crops Orchards	Agriculture	A-12	NN, SOC	L	L
63	CONFIDENTIAL	Crops Corn Soybean Wheat	Agriculture	A-6	NN, SOC, MP	L	L
64	CONFIDENTIAL	Junk yards scrap and auto	Commercial	C-25	PH, VOC, M, HM	H	H
65	CONFIDENTIAL	Residential (single family homes)	Residential	R-4	VOC, SOC, NN	H	H
66	CONFIDENTIAL	Railroad Tracks and Yards	Commercial	C-41	PH, M, VOC, SOC	H	H
67	CONFIDENTIAL	Residential (single family homes)	Residential	R-4	VOC, SOC, NN	H	H
68	CONFIDENTIAL	Other (retention pond behind house)	Residential	R-7	ND	ND	ND
69	CONFIDENTIAL	Residential (single family homes)	Residential	R-4	VOC, SOC, NN	H	H



Notes:
1. Source Water Protection Area delineation provided by West Virginia Bureau for Public Health.
2. Stream data, road data and topographic base map from National Resource Conservation Service.
3. This figure is integral to an accompanying protection plan and should only be used in that context.
4. This figure is not intended to be used for boundary verification or survey control purposes.

Client:
BERKELEY COUNTY PUBLIC SERVICE WATER DISTRICT

PROJECT NO. WV7S619

Project:
Berkeley County Public Service Water District - Potomac River Plant
Source Water Protection Plan

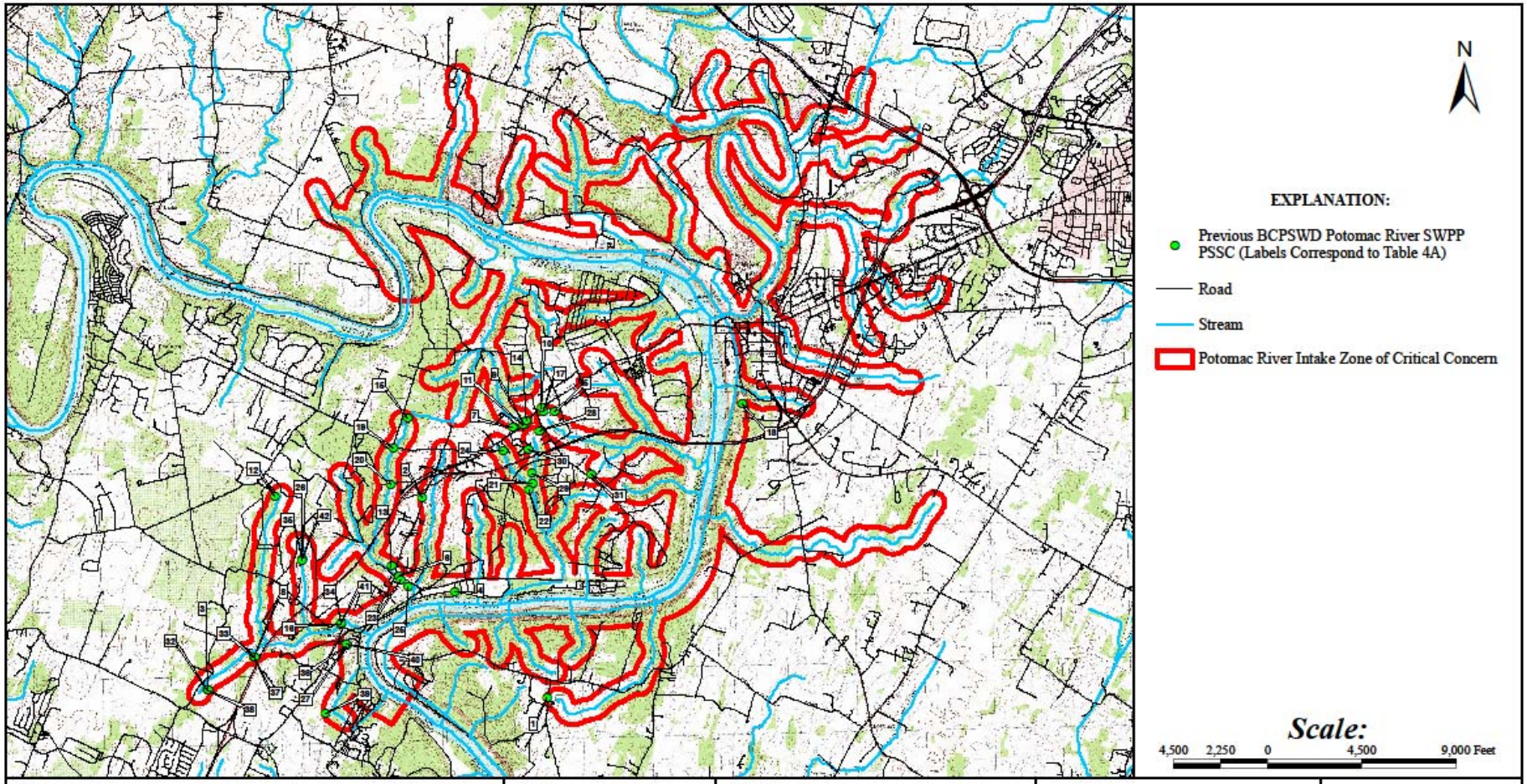
Berkeley County, West Virginia

ADVANCED Land and Water, Inc.

Figure 4A:
Public Regulated Potential Significant Source of Contamination in Zone of Critical Concern (Surface Water Intake)
April 8, 2016

Table 3A: List of Regulated PSSCs (Surface Source ZCC)

Map Label	Site Description	PSSC Type
1	CONFIDENTIAL	Underground Storage Tank Site
2	CONFIDENTIAL	Pesticide Dealer
3	CONFIDENTIAL	Pesticide Dealer
4	CONFIDENTIAL	Resouce Conservation and Recovery Act Facility of Interest
5	CONFIDENTIAL	Resouce Conservation and Recovery Act Facility of Interest
6	CONFIDENTIAL	Resouce Conservation and Recovery Act Facility of Interest
7	CONFIDENTIAL	Resouce Conservation and Recovery Act Facility of Interest



Notes:
1. Source Water Protection Area and Zone of Critical Concern delineations provided by West Virginia Bureau for Public Health.
2. Stream data, road data and topographic base map from National Resource Conservation Service.
3. This figure is integral to an accompanying protection plan and should only be used in that context.
4. This figure is not intended to be used for boundary verification or survey control purposes.

Client:
BERKELEY COUNTY PUBLIC SERVICE WATER DISTRICT

PROJECT NO. WV7S619

Project:
Berkeley County Public Service Water District - Potomac River Plant
Source Water Protection Plan

Berkeley County, West Virginia

ADVANCED Land and Water, Inc.

Figure 5A:
Previous SWPP Potential Significant Source of Contamination Map (Surface Water Intake)

April 8, 2016

Table 4A: List of SWAP PSSCs (Surface Source ZCC)

Map Label	Source Name	Source Description	Type	Map Code	Associated Chemicals	Threat to GW	Threat to SW
1	CONFIDENTIAL	Other animal facilities	Agriculture	A-17	MP	L	L
2	CONFIDENTIAL	Pasture	Agriculture	A-18	MP, SOC	L	L
3	CONFIDENTIAL	Animal Feedlots	Agriculture	A-2	NN, MP, TO	H	H
4	CONFIDENTIAL	Animal Feedlots	Agriculture	A-2	NN, MP, TO	H	H
5	CONFIDENTIAL	Crops: orchards	Agriculture	A-6	NN, SOC	L	L
6	CONFIDENTIAL	Crops: other	Agriculture	A-7	NN, MP, SOC	L	M
7	CONFIDENTIAL	Construction areas	Commercial	C-10	M, T, PH, VOC, SOC, HM	M	H
8	CONFIDENTIAL	Construction areas	Commercial	C-10	M, T, PH, VOC, SOC, HM	M	H
9	CONFIDENTIAL	Fleet/truck/bus terminals	Commercial	C-14	M, VOC, HM, SOC, PH	H	H
10	CONFIDENTIAL	Fleet/truck/bus terminals	Commercial	C-14	M, VOC, HM, SOC, PH	H	H
11	CONFIDENTIAL	Gas Stations	Commercial	C-18	PH, M, VOC, SOC	H	M
12	CONFIDENTIAL	Body shops	Commercial	C-5	VOC, PH	H	M
13	CONFIDENTIAL	Body shops	Commercial		VOC, PH	H	M
14	CONFIDENTIAL	Gas Stations	Commercial	C-18	PH, M, VOC, SOC	H	M
15	CONFIDENTIAL	Gas Stations	Commercial	C-18	PH, M, VOC, SOC	H	M
16	CONFIDENTIAL	Gas Stations	Commercial	C-18	PH, M, VOC, SOC	H	M
17	CONFIDENTIAL	Gas Stations	Commercial	C-18	PH, M, VOC, SOC	H	M
18	CONFIDENTIAL	Gas Stations	Commercial	C-18	PH, M, VOC, SOC	H	M
19	CONFIDENTIAL	Lawn/farms stores	Commercial	C-28	VOC, SOC, NN	L	L
20	CONFIDENTIAL	Auto repair shops	Commercial	C-3	PH, M, VOC, HM, SOC	H	M
21	CONFIDENTIAL	Auto repair shops	Commercial	C-3	PH, M, VOC, HM, SOC	H	M
22	CONFIDENTIAL	Auto repair shops	Commercial	C-3	PH, M, VOC, HM, SOC	H	M
23	CONFIDENTIAL	Auto repair shops	Commercial	C-3	PH, M, VOC, HM, SOC	H	M
24	CONFIDENTIAL	Auto repair shops	Commercial	C-3	PH, M, VOC, HM, SOC	H	M
25	CONFIDENTIAL	Auto repair shops	Commercial	C-3	PH, M, VOC, HM, SOC	H	M

Table 4A: List of SWAP PSSCs (Surface Source ZCC)

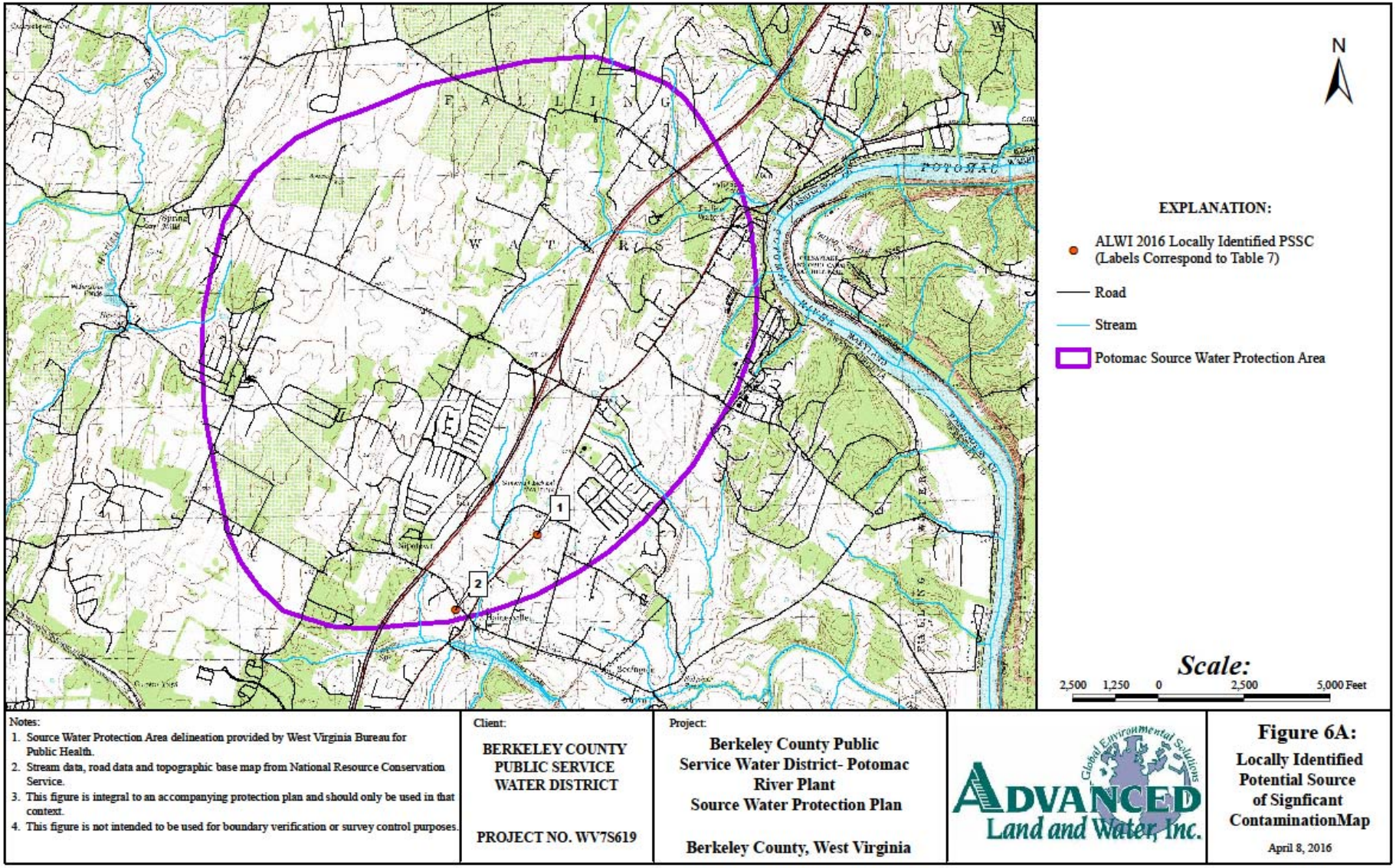
Map Label	Source Name	Source Description	Type	Map Code	Associated Chemicals	Threat to GW	Threat to SW
26	CONFIDENTIAL	Auto repair shops	Commercial	C-3	PH, M, VOC, HM, SOC	H	M
27	CONFIDENTIAL	Auto repair shops	Commercial	C-3	PH, M, VOC, HM, SOC	H	M
28	CONFIDENTIAL	Medical/dental offices/clinics	Commercial	C-31	MP, D, R	M	L
29	CONFIDENTIAL	Medical/dental offices/clinics	Commercial	C-31	MP, D, R	M	L
30	CONFIDENTIAL	Parking lots/malls	Commercial	C-35	VOC, PH	L	M
31	CONFIDENTIAL	Recreational vehicle/mini storage	Commercial	C-42	PH, VOC	L	L
32	CONFIDENTIAL	Other	Commercial	C-53	ND	ND	ND
33	CONFIDENTIAL	Other	Commercial	C-53	ND	ND	ND
34	CONFIDENTIAL	Other	Commercial	C-53	ND	ND	ND
35	CONFIDENTIAL	Other	Commercial	C-53	ND	ND	ND
36	CONFIDENTIAL	Other	Commercial	C-53	ND	ND	ND
37	CONFIDENTIAL	Camp grounds	Commercial	C-6	MP, SOC, VOC, PH	L	L
38	CONFIDENTIAL	Car dealerships	Commercial	C-7	PH, VOC	H	L
39	CONFIDENTIAL	Schools	Municipal	M-21	SOC, D, VOC, PH	L	L
40	CONFIDENTIAL	Schools	Municipal	M-21	SOC, D, VOC, PH	L	L
41	CONFIDENTIAL	Cemeteries	Commercial	C-9	M, SOC, PH	L	L
42	CONFIDENTIAL	Lagoon/Pond/Pit	Industrial	I-16	VOC, PH, SOC	H	M
43	CONFIDENTIAL	Lagoon/Pond/Pit	Industrial	I-16	VOC, PH, SOC	H	M
44	CONFIDENTIAL	Machine and metalworking shops	Industrial	I-20	M, VOC, HM, PH, SOC	H	M
45	CONFIDENTIAL	Permitted Discharge Pipe (outfall)	Industrial	I-27	ALL	L	M
46	CONFIDENTIAL	Petroleum production and storage facilities	Industrial	I-28	PH, M, VOC	H	M
47	CONFIDENTIAL	Public Utilities (phone, gas, electric power)	Industrial	I-30	M, VOC, SOC	M	M
48	CONFIDENTIAL	Storm Drains	Municipal	M-24	M, VOC, MP, PH	L	M
49	CONFIDENTIAL	Wastewater Treatment Plant	Municipal	M-29	MP, D	L	M

Table 4A: List of SWAP PSSCs (Surface Source ZCC)

Map Label	Source Name	Source Description	Type	Map Code	Associated Chemicals	Threat to GW	Threat to SW
50	CONFIDENTIAL	Wastewater Treatment Plant	Municipal	M-29	MP, D	L	M
51	CONFIDENTIAL	Wastewater Treatment Plant	Municipal	M-29	MP, D	L	M
52	CONFIDENTIAL	Wastewater Treatment Plant	Municipal	M-29	MP, D	L	M
53	CONFIDENTIAL	Wastewater Treatment Plant	Municipal	M-29	MP, D	L	M
54	CONFIDENTIAL	Wastewater Treatment Plant	Municipal	M-29	MP, D	L	M
55	CONFIDENTIAL	Wastewater Treatment Plant	Municipal	M-29	MP, D	L	M
56	CONFIDENTIAL	Wastewater Treatment Plant	Municipal	M-29	MP, D	L	M
57	CONFIDENTIAL	Wastewater Treatment Plant	Municipal	M-29	MP, D	L	M
58	CONFIDENTIAL	Other	Municipal	M-32			
59	CONFIDENTIAL	Other	Municipal	M-32			
60	CONFIDENTIAL	Vault toilets	Municipal	M-34	MP, NN, D	H	L
61	CONFIDENTIAL	Vault toilets	Municipal	M-34	MP, NN, D	H	L
62	CONFIDENTIAL	Vault toilets	Municipal	M-34	MP, NN, D	H	L
63	CONFIDENTIAL	Vault toilets	Municipal	M-34	MP, NN, D	H	L
64	CONFIDENTIAL	Vault toilets	Municipal	M-34	MP, NN, D	H	L
65	CONFIDENTIAL	Drinking Water Treatment Plants	Municipal	M-5	D	L	L
66	CONFIDENTIAL	Drinking Water Treatment Plants	Municipal	M-5	D	L	L
67	CONFIDENTIAL	Highway	Municipal	M-7	PH, VOC, M	M	H
68	CONFIDENTIAL	Highway	Municipal	M-7	PH, VOC, M	M	H
69	CONFIDENTIAL	Residential (multi-units)	Residential	R-3	VOC, NN, TO, MP	L	L
70	CONFIDENTIAL	Residential (single family homes)	Residential	R-4	VOC, SOC, NN	H	H
71	CONFIDENTIAL	Residential (single family homes)	Residential	R-4	VOC, SOC, NN	H	H
72	CONFIDENTIAL	Residential (single family homes)	Residential	R-4	VOC, SOC, NN	H	H
73	CONFIDENTIAL	Residential (single family homes)	Residential	R-4	VOC, SOC, NN	H	H
74	CONFIDENTIAL	Residential (single family homes)	Residential	R-4	VOC, SOC, NN	H	H
75	CONFIDENTIAL	Residential (single family homes)	Residential	R-4	VOC, SOC, NN	H	H

Table 4A: List of SWAP PSSCs (Surface Source ZCC)

Map Label	Source Name	Source Description	Type	Map Code	Associated Chemicals	Threat to GW	Threat to SW
76	CONFIDENTIAL	Residential (single family homes)	Residential	R-4	VOC, SOC, NN	H	H
77	CONFIDENTIAL	Residential (single family homes)	Residential	R-4	VOC, SOC, NN	H	H
78	CONFIDENTIAL	Residential (single family homes)	Residential	R-4	VOC, SOC, NN	H	H
79	CONFIDENTIAL	Residential (single family homes)	Residential	R-4	VOC, SOC, NN	H	H
80	CONFIDENTIAL	Residential (single family homes)	Residential	R-4	VOC, SOC, NN	H	H
81	CONFIDENTIAL	Residential (single family homes)	Residential	R-4	VOC, SOC, NN	H	H
82	CONFIDENTIAL	Residential (single family homes)	Residential	R-4	VOC, SOC, NN	H	H



Notes:
1. Source Water Protection Area delineation provided by West Virginia Bureau for Public Health.
2. Stream data, road data and topographic base map from National Resource Conservation Service.
3. This figure is integral to an accompanying protection plan and should only be used in that context.
4. This figure is not intended to be used for boundary verification or survey control purposes.

Client:
BERKELEY COUNTY PUBLIC SERVICE WATER DISTRICT

PROJECT NO. WV7S619

Project:
Berkeley County Public Service Water District- Potomac River Plant
Source Water Protection Plan

Berkeley County, West Virginia

ADVANCED Land and Water, Inc.

Figure 6A:
Locally Identified Potential Source of Signficant ContaminationMap

April 8, 2016

Appendix B. Early Warning Monitoring System Forms

The following forms have been prepared by WV BPH for use by public utilities, with the proper form dependent on source type (surface or groundwater) and the presence or absence of an early warning monitoring system. The appropriate forms for this utility to complete are Forms A and C, as the utility has an existing early warning monitoring system. Form B is included to provide information to create a more robust early warning monitoring system for the Potomac River Plant's surface water intake.

Form A-Complete if you currently have an early warning monitoring system installed for a surface water source

Form B-If you do not currently have an early warning monitoring system installed for a surface water intake or are planning to upgrade or replace your current system, complete this form.

Form C-Complete if you currently have an early warning monitoring system for a groundwater source.

Form D-If you do not currently have an early warning monitoring system installed for a groundwater source or are planning to upgrade or replace your current system, complete this form.

Appendix B- Form A

Existing Early Warning Monitoring System Worksheet- Surface Water Source

Describe the type of early warning detection equipment installed.
CONFIDENTIAL
Describe the mechanism used to store data and an institutional framework to analyze and interpret the data.
CONFIDENTIAL
Describe the process used to determine the credibility of a contamination event if a change is detected in the quality of source water.
The Potomac River plant utilizes the Potomac River Basin Commission, local and regional news, West Virginia Department of Protection, and the West Virginia State Health and Human Services Department to determine credibility of a spill, contaminant, or change in water quality.

Appendix B-Form B

Proposed Early Warning Monitoring System Worksheet- Potomac River Intake

Describe the type of early warning detection equipment that could be installed, including the design.
CONFIDENTIAL
Where would the equipment be located?
CONFIDENTIAL
What would the maintenance plan for the monitoring equipment entail?
CONFIDENTIAL
Describe the proposed sampling plan at the monitoring site.
CONFIDENTIAL
Describe the proposed procedures for data management and analysis.
CONFIDENTIAL

Appendix B-Form C

Existing Early Warning Monitoring System Worksheet- Groundwater Source

Describe the type of early warning detection equipment installed.
CONFIDENTIAL
How many monitoring (sentinel) wells are established?
None. Due to the complex hydrogeologic setting and widespread geospatial position of PSSCs, there is no guarantee that installation of monitoring wells would provide adequate advanced notification of contamination in the groundwater system. Monitoring wells may be considered in the future if outside funding sources are available.
What is the expected rate of travel of a contaminant through the groundwater system?
Travel times are highly dependent on the 1.) Location of the contaminant source with respect to system sources, 2.) Hydraulic conductivity (0.6 – 120.0 m/d, according to the USGS) of geologic formations, which reflects the degree to which fractures are naturally enlarged and 3.) Hydraulic gradient along groundwater flow pathways. As such, travel times vary significantly throughout the SWPA and change as hydrologic conditions change.
Provide the distance from the contaminant source to the monitoring wells.
CONFIDENTIAL
What is the distance of the monitoring equipment to the wellhead?
CONFIDENTIAL
Describe the mechanism used to store data and an institutional framework to analyze and interpret the data.
CONFIDENTIAL
Describe the process used to determine the credibility of a contamination event if a change is detected in the quality of source water.
If a notable change is detected in water quality for a parameter regularly monitored, an additional water quality sample will be taken immediately for result verification. If the result is confirmed, more comprehensive testing could be performed, depending on the type of water quality change observed (for the purpose of differentiating between hazard types). BCPSWD Potomac River WTP personnel may also choose to shut down the Well pumps or close the River Intake until an appropriate course of action is determined. This would not affect the quality or quantity of water delivered to customers, as the utility can continue to operate with either its surface source or its groundwater sources offline, as well as relying on interconnections with other systems. If the sample is in violation of an MCL, an additional water quality sample will be taken immediately for result verification. As water quality results are pending, BCPSWD Potomac River WTP personnel should shut down the well pumps and close the River intake until an appropriate course of action is determined. This would not affect the quality or quantity of water delivered to customers, as the utility can continue to operate with either its surface source or its groundwater sources offline, as well as relying on interconnections with other systems.

Appendix B-Form D Not Applicable to BCPSWD Potomac River WTP

Proposed Early Warning Monitoring System Worksheet- Groundwater Source

Describe the type of ground water monitoring network that could be installed, including the design and location.
How many monitoring (sentinel) wells would need to be established?
What is the expected rate of travel of a contaminant through the groundwater system?
Provide the distance from the contaminant source to the proposed monitoring wells.
What is the distance from the proposed monitoring equipment to the wellhead?
What would the maintenance plan for the monitoring equipment entail?
Describe the proposed sampling plan at the monitoring site.
Describe the proposed procedures for data management and analysis.

Appendix C. Communication Plan

Communication Plan Template

For The BCPSWD Potomac River Plant Public Water System

PWSID: __WV3300218_____ District: _____Kearneysville_____

Certified Operator: ___CONFIDENTIAL_____

Contact Phone Number: _____

Contact Email Address: _____

Plan Developed On: _5/24/2016__ Plan Update Due On: _5/24/2019__

ACKNOWLEDGMENTS:

This plan was developed by Berkeley County Public Service Water District 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

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 occurring 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 also provides associated risk levels.

> **A** = **A**nnouncement. 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 = **B**oil 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 = **C**annot 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 = **D**o 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 = **E**mergency. Water cannot be used for any reason.

Tier	Tier Category	Risk Level	Tier Summary
A	**A**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**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.
C	**C**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.
D	**D**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.
E	**E**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
CONFIDENTIAL				
CONFIDENTIAL				
CONFIDENTIAL				

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 SWPP, 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 SWPP and Communication Plan
- ❑ Attend team meetings to ensure up-to-date knowledge of the system and its functions
- ❑ Participate in periodic exercises that "game out" 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
- ❑ Not 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; as well as working with the management staff and the communication team to ensure that 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
- ❑ 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. 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 collecting information about the:

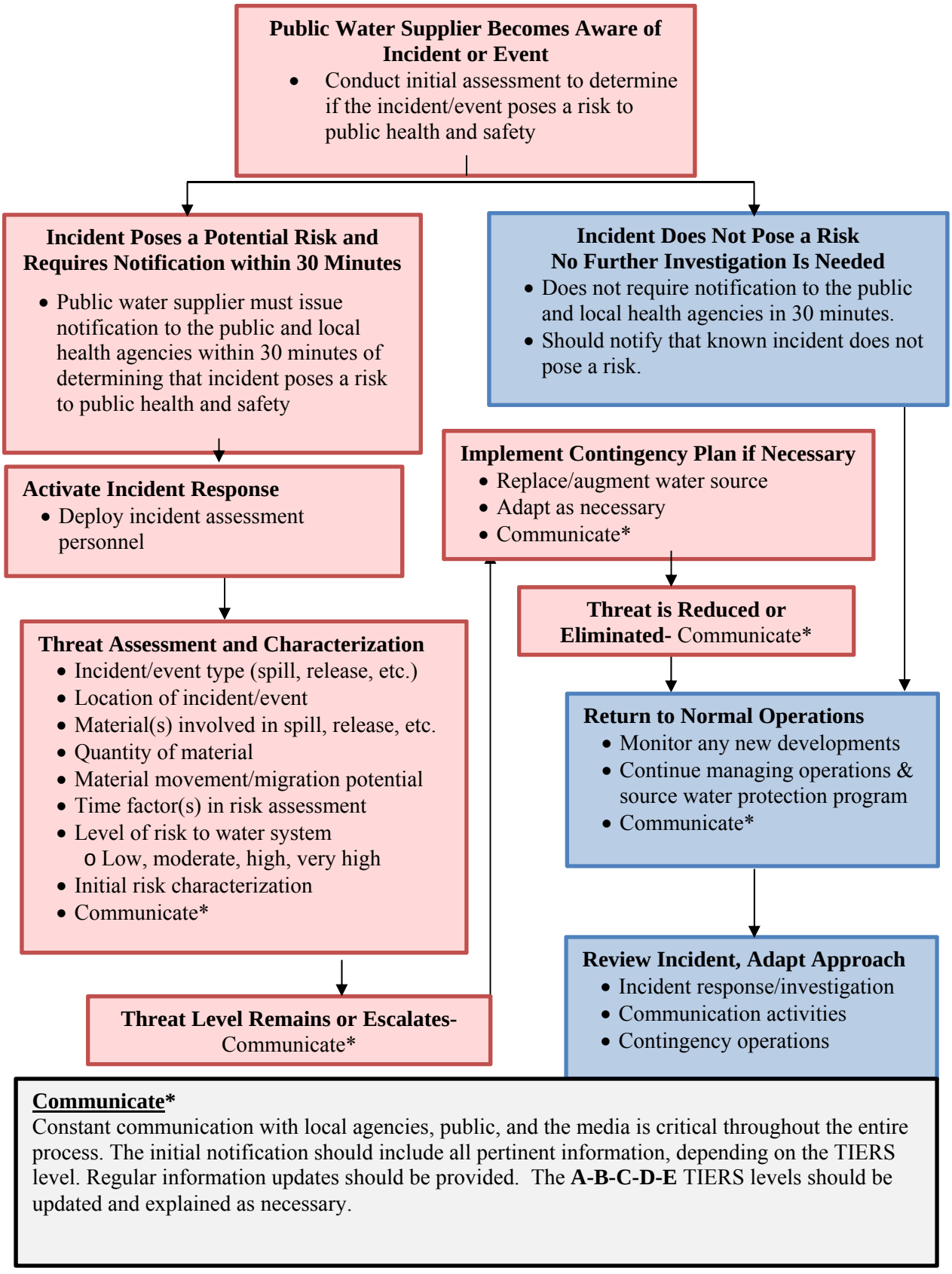
- ❑ Incident/event type (spill, release, etc.)
- ❑ Location of incident/event
- ❑ Type of material(s) involved in spill, release, etc.
- ❑ Quantity of material involved
- ❑ Potential of the material to move, migrate, or be transported
- ❑ Relevant time factor(s) in the risk assessment (e.g., downstream 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., **A**nnouncement, **B**oil Water, **C**annot Drink, **D**o Not Use, or **E**mergency)
  - o 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
  - o If warranted by initial findings regarding the spill, release, or incident
- ❑ Notification of the WV Bureau for Public Health
  - o As required
- ❑ Periodic information updates, as incident response information is received
- ❑ Updates to the applicable A-B-C-D-E advisory tier, as necessary

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:

_____

_____

_____

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
Designated spokesperson:	Christine Thiel	304-267-4600	cthiel@berkeleywater.org
Alternate spokesperson:	Steve DeRidder	304-274-5803 or 304-229-5255	sderidder@berkeleywater.org
Designated location to disseminate information to media:	251 Caperton Boulevard Martinsburg, WV 25403		
Methods of contacting affected residents:	BCPSWD utilizes the radio, newspapers and Television.		

	Name	Title	Phone Number	Email
Media contacts:	Bill Kohler; The Herald Mail Co.	Editor	301-733-5131	billk@herald-mail.com
	The Journal	-	304-263-8931 ext. 125	-
	WRNR – Main Line	-	304-263-6586 304-263-6540	info@talkradiowrnr.com
	WKMZ – Main Line	-	304-263-2770	-
	WYII	-	304-263-0637	-
	WEPM 1340	-	304-263-8868 304-263-4321	-
	WHAG Channel 25	-	301-797-4400	-

Emergency Services Contacts

	Name	Emergency Phone	Alternate Phone	Email
Local Police	Berkeley County Sheriff's Office	911	304-267-7000	
Local Fire Department(s)	Bedington Fire Department	911	304-274-2381	
	Williamsport Fire Department	911	301-223-9112	
Local Ambulance Service	Berkeley County Emergency Ambulance Authority	304-274-5013		
Hazardous Material Response Service	Berkeley County Office of Emergency Services	911	304-263-1345	

Key Personnel

	Name	Title	Phone	Email
Key staff responsible for coordinating emergency response procedures?	CONFIDENTIAL			
	CONFIDENTIAL			
Staff responsible for keeping confidential PSSC information and releasing to emergency responders:	CONFIDENTIAL			
	CONFIDENTIAL			
Are you planning on implementing the TIER system?	Yes			

Emergency Response Information

Has the utility developed a detailed Emergency Response Plan in accordance with the Public Health Security Bioterrorism Preparedness and Response Pan Act of 2002 that covers the following areas?	Yes
When was the Emergency Response Plan developed or last updated?	October, 2015

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

Readiness Coordinator- Warren Von Dollen
Phone; 304-356-4290
Cell; 304-550-5607
e-mail; 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

The single source feasibility study is required for a public water utility which is served by a single surface water source or a single groundwater source (i.e., one well or one spring). The BCPSWD Potomac River WTP has one or more alternative supply sources in place at this time; see **Appendix E** for details. As a result, a single source feasibility study is not required for this utility at this time.

Appendix E. Feasibility Study Narrative

The BCPSWD Potomac River System has multiple sources that eliminate the necessity for the single source analysis. The Potomac River WTP possesses two source types (a groundwater wellfield and a surface water intake) that are independent of one another. BCPSWD Potomac River WTP has an intake on the Potomac River, the capacity of which is higher than average system demand (2.4 MGD). The Potomac River WTP also utilizes three groundwater supply wells located northwest of the intersection of Interstate-81 and Hammonds Mill Road (Route 901), which are capable of providing up to approximately 2 MGD. Finally, the system already has active interconnections with the City of Martinsburg and the BCPSWD Bunker Hill WTP. BCPSWD has a purchase agreement with the City of Martinsburg for up to 1,000,000 gpd. They currently utilize approximately 250,000 gpd of the 1,000,000 gpd agreement, leaving approximately 750,000 gpd for use during emergencies.

In the event that the groundwater supply wells become contaminated (two are in close proximity while the third is significantly further downgradient from the upgradient two wells), BCPSWD can rely on the Potomac River Intake, as well as its interconnections, if deemed necessary. Should the Potomac River Intake become contaminated, as occurred during an October 2015 latex spill, the System would rely upon its three groundwater supply wells, which cannot meet system demands on their own. These three wells can supply approximately 1.6 MGD. To supplement the limited supply, the System can and does increase the amount of water purchased from the City of Martinsburg. Doing so permits them to meet their supply demand for the required 30, 60 and 90 day periods.

The Potomac River WTP utilizes seven storage tanks throughout the distribution system. The combined total treated water storage of the seven tanks is 5.25 MG. At this capacity, the Potomac River WTP has approximately two days of storage. Lotic water bodies (including the Potomac River) oftentimes do not remain contaminated for extended periods (as can groundwater sources) because of high flow rates and associated travel times. The amount of time that an intake would need to remain closed is dependent on Potomac River flow rates, gradient and travel times of potential contaminants sources. Comparatively, groundwater travel times are significantly slower, and such supplies may need to remain offline for longer periods of time when contamination events occur. Because of this, it seems unlikely that the Potomac River Intake would need to remain closed for extended periods up to 30, 60 or even 90 days.

Appendix F. Supporting Documentation

Appendix F-1. ALWI PSSC Update and Source Inspection

Appendix F-2. Locally Identified PSSC Database Search

Appendix F-3. BCPSWD – Potomac River WTP SWARs

Appendix F-4. BCPSWD Potomac River WTP Protection Team Meeting Minutes

Appendix F-5. Emergency Response Plan Signature Page

Appendix F-6. Engineering Evaluation

Appendix F-7. Railroad Emergency Response Trainings and Services

Appendix F-1. ALWI PSSC Update and Source Inspection

Advanced Land and Water, Inc. (ALWI) performed regulatory database reviews and a desktop review/reconnaissance in order to identify changes to known PSSCs and to identify and record additional PSSCs not previously documented. The desktop review/reconnaissance also included verifying water source locations and reviewing the delineated SWPA. Both point sources and non-point sources of contamination were considered during our desktop review.

Appendix F-2. Locally Identified PSSC Database Search

ALWI incorporated information from the following state-maintained environmental databases to supplement the non-confidential point-source hazard inventories, with the date of database publication provided parenthetically as follows:

- WV Department of Agriculture; Pesticide Program Database search for Pesticide Businesses, Regulated Pesticide Application Businesses (RPAB), Pesticide Dealers and Commercial Applicators (2/19/2016);

- WV DEP Office of Environmental Remediation; Public Record of Voluntary Cleanup Program Sites (2/19/2016);

- Underground Storage Tank and Leaking Underground Storage Tank Databases (2/19/2016);

- EPA System Data Search of RCRAInfo Database for Resource Conservation and Recovery Act (RCRA) sites (2/19/2016).

The databases helped with interpretations of water susceptibility, in that the listed facilities may be generators of hazardous materials, petroleum products and/or other drinking water contaminants.

Appendix F-3. BCPSWD – Potomac River WTP SWARs

Appendix F-4. BCPSWD Protection Team Meeting Minutes

Bunker Hill WTP *and* Potomac River Plant

Protection Team Meeting

November 19, 2015

251 Caperton Blvd. Martinsburg, WV

In Attendance:

Christine Thiel .....BCPSWD

Steven DeRidder.....BCPSWD

Zachary Neal .....Advanced Land and Water, Inc.

Sarah Taggart .....Advanced Land and Water, Inc.

Stephen M. Gyurisin.....Advanced Planning Associates, LC

Bill Clark .....Eastern Panhandle Regional Planning & Development Council

Jennifer O'Brien .....Eastern Panhandle Regional Planning & Development Council

Eddie Gochenour .....Berkeley County Office of Homeland Security & Emergency Management

Alana Hartman .....West Virginia Department of Environmental Protection

Monica Whyte .....West Virginia Bureau of Public Health

Mike Thompson .....Berkeley County Planning Commission

Interested Participants Who Could Not Attend:

Regina (Suzy) Lucas .....West Virginia Conservation Agency

Joseph A. Castaldo .....West Virginia Department of Transportation

Invitees Who Did Not Respond:

Penny Shewell .....Berkeley County Council Office Administrator

Stephen L Christian .....Berkeley County Development Authority

Manny P. Arvon .....Berkeley County Schools

Tina Combs .....Martinsburg-Berkeley County Chamber of Commerce

Ashley Petrolino .....Berkeley County Health Department

Matt Ware.....Berkeley County Farm Bureau

Tim Canfield.....USDA Natural Resources Conservation Service

Dolly Vessella .....Winchester and Western Railroad

Dave Scott .....CSX Corporation

Eric Lawrence.....Frederick County, VA Department of Planning

Meeting Objectives:

The purpose of this meeting was to establish a Protection Team, an entity which will work to forward source water protection efforts and strategies for the BCPSWD Bunker Hill and Potomac River Systems. More specifically, the Team worked to prioritize the major Potential Significant Sources of Contamination, critical areas, and other threats deemed of greatest concern to the systems' water supply sources. Management Strategies and Implementation Plans were developed for the highest priority threats. Education and Outreach Strategies were also discussed, and Implementation Plans were created for these and other management activities. Finally, the Protection Team reviewed additional general recommendations ALWI made for both of the water Systems.

Timeline of Events:

Following formal introductions from participating Protection Team members, ALWI staff began a PowerPoint in which we explained the hydrogeologic setting of Berkeley County and broadly covered general system information pertaining to water source location and delineated areas that influence system sources, which are termed source water protection areas (SWPAs). From there, we introduced our list of prioritized PSSCs, management strategies related to those PSSCs and education and outreach strategies to engage and educate the public on source water protection efforts. We then asked the Protection Team to opine on our PSSC list and edit prioritization, if and where appropriate. We discussed implementation measures for protection strategies, as well

as education and outreach strategies, and assigned responsibility to Protection Team members who volunteered to handle each strategy. We ended the meeting by presenting additional general system recommendations, which broadly covered better physical protection measures (e.g., fences) and investigative studies.

Discussion of Public Involvement and Future Public Workshop Meetings:

During the course of the meeting, the Protection Team discussed the degree of public involvement required and concerns about the confidentiality of specific information (PSSC Inventory) when engaging the public. This was brought about by discussion of the future public workshop meeting and conceptualization of hosting a draft SWPP (that does not contain confidential information) on BCPSWD's website, for the purpose of garnishing additional public comment and feedback. BPH opined that this could be an effective method of keeping the public informed of Source Water Protection activities, as long as confidential information (i.e., that information that isn't accessible to the public online) is omitted from the document.

Monica Whyte informed the Protection Team that the BPH will hold public hearings (possibly grouping Systems together based on geographic location) after they have received and reviewed the completed Source Water Protection Plans from required systems throughout Region 9. This hearing does not satisfy the requirements, nor take the place of the public workshop that each utility is required to hold for their relevant systems. Feasible methods of advertising such workshops were also discussed; BCPSWD has contacts with local newspapers and radio stations, and has the ability to advertise on their website, Facebook page, and posted notices at the BCPSWD office.

Bunker Hill System Specific Discussions:

During discussion of a 1976 dye tracing study completed in Berkeley County by W.A. Hobba Jr., Alana Hartman stated that the non-point section of the Division of Water & Wastewater Management is beginning to focus funding and interest towards Sylvan Run, Torytown Run, and Mills Creek. Funding would potentially be available through the West Virginia DEP Agricultural Enhancement Program (among other programs), and would focus on reducing negative effects associated with agricultural practices within the watershed, and may potentially cover non-point contamination originating from septic systems. Programs being forwarded in these areas include agricultural enhancement programs, others aimed at establishing riparian buffer zones, and others designed for encouraging residents to frequently check and pump their septic tanks. These programs are important for the Bunker Hill system, as Sylvan run has been documented as a losing stream (Hobba, 1976) and may serve as a source of recharge to LeFevre Spring. As such, the Bunker Hill Water Treatment Plant may benefit from activation and renewed interest in these programs in the SWPA, with an emphasis placed on decreasing the effects of non-point source pollution on Sylvan Run.

During the presentation, we displayed current and future land use maps, with the BPH delineated SWPA overlain. The future growth area maps, which we acquired from the Berkeley County

Council website, depict anticipated land development in close proximity to the LeFevre Spring, and in areas associated with major faults and conduits associated with the spring. Much of the development area is anticipated to occur between and west of the Route 11 and I-81 corridors. The maps also showed that approximately one-third of the SWPA is located in Frederick County, VA in locations where zoning maps indicate future industrial and commercial growth will occur. Eric Laurence, Director of the Frederick County, VA Department of Planning was invited to the Protection Team meeting, but did not respond. ALWI recommended that the System continue to work with representatives from the Frederick County Department of Planning to limit incompatible land use development within the Bunker Hill SWPA.

ALWI-identified PSSCs and Critical Areas within the Bunker Hill SWPA were presented and discussed, with ALWI staff explaining the basis for each potential threat. Prior to the meeting, ALWI had prioritized these potential threats, as follows (in order from highest priority to lowest priority; see Table 8):

1. Highway (I-81) Corridors
2. Railroad Networks
3. Sinkholes
4. Commercial Activities
5. Septic & Sewer Systems
6. Agricultural Activities
7. New Growth Areas

ALWI asked that the Protection Team consider the threats, add additional threats conceived by the team, assess the prioritization of the threats and make any revisions to prioritization, as presented to the team. The Protection Team did not recommend any revisions to the ALWI-identified and prioritized table of PSSCs and Critical Areas.

Management Strategies developed and recommended by ALWI for each of these priority concerns were discussed thereafter (see Table 9). During the discussion, team members volunteered to handle implementation of the recommended management strategies. Relevant management and implementation strategies were discussed as follows:

- **Highways -** In response to an ALWI recommendation to establish emergency spill response stations, Mr. Eddie Gochenour explained that OHSEM currently has 20-25 absorbent bags available for the cleanup of spills and leaks. Mr. Gochenour deemed that this would be enough for small spills, but not large spills associated with train derailments and tanker truck accidents. Mr. Gochenour indicated that Berkeley County can receive mutual aid from Washington County, MD, who maintains an inventory of two pallets of absorbent, with each pallet containing 20-25 bags of absorbent. Mr. Gochenour agrees that pre-stocked response stations at key locations could decrease response time in the event of a spill. In this regard, Mr. Gochenour recommended reaching out to Joseph A. Castaldo with the Department of Transportation to discuss storage options for spill response equipment at the State Highway facility located on Tabler Station Road, which is located between the City of Martinsburg and Town of

Inwood. Alana Hartman added that as a "one-time-expense" project, there is a possibility that funding for instituting emergency stations could be sought through local watershed groups. The responsibility of re-stocking the emergency resources would be put on the carrier or entity responsible for the spill.

- **Railroad -** ALWI recommended that Berkeley County emergency personnel work with CSX and their shortline partners and take advantage of free training (online and in classroom) offered by the railroad corporation. These training exercises include online workshops, training at emergency personnel facilities, and train car response workshop activities. Mr. Gochenour informed the Team that he is working with Joe Taylor (CSX) to schedule tabletop and onsite trainings for railroad accidents and spills. He anticipates that onsite drills will begin to take place as early as 2016, and that the recommendations provided in Table 9 (relating to highways and railroads) will be implemented within a two-year time period.

- **Sinkholes** - Due to the presence of karst terrain, which underlies the region and encompasses the majority of both SWPAs, ALWI recommended that the System work with the County to establish a Sinkhole Management Program, possibly modeled after the Carroll County, MD Sinkhole Management Program. ALWI explained the general outline of the Carroll County Sinkhole Management Plan, whereby the locations of known sinkholes and karst geology boundaries are mapped, responsible parties for sinkhole formation and mitigation are established and/or determined, protocol for regular sinkhole inspections on County lands are instituted and cost-sharing initiatives for sinkhole mitigation are presented. When asked what policies Berkeley County presently has in place for sinkhole management, Mike Thompson stated that from a planning perspective, the Council becomes aware of the presence of sinkholes on private lands through the subdivision ordinance and associated planning requirements. Developers are required to establish buffers around known sinkholes, and residents are encouraged to establish buffers around or mitigate sinkholes that come to form on their land. Sinkholes located on land to be developed must be mapped and reported to the planning commission. A 50 foot buffer is required around existing sinkholes. Mr. Thompson added that roadways in the County are all privately owned, excluding State roads maintained by the Department of Transportation, which is no longer accepting incorporation of privately built roads. This presents a problem when a sinkhole forms on a private roadway because the responsibility of onerous repair efforts falls on one or more residents or homeowners associations. Berkeley County is dealing with such a situation currently. The lack of zoning in the County impedes land use restriction efforts and makes it difficult to establish sinkhole regulations through ordinances or other related measures. The Team discussed alternative options for implementing sinkhole regulations. Currently there are minimal sinkhole requirements embedded into County Stormwater Regulations, which are presently being updated. Matt Pennington is responsible for the draft stormwater regulations. This could present a possible avenue to incorporate more stringent sinkhole management regulations. WV State Code also provides for protective efforts to be established in wellhead protection areas. A sinkhole management strategy would be far more feasible if it is focused on SWPAs or other critical areas within the County, rather than as a County-wide regulation. Mr. Bill Clark and Ms. Jennifer O'Brien with the

Eastern Panhandle Regional Planning & Development Council expressed a willingness to identify funding opportunities for implementation of a preliminary sinkhole management program.

- **Commercial Activities** – While a limited number of commercial facilities exist within the Bunker Hill SWPA, two of the existing facilities identified by BPH included gas stations. ALWI also came to identify a number of auto repair and maintenance shops scattered throughout the SWPA. These facilities were discussed briefly. The Protection Team decided it would be appropriate to request site information from the Department of Environmental Protection and confirm that auto repair facilities were legal and properly disposing waste products. The Protection Team also felt it would be appropriate to provide site-specific Best Management Practice (BMP) documents to these commercial facilities to raise awareness about source water protection efforts and ensure potential contaminants are disposed of using best available methods.

- **Septic System(s) -** The Protection Team decided to hold off on implementation of related management activities until the next time the Sanitary Sewer Service plans to assess the feasibility of sewer extension/expansion, which will occur concordantly with development. The team discussed how the DEP Non-Point Section of the Division of Water and Wastewater Management works to assist and encourage residents to properly maintain their septic systems and maintains information regarding which systems are in need of attention. As a result, ALWI recommendations will be coordinated with other agencies at a later date.

- **Agricultural Practices** - The Team discussed recommended management activities for farmlands within the SWPA; accepting our recommendations without a set time limit for implementation. Ms. Alana Hartman indicated that West Virginia does not require Nutrient Management Plans for agricultural facilities, but that they are developed and provided at no cost.

- **New Growth** - When discussing relevant management activities, the Berkeley County Planning Commission reiterated that they do not possess the ability to enforce low impact development practices directly due to the absence of zoning in Berkeley County, presently. The Protection Team is turning towards alternate avenues of land use restrictions and purchasing opportunities, which include coordination with the Farmland Protection Board and other Land Protection programs/agencies. In this regard the System could consider working with Farmland Protection to request a higher point value (system of ranking the program uses; corresponding to the amount of funding given) to properties within the SWPA which are near the System's sources or overlying mapped fractures and faults associated with System sources.

During the course of the meeting, the Communication Plan component of the SWPP was discussed. The plan requires that a Communication Team be formed and comprised of personnel who would play an integral part in disseminating information between the system, the public and

other entities involved, should an emergency contamination event occur. ALWI recommended to the System that invitations be extended to local emergency and law enforcement personnel in this regard. However, ALWI also pointed out to Protection Team members that diagrams depicting the chain of communication/command in the event of a contaminant occurrence are provided in BCPSWDs confidential Emergency Response Plan (ERP), which BPH possesses and will receive an update to at a later date. This ERP outlines the means by which information will be disseminated to the public in a timely manner. Recent public notifications by BCPSWD regarding the latex spill on the Potomac River indicate that the ERP is sufficiently well designed and organized to effectively notify water users in a timely fashion.

When discussing the generalized and non-confidential web of communication followed by different entities in the event of a spill or other emergency, it became apparent that there is a delay in the time it takes information gathered by first responders and emergency personnel to be shared with water suppliers. Eddie Gochenour stated that when a spill or other contamination emergency is reported to their dispatch station, the EPA has asked that they be notified directly. From there, notifications would then be sent out at the State and then the Local levels. It is important to note that this system is not currently in place or finalized, and is just a concept proposed by the EPA.

Chris Thiel indicated that she receives notifications of spills on the Potomac (such as the recent latex spill) from the Interstate Commission on the Potomac River Basin, while she receives only email notifications from the County Health Department for all other spills. Ms. Thiel indicated that she receives excessive notifications of small scale spills on a daily basis. In an effort to streamline local communication efforts with the System, Mr. Gochenour will work with local dispatchers to highlight circumstances where the BCPSWD should be directly informed of a spill (i.e., spills occurring in close proximity to Sylvan Run, or LeFevre Spring itself). Mr. Gochenour inquired as to the amount of spilled material which Ms. Thiel would want to be notified of directly. She indicated that she would deem a spill of 1,000 gallons or more within the SWPA as a critical threat, but that notifications of smaller quantities may be issued if spills occur in close proximity to System sources.

The Education and Outreach Strategies recommended by ALWI were discussed, and responsible members were chosen for each category (See Table 10).

Appendix F-5. Emergency Response Plan Signature Page

EMERGENCY RESPONSE PLAN
WATER SECTOR

Public Water System Name: BCPSWD – Potomac River WTP

PWSID No: WV3300218

Physical Address: 251 Caperton Blvd.

City: Martinsburg
State: West Virginia
Zip Code: 25403
General Phone Number: 304-267-4600

Population Served: 22,396
Municipalities Served: 1

Prepared by (signature & title): [signature] Chief Operator

Reviewed by (signature & title): [signature] Executive Director

Date Completed: [illegible] 2004 **(June 2004)**

Date Revised: [illegible] 2015 **(November 2015)**

Appendix F-6. Engineering Evaluation

CONFIDENTIAL

Appendix F-7. Railroad Emergency Response Trainings and Services

The information included in this Appendix may be found at the following web addresses (respectfully):

Online Education:

- General - https://www.csx.com/index.cfm/about-us/safety/community/emergency-responder-training-and-education/
- Online Trainings – www.csxsafe.com
- Planning Guides – http://csxhazmat.kor-tx.com/
- Additional Training Opportunities - http://www.beyondourrails.org/index.cfm/safety/

Rail Respond:

- Program Information – http://www.beyondourrails.org/index.cfm/safety/respond/

Safety Train:

- Program Information – http://www.beyondourrails.org/index.cfm/news-stories/articles/csx-safety-train-delivers-enhanced-outreach-to-first-responders-and-communities/
- Related Article – http://www.richmond.com/business/article_6b1526cf-e3fe-55d4-bec6-37601609a875.html
- CSX Corporate Social Responsibility Report (additional information on the Safety Train program may be found on page 50) - https://www.csx.com/index.cfm/library/files/responsibility/csr-report-files/corporate-social-responsibility-report/

Community

Rail Security Partnerships

Emergency Responder Training and Education

Emergency Responder Training and Education

CSX provides emergency planning assistance and training to local fire, police and emergency response personnel in the communities we serve.

Online Training at CSXSAFE.com

CSX hosts a free online training program to educate emergency personnel on how to safely respond to incidents on and around railroad property and equipment.

CSXSAFE offers participants the opportunity to gain an understanding of how railroads operate, including some of the hazards of working around the rails and necessary protocols to keep responders safe.

The web-based program takes less than an hour to complete and is intended to provide important information to public agency personnel in fire and police departments, rescue and emergency medical organizations about basic rail safety precautions, railroad operations, initial-response procedures, types of rail equipment and who to call in an emergency.

Upon completion of the training modules, participants take a quiz, print a certificate of completion and are able to browse through upcoming in-person training opportunities being offered across the CSX network.

Training Materials

The CSX Transportation Public Safety and Environment department provides free training and emergency planning materials for emergency response agencies. Visit our Training Materials for Emergency Responders page to request any of the following items:

- Community Awareness Emergency Planning Guide
- Emergency Response to Railroad Incidents Self Study Guide
- Emergency Response to Railroad Incidents Self Study Video
- Locomotive Emergency Response Operations Video

Related Links

Corporate Social Responsibility

CSX Police Department

Emergency Responders

SAFE
CSX Safety Awareness For Emergencies

CSX

WELCOME TO CSX SAFE,

a course designed by CSX to help local emergency responders manage incidents involving rail property and equipment. CSX is dedicated to managing safe railways, and by working together with professionals like you, we can better protect and serve the communities in which we live and work.

Emergency response procedures require attention to detail. While this site is geared toward all responders, CSX provides discipline-specific training for police, fire & rescue, and other response agencies.

Once you've passed the quiz and are ready to take your emergency response training further, please visit the "More" section of this site.

To save your quiz progress, receive your certificate, or enroll in live training, you must have cookies enabled and be logged in.

CSX Transportation is a proud member of TRANSCAER

TRAINING MATERIALS FOR EMERGENCY RESPONDERS

Welcome

The CSX Transportation Public Safety and Environment department provides training and emergency planning materials for emergency response agencies free of charge. On this website, you can request the following items:

- Community Awareness Emergency Planning Guide
- Emergency Response to Railroad Incidents Self Study Guide
- Emergency Response to Railroad Incidents Self Study Video
- Locomotive Emergency Response Operations Video

Please follow the directions below to request these materials.

To login, please select the agency type with which you are affiliated.
You will need to provide evidence of your need for the materials requested before your order is filled.

CSX Transportation provides training materials to response agencies located in the states in which we operate. Due to the high demand for these training products, CSXT cannot provide materials for agencies in states other than those served by CSXT. If you are associated with a response agency west of the Mississippi River, Wisconsin, or any other area not served by CSXT, you should contact the railroad company operating in your jurisdiction for training.

TRANSCAER®

CSX Transportation proudly supports TRANSCAER® (Transportation Community Awareness Emergency Response), a voluntary national outreach effort that focuses on assisting communities prepare for and respond to a possible hazardous material transportation incident.

City/County Government
Consultant/Private Company
CSX Employee
EMA - County
EMA - State
EMS
Fire Department - Paid
Fire Department - Volunteer
Police
State/Federal Government

GO ▶

Alternatively, you may login as an authorized CSX employee with your email address and password.

Username:

Password:

LOGIN ▶

Forgot Your Password?

Play It Safe

Youth Safety Outreach

Rail Respond

Safety

At CSX, safety encompasses every aspect of company operations. Guided by a policy to ensure the safety of our employees, our customers and the communities we serve, CSX works relentlessly to prevent injuries and accidents through education, programming and advocacy at all levels.

Youth Safety Outreach

Play It Safe Outreach Campaign

Rail Safety First Responders

Through Rail Respond, CSX and First Responders work hand-in-hand to seamlessly share information to safeguard the communities and customers they serve.

LEARN MORE

Safety Train

Emergency Responder Training

Rail Respond

Online Training

Training Materials

VIEW ALL >

Safety

Play It Safe

Youth Safety Outreach

Rail Respond

Rail Respond

CSX Rail Respond is the first program of its kind among Class I railroads. It provides firefighters, police officers and other emergency responders with easy mobile access to critical information about what's traveling on CSX rails.

Designed specifically to aid first responders in the event of a rail emergency, CSX Rail Respond quickly identifies the contents of rail cars carrying hazardous materials. Through the mobile website, responders can securely access:

- Real-time information on the contents of rail cars.
- Real-time complete train list information.
- A suite of other useful emergency response information designed to assist when responding to a rail-related transportation emergency.

This innovative system builds on CSX's longstanding commitment to communicate with, collaborate with and train first responders in hopes of advancing our top priority: the safety of our communities, our employees and our customers' freight.

CSX Rail Respond, designed to work on smartphones, tablets or desktop PC, can be accessed through iPhone, Android devices and most browsers.

First responders can request access at www.csxrailrespond.com .

Youth Safety Outreach

Play It Safe Outreach Campaign

CSX Safety Train Delivers Enhanced Outreach to First Responders and Communities

CSX's Safety Train: Energy Preparedness Program, with rolling classrooms and specialized hands-on training, has taken to the rails on an expanded first responder training initiative. The train will travel over much of the company's crude oil service territory over the next several months.

This CSX Safety Train will begin in mid-May, visiting numerous communities in Pennsylvania, New York, New Jersey, Ohio, Indiana and Illinois. The company's enhanced training program offers fire fighters, police officers, emergency medical technicians and other first responders insights on how rail cars work and how to deal with rail incidents. CSX's first responder training already reaches hundreds of emergency personnel each year.

Upcoming training sessions will include Philadelphia; South Kearny, N.J.; Kingston, Albany, Syracuse, Rochester, Buffalo and New York, N.Y.; Erie, Pa.; Cleveland and Willard, Ohio; Garrett, Ind.; and Chicago. More details will be provided as the schedule is finalized.

"As the market for shipping crude oil has grown, so has our commitment to and responsibility for moving those shipments safely and efficiently," said Skip Elliott, CSX's vice president-public safety, health and environment. "This year, in light of increased crude oil movements on our network, we have expanded our engagement with first responders and emergency personnel along key routes to include training specific to crude oil movements."

The CSX Safety Train is comprised of a locomotive, four tank cars, one flat car equipped with a variety of tank car valves and fittings, two classroom cars and a caboose. CSX hazardous material specialists will lead training sessions with specific instruction on how crude oil is shipped. The train and instruction will help strengthen CSX's partnership with first responders and provide a higher state of emergency readiness.

Increased emergency response training and tuition assistance are part of a voluntary agreement that the nation's railroads reached with the U.S. Department of Transportation earlier this year. As part of this comprehensive agreement, the nation's railroads have lowered maximum authorized speeds for certain trains carrying crude oil in designated cities, increased track inspections on key oil routes, and agreed to implement additional trackside safety technology.

The CSX Safety Train is just one of a number of continuing programs through which CSX offers training and recognition to emergency responders and customers. Just recently, CSX presented its Chemical Safety Excellence Award to more than 70 shippers who had incident-free records in 2013.

Training already reaches hundreds of first responders through the Safety Train, hands-on sessions at training centers operated by CSX and the Association of American Railroads, classroom training at local fire stations, exercises and table-top drills, and thousands more through web-based and self-study courses. In September 2013, nearly 100 crude oil customers were trained by a CSX team.

Location: Jacksonville, FL

Published: May 26, 2014

Photos

Appendix F-8. Considerations for Future SWPPs

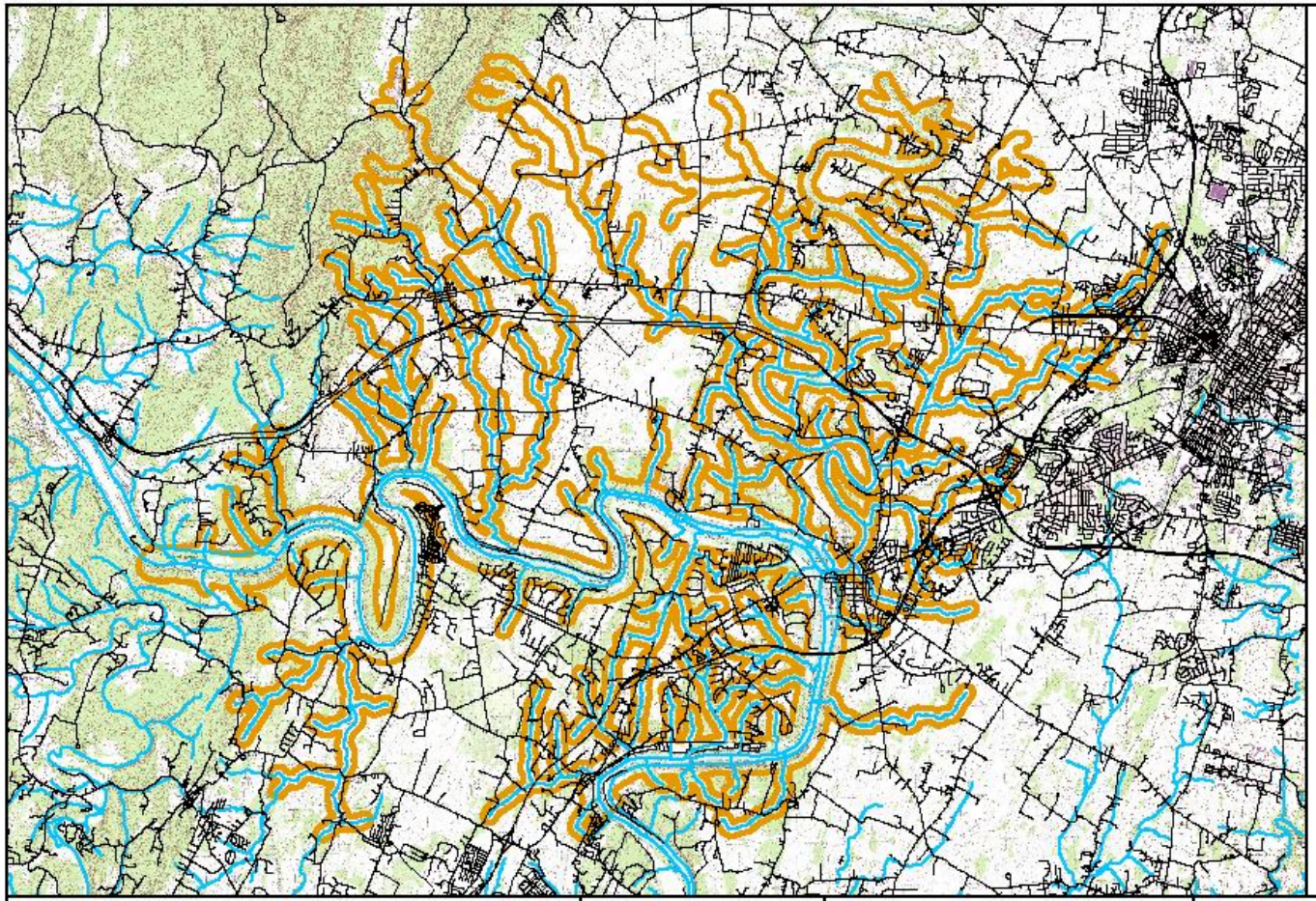
Following submittal of the 2016 Berkeley County Public Service Water District Potomac River Plant Source Water Protection Plan (SWPP), the West Virginia Bureau for Public Health requested that the following factors or corrections be included in future iterations of the SWPP:

- When the next SWPP is completed in 2019, that document should acknowledge the existence of this SWPP, as well as the September 2011 SWPP, which was not referenced in Table 1 in this report.

- During completion of this SWPP, the contact for the Shepherdstown Water Department changed from Bill Myers to Charles "Woody" Coe. Future iterations of the SWPP should reflect this change in the Sensitive Population Section of the Emergency Short Forms of this document.

- A brief cost estimate was omitted from Table 9 in this report for the "Mining Operations and Fly Ash Pits" PSSC because a more detailed cost analysis is provided in Appendix F-6 titled "Preliminary Early Warning System Cost Analysis." This early warning monitoring system provides adequate recommended equipment that would analyze water quality constituents indicative of a release from these PSSCs.

A map depicting the Zone of Peripheral Concern for the Potomac River Intake has been included in this submittal (Figure 7A), and should be featured in future iterations of the SWPP.



N

EXPLANATION:

- Road
- Stream
- Potomac River Intake Zone of Peripheral Concern

Scale:

8,000 4,000 0 8,000 16,000 Feet

Notes:

1. Zone of Peripheral Concern delineations provided by West Virginia Bureau for Public Health.
2. Stream data, road data and topographic base map from National Resource Conservation Service.
3. This figure is integral to an accompanying protection plan and should only be used in that context.
4. This figure is not intended to be used for boundary verification or survey control purposes.

Client:

BERKELEY COUNTY PUBLIC SERVICE WATER DISTRICT

PROJECT NO. WV7S619

Project:

Berkeley County Public Service Water District - Potomac River Plant Source Water Protection Plan

Berkeley County, West Virginia

ADVANCED Land and Water, Inc.

Global Environmental Solutions

Figure 7A:

Zone of Peripheral Concern Map

June 20, 2016

Summary of Public Outreach Efforts

Source Water Protection Plan Update,

Bunker Hill Source and Potomac River Plant Source

Activity	Date	Objective
Public Workshop	Dec 16, 2015	Provide forum for public information exchange.
Source Water Protection Team Meeting	Nov 18, 2015	Development of source water protection strategies.
Invitation Letters for Protection Team	Nov 2015	Identify prospective members for the Source Water Protection Team
Water District Board of Directors Meetings	Various	Open discussion of source water protection efforts with opportunity for public comment.
Press Release for publication in The Journal (by Region IX)	Nov 2015	Notify public of SB373 compliance efforts and opportunity for public comment on SWPPs.
Web site and facebook postings (Region IX and BCPSWD sites)		Public information
Emergency Response Planning Workshop, Shepherdstown	Sept 3, 2015	Network with agencies involved in emergency response activities; training
Potomac River Basin Source Water Protection Team Annual Meeting	Nov 18, 2015	Network with Potomac River water purveyors; discuss source water protection concerns
Source Water Protection Plan Training, Region IX	Sept 3, 2015	Network and training
Article in The Journal	May 25, 2015	Public information

Berkeley County Public Service Water District

Potomac River Water System

Public Outreach and Involvement Summary

The Protection Team: Efforts to engage local stakeholders, government entities and specific members of the community in forming the Berkeley County Public Service Water District (BCPSWD) Potomac River Water System Source Water Protection Team are listed below.

1. ALWI provided BCPSWD a recommended list of entities (including local stakeholders, government officials, etc.) to consider inviting to participate on the Protection Team. This list also contained contact information for each potential invitee in at least one form, including a mailing address, email and/or phone number.
2. On behalf of BCPSWD, ALWI sent a formal invitation to each invitee selected by BCPSWD from the above mentioned list, by mail and electronically (email).
3. The corresponding minutes for the November 19, 2015 Protection Team Meeting can be found in Appendix F-4 of the BCPSWD Potomac River SWPP.

The Public Workshop: Efforts to publicize the BCPSWD Potomac River Source Water Protection Public Workshop are listed below.

1. A Press Release was developed and provided to both BCPSWD and the Eastern Panhandle Regional Planning & Development Council (Region 9). The press release was distributed to the local media and posted on the BCPSWD website, as well as the Region 9 website.

The SWPP Report: Efforts to inform the public of the SWPP update and to receive comments and opinions on the content of the report are listed below.

1. ALWI created a SWPP Summary PowerPoint presentation for Region 9 to host on their website. This afforded the public an opportunity to view general SWPP information prior to the Draft SWPP being uploaded for public review and comment.
2. A public version of the SWPP Draft was posted on the BCPSWD and Region 9 websites for the public to opine on, prior to final submittal of the plan to WV BPH. At the close of the public comment period, ALWI discussed comments received with BCPSWD and updated the SWPP accordingly.