Town of Purcellville
Source Water Protection Plan

January 2014

Prepared by Tetra Tech, Inc.
in cooperation with the Town of Purcellville

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SOURCE WATER PROTECTION PLAN

TOWN OF PURCELLVILLE

PWSID: 6107600
LOUDOUN COUNTY

January 2014

Plan Preparation Funded by the Virginia Department of Health

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Purpose

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

It should be noted that proposed source water protection strategies in this report are voluntary, and not necessarily mandated by the Safe Drinking Water Act (SDWA). Proposed commitments and schedules are subject to change.

What are the Benefits of a Source Water Protection Plan?

- ✓ It can ensure conditions to provide the safest and highest quality drinking water to customers at the lowest possible cost.
- ✓ It establishes strategies to minimize the potential threats to the source of drinking water.
- ✓ It can plan for expansion, development, zoning and emergency response issues.
- ✓ It can provide more opportunities for funding in order to improve infrastructure, purchase land in the protection area, and make other improvements to the wellhead or source water protection areas.

Background

Source Water Protection

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

The Safe Drinking Water Act Amendments of 1996 expanded the concept of wellhead protection to include surface water sources under the umbrella term of Source Water Protection. The amendments encourage states to establish source water assessment and protection (SWAP) programs to protect all public drinking water supplies. As part of this

initiative, states must explain how protection areas for each public water system will be delineated, inventoried for potential contaminant sources, and given a susceptibility rating. In 2005, the Virginia Department of Environmental Quality published the Wellhead Protection Plan for the Commonwealth of Virginia, which was endorsed by the United States Environmental Protection Agency (USEPA). Source Water Protection Plans prepared for public water systems in Virginia should include all elements described in the approved Wellhead Protection Plan.

As a result of the SDWA amendments and the development of the commonwealth's Wellhead Protection Plan, the Virginia Department of Health (VDH) began preparing assessments of public drinking water facilities. During these assessments, field office personnel would identify the sources of water, provide delineations, and inventory potential contaminant sources to gather information to score each water source's susceptibility. Each public water system was provided a copy of its assessment. The Town of Purcellville was provided its Source Water Assessment, prepared in 2002 and attached as **Appendix A**. The assessment provides a list of recommended activities to review for possible implementation.

Local Advisory Committee

Communities with successful protection plans form a local advisory committee or Protection Team to help develop and implement the plan. A Protection Team provides a broader level of oversight and should include individuals familiar with protective strategies. Team members may include: water supply staff, emergency response personnel, local decision makers, business and industry representatives, land owners (of land in the protection area), and concerned citizens. The committee may consist of one individual to a number of individuals.

The Assistant Director of Public Works, Water Superintendent and Assistant Water Superintendent will form a Protection Team. The team will continue to oversee protection implementation. The team will meet with emergency response representatives, such as the fire and police chiefs annually to discuss security and emergency response. The team will report protection plan activities to the Town Council during meetings advertised and open to the public. Those wishing to participate in protection efforts or serve as a citizen volunteer may contact the Public Works offices at 540-751-2313.

System Information

The Town of Purcellville operates a community public water system that serves an estimated population of 7,800 people. A community public water system is a system that regularly supplies drinking water from its own sources to at least 15 service connections used by year-round residents of the area or regularly serves 25 or more people throughout the entire year.

Water Sources

The Town of Purcellville obtains raw water from three major areas: three springs (with adjacent impoundments), a raw water reservoir, and drilled wells. The springs are Harris

Springs, Potts Springs, and Cooper Springs. Water from each group of springs flows overland into an open earthen impoundment with a concrete dam. The three impoundments are almost identical and are approximately 20 feet by 50 feet and three feet deep. The Cooper Springs impoundment drains to an outflow pipe leading to downstream water system facilities. Water from the Harris Springs and Potts Springs flows overland to the J.T. Hirst Reservoir, which also collects surface water runoff from a drainage area. The reservoir is split into three basins. A second water line carries raw water from the reservoir to the water treatment plant.

There are several developed wells and others that have been drilled, but not brought on line as of yet. The wells are generally located in town limits or on property controlled by the town. The developed wells include: Cornwell Well No. 2, Nature Park Well, Main Street Village Wells 1, 2, and 5, Village Case Well, Hirst Well, Mountain View Well and Mountain View Well B, Jeffries Well, and the Marsh Well.

WHPA and SWPA Delineation

Delineation

Delineation is the process used to identify and map the surface recharge area that supplies water to a well or spring or the drainage basin that supplies water to a source water intake. This area is referred to as the source water protection area (SWPA), or as a Wellhead Protection Area (WHPA) when specifically referencing groundwater sources. The WHPA is also considered the surface and subsurface area surrounding a water well through which contaminants, if present, are reasonably likely to move toward and reach the water well. The WHPA is one of the areas that may be managed by the Town of Purcellville in order to protect groundwater resources. The Town of Purcellville owns the majority of the property and controls access to the SWPAs surrounding their springs and reservoir. Both the WHPA and SWPA are further described as Zone 1 or Zone 2 depending upon the likelihood of contamination. For purposes of this report, Town of Purcellville will focus on Zone 1 protection areas to ensure that resources are focused on priority threats.

The WHPA was originally delineated by VDH as part of the source water assessment based on a fixed radius around each of the wells supplying water to the Town of Purcellville.

- Zone 1 is a 1,000 foot radius around the well and is a priority zone for managing potential sources of contamination; and
- Zone 2 is a one-mile (5,280 feet) radius which represents an estimate of the total recharge zone for the well.

The fixed radius approach to delineate the recharge area is used as a reasonable approximation. More specific delineation of the recharge area can be developed through a more extensive evaluation of factors such as the hydrogeology in the vicinity of the well, daily withdrawal rate of the well, watershed boundaries, topography, bedrock and surficial geology, permeability and hydraulic conductivity of the bedrock, flow boundaries such as ridges, rivers, canals and lakes, fracture traces and lineaments, and dissolution features

such as sinkholes. These evaluations may include ground water basin boundary determination, Tiered Zone boundary delineations, and/or ground water discharge modeling. A map of the WHPA zones for the Town of Purcellville Wells is displayed as **Figure B-1** in **Appendix B**.

As for the surface water reservoir, the SWPA Zone 1 is defined as the portion of the watershed in a 5-mile radius of the intake structure. Zone 2 of a surface water system is that of the entire watershed, or the catchment area which provides the water to the intake. The VDH refers to this area as the Zone 2 protection area, because it is the secondary area of concern. Because it represents the entire watershed above an intake, it is less likely that a water works will have jurisdiction for the area and large scale implementation is less feasible. However, because their springs and reservoir occur high in the watershed, the Town of Purcellville has acquired the majority of the catchment area. **Figure B-2** (See **Appendix B**) shows the extent Zone 1 and Zone 2 SWPAs.

The springs and storage impoundments are considered surface water because they are exposed to the atmosphere before treatment, but the origin of the groundwater discharging at the spring may extend beyond the surface watershed. WHPAs have been delineated for the springs to capture a larger area of concern which may be contributing water to the springs. (**Figure B-2**)

Geology and Soils

The Town of Purcellville is located in the Blue Ridge Province of Virginia. The Blue Ridge province consists mainly of Proterozoic and Paleozoic igneous and metamorphic rock, with some occurrences of younger sedimentary rock and intrusions (Trapp and Horn 1997). A thin layer of soil and weathered rock overlay a relatively impervious bedrock, containing water primarily in joints, fractures, and faults. As a result of the thin soil layer, as well as steep terrain, there is rapid runoff of surface water and low groundwater recharge. Springs are common in the lower slopes of the mountains (UVA-IBE, 1991); such as those major spring complexes providing source water to the Town of Purcellville. Garnetiferous leucocratic metagranite (Ygt) makes up the majority of the bedrock underlying the Town of Purcellville and the surrounding valley. Main Street Village Wells, Cornwell Well, and Nature Park Well are drilled into the Ygt. Additional details and list of geology underlying the Town of Purcellville WHPA are provided in **Appendix B, Table B-1** and on **Figure B-3**.

Soils

A detailed soil survey of Loudoun County has been completed and mapped by the U.S.D.A Soil Conservation Service. Soil types can be important because the rate the groundwater infiltrates through the soil and type of plants that grow in the soil control the amount of precipitation that reaches the groundwater. The hydrologic soil group classification is provided for each of the main soil types in **Table B-2 (See Appendix B)**. **Table B-2** also provides the total area in acres and percentage of the WHPA for each significant soil type. The hydrologic soil group is a means for grouping soils by similar infiltration and runoff characteristics. Clay soils that are poorly drained tend to have the lowest infiltration rates, whereas sandy soils that are well-drained have the highest

infiltration rates. Natural Resources Conservation Service (NRCS) has defined four hydrologic groups for soils, A-D (NRCS 2007). Group A soils are described as having high infiltration rates that are usually deep, well-drained sands or gravels and typically have little runoff potential. Group B soils are described as having moderate infiltration rates that are usually moderately deep and moderately well-drained soils. Group C soils are described as having slow infiltration rates, and typically have finer textures with slow water movement. Group D soils are described as having very slow infiltration rates and high clay content with poor drainage. Group D soils usually have high runoff potential. The soils data were summarized using the major hydrologic group in the soil surface layers. A large majority of soils in the Purcellville area are classified in the hydrologic soil group, Group B.

Identification of Local Source Water Concerns

Potential Sources of Contamination Inventory

This inventory identifies potential sources of contamination (PSCs) in and around the protection area that could pose a threat to drinking water. A facility or activity is listed as a PSC if it has the potential to release a contaminant based on the kinds and amounts of chemicals typically associated with that type of facility or activity. It does not necessarily indicate that any release has occurred. An initial PSC list was developed as part of the Source Water Assessment conducted by VDH in the early 2000's. This list was reviewed prior to field investigation.

On February 19 2013, in preparation for developing this protection plan, contractor staff met with the Town of Purcellville staff to gain local knowledge of the presence of PSCs and determine local concerns. Prior to this meeting on December 11, 2012, the water system operator provided a tour of the WHPA and SWPA and information specific to each source. PSCs were identified for the WHPA Zone 1 during a subsequent field investigation. The most significant threats are from conduits (private wells), waste water pump stations and private septic systems, auto repair garages, gas stations, gas distribution tanks, commercial facilities throughout the town limits, and agricultural land uses. Refer to **Appendix C**, **Table C-1 and C-2** for specific PSCs that were field verified and **Figure C-1 and C-2** for locations of the PSC as they relate to the source water protection areas. Tables and figures present two sets of results, one for the source water protection area for the wells and the second for the source water protection areas for the reservoir and springs.

The wells are situated in three general areas: in or near the town limits, near the high school, or on property associated with the surface water treatment plant in an agricultural area. Those wells in or near Purcellville are susceptible to many potential contaminant sources associated with a high density of residents and commercial businesses. The wells near the high school are most susceptible to individual residents' wells, septic systems, and maintenance of the high school campus, especially the football field located in close proximity to the wells. The wells located near the surface water treatment plant are located near a tree farm and croplands.

No specific locational data for PSCs were collected in the reservoir source water protection area. However, there is a pasture located in the protection area. No livestock

were observed during the site visit, but there is evidence that there is active pasturing during a portion of the year. The pasture is fully fenced with no access for the livestock to the reservoir. The majority of the protection area is wooded, with no other significant threats. The springs' surface impoundments are surrounded entirely by forest. Operators inspect the reservoir and springs several times a week.

In addition to the field investigation, contractor staff referred to regulated databases of PSCs, known sites of contaminant releases, and wells from federal, state, and county sources. Regulated PSCs were identified for WHPA Zones 1 and 2, where available. The Regulated PSCs have not necessarily been field verified and represent potential threats that should be further investigated.

Table 1 provides a summary list of Regulated PSC types, data sources, and number of occurrences within the WHPA. The most significant regulated sites include petroleum releases, individual wells, test wells, and individual septic systems. Specific site data for Regulated PSC Types are provided in **Appendix C,** including figures showing locations and table providing specific parcel information.

Table 1: Number of regulated PSC types and data sources in the Town of Purcellville WHPA and SWPA.

Regulated PSC Type		Data Source	Zone 1	WHPA Zone 1 and 2	SWPA
NPDES (VPDES)		Virginia Environmental Geographic Information Systems (VEGIS) permits		3	0
Petroleum Release		VEGIS		60	0
Petroleum Facility		VEGIS		20	0
RCRA		US EPA		43	0
Wells (conduits)		Loudoun County GIS**			
Subtype	WWCO	Community well	11	25	1
	WWDH	Dry well		18	7
	WWDU	Dug well	4	12	
	WWHP	Heat Pump Well	2	7	
	WWIN	Individual well	16	478	40
	WWIR	Irrigation Well		6	
	WWMN	Monitor well		1	
	WWNC	Non-community well	3	12	
	WWSP	Spring	5	28	2
	WWTS	Test well	12	138	7
	WWUN	Unknown Well		2	
Pollutant Sources		Loudoun County GIS**			
Subtype	PCEM	Cemetery		7	
	PSCS	Chemical storage tank	2	13	
	PSSD	Sewage disposal system	28	615	38
	PSTP	Sewage treatment plant permits		1	
	PSBD	Building (e.g., Barn)		0	2

*Note: *The environmental data contained within the [VEGIS] files are intended for REFERENCE ONLY and are NOT certified to be absolutely complete or correct.*
***Loudoun County GIS does not include the entire WHPA. Conduits known near Well 2 in Fauquier County were identified during the PSC field investigation and through data provided by the Fauquier County Health Department, displayed on Figure C-1.*

Prioritization of Potential Contaminant Sources & Critical Areas

It may not be feasible to develop management strategies for all of the PSCs within the Town of Purcellville SWPA, depending on the total number identified. The identified PSCs can be prioritized by potential threat to water quality, proximity to the intakes and wells, and local concern. The highest priority PSCs can be addressed first in the initial management plan. Lower ranked PSCs can be addressed in the future as time and resources allow. In addition to identifying and prioritizing PSCs within the SWPA, local source water concerns may also focus on critical areas. For purposes of this source water protection plan, a critical area is defined as an area, identified by local stakeholders, within or outside of the SWPA, that may contain one or more PSC(s), and/or within which immediate response would be necessary to address the incident and to protect the source water.

During a follow-up meeting, held August 22, 2013, staff from the Town of Purcellville reviewed the PSC and critical area lists derived from new field verified PSCs, regulated points, and local concerns. Meeting participants identified the PSCs and/or critical areas as the highest priority at this time (**Table 2**). The Town of Purcellville protective strategies will focus on these PSCs. The locations of these highest priority PSCs are identified in figures in Appendix C.

Table 2: PSCs and/or Critical Areas Prioritized as Highest Priority and Reason for Local Concern

Highest Priority PSCs/Critical Areas	Why Are They Considered Highest Priority?
Conduits and Private Water Well Use	More than 700 wells are inventoried in the Loudoun County GIS in the Town of Purcellville WHPA and SWPA; more than 50 occur within the Zone 1 WHPA. Because water wells, monitoring wells, test well, vertical geothermal wells, etc. can allow surface water and contaminants a direct route to ground water; these conduits must be properly constructed and maintained. The condition of many conduits is not known entirely. In addition, the condition of existing domestic, irrigation, monitoring wells that are documented will not be inspected by the county health department regularly, if at all. Currently there are unused community wells that were drilled and not placed into service, yet. These wells are undeveloped and represent a potential threat. In addition to private water wells acting as potential conduits for contamination, if used, private water wells can draw contaminants into the public wells; and can draw groundwater resources from the public wells operated by the water works, reducing the wells capacity and the Town's ability to meet water demands.
Public and Private Waste Water	There are private individual septic systems and public waste water systems located in and near the WHPA. Accidental releases may allow untreated waste water to contaminate the water resource. Failing private septic systems can leach into surrounding soils and potentially contaminate the source water.

Highest Priority PSCs/Critical Areas	Why Are They Considered Highest Priority?
Petroleum storage and spills	Several homes in the Purcellville area are using or have used oil burning heating systems. Oil is delivered to these homes and stored in or around the home. For homes that have converted to alternative heat sources, storage containers may remain on their property. Petroleum releases during delivery or due to leaking storage containers can contaminate the drinking water source if not addressed.
Gas Stations/ Maintenance Garages	Oils, antifreeze, and other automobile fluids can cause contamination of groundwater sources if not cleaned up and disposed of properly. Underground Storage Tanks (USTs), particularly those at historic sites, may leak and contaminate groundwater sources.
Pesticides/fertilizers	Pesticides and fertilizers used for farm operations, golf course and public ground maintenance can migrate into the water supply. Areas used for disposal of animal waste or burying dead livestock can also cause contamination of the source water. There are at least two farm supply businesses in the WHPA, which stores and sells fertilizer and pesticides. If not stored properly or in cases of fire emergencies, these chemicals have been known to leach into the groundwater source in other communities.
Municipal Area - Concentrated Residential/Municipal Facilities	Municipal areas have a concentration of homes, businesses, schools, and other facilities that may collectively introduce contaminants into surface water at a concentration to cause concern. Storm water runoff, care of public grounds, maintenance of city vehicles at garages, and residents' activities in and outside their homes can contribute to contamination of the surface water including: fertilizers, pesticides, oils, paints, cleaning agents, etc.
Highway Traffic and Rights-of-way Maintenance	Highways traverse the WHPA with truck traffic hauling fertilizers, pesticides, petroleum products, etc. The source water could become contaminated if an accident was to occur and a resulting spill not addressed. Highway and utility rights of way are typically maintained with herbicides that can migrate into the water supply.
Water Treatment Facilities	Water is treated at separate water treatment plants that are in close proximity to each well. The water treatment plants are considered potential threats to the sources due to the chemicals used to treat the water, as well as the concentration of contaminants removed during the treatment process.

Protective Strategies

Source Management Strategies

Source management strategies are any actions taken to protect the source water from specific PSCs, type of contaminant, or critical area. For example, prohibitions, design standards, operating standards, and reporting requirements are typical source management strategies. Land purchases, conservation easements, and purchase of development rights are also included in the category of source management strategies.

It is advisable to focus source management strategies on high-priority PSCs, especially those that are within the Town of Purcellville jurisdiction. However, Town of Purcellville can protect against contaminant sources outside its jurisdiction by working with the officials of the county or neighboring communities in which the sources are located. Also, if watershed groups are active in the area of concern, the system may be able to partner with them.

Table 3 lists the PSC/critical area and active or possible protective strategies that the Town of Purcellville has implemented, is implementing, or intends to implement to reduce the threat to the source water.

Table 3: Source Management Strategies

PSC/Critical Area	Active or Possible Protective Strategies
Conduits and Private Water Well Use	The Town of Purcellville has enacted an ordinance that prohibits the construction of private water wells for any purpose within 1500 feet of a community well. Also, homes within 500 feet of a water or waste water line must connect to the public utility. When an applicant outside of these zones request a well permit, an environmental committee reviews the requests to determine how a private well would potentially impact the public supply. Undeveloped community wells will be included in monthly inspection routines to preserve them for future growth. These wells may be developed and brought on line in case of a long term water emergency (e.g., well contamination) or to provide larger capacity. These wells were the subject of hyrdrogeologic studies to determine the impacts to other public wells and private wells. This process will continue in the future if additional wells are drilled and developed. Many unused private water wells exist that could be properly abandoned. In order to accomplish this goal, the Town of Purcellville will consider a town ordinance requiring proper abandonment of existing wells on properties undergoing changes requiring a site plan approval. An alternative would be to place the requirement in the town's Facility Manual, which is the guide for future development. Site plan approval could be contingent on the applicant providing evidence that pre-existing wells have been or will be abandoned in accordance with specifications

PSC/Critical Area	Active or Possible Protective Strategies
	established by Loudoun County provided in **Appendix D** or accessed at: http://va-loudouncounty.civicplus.com/index.aspx?nid=1451 The Town of Purcellville will consider abandonment of known wells on town property or on properties seeking abandonment assistance, prioritizing those wells closest to public drinking water wells. The Town of Purcellville may pursue a grant from VDEQ to abandon wells. More information concerning the grants can be accessed by visiting: http://www.deq.virginia.gov/Programs/Water/WaterSupplyWaterQuantity/GroundwaterProtectionSteeringCommittee/WellheadProtection.aspx or contacting program coordinator Mary Ann Massie at 804-698-4042.
Public and Private Waste Water	Several septic systems occur in the town limits and in the WHPA Zones 1 and 2. Loudoun County has jurisdiction for those septic systems outside the town limits. The Town can communicate Loudoun County requirements to properly maintain septic systems to area residents. (see **Appendix D** for Frequently Asked Questions, provided by Loudoun County). The Town may consider a capital improvement project focused on extending lines and establishing pump stations to eliminate private septic systems. Priority should be given to those within the WHPA Zone 1, 1000' buffer.
Petroleum storage and spills	The Protection Team may communicate the source water vulnerability to residents with petroleum storage and encourage the removal of unused tanks, particularly those installed underground.
Gas Stations/ Maintenance Garages	The Protection Team will communicate with current station owners the need to properly dispose of oil and other automobile products and ask them to follow regulations and institute BMPs to contain and clean up spills. These facilities may already be implementing best management practices for monitoring and/or containing a potential leak or spill and may be reviewed.
Pesticides/fertilizers	The Town of Purcellville will consider a local ordinance that limits the amount of any substance with a Maximum Contaminant Level in drinking water, including fertilizers and pesticides that can be stored or applied in the WHPA Zone 1. Example language appears in **Appendix D.** If a local ordinance is not accepted, the committee will consider increased raw water monitoring for specific contaminants, such as nitrates/nitrites. The Protection Team will communicate with the owner of the golf course or operator of the town/county facilities to suggest implementation of BMPs when applying fertilizers. For more

PSC/Critical Area	Active or Possible Protective Strategies
	information, visit: http://www.epa.gov/opp00001/factsheets/ipm.htm.
Municipal Area - Concentrated Residential/Municipal Facilities	The Town of Purcellville has considered the potential for future disturbances and threats to the WHPA through commercial and industrial development. The Town of Purcellville has a Facilities Manual that is provided to developers detailing procedures and specifications for construction within in Purcellville. The Facilities Manual can be revised to include restrictions and/or requirements for development within the WHPA Zone 1. The Protection Team will communicate with the Town of Purcellville's maintenance personnel to raise their awareness of the WHPA and ask that they institute BMPs when maintaining grounds and vehicles. Previously, the Town of Purcellville participated in a pharmaceutical take back program, but found that the program was not utilized by their residents. If at some point in the future there is a need the Town will reconsider the National Take Back Initiative, in which consumers can bring back unwanted prescription medication and personal care products. Additionally, public education and outreach activities may include providing guidance for proper disposal of pharmaceuticals and personal care products to water customers, as well as in home healthcare providers such as Hospice.
Highway Traffic and Rights-of-way Maintenance	The Protection Team will coordinate with emergency officials to be better prepared in the event of a hazardous spill. Explore the possibility of erecting signs within the WHPA to alert motor carriers of the emergency number(s) to call should a spill occur. Contact carriers that transport materials within the WHPA and identify the types of materials commonly transported. This information will be used to inform and properly prepare emergency response personnel. The Protection Team may contact the utility companies to determine the herbicides used within the ROW and any other chemicals used. Herbicide labeling is developed with guidance from the USEPA providing information on application. This guidance has been developed with public health in mind and may list restrictions for application to prevent herbicide migration into water supplies. Communicate the boundaries of the WHPA to raise awareness with utility company to ensure BMPs.
Water Treatment Facilities	To protect the source water, treatment plant, and personnel, the water works should regularly inspect chemical containment structures, evaluate and update materials handling procedures, and implement a "just-in-time" ordering process for chemicals if possible.

Education and Outreach Strategies

Table 4 gives an overview of strategies that the Town of Purcellville proposes to implement for education and outreach activities. The goal of the overall education and outreach plan is to raise awareness of the need to protect drinking water supplies and build support for implementation strategies.

Table 4: Education and Outreach Strategies

Education and Outreach Strategies	Target Audience
Annual Drinking Water Quality Report	The water system publishes an Annual Drinking Water Quality Report (i.e., Consumer Confidence Report), as required by the Safe Drinking Water Act, which is provided to all water customers. Information concerning the wells, treatment, and Source Water Assessment is included in the report. In the future, the Town of Purcellville may include a reference to this source water protection plan and how customers can access a copy and potentially contribute to protection activities.
Brochures	The Town of Purcellville may develop a brochure describing Source Water Protection specifically for the town and promote the general education of the community on Source Water Protection. If developed this brochure will be distributed to water customers and provided in the town offices.
Webpage	The Town of Purcellville will consider creating a source water protection page with links to the source water protection plan, state and federal sites with protection information such as septic system maintenance, private water well maintenance/construction guidance, water conservation, wellhead protection guidance, kids resources, wellhead brochure, etc. The page could also feature announcements for household hazardous waste collection or drug take back events.
Committee on the Environment	The Town of Purcellville has a Committee on the Environment that has been active for several years. The committee has similar interests in protecting the environment and community (including the water). The Committee on the Environment will integrate source water protection into their efforts.
Letters and Links	The Town of Purcellville will consider sending letters providing educational information to residences and businesses. These will alert the recipients of the need for source water protection and conservation. See **Appendix E** for example letters. The letters may be modified to provide guidance for specific threats, invitations to volunteer or participate in events, or to announce public meetings and ordinances. Several organizations provide information and resources on the internet, related to source water concerns and PSCs. These materials or websites may supplement the letters in order to provide the public with additional education resources. Examples of these websites are described below. The Virginia Department of Health, Office of Drinking Water hosts a page describing source water protection in the state of Virginia with several links to additional resources. http://www.vdh.virginia.gov/ODW/SourceWaterProtection.htm The Virginia Department of Environmental Quality hosts a page describing

Education and Outreach Strategies	Target Audience
	wellhead protection efforts specifically aimed at groundwater, including available grant funding. http://www.deq.virginia.gov/Programs/Water/WaterSupplyWaterQuantity/GroundwaterProtectionSteeringCommittee/WellheadProtection.aspx USEPA Water Sense Simple Steps to Save Water (EPA-832-F-07-011) presents benefits of conserving water. Focusing not only on the environment, but also on the financial savings associated with conservation. The brochure can be viewed at: http://www.epa.gov/watersense/docs/ws_simplesteps508.pdf The public may be concerned with the potential impact of pharmaceutical and personal care products on both surface and groundwater sources. Several states and the USEPA have developed guidance to consumers regarding proper disposal of these products. The following links are publications from the USEPA and US Food and Drug Administration (FDA). http://water.epa.gov/scitech/swguidance/ppcp/upload/ppcpflyer.pdf http://www.fda.gov/downloads/Drugs/ResourcesForYou/Consumers/BuyingUsingMedicineSafely/UnderstandingOver-the-CounterMedicines/ucm107163.pdf
School Curricula	The Town of Purcellville will consider working with the school system to incorporate source water activities into the school curricula. The committee may request that an operator visit school or invite students for a plant tour to tie in with school curricula. The USEPA offers free educational materials for teachers and students, including classroom lessons, fact sheets, and interactive games and activities, for grades K-12. These materials can be accessed at the following websites. For general source water protection: http://www.epa.gov/safewater/kids/index.html. For water conservation: http://www.epa.gov/watersense/kids/index.html Similar protection and conservation related resources can be found at the Groundwater Foundation website; http://www.groundwater.org/kids/
Plant Tours	Tours of the water plant may be provided to interested organizations such as watershed groups, schools, and civic organizations; as well as local Emergency Responders to make them familiar with the facilities in the event of an emergency.
Emergency Planning and Coordination	The Protection Team will communicate with local fire departments and County Emergency Services on a regular basis, and when available participate in training exercises for emergency response. Once each year, the Town of Purcellville should provide an updated emergency information sheet that shows the WHPA, roads, and waterworks emergency contact information. If needed the Town of Purcellville will invite the emergency responders to review emergency response plans for the waterworks.

Contingency Planning

The goal of contingency planning (See **Appendix F**) is to identify how the Town of Purcellville will prepare for and respond to any drinking water shortages or emergencies

that may occur, due to short and long term water interruption, incidents of spill or contamination.

The Town of Purcellville should seek information and participate in any existing emergency response plans or programs, such as those with Loudoun County, the state Rural Water Association, or the Virginia WARN (Water/Wastewater Agency Response Network).

The pages in **Appendix F** may be photocopied and posted in the water plant making them accessible in case of an emergency.

Implementation

Table 5 summarizes the Town of Purcellville Source Water Protection Plan. Many implementation activities may be eligible for funding offered through the VDEQ. More information concerning the grants can be accessed by contacting program coordinator Mary Ann Massie at 804-698-4042 or visiting:
http://www.deq.virginia.gov/Programs/Water/WaterSupplyWaterQuantity/GroundwaterProtectionSteeringCommittee/WellheadProtection.aspx

The initial step in implementation should be to discuss responsible parties and timelines to implement the strategies. Wellhead Protection Advisory Committee members can determine the best process for completing activities within the projected time periods. Additional meetings may be needed during the initial effort to complete activities, after which the Protection Team should consider meeting annually to review and update the Source Water Protection Plan.

Updating the Plan

The Protection team will review and make needed updates to this source water protection plan annually or whenever there are changes in the following: major staff, PSCs near the SWPA, land use in the watershed, water quality, etc. The committee will review the contingency plan to update emergency contact numbers and procedures continually to best prepare for emergency incidents and water shortages.

The Town of Purcellville will provide access to Loudoun County officials, in order to insure that the WHPA and SWPA are properly identified in the Loudoun County Planning documents.

Substantial Implementation

Virginia's definition of "substantial implementation" of source water protection measures follows:

a. Community waterworks which have a developed strategy in-place (e.g., Wellhead Protection Plan), and
b. Have implemented one or more recommended actions.

Recommended actions are those described in the Source Water Assessment Report (See **Appendix A**); this Source Water Protection Plan; or locally defined protective measures.

Table 5: Implementation of Activities

ACTIVITY	RESPONSIBLE PARTY	WHEN IMPLEMENTED
Source Management Activities		
Has enacted an ordinance that prohibits the construction of private water wells for any purpose within 1500 feet of a community well. Also, homes within 500 feet of a water or waste water line must connect to the public utility.		
When an applicant request a well permit, an environmental committee reviews the requests to determine how a private well would potentially impact the public supply.		
Many unused private water wells exist that could be properly abandoned. In order to accomplish this goal, the Town of Purcellville will consider a town ordinance requiring proper abandonment of existing wells on properties undergoing changes requiring a site plan approval. An alternative would be to place the requirement in the town's Facility Manual, which is the guide for future development. Site plan approval could be contingent on the applicant providing evidence that pre-existing wells have been or will be abandoned in accordance with specifications established by Loudoun County.		
Undeveloped community wells will be included in monthly inspection routines to preserve them for future growth. Consider abandonment of known wells on town property or on properties seeking abandonment assistance, prioritizing those wells closest to public drinking water wells. The Town of Purcellville may pursue a grant from VDEQ to abandon wells.		
Several septic systems occur in the town limits and in the WHPA Zones 1 and 2. Loudoun County has jurisdiction for those septic systems outside the town limits. The Town can communicate Loudoun County requirements to properly maintain septic systems to area residents.		
Consider a capital improvement project focused on extending lines and establishing pump stations to eliminate private septic systems. Priority should be given to those within the WHPA Zone 1, 1000' buffer.		
Communicate the source water vulnerability to residents with petroleum storage and encourage the removal of unused tanks, particularly those installed underground.		
Communicate with current gas station and garage owners the need to properly dispose of oil and other automobile products and ask them to follow regulations and institute BMPs to contain and clean up spills. These facilities may already be implementing best management practices for monitoring and/or containing a potential leak or spill and may be reviewed.		

ACTIVITY	RESPONSIBLE PARTY	WHEN IMPLEMENTED
Consider a local ordinance that limits the amount of any substance with a Maximum Contaminant Level in drinking water, including fertilizers and pesticides that can be stored or applied in the WHPA Zone 1. The.		
Protection Team will communicate with the owner of the golf course or operator of the town/county facilities to suggest implementation of BMPs when applying fertilizers. For more information, visit: http://www.epa.gov/opp00001/factsheets/ipm.htm		
Revise the Facilities Manual to include restrictions and/or requirements for development within the WHPA Zone 1.		
Communicate with the Town of Purcellville's maintenance personnel to raise their awareness of the WHPA and ask that they institute BMPs when maintaining grounds and vehicles.		
Reconsider the National Take Back Initiative, in which consumers can bring back unwanted prescription medication and personal care products. Additionally, public education and outreach activities may include providing guidance for proper disposal of pharmaceuticals and personal care products to water customers, as well as in home healthcare providers such as Hospice.		
Coordinate with emergency officials to be better prepared in the event of a hazardous spill.		
Explore the possibility of erecting signs within the WHPA to alert motor carriers of the emergency number(s) to call should a spill occur. Contact carriers that transport materials within the WHPA and identify the types of materials commonly transported. This information will be used to inform and properly prepare emergency response personnel.		
Contact the utility companies to determine the herbicides used within the ROW and any other chemicals used. Communicate the boundaries of the WHPA to raise awareness with utility company to ensure BMPs.		
To protect the source water, treatment plant, and personnel, the water works should regularly inspect chemical containment structures, evaluate and update materials handling procedures, and implement a "just-in-time" ordering process for chemicals if possible.		
Education and Outreach		
Include a reference to this source water protection plan and how customers can access a copy and potentially contribute to protection activities in the Annual Drinking Water Quality Report (i.e., Consumer Confidence Report).	PWS operator	Ongoing
Develop a brochure describing Source Water Protection specifically for the town and promote the general		

ACTIVITY	RESPONSIBLE PARTY	WHEN IMPLEMENTED
education of the community on Source Water Protection. If developed this brochure will be distributed to water customers and provided in the town offices.		
Consider creating a source water protection page with links to the source water protection plan, state and federal sites with protection information such as septic system maintenance, private water well maintenance/construction guidance, water conservation, wellhead protection guidance, kids resources, wellhead brochure, etc. The page could also feature announcements for household hazardous waste collection or drug take back events.		
Committee on the Environment may integrate source water protection into their efforts.		
Consider sending letters providing educational information to residences and businesses. These will alert the recipients of the need for source water protection and conservation. The letters may be modified to provide guidance for specific threats, invitations to volunteer or participate in events, or to announce public meetings and ordinances.		
Several organizations provide information and resources on the internet, related to source water concerns and PSCs. These materials or websites may supplement the letters in order to provide the public with additional education resources. Examples of these websites are described below.		
Consider working with the school system to incorporate source water activities into the school curricula. The committee may request that an operator visit school or invite students for a plant tour to tie in with school curricula.		
Tours of the water plant may be provided to interested organizations such as watershed groups, schools, and civic organizations; as well as local Emergency Responders to make them familiar with the facilities in the event of an emergency.		
Communicate with local fire departments and County Emergency Services on a regular basis, and when available participate in training exercises for emergency response. Provide updated emergency information sheet that shows the WHPA, roads, and waterworks emergency contact information. If needed the Town of Purcellville will invite the emergency responders to review emergency response plans for the waterworks.		

References

NRCS (Natural Resources Conservation Service). 2007. Hydrologic Soil Groups. Chapter 7 in Part 630 Hydrology: National Engineering Handbook, pp. 7-i–7-5. U.S. Department of Agriculture, Natural Resource Conservation Service, National Soil Survey Center and Conservation Engineering Division, Washington, DC. http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba

Trapp, Henry, Jr. and Marilee A. Horn. 1997. Delaware, Maryland, New Jersey, North Carolina, Pennsylvania, Virginia, West Virginia. Chapter 730-L in *Hydrologic Atlas Ground Water Atlas of the United States.* U.S. Geological Survey, Office of Ground Water, Reston, VA. Accessed December 7, 2012. http://pubs.usgs.gov/ha/ha730/ch_l/index.html

University of Virginia, the Institute of Environmental Negotiation (UVA-IEN), Department of Urban and Environmental Planning, School of Architecture,. 1991 A Handbook for Local Governments in Virginia for the Virginia Ground Water Protection Steering Committee (VGWPSC).

Appendix A:

Source Water Assessment Report

Appendix B:

WHPA Characterization

Figures showing maps of the source have not been included in electronic format for security purposes. To view figures, contact the Town of Purcellville Public Works office at 540-751-2313.

Geology

Refer to **Figure B-3** for locations, as well as **Table B-1** for a summary of geologic units in the Town of Purcellville WHPA and springs.

Table B-1. Geologic units in Town of Purcellville WHPA Zone 2

Data source	Map unit	Lithological unit of bedrock	Rock Classification	Age	Color	Formation	Area of Zone 2 (acres)	Springs
Loudoun County	Cw	Quartzite	Metasedimentary	Early Cambrian	White	Weverton	15	
Loudoun County	Cwl	Quartzite	Metasedimentary	Early Cambrian	White	Weverton	31	X
Loudoun County	Cwm	Quartzite	Metasedimentary	Early Cambrian	White,gray	Weverton	29	X
Loudoun County	Cwu	Quartzite	Metasedimentary	Early Cambrian	Blue gray	Weverton	22	
Loudoun County	Jd	Diabase	Igneous intrusive	Early Jurassic	Black		22	
Loudoun County	Ygt	Garnetiferous leucocratic metagranite	Igneous	Mesoproterozoic	Light gray		4083	
Loudoun County	Yhm	Hornblende monzonite gneiss	Igneous	Mesoproterozoic	Tan gray		1013	
Loudoun County	Ymb	Biotitic Marshall metagranite	Igneous	Mesoproterozoic	Light gray		1607	
Loudoun County	Zc	Metabasalt	Igneous extrusive	Neoproterozoic	Green	Catoctin	398	X
Loudoun County	Zcp	Phyllite	Metasedimentary,volcanic	Neoproterozoic	Variegated	Catoctin	42	
Loudoun County	Zmd	Metadiabase dike	Igneous intrusive	Neoproterozoic	Green		323	
Loudoun County	Zsm	Marble	Metasedimentary	Neoproterozoic	Tan,pink	Swift Run	5	
Loudoun County	Zss	Schist, metasandstone	Metasedimentary	Neoproterozoic	Light gray	Swift Run	144	

Note: X denotes major lithological units of the area draining into the springs.

Soils

The majority of the soils in the WHPA are classified in Groups B. **Refer to Figure B-4** to see a map of the hydrologic groups in the WHPA.

Table B-2: Soils and hydrological groups in the Town of Purcellville WHPA.

Map Unit Symbol	Map Unit Name	Area in WHPA (ac)	% WHPA	Hydrologic Soil Group
10B	Mongle silt loam	638	8.26	D
17B	Middleburg silt loam	662	8.57	B
20B	Purcellville and Tankerville soils	27	0.35	B
20C	Purcellville and Tankerville soils	1113	14.41	B
20D	Purcellville and Tankerville soils	176	2.28	B
20E	Tankerville and Purcellville soils	4	0.05	B
22B	Purcellville-Swampoodle complex	850	11.01	B
23B	Purcellville silt loam	2640	34.18	B
27C	Flairmont very flaggy loam	23	0.30	C
28B	Eubanks loam	78	1.01	B
28C	Eubanks loam	21	0.27	B
29B	Eubanks loam	40	0.52	B
29C	Eubanks loam	50	0.65	B
29D	Eubanks loam	46	0.60	B
2A	Codorus silt loam	183	2.37	C
30C	Tankerville and Philomont soils	4	0.05	C
31B	Philomont and Tankerville soils	57	0.74	B
38B	Swampoodle silt loam	469	6.07	C
40C	Catoctin channery silt loam	13	0.17	C
40D	Catoctin channery silt loam	32	0.41	C
43B	Myersville-Catoctin complex	21	0.27	B
43C	Myersville-Catoctin complex	40	0.52	B
45B	Fauquier silt loam	55	0.71	C
45C	Fauquier silt loam	10	0.13	C
4A	Hatboro loam	148	1.92	D
50D	Stumptown very flaggy loam	31	0.40	B
51E	Stumptown-Rock outcrop complex	40	0.52	B
52D	Cardiff channery silt loam	4	0.05	B
55B	Glenelg silt loam	22	0.28	B
55C	Glenelg silt loam	30	0.39	B
55D	Glenelg silt loam	3	0.04	B
59C	Flairmont very flaggy loam	3	0.04	C
81B	Brumbaugh cobbly silt loam	7	0.09	B
81C	Brumbaugh cobbly silt loam	8	0.10	B
82B	Scattersville silt loam	20	0.26	C
83B	Braddock gravelly loam	1	0.01	B
83C	Braddock gravelly loam	2	0.03	B
89D	Weverton very flaggy silt loam	117	1.51	B
94B	Allegheny silt loam	2	0.03	B
W	Water	33	0.43	
	Totals	7723	100.00	

Appendix C:

Potential Sources of Contamination

Table C-1 provides specific site information and **Figure C-1** presents a map of the PSC locations identified in a field investigation.

Table C-1: Potential Contaminant Sources Occurring in or Near the Source Water Protection Area for the Town of Purcellville

PSC No.	Type of PSC	Description
P-1	Community garden	Community garden next to Village Case well
P-2	Conduit	Hirst farm well (HF-2)
P-3	Conduit	Well, Not pumping from (HF-4)
P-4	Stormwater Pond	Stormwater pond near WWTP
P-5	Conduit	Nature Park well (Suzanne R Kane Nature Preserve)
P-6	Conduit	Corn Well
P-7	Conduit	unnamed well
P-8	Conduit	unnamed well
P-9	Conduit	Mountain View well #1 near football field
P-10	Conduit	Mountain View well #2
P-11	Conduit	tree farm well
P-12	Conduit	unnamed well
P-13	Conduit	Marsh Well
P-14	chemical/fuel storage area	tree farm (garage and mulch deck)
P-15	Conduit	unnamed well (nursery)
P-16	Conduit	unnamed well (cornfield)
P-17	Conduit	Vi Geoffrey's well
P-18	Conduit	unnamed well
P-19	Pumpstation	Pumpstation and generator
P-20	Wastewater Collection	wastewater collection line
P-21	School parking lot/playing fields	Woodgrove Highschool
P-22	Conduit	Unnamed well 4, not used.
P-23	Conduit	VC well
P-24	Residential Area	Mainstreet Village Residential development at the MSV Treatment Building
P-25	Residential Area	Mainstreet Village Residential development at the MSV Wells
P-26	Farm Equipment and Supply Store	Browning Equipment
P-27	Public Schools	Blue Ridge Middle School and Fields
P-28	Maintenance Facility	Town of Purcellville Public Works Facility: Covered salt storage and other roadway maintenance equipment/supplies. Several garage bays for equipment storage and maintenance.
P-29	Private Well-conduit	Residential area with private wells and septic systems.
P-30	Private Well-conduit	Residential area with private well, septic system, and horse barn.
P-31	Funeral Home	Lyles Funeral Service
P-32	Public Park and Fields	Fireman's Field Park
P-33	Town Hall	Purcellville Town Hall and parking
P-34	Funeral Home	Hall Funeral Home
P-35	Dry Cleaning Facility	Executive Cleaners
P-36	Auto Garage	Bridges Auto Center
P-37	Above Ground Storage Tanks	Multiple ASTs at Unknown Cleaners Facility: Sign indicates the building contains "cleaners"
P-38	Gas Station	7-11 Gas Station

PSC No.	Type of PSC	Description
P-39	Auto Garage	Purcellville Tire and Auto Service
P-40	Auto Garage	Champion Auto
P-41	Dry Cleaning Facility	Festival Cleaners
P-42	Auto Garage	Goodyear Tire and Service
P-43	Recycling Center	Central Western Loudoun Recycling Center
P-44	Public Schools	Harmony Middle School
P-45	Public Schools	Patrick Henry College
P-46	Dry Cleaning Facility	Gateway Cleaners
P-47	Medical Facility	Loudoun Valley Medical Building
P-48	Historic spring house	Mahlon Taylor Spring House
P-49	Stormwater Swell	Stormwater pond near the medical center and residential development
P-50	Waste Water Pump Station	Pump station near MSV Well #1
P-51	Automobile Sales	H&H Used Cars
P-52	Auto Garage	Purcellville Tire and Auto Service. 2 bay garage
P-53	Gas Station	Exxon
P-54	Public Schools	Loudoun Valley High School
P-55	Wood Manufacturing	Loudoun Stairs
P-56	Truck Repair	High Gear Truck Repair. Loudoun Stairs is at the same complex
P-57	Printers	Mr. Print
P-58	Dry Cleaning Facility	Purcellville Cleaners
P-59	Asphalt Company	Dominion Paving and Sealing
P-60	Concrete Company	Cardinal Virginia- Purcellville Plant
P-61	Commercial Business Facility	Desanti Designs
P-62	Lumber Yard	Loudoun Lumber Yard
P-63	Gas Distributor	Amerigas Distribution center where large tanker trucks are refilling
P-64	Commercial Business Facility	Loudoun Valley Roofing
P-65	Auto Garage/Truck Service	Saville's Service Center
P-66	Commerical Business Facility	Shenandoah Sash and Door
P-67	Auto Repair	Loudoun Collision Center
P-68	Automotive Machine Shop	M&D Automotive Machine Shop
P-69	Truck Repair	Truck Center
P-70	Auto Garage	Walsh's VIP Auto Service
P-71	Construction Company	McKim Construction Co.
P-72	Auto Garage/Truck Service	Road Runner
P-73	Construction Company	RPR Construction Co.
P-74	Emergency Vehicles	Fastlane Emergency Responders
P-75	Auto Repair	Stingrays Autobody
P-76	Construction Company	NN&R Development
P-77	Auto Repair	Craftsman Autobody
P-78	Heavy Equipment	GeoStructure: Large Construction Equipment stored and possibly serviced on site.
P-79	Bus Terminal	Virginia Regional Transit:Also provides bus storage at the site
P-80	Auto Repair	Terry’s Body Shop
P-81	Above Ground Storage Tanks	Augustine Plumbing: Several large new and used storage tanks. Appears to be septic tanks
P-82	Carpet Center	Loudoun Carpet Care: Large facility, may keep carpet cleaning solutions onsite
P-83	Auto Supplies	Loudoun Valley Auto Parts

PSC No.	Type of PSC	Description
P-84	Printers	Purcellville Copy
P-85	Automobile Sales	Purcellville Motors Inc, Auto Sales
P-86	Auto Supplies	NAPA Auto Parts
P-87	HVAC Businesses	Carrier Heating and Cooling, Temp-A-Tron Inc.
P-88	Farm Equipment and Supply Store	Southern States
P-89	Horse Stables	Center Field
P-90	Highway	Route 7 overpass
P-91	Public Schools	Mountain View Elementary School
P-92	Public Schools	Woodgrove High school
P-93	Horse Farm	Private Horse Farm with barn, feedlot.
P-94	Residence	Private Residence with several pieces of equipment stored
P-95	Auto Towing and Garage	Purcellville Towing and Recovery
P-96	Gas Station and Auto Garage	Shell
P-97	Truck Repair	Loudoun Truck Center
P-98	Paint Supply	The Paint and Paper Place
P-99	Golf Course	Loudoun County Club and Golf Course
P-100	Historic Gas Station	7-11 Convenience Shop

Note: PSC No. labeled with "P" indicated that the site is a specific point, possibly a well or outlet. "L" indicates a threatening land use or facility.

In addition to PSCs identified through interviews and field inventories, a list of regulated sites is provided in **Table C-2 and C-3** and depicted on **Figure C-3 and C-4**. The protection team may choose to verify this list and initiate protective strategies to address confirmed threats to the source water. Sites listed may represent expired permit data. For existing facilities of concern, determine if there is an active permit. In addition determine whether the owners/operators are complying with the permit, including developing and adhering to Groundwater Protection Plans when applicable.

No sites are registered as Superfund or Toxic Release Inventory in any source water protection area (around wells, springs, or reservoirs). In addition, no RCRA or VDPES facilities are located in the springs and reservoir source water protection areas.

Table C-2: Federal and State Regulated Sites Occurring in or Near the Source Water Protection Area for the Town of Purcellville

Map ID	Regulation Type*	Permit No.	Site Description	SWPA
R-1	RCRA	110014364000	Harmony Intermediate	Wells
R-2	RCRA	110043151000	Kenneth W. Culbert Elementary	Wells
R-3	RCRA	110020897000	Loudoun Cty Public Schools Support	Wells
R-4	RCRA	110010408000	Aire-Flo Incorporated	Wells
R-5	RCRA	110026413000	Lincoln Elementary School	Wells
R-6	RCRA	110008193000	7-Eleven #24539	Wells
R-7	RCRA	110006455000	At & T Long Lines Equipment Eng	Wells
R-8	RCRA	110006459000	Blue Ridge Middle	Wells
R-9	RCRA	110005290000	Capitol Fuel Co	Wells
R-10	RCRA	110010376000	Cardinal Concrete - Purcellville Plant	Wells

Map ID	Regulation Type*	Permit No.	Site Description	SWPA
R-11	RCRA	110008187000	Chesapeake & Potomac Telephone Co	Wells
R-12	RCRA	110033182000	Craftsman Auto Body Of Purcellville	Wells
R-13	RCRA	110000341000	Creative Urethanes Inc	Wells
R-14	RCRA	110020674000	Creative Urethanes Incorporated	Wells
R-15	RCRA	110036773000	Emerick Elem.	Wells
R-16	RCRA	110026400000	Emerick Elementary School	Wells
R-16	RCRA	110020678000	Executive Cleaners Inc.	Wells
R-17	RCRA	110001911000	Festival Cleaners	Wells
R-18	RCRA	110020676000	Lincoln Elementary School	Wells
R-19	RCRA	110006459000	Lincoln Elementary School	Wells
R-20	RCRA	110033182000	Loudoun Collision Center Incorporated	Wells
R-21	RCRA	110005221000	Loudoun Laundry Inc (DBA Executive Cleaners)	Wells
R-22	RCRA	110011482000	Loudoun Pools- C. Soderlund D/B/A	Wells
R-23	RCRA	110006454000	Loudoun Truck Center	Wells
R-24	RCRA	110020674000	Loudoun Valley High School	Wells
R-25	RCRA	110001892000	Loudoun Veterinary Service Incorporated	Wells
R-26	RCRA	110026053000	Mountain View Elementary School	Wells
R-27	RCRA	110015716000	Mountain View Elementary School	Wells
R-28	RCRA	110026053000	Patrick Henry College	Wells
R-29	RCRA	110020672000	Purcellville Cleaners	Wells
R-30	RCRA	110010912000	Purcellville Town Water Treatment	Wells
R-31	RCRA	110002031000	Real Tool Incorporated	Wells
R-32	RCRA	110033182000	Stringray's Autobody	Wells
R-33	RCRA	110006455000	Terry’s Body Shop	Wells
R-34	RCRA	110006455000	Terry’s Body Shop	Wells
R-35	RCRA	110027236000	Terry’s Body Shop Incorporated - Bailey L	Wells
R-36	RCRA	110006458000	TLC Collision Inc	Wells
R-37	RCRA	110006456000	Towe & Johnson Md Medical Office	Wells
R-38	RCRA	110018898000	Town Of Purcellville Maintenance Facility	Wells
R-39	RCRA	110010844000	Town Of Purcellville STP	Wells
R-40	RCRA	110013288000	Valley Energy Co	Wells
R-41	RCRA	110043151000	Woodgrove High	Wells
R-42	RCRA	110006459000	Charles Monroe Inc.	Wells
R-123	VPDES	VA0022802	Basham Simms Wastewater Facility	Wells
R-124	VPDES	VA0089940	Purcellville Town Water Treatment Plant	Wells
R-125	VPDES	VA0091189	Purcellville Elementary School Water System	Wells

Note:

“R” in the Map ID indicates that these data were obtained from state and federal regulatory databases.

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

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

waters. In the Commonwealth of Virginia, DEQ administers the program as the Virginia Pollutant Discharge Elimination System (VPDES). Though DEQ requires VPDES permits for all point source discharges to surface waters, the US Environmental Protection Agency (EPA) maintains authority to review applications and permits for "major" dischargers, a distinction based on discharge quantity and content.

Table C-3 provides data relative to petroleum and has been included because petroleum facilities and known releases pose high levels of threat to groundwater systems. The types of data are “PR” indicating Petroleum Release and “PF” indicating Petroleum Facility, where petroleum is stored. Petroleum Releases are classified in the state database as having a closed or open status. An open status more than likely indicates that the investigation for the release or spill is ongoing. The Local Advisory Committee may follow up with the land owners or the VDEQ to identify if the open or closed statuses of Petroleum Releases have been mitigated. No petroleum releases or facilities are located in the source water protection areas for the springs or the reservoir.

Petroleum Releases have not necessarily occurred at all Petroleum Facilities, but the potential remains for an accidental spill. The Local Advisory Committee may communicate with the facility owners to insure that they are aware of spill response procedures.

Table C-3: Petroleum Release and Facility Data for the Wellhead Protection Areas. –

Map ID	Type	ID Number	Name	SWPA
R-43	PR	20013268	Loudoun Valley Professional Building	Wells
R-44	PR	19940221	Saint Peters Episcopal Church	Wells
R-45	PR	19911186	Hessick Oil Facility	Wells
R-46	PR	19963173	Hessick Oil Facility	Wells
R-47	PR	20003333	Fiddler Richard Residence	Wells
R-48	PR	20033145	Purcellville Town Maintenance Facility	Wells
R-49	PR	19910982	Loudoun Laundry	Wells
R-50	PR	19954261	Resnick Ron Residence	Wells
R-51	PR	20003241	Marconi Jeannene Property	Wells
R-52	PR	19993068	Southern States	Wells
R-53	PR	20013069	Rothstein Robert Property	Wells
R-54	PR	20013128	Nichols Hardware	Wells
R-55	PR	20063023	Pancost Joseph Residence	Wells
R-56	PR	20043194	Purcellville Tire and Auto	Wells
R-57	PR	19810089	Whitmore & Arnold Fertilizer	Wells
R-58	PR	19920111	MotorCar Garage	Wells
R-59	PR	19993278	Carlyle and Anderson Incorporated	Wells
R-60	PR	20013169	Loudoun Veterinary Service Incorporated	Wells
R-61	PR	20023222	1000 Main Street Vacant Lot	Wells
R-62	PR	19993184	Loudoun Milk Transportation - Tanks 4-7	Wells
R-63	PR	19993185	Loudoun Milk Transportation - Tank 8	Wells
R-64	PR	19993416	Loudoun Milk Transportation	Wells
R-65	PR	20003140	Robey Linda Property	Wells
R-66	PR	19900348	Schonder Property - Loudoun Lumber	Wells
R-67	PR	19900981	Union 76	Wells
R-68	PR	19901302	Schonder, Robert J Property	Wells
R-69	PR	19901505	Schonder, Robert J Property	Wells
R-70	PR	19910760	Waco Oil	Wells

Map ID	Type	ID Number	Name	SWPA
R-71	PR	19911431	Texaco	Wells
R-72	PR	19911956	Whetsell Property	Wells
R-73	PR	19920016	Browning Equipment Incorporated	Wells
R-74	PR	19921721	Unocal 76	Wells
R-75	PR	19940299	Purcellville Town	Wells
R-76	PR	19941443	Old National Building and Supplies	Wells
R-77	PR	19963013	First Virginia Bank	Wells
R-78	PR	19973062	Nichols Kenneth Residence	Wells
R-79	PR	19983567	Shell Station - former Bridges	Wells
R-80	PR	19983581	Loudoun Milk Transportation	Wells
R-81	PR	19993066	7 Eleven 24539	Wells
R-82	PR	19993069	Mobil Purcellville	Wells
R-83	PR	19993070	Purcellville Volunteer Rescue Squad	Wells
R-84	PR	19993137	Goodin, John Property	Wells
R-85	PR	20033135	NVRPA - Hatcher Avenue Parking Lot W and O D Trail	Wells
R-86	PR	19993065	Case Motor Company former	Wells
R-87	PR	20073037	Fields Farm Property	Wells
R-88	PR	20073017	Marsan, James S Residence	Wells
R-89	PR	19901864	Loudoun Valley High School	Wells
R-90	PR	19870801	Lynn Adams Seed Company	Wells
R-91	PR	19993009	NVRPA - W and O D Trail	Wells
R-92	PR	20043008	VDOT - Purcellville	Wells
R-93	PR	20043136	Pelton, Charles Residence	Wells
R-94	PR	20063125	Anderson, Douglas Residence	Wells
R-95	PR	19983765	Purcellville Town	Wells
R-96	PR	20083141	Loudoun Truck Center	Wells
R-97	PR	20083296	Culbert, Linda Residence	Wells
R-98	PR	20093216	Purcellville Amoco	Wells
R-99	PR	20103069	Purcellville Town Property - Former Baptist Church	Wells
R-100	PR	20103286	Mengel, John R and Nancy M Residence	Wells
R-101	PR	20123082	Kelly, Nevin Residence	Wells
R-102	PR	20123169	Southern Collector Road Right of Way Investigation	Wells
R-103	PF	3007233	Boyd, Daniel P	Wells
R-104	PF	3019906	Browning Equipment Inc	Wells
R-105	PF	3016091	Cullinane, Michael	Wells
R-106	PF	3005186	Loudoun County Schools Valley Service Center	Wells
R-107	PF	3013724	Loudoun Milk Transportation, Inc	Wells
R-108	PF	3023583	Motor Garage Inc	Wells
R-109	PF	3004652	James Texaco	Wells
R-110	PF	3023674	Robert J Schonder	Wells
R-111	PF	3007967	Loudoun County Coop Purcellville Branch	Wells
R-112	PF	3026943	St Peters Church	Wells
R-113	PF	3014686	Air Photographics Inc	Wells
R-114	PF	3004336	7 Eleven 24539	Wells
R-115	PF	3025848	WACO Oil Inc	Wells
R-116	PF	3019905	Whitmore & Arnold Inc	Wells
R-117	PF	3009902	Purcellville Mobil	Wells
R-118	PF	3006396	Bridges Shell	Wells
R-119	PF	3024482	Purcellville Exxon	Wells

Map ID	Type	ID Number	Name	SWPA
R-120	PF	3002734	Community-Blankenship Oil	Wells
R-121	PF	3026961	Town Of Purcellville Former Town Office	Wells
R-122	PF	3037951	Valley Energy Co	Wells

Note:
"R" in the Map ID indicates that these data were obtained from state and federal regulatory databases.
PR and PF: Petroleum Release and Petroleum Facility data were obtained from the Virginia Environmental Geographic Information Systems (VEGIS) permits The datasets are DEQ produced data. NOTE: The environmental data contained within the below files are intended for REFERENCE ONLY and is NOT certified to be absolutely complete or correct

Local data were obtained from the Loudoun County Geologic Information System providing locations for wells and pollutant sources. There were 1,460 points within the Zone 2 SWPA. There were 676 classified as pollutant sources (which may appear in field PSC, regulated PSCs, or petroleum releases/facilities. The remaining 784 points were classified as wells, all of which represent a threat to the groundwater sources. **Figure C-3** provides locations for all points. These are too numerous to label and list in this report. The town has a separate spreadsheet with this information if needed.

PCS and Regulated Source Figures

Figures showing maps of the source have not been included in electronic format for security purposes. To view figures, contact the Town of Purcellville Public Works office at 540-751-2313.

Appendix D-E contains guidance materials and examples for internal use by the Town of Purcellville Public Works office to develop their Source Water Protection Program.

Appendix F provides Emergency Response and Contingency Planning for internal use and not provided in electronic format for security purposes.

To view these appendices, contact the Town of Purcellville Publics Works office at 540-751-2313.