KENTUCKY DIVISION OF WATER WELLHEAD PROTECTION PLAN 5-YEAR UPDATE FORM

Update Requirements:

This form should be used for the 5-year update submittal requirements of the Kentucky Wellhead Protection Program (WHPP) in compliance with 401 KAR 4:220 and SDWA Section 1428. Once the form is complete, please sign and send to:

Kentucky Division of Water
Watershed Management Branch
Attention: Chip Zimmer

300 Sower Boulevard, 3rd Floor

Frankfort, Kentucky 40601 or edward.zimmer@ky.gov

For assistance, contact Chip Zimmer at (502) 782-7141 or edward.zimmer@ky.gov

System Information:

PWS Name: Sandy Hook Water District

PWS ID Number: KY0320383 Al Number: 996

Contact Person/Title: Jessica Litton-Adkins/General Manager

Mailing Address: PO Box 726, Sandy Hook, KY 41171

Telephone: 606-738-6282 Email: shwaterdistrict@outlook.com

System Type*: Community

*Community; Non-Transient/Non-Community; Transient/Non-Community

Source*: 8 Wells (3 active; 5 inactive) *Well(s) or Spring(s) and total number of each

AKGWA #(s): Active wells: Well 5/00052056, Well 6/00052065 & Well 8/00069529; Inactive wells: Well 1/00048981, Well 2/00048982, Well 3/00048983, Well 4/00048984 & Well

7/00052044

County: Elliot ADD: FIVCO

WWD Permit #: 0983 Permitted Amount (mgd): 0.2-0.250

Population Served: 3528

Overall Susceptibility Rating*: Medium *High, Medium or Low

WHPP Changes Summary: Sandy Hook Water District currently withdraws from three (3) wells drilled between 200 and 300 feet into the sandstone and shale deposits of Lee Formation the Eastern Coal Field physiographic region. Water withdrawals are permitted for up to 0.250 million gallons per day (MGD), with current average monthly water withdrawals of 0.201 MGD under Permit #0983 (2018-2023). The WHPA delineation includes the wellfield along Howards Creek Road and is composed of 2169 acres of mostly forested land use with agricultural and some developed land use along the creek. The CSI includes 10 potential contaminants mainly composed of on-site residential septic systems and the overall susceptibility rating is medium. Sandy Hook Water District has developed management strategies including exploring options for rehabilitate their inactive wells and education and outreach to residents within the WHPA regarding a WHPP brochure guidance for proper operation and maintenance of residential onsite septic systems. Since 2019, the district has been working on a major construction project that includes a new 300,000 gallon per day water treatment plant that is currently being built along Howards Creek Road.

Update Form Instructions:

Please complete each section that applies to any system or WHPP updates and submit the supporting documentation. Please indicate if a section is not applicable to this update. **Sections 4 and 6 through 11 are required for every 5-year update**.

Please sign certification on the last page upon completion.

Section Updates:

Section 1: Treatment Plant

If the treatment plant location has changed then provide a new location map below. This can be a county roadmap or a GIS-produced map. Please use the area below to provide relevant details, or to indicate that no change has occurred.

The original 380,000 gallon per day water treatment plant is still located at 616 Howards Creek Rd, Sandy Hook, KY 41171. However, a new water treatment plant with a design capacity of 300,000 gallons per day is currently being built near Well #8 at 260 Howards Creek Rd, Sandy Hook, KY 41171.

Section 2: Water Withdrawal and Water Quality

If there have been changes in water withdrawal rates or water quality since the last submittal, provide a discussion of the relevant details in the space below (include new Water Withdrawal Permit Number if applicable). Include supporting documentation as an attachment.

Sandy Hook Water District withdrawals water from a wellfield under Permit #0983 which was last revised in 2006 and an application for amendment to the permit will be submitted to account for the active wellfield. Over the last 5 years (2018-2022), average monthly water withdrawals have varied from 0.200 to 0.216 MGD with maximum monthly withdrawals varying from 0.210 to 0.246 MGD. The 2000 Phase I Report reported 0.144 MGD as the average monthly water withdrawals for the district serving approximately 2300 customers. The same report referenced 1991 as the year with the lowest average monthly withdrawals of 0.068 MGD and 1997 as the year with the highest average monthly withdrawals of 0.149 MGD.

Sandy Hook Water District currently withdraws from three (3) wells drilled between 200 and 300 feet into the sandstone and shale deposits of Lee Formation the Eastern Coal Field physiographic region. The Eastern Coal Field, or Cumberland Plateau, is composed of sandstone, siltstone, clay, shale, and coal beds. Uplift and subsequent erosion of this plateau has produced deeply incised, steep-sided valleys that are divided by narrow ridges. Groundwater flow is predominantly through shallow stress relief fractures rather than primary porosity and permeability. High-yield municipal or industrial supply wells are uncommon. Groundwater sensitivity in the Eastern Coal Field generally rates as moderately sensitive (#3) and the sensitivity factor of groundwater velocity may locally exceed the moderate category, especially along coal seams and enlarged stress-relief fractures. Sandy Hook is located within the Kanawha section of the Eastern Kentucky Coal Field is dominated by forested hills and narrow crooked valley and irregular steep sided ridges.

Water quantity is an issue from the wellfield along Howards Creek Road due to the buildup of chloride and iron which is the most common objectionable constituents found in the groundwater throughout the region. The system has proposed a well rehabilitation project for 6 of the 8 wells (Wells 2,3,4,5,6 & 8) intended to break up the existing iron deposits and increase production and distribution of potable water from the new water treatment plant. Well #7 has a good flow but is contaminated with gas so work has been considered for this in addition rehabilitation of the low flow wells. The Isonville pool in Elloitt County is one of the reported oil producing oil fields in the Eastern Coal Field region.

Section 3: Change or Modification to Groundwater Source

If the system has changed or modified the wells or springs being used, provide the following: 1) a description of changes/modifications; 2) copies of the relevant form(s) (Kentucky Water Well Record, Well Maintenance & Plugging Record, Well Inspection Form or Spring Inventory Record); and 3) any other information relating to well construction (i.e., installation logs, driller's logs, lithological or geophysical logs), below.

Active wells: Well 5/00052056, Well 6/00052065, Well 8/00069529; Inactive wells: Well 1/00048981, Well 2/00048982, Well 3/00048983, Well 4/00048984 & Well 7/00052044. An application for amendment Permit #0983 will be submitted to account for the active wellfield.

Section 4 (REQUIRED): Planning Team

Effective water supply protection requires community involvement and public awareness. Identify the planning team consisting of a leader and at least two team members, with their respective titles, below.

Leader:

Kevin Winkleman, Superintendent

Team Members:

Estill Howard, Board Member
Jessica Litton-Adkins, General Manager in Training
Bridgett Howard, Acting General Manager

Section 5: WHPA Delineation

If the system is revising a Wellhead Protection Area (WHPA) delineation, or if a new groundwater source has been added since the last submittal, provide a site-specific description of the local geology and aquifer. Include references for published literature. Provide a summary of any aquifer tests (i.e. pumping tests, slug tests, tracer tests), including data gathering and evaluation methods. Show calculations and supporting data for each WHPA delineated or revised. Include the detailed hydrogeologic report as an attachment.

There is no required revision of the WHPA delineation for this update. The following table provides the total delineation area of the three (3) zones.

Zone	Time of Travel (TOT)	Acres	2023 Update Notes:
1	180-day	86.265	NA
2	10-year	221.269	NA
3	Hydrologic boundary	1861.129	NA
Total		2168.663	

Section 6 (REQUIRED): WHPA Map

Provide a WHPA map that shows each groundwater source labeled with the appropriate AKGWA #, all protection zones identified and the Contaminant Source Inventory (CSI) point locations. If no changes have occurred since the last submittal, then a copy of the most recent WHPA/CSI map can be resubmitted. To view the most recent delineations for your system, please visit the Source Water Protection Viewer. Please contact program staff for assistance.

See attached WHPA map. The WHPA for the public water supply wells is further delineated into three (3) zones based on time of travel (TOT) and the hydrological boundary for potential contaminants, including:

Zone 1: 180-day time of travel

Zone 2: 10-year time of travel Zone 3: Hydrologic boundary

Section 7 (REQUIRED): Contaminant Source Inventory

Provide an updated CSI in table format. This can be created using the spreadsheet template provided, and copied into the space below. If no changes occurred since the last update, the table can be pulled from previous WHPP documents. Each contaminant source listed should have a Contaminant Source ID # that corresponds to the WHPA map in Section 6. The CSI table must show the susceptibility determination ranking for each contaminant source. Include a brief narrative discussion of the overall system susceptibility. For more information on potential sources of contamination, please visit the DOW's Web Tools for SWP Planning website. Please contact program staff for assistance.

See attached CSI. Sandy Hook Water District currently withdraws from three (3) deep wells drilled into thick, resistant sandstones that are separated by less resistant shales along Howards Creek valley of the Eastern Coal Field. The delineated wellhead protection area is predominately deciduous forest with some pasture/hay and developed land use along the creek. The contaminant source inventory indicates 10 potential contaminant sources including private domestic wells, on-site septic systems, and an inactive auto body junkyard. The on-site septic systems along Howards Creek Road that service domestic residents represent the largest threat of contamination.

Section 8 (REQUIRED): Management Strategies

Provide a discussion of the previous and newly proposed management strategies to prevent source water contamination. This discussion must include the previous management strategies that were implemented as well as the goals that were met. Next, include any NEWLY proposed management strategies, associated goals, implementation plans and the party responsible for implementation. For information about wellhead protection strategies please visit the DOW's Source Water Protection Strategies website.

Previous Management Strategy Update:

Management strategies for Sandy Hook Water District mainly been public education.

Newly Proposed Management Strategies:

The Sandy Hook Water District will continue to use a combination of public education and regulatory compliance to manage areas within the Wellhead Protection Area. A Wellhead Protection brochure has been provided to the district and can be made available at the district office and mailed to all residents in the WHPA with septic system guidance.

Section 9 (REQUIRED): Contingency and WHP Planning

Provide a description of Contingency and WHP Planning. Complete the Emergency Response Phone List, Procedures for Public Notification, identification of Potential Future Problems and

the procedures to establish Alternative Water Supplies. This section must also address how often the WHPP will be reviewed and updated.

Emergency Response Phone List

Fill in all Blanks and Phone Numbers with appropriate information.

Local Emergency Response	Phone Number
Plant Operator	606-315-5528
Sandy Hook Fire Department	606-738-6000
Elliott County Sheriff	606-738-5422 or 606-738-4167
ELLIOTT COUNTY EMERGENCY MANAGEMENT	606-738-7011
Local Emergency Dispatch Click here to enter text.	606-738-6000

State and Federal Assistance	Phone Number
Kentucky DOW (Frankfort)	502-564-3410
Kentucky DOW Associated Field Office (FO) Morehead	606-783-8655
Kentucky Environmental Response Team	(502) 564-2380
24 hour response line	(800) 928-2380
Kentucky State Fire Marshall	(502) 573-0382

Any Other Pertinent Contacts	Any Other Pertinent Numbers
Morgan County Sheriff	606-743-3613
Morgan Co Office of EM	606-743-4169
General Manager	606-738-6282

Procedures for Public Notification:

Sandy Hook Water District uses Elliot County Dispatch at 606-738-6000 for an announcement on County Radio; Facebook Announcement shared publicly on the Water District Facebook Page; the Following Public Media:

Newspaper, Television, and Radio Stations	Phone Numbers
Elliott County News	606-738-5574
Click here to enter text.	PHONE NUMBER

Potential Future Problems:

Describe the *most likely* scenarios that could threaten the water supply.

The most likely scenario for contamination is agricultural areas along the creek but the primary risk is from onsite residential septic systems. A Wellhead Protection brochure can be made available at the district office and mailed to all residents in the WHPA with septic system guidance. There is an inactive junkyard in the protection area that has been somewhat cleaned up.

Alternative Water Supply (Short and Long Term):

Describe the short term and long-term water supply alternatives that address each of the potential future problems identified above. List all current interconnections with other water systems. Discuss the capacity of each potential alternative water supply to sustain normal operations.

Sandy Hook Water District has contracts to purchase water from Rattlesnake Ridge Water District and Rowan Water, Inc. In the event of contamination, water can be purchased for both short and long periods of time.

Schedule for Update and Review:

The Wellhead Protection Plan will be reviewed regularly and updated every five years as required by regulation.

Section 10 (REQUIRED): Copies of Public Notices and Education Materials

Provide copies of wellhead protection public notices and education materials distributed.

A copy of this wellhead protection plan will be posted on Kentucky Rural Water Association's webpage and the link to plan will be printed on customer bills for public notice.

Section 11 (REQUIRED): Public Meeting Documentation***

Provide the record of WHPP public meeting attendance, minutes and comments.

A copy of this wellhead protection plan will be posted on Kentucky Rural Water Association's webpage and the link to plan will be printed on customer bills for public review. A copy will be provided in the attachments for documentation.

***Non-Community Water Systems are not required to have public meetings for 5-year updates but must post a public notice in a conspicuous place. A public notice template is provided as a separate document. However, public input and associated documentation are encouraged. Please contact program staff if you have any questions.

Certification Signature (TO BE COMPLETED BY PLANNING REPRESENTATIVE):

"I certify that this document and all attachments were prepared under my direction or supervision. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete."

Date: Click Here Be 2013xt.

Signature:

Printed Name/Title: General Manager

Assistance:

For any assistance, please contact Wellhead Protection Staff:

Chip Zimmer (502) 782-7141 Edward.Zimmer@ky.gov

Dale Booth (502) 782-6895 Dale.Booth@ky.gov

Please sign and return completed form to:

Kentucky Division of Water Watershed Management Branch Attention: Chip Zimmer 300 Sower Boulevard, 3rd Floor Frankfort, Kentucky 40601 or <u>Edward.Zimmer@ky.gov</u>

System Information:

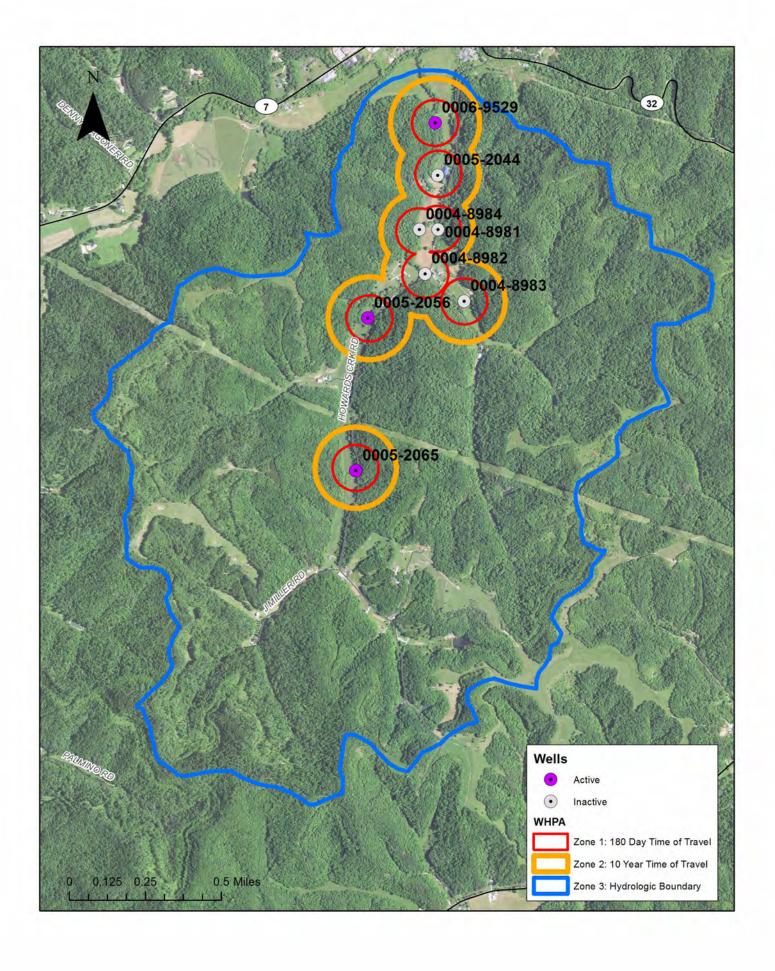
Table 1: Source Inventory

					Well Depth	Well Diameter	
Alt Id	Agency	AKGWA#	Start Date	Notes	(ft)	(in)	Comments
WELL 1	Sandy Hook Water District	00048981	1/8/2005	Inactive	230	6	Iron Deposits
WELL 2	Sandy Hook Water District	00048982	1/8/2005	Inactive	240	Unknown	Iron Deposits
WELL 3	Sandy Hook Water District	00048983	1/8/2005	Inactive	200	Unknown	Iron Deposits
WELL 4	Sandy Hook Water District	00048984	1/8/2005	Inactive	250	Unknown	Iron Deposits
WELL 5	Sandy Hook Water District	00052065	2/24/2004	Active	235	12.5 to 8	
WELL 6	Sandy Hook Water District	00052056	10/20/2005	Active	302	15 to 8	
WELL 7	Sandy Hook Water District	00052044	10/19/2005	Inactive	322	15 to 8	Gas
WELL 8	Sandy Hook Water Co.	00069529	6/26/2014	Active	262	15 to 10	

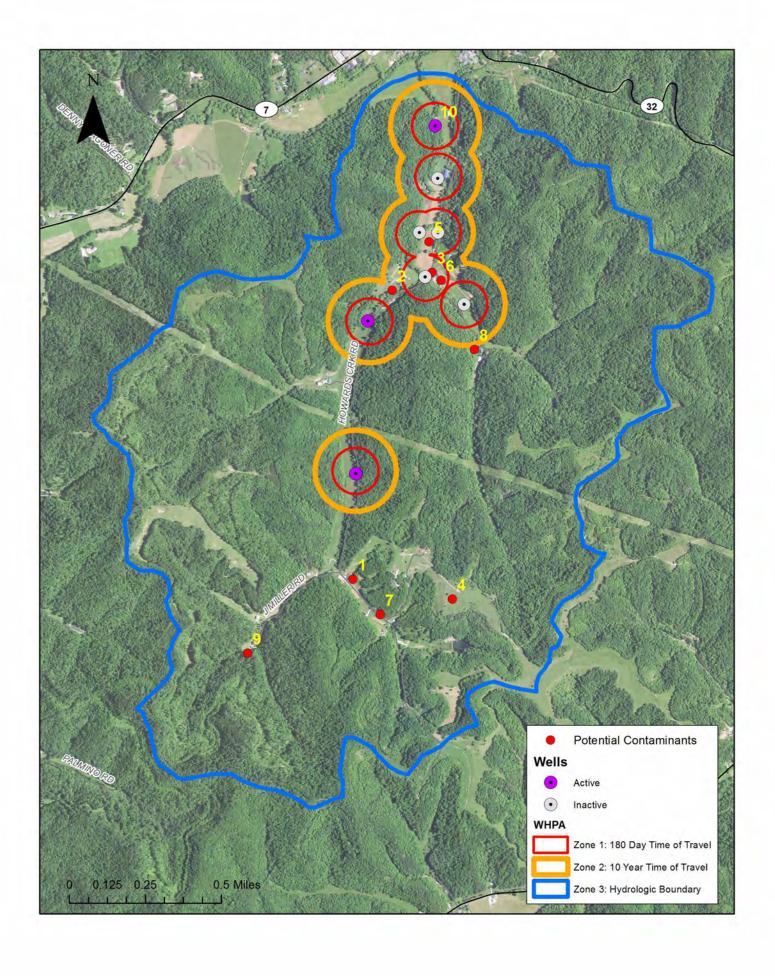
Table 2: Water Withdrawal Permits & Permitted Sources

WWD Permit #	Permitted	Permitted Sources						
	Amount (MGD)							
0983	0.2-0.250	Well 1/00048981, Well 2/00048982, Well 3/00048983, Well 4/00048984, Well 5/00052056, Well 6/00052065 & Well 7/00052044 *Water withdrawal application to amendment Permit #0983 will be submitted to DOW						
Total	0.2-0.250	8 (3-active; 5- inactive)						

Section 6: WHPA Map



Section 7: Contaminant Source Inventory



Contaminant Source Inventory and Susceptibility Analysis for

Sandy Hook Water District (KY0320383)

Instructions (section may be deleted on submission):

Use the following table to list and rank potential contaminants identified during the contaminant source inventory.

Include Lat/Lon or addresses when possible. Enter the WHPA in which the contaminant occurs.

Multiple, similar sources that are clustered can be listed once with the Quantity identified.

The Proximity Ranking is based on the WHPA in which the contaminant is located (WHPA 1=3; WHPA 2=2; WHPA 3=1).

Contaminant Value is on a 1-3 scale, based upon its potential threat; consult the Contaminant Source Types_Values guide.

Hydrologic Sensitivity: The physical, chemical, geological, hydrological, and biological characteristics of the area over which, or through which, the contaminants move to the aquifer have various capabilities to detain or attenuate contaminant releases. Consult the Hydrologic Sensitivity tab.

The spreadsheet will use the values entered to calculate the Numeric Rating for each contaminant source.

o Numeric Rating = (Proximity Value x 2)+(Contaminant Value x 3) + (Hydrologic Sensitivity Value)

This will determine the Susceptibility Ranking: Numeric Rating less than 10 = Low; 10-15 = Medium; greater than 15 = High.

Please contact SWP/WHPP staff if you have any questions.

Contact:

Dale Booth; Dale.booth@ky.gov; 502-782-6895

Chip Zimmer; Edward.Zimmer@ky.gov; 502-782-7141

WHPA CSI Form Version: 3/20/2023

CSI Map ID#	Site ID	Contaminant Source Type	CS CODE	Name	Address	Lat	Lon	Quantity	Zone	Proximity Value	Contaminant Value	Hydrologic Sensitivity	Numeric Rating	Susceptibility Ranking	Contaminant Notes
1		Residential Septic	R-4	Residential /septic	WHPA 3	38.059205	-83.130765	20	3	1	2	1	9	LOW	
2		Residential Septic	R-4	Residential/ septic	WHPA 2	38.072935	-83.127907	2	2	2	2	1	11	MED	
3		Residential Septic	R-4	Residential/ septic	WHPA 1	38.073732	-83.12547	3	1	3	2	1	13	MED	
4		Row Crops : Corn, Soybean, Wheat	A-5	Cultivated Crops	WHPA 3	38.058127	-83.124814	4	3	1	3	1	12	MED	
5		Pasture/Hay (Livestock)*	A-14	Hay, no livestock	WHPA 1	38.075185	-83.12561	6	1	3	3	1	16	HIGH	Hay
6		Auto Repair Shops/ Body Shops	C-2	Kidd Auto	WHPA 2	38.073344	-83.124954	1	2	2	3	1	14	MED	
7		Domestic Wells	G-7	Residence - Don Coffee	WHPA 3	38.0575	-83.129167	1	3	1	2	1	9	LOW	
8		Domestic Wells	G-7	Residence - Paul Kidd	WHPA 3	38.07	-83.123056	1	3	1	2	1	9	LOW	
9		Domestic Wells	G-7	Residence - Bob Miller	WHPA 3	38.055833	-83.137222	1	3	1	2	1	9	LOW	
10		Industrial Wells	G-8	Sandy Hook Water District	WHPA 1	38.080695	-83.125038	1	1	3	3	1	16	HIGH	

	Low	23
CSI Totals	Med	7
	High	2

Overall Susceptibility Ranking	Med	
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WHPA CSI Form Version: 3/20/2023

Section 10 & 11: Public Notice Documentation

This space is being save for HCWD#2 Documentation HCWD#2 to provide webpage link and copy of redacted customer bill for public notification.

What you can do to protect your drinking water supply

- Report Spills! Please report spills in water supply protection areas by calling 911 or 1-800-928-2380.
- Limit your use of chemicals, fuels, fertilizers, pesticides, and other hazardous products.
- If you have a septic system, make sure it is inspected and serviced every three years.
- Properly report and abandon unused wells on your property.
- Properly store and dispose of chemicals and other hazardous products.
- Develop an Agriculture Water Quality Plan (KRS 224.71-100 through 224.71-140) or Groundwater Protection Plan (401 KAR 5:037).
- Get involved and contact the Division of Water for more information on local water protection activities.

More Information

To learn more about your drinking water supply and local protection efforts, reach out to your water supplier or visit the Division of Water website.

Kentucky Division of Water Water Supply Section 300 Sower Blvd Frankfort, KY 40601 502-564-3410



Source Water & Wellhead Protection Program

WELLHEAD PROTECTION

in Kentucky

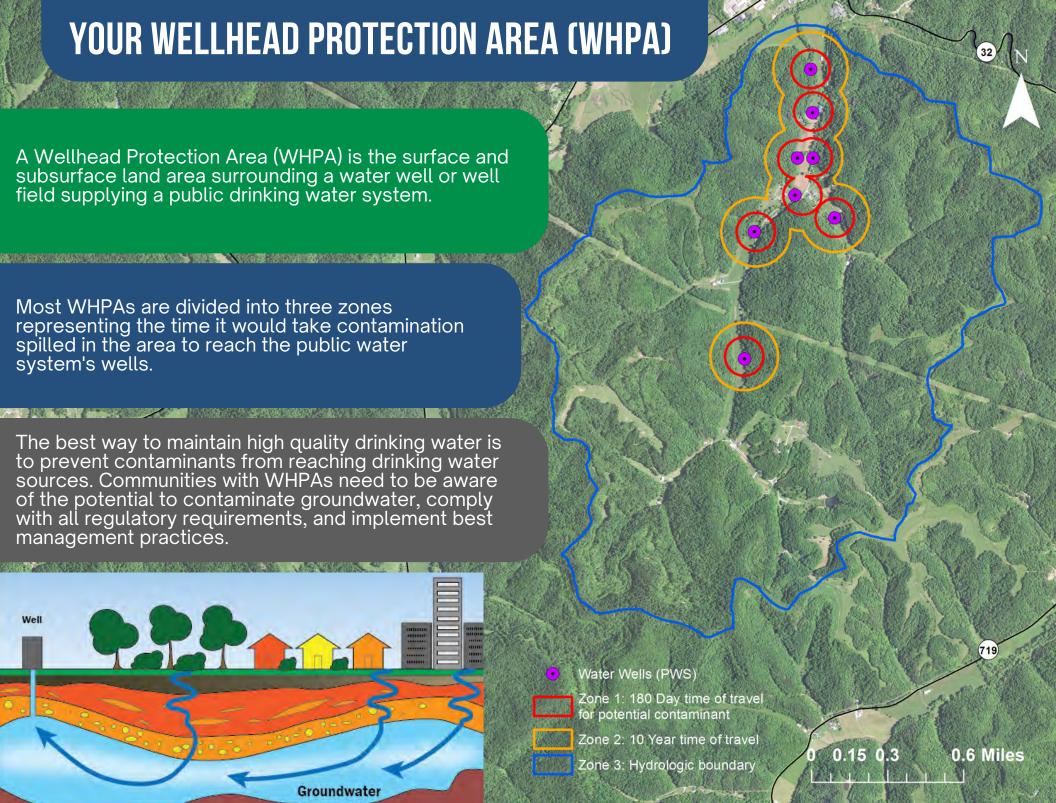


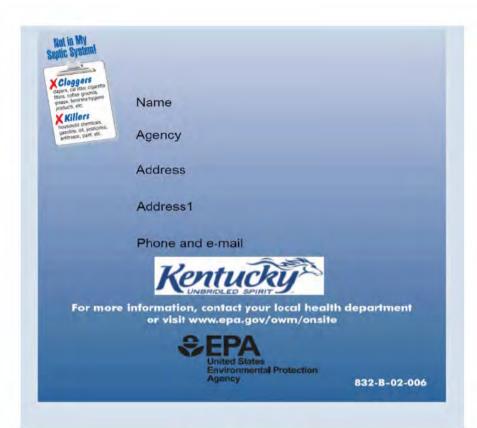
Sandy Hook Water District

Contact: Jessica Litton-Adkins

Phone: 606-738-6282











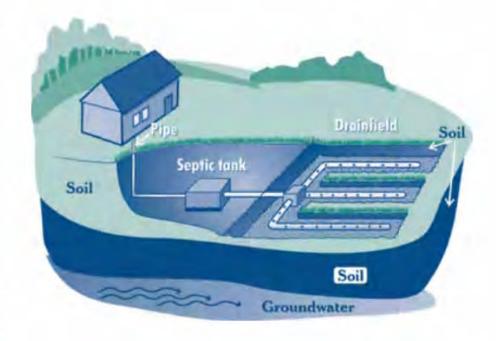
Cabinet For Health and Family Services

Department for Public Health

Homeowner Tips for

Septic Systems

Promoting Health and Long Life



Vocut septic system is your responsibility!

id you know that as a homeowner you're responsible for maintaining your septic system? Did you know that maintaining your septic system protects your investment in your home? Did you know that you should periodically inspect your system and pump out your septic tank?

If properly designed, constructed, and maintained, your septic system can provide long-term, effective treatment of household wastewater. If your septic system isn't maintained, you might need to replace it, costing you thousands of dollars. A malfunctioning system can contaminate groundwater that might be a source of drinking water. And if you sell your home, your septic system must be in good working order.



rotect Your Septic System

- 1 Inspect your system (every 3 years) and pump your tank as necessary (generally every 3 to 5 years).
- 2 Use water efficiently.
- 3 Don't dispose of household hazardous wastes in sinks or toilets.
- 4 Care for your drainfield. Avoid driving or parking vehicles on your drainfield. Plant only grass over and near your drainfield to avoid damage from roots.

How does it work?

A typical septic system has four main components: a pipe from the home, a septic tank, a drainfield, and the soil. Microbes in the soil digest or remove most contaminants from wastewater before it eventually reaches groundwater.

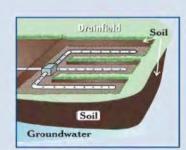
The septic tank is a buried,
watertight container typically made
of concrete, fiberglass, or polyethylene. It holds the wastewater long
enough to allow solids to settle out
(forming sludge) and oil and grease
to float to the surface (as acum). It
also allows partial decomposition of
the solid materials. Compartments
and a T-shaped outlet in the septic
tank prevent the sludge and scum from leaving
the tank and traveling into the drainfield area.
Screens are also recommended to keep solids

The wastewater exits the septic tank and is discharged into the drainfield for further treatment by the soil.

from entering the drainfield.

Microorganisms in the soil provide final treatment by removing harmful bacteria, viruses, and nutrients.





Why should I maintain my septic system? A key reason to maintain your septic system is to save money! Failing septic system.

A key reason to maintain your septic system is to save money! Failing septic systems are expensive to repair or replace, and poor maintenance is often the culprit. Having your septic system inspected (at least every 3 years) is a bargain when you consider the cost of replacing the entire system. Your system will need pumping every 3 to 5 years, depending on how many people live in the house and the size of the system. An unusable septic system or one in disrepair will lower your property's value and could pose a legal liability.

Other good reasons for safe treatment of sewage include preventing the spread of infection and disease and protecting water resources. Typical pollutants in household wastewater are nitrogen, phosphorus, and disease causing bacteria and viruses. Nitrogen and phosphorus are aquatic plant nutrients that can cause unsightly algae blooms. Excessive nitrate-nitrogen in drinking water can cause pregnancy complications, as well as methemoglobinemia (also known as blue baby syndrome) in infancy. Pathogens can cause communicable diseases through direct or indirect body contact or ingestion of contaminated water or shellfish. If a septic system is working properly, it will effectively remove most of these pollutants.

How do I maintain my septic system?

Pump frequently

X Cloggers

X Killers

diapers, cat liner, cigarett finers, cottee grounds, grease, terminole hygiene

You should have your septic system inspected at least every 3 years by a professional and your tank pumped as necessary (generally every 3 to 5 years).

Use water efficiently

Average indoor water use in the typical single-family home is almost 70 gallons per person per day.

Dripping faucets can waste about 2,000 gallons of water each year. Leaky toilets can waste as much as 200 gallons each day. The more water a household

conserves, the less water enters the septic system.

Flush responsibly

Dental floss, feminine hygiene products, condoms, diapers, cotton swabs, cigarette butts, coffee grounds, cat litter, paper towels, and other kitchen and bathroom items can clog and potentially damage septic system components. Flushing

household chemicals, gasoline, oil, pesticides, antifreeze, and paint can stress or destroy the biological treatment taking place in the system or might contaminate surface waters and groundwater.

U"

se Water Efficiently!

- Fill the bathtub with only as much water as you need
- Turn off faucets while shaving or brushing your teeth
- Run the dishwasher and clothes washer only when they're full
- Use toilets to flush sanitary waste only (not kitty litter, diapers, or other trash)
- Make sure all faucets are completely turned off when not in use
- Maintain your plumbing to eliminate leaks
- Install aerators in the faucets in your kitchen and bathroom
- Replace old dishwashers, toilets, and clothes washers with new, high-efficiency models

For more information on water conservation, please visit www.epa.gov/owm/waterefficiency