



Local Wellhead Protection Program Plan

Beech Mountain, Watauga County, PWSID: NC-01-95-104

APRIL 14, 2025

Town of Beech Mountain

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BACKGROUND

In 1986, Safe Drinking Water Act (SDWA) amendments added Section 1428, "State Programs to Establish Wellhead Protection Areas", which requires each state to develop a program to "protect wellhead areas within their jurisdiction from contaminants which may have any adverse effects on the health of persons." The term wellhead protection area is defined in the law as "the surface and subsurface area surrounding a water well or wellfield, supplying a public water system, through which contaminants are reasonably likely to move toward and reach such water well or well field." North Carolina's Environmental Protection Agency (EPA) approved Wellhead Protection Program (WHPP) provides technical support to local governments and public water supply systems in their endeavors to develop and implement their own Wellhead Protection Plans.

One of North Carolina's objectives in developing a protection program is to provide a process for public water system operators to learn more about their groundwater systems and how to protect them. Wellhead Protection Plans allow communities to take charge of protecting the quality of their drinking water by identifying and carefully managing areas that supply groundwater to their public wells.

Regulations of the **Division of Water Resources (DWR), under the Department of Environmental Quality (DEQ)** require wellhead protection measures for any public water supply wells to be used as a community or non-transient, non-community water system to meet the following requirements:

- (1) The well shall be located on a lot so that the area within 100 feet of the well is owned or controlled by the person supplying the water. The supplier of water shall be able to protect the well lot from potential sources of pollution and to construct landscape features for drainage and diversion of pollution.
- (2) The minimum horizontal separation between the well and known potential sources of pollution shall be as follows:
 - a) 100 feet from any sanitary sewage disposal system, sewer, or a sewer pipe unless the sewer is constructed of water main materials and joints, in which case the sewer pipe shall be at least 50 feet from the well;
 - b) 200 feet from a subsurface sanitary sewage treatment and disposal system designed for 3000 or more gallons of wastewater a day flows, unless the well water source is from a confined aquifer;
 - c) 500 feet from a septage disposal site;
 - d) 100 feet from buildings, mobile homes, permanent structures, animal houses or lots, or cultivated areas to which chemicals are applied;
 - e) 100 feet from surface water;
 - f) 100 feet from a chemical or petroleum fuel underground storage tank with secondary containment;
 - g) 500 feet from a chemical or petroleum fuel underground storage tank without secondary containment;
 - h) 500 feet from the boundary of a ground water contamination area;

- i) 500 feet from a sanitary landfill or non-permitted non-hazardous solid waste disposal site;
 - j) 1000 feet from a hazardous waste disposal site or in any location that conflicts with the North Carolina Hazardous Waste Management Rules cited as 15A NCAC 13A;
 - k) 300 feet from a cemetery or burial ground; and
 - l) 100 feet from any other potential source of pollution.

- (3) The Department may require greater separation distances or impose other protective measures if necessary to protect the well from pollution, taking into consideration factors such as:
 - a) the hazard or health risk associated with the source of pollution;
 - b) the proximity of the potential source to the well;
 - c) the type of material, facility, or circumstance that poses the source or potential source of pollution;
 - d) the volume or size of the source or potential source of pollution;
 - e) hydrogeological features of the site that could affect the movement of contaminants to the source water;
 - f) the effect that well operation might have on the movement of contamination; and
 - g) the feasibility of providing additional separation distances or protective measures.

- (4) The lot shall be graded or sloped so that surface water is diverted away from the wellhead. The well shall not have greater than a one percent annual chance of flooding.

- (5) If a supplier of water demonstrates that it is impracticable, taking into consideration feasibility and cost, to locate water from any other approved source and an existing well can no longer provide water that meets the requirements of this Subchapter, a representative of the Division may approve a variance for a smaller well lot and reduced separation distances to meet existing demands. Additional monitoring under this Part or other conditions shall be imposed if necessary to mitigate the increased risk from the variance.

In addition, communities are encouraged to establish wellhead protection plans, which include the following:

- (1) The formation of a wellhead protection committee to establish and implement the wellhead protection program whose role it is to conduct a potential contaminant source inventory, provide options for the management of the Wellhead Protection (WHP) area, seek public input into the creation of the WHP plan, seek approval for the WHP program and to implement the WHP program;
- (2) Delineation of the contributing areas of the water sources;
- (3) Identification of potential contamination sources within the wellhead protection area;
- (4) Develop and implement wellhead protection area management actions to protect the water sources;

- (5) Develop an emergency contingency plan for alternative water supply sources in the event the groundwater supply becomes contaminated and emergency response planning for incidents that may impact water quality;
- (6) Development of a public education program;
- (7) Conduct new water source planning to ensure the protection of new water source locations and to augment current supplies.

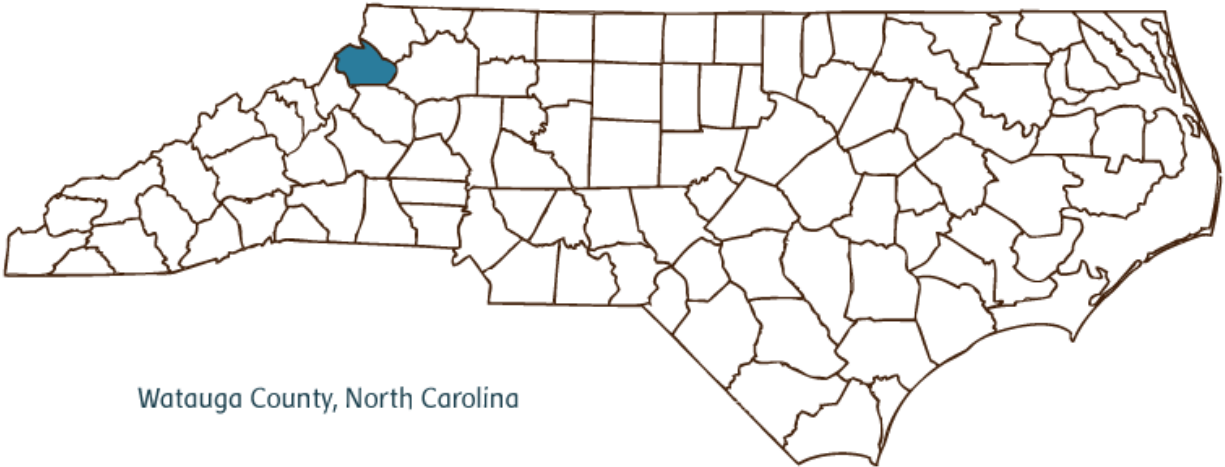
Wellhead protection for public water supply wells is a voluntary program, but water systems across the state are encouraged to take the above steps in protecting all groundwater sources.

The Public Water Supply Section (PWSS) provides the final approval for WHP Programs. The NC Wellhead Protection Program Coordinator is:

Danny Edwards
Public Water Supply Section
1634 Mail Service Center
Raleigh, North Carolina 27699-1634
Phone: 919-707-9070
Fax: 919-715-4374
danny.edwards@deq.nc.gov

INTRODUCTION

This Local Wellhead Protection Plan has been developed for the Town of Beech Mountain to better protect its groundwater supply. The utility wishes to educate the public about best management practices so that groundwater contamination is prevented.



Watauga County, North Carolina

The Town of Beech Mountain is in North Western North Carolina and near the Tennessee State line. The town is situated on the Watauga / Avery County line, with the majority of the town being in Watauga County. The town's public water system has approximately 2077 service connections and serves a permanent population of about 695 people. The seasonal population explodes to more than 10,000 people for the winter and summer months. The water system operates a surface water treatment plant for the bulk of the town's drinking water supply. The town has put great effort into securing additional water sources to meet the demands of the seasonal popularity and secured additional water by drilling and operating a single well which pulls water from the unconfined, bedrock aquifer. The pumped water is treated with sodium hypochlorite for disinfection before it enters the distribution system. Table 1 provides the depth and the yield for the well. The system has ten water storage tanks that have a total capacity of 1,474,000 gallons of finished water storage.

Table 1- Beech Mountain Well Information

Well ID	Well Depth (ft)	Well Yield (gpm)	Aquifer
Well 2	740	150	Surficial / Bedrock

I. THE WELLHEAD PROTECTION COMMITTEE

A Wellhead Protection Committee was formed to develop this Local Wellhead Protection Plan for the Town of Beech Mountain. Members of this committee are as follows:

- Daniel Davis, Town of Beech Mountain Utilities Director
- Ronnie McKinney, Town of Beech Mountain WTP Supervisor
- Roger Hicks, Town of Beech Mountain WTP Assistant Supervisor
- Jordan Jackson, NC Rural Water Association

Jordan Jackson of North Carolina Rural Water Association provided technical assistance throughout the development of this plan. The Beech Mountain Council has authorized Ronnie McKinney and the Wellhead Protection Committee the authority to review and accept this Wellhead Protection Plan. The implementation of the Wellhead Protection Plan will be completed by Ronnie McKinney. The Town of Beech Mountain will begin implementation of the plan immediately following its approval by the Public Water Supply Section of the North Carolina Division of Water Resources and will complete the implementation within ninety (90) days. Upon completion of the implementation phase of the Plan, notification will be made to the Public Water Supply Section by Ronnie McKinney.

II. DELINEATING THE WELLHEAD PROTECTION AREA

Wellhead protection is essentially protection of all or part of the area surrounding a well from which the well's groundwater is drawn. The area is called a Wellhead Protection Area (WHPA). The Safe Drinking Water Act defines a WHPA as: "the surface and subsurface area surrounding a water well or wellfield, supplying a public water system, through which contaminants are reasonably likely to move toward and reach such well water or wellfields".

WHPA delineation methods typically involve estimating the size of the contributing area to the well or wellfield. The contributing area is the land area which supplies the water pumped from a well. If a contaminant reaches groundwater within a well's contribution area, the contaminant can move with the groundwater into the well. If the contributing area for the well is identified, and management strategies are set in place to manage certain activities, the possibility that the well might become contaminated can be significantly reduced.

There are several methods that are used to delineate WHPA. "The North Carolina Wellhead Protection Guidebook" is a great resource to learn about the different methods that can be used. The one that is most appropriate for each well system depends upon many factors such as the well's geographic location, depth, and characteristics of the subsurface geology. Based on the data for Beech Mountain's well, it was determined to use the Recharge Method for the calculations.

The Recharge Method involves estimating the size of the contributing area to the well or wellfield based on the rate of recharge to the aquifer. The recharge rate used for the aquifer was 600,000 gallons per day per square mile. The size of the contributing area is controlled by the rate at which water is pumped from the well and the rate at which the aquifer is replenished by recharge. For a given recharge rate, the larger the well pumping rate, the larger the contributing area to supply the water being withdrawn.

State regulations require that all public water-supply wells have a 24-hour drawdown test to determine their well yield. State regulations also require that the yield of the well provide the average daily demand in 12 hours. Therefore, the well yield (in gallons per minute) determined from the drawdown test is multiplied by 720 (the number of minutes in 12 hours) to define the "maximum permitted withdrawal" in gallons per day, or:

$$Q_{MPW} = Q_{MAX} \times 720$$

where:

Q_{MPW} = maximum permitted withdrawal in gallons per day,

Q_{MAX} = well yield in gallons per minute, and

720 = a factor for converting the pumping rate from gallons per minute to gallons per day based on a 12 hour pumping day. If the actual pumping period exceeds 720 minutes per day, then the actual pumping period is used in the calculation.

Once the maximum permitted withdrawal has been determined, the approximation for the size of the contributing area becomes:

$$A_c = \frac{Q_{MPW}}{W}$$

where:

A_c = contributing area in square miles,

Q_{MPW} = maximum permitted withdrawal in gallons per day, and

W = estimated average recharge rate in gallons per day per square mile. 600,000-gallons per day per square mile in the Beech Mountain area.

After determining the contributing area, the area was then doubled because transmissivity may be directional due to cracks in the bedrock aquifer. And then the radius (r) for the WHPA was determined using the following formula:

$$r = \sqrt{(A/\pi)} \times 5280$$

where:

r = radius of the wellhead protection area in feet

A = contributing area, in square miles

π = 3.1416

The radius of the individual wellhead protection area was calculated.

Table 2-Beech Mountain Delineation Data

Well ID	Well Yield (gpm)	Max Daily Well Operation (minutes / day)	Max Daily Permitted Withdrawal (gallons / day)	Recharge Rate (gpd/mi²)	Contributing Area Doubled A_{cmax} (sq mi)	Radius of Doubled A_{cmax} (ft)
Well 2	150	720	108,000	600,000	0.36	1787

Because of the well's locations related to hydraulic boundaries, such as ridgelines and streams, and the slope of the area's hydraulic gradient, the resulting WHPA is irregularly shaped and takes into consideration the drainage area and water flow. The final wellhead protection area for the Town of Beech Mountain is shown on the following page.

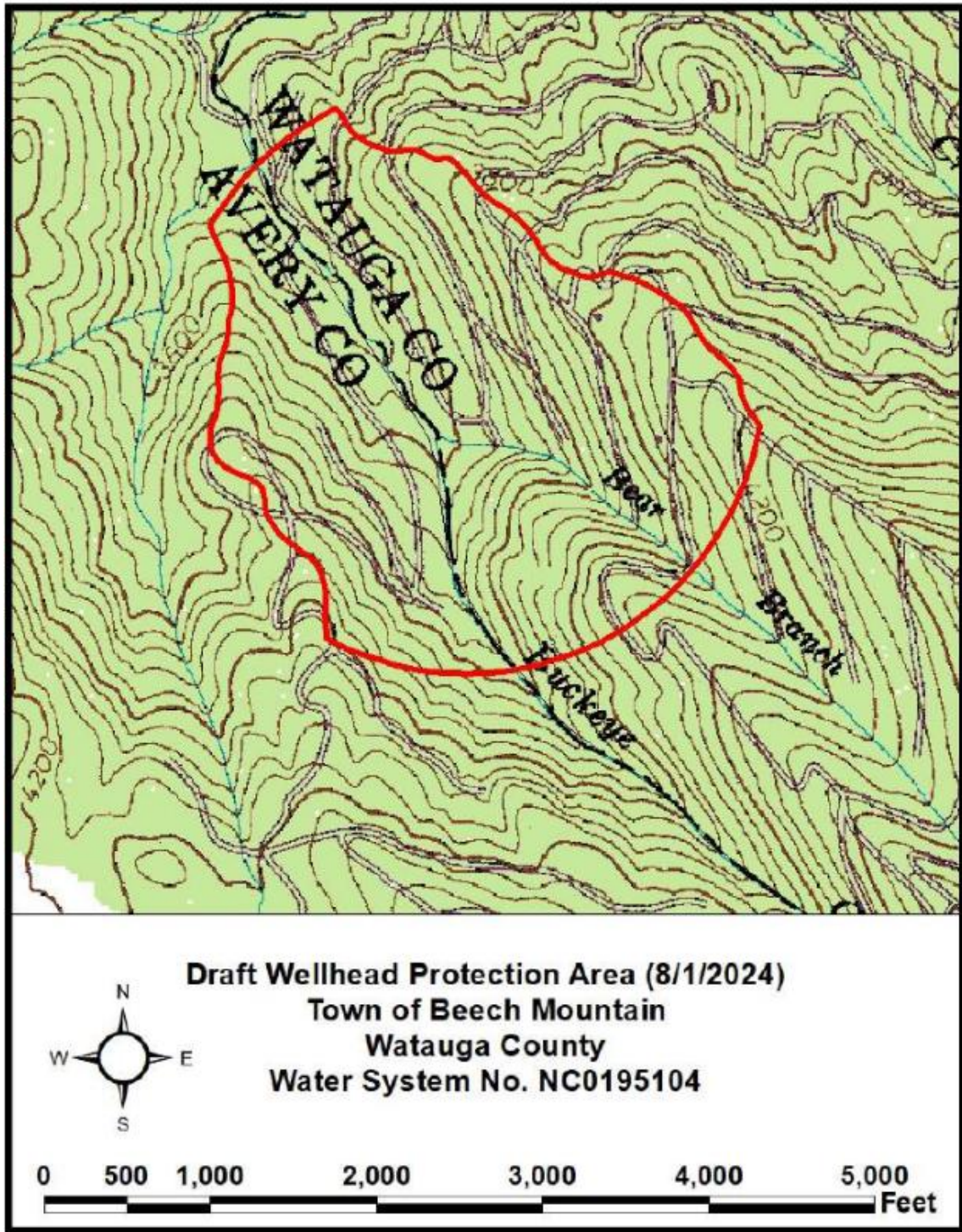


Figure 1- Final Wellhead Protection Area for Beech Mountain, NC

III. POTENTIAL CONTAMINANT SOURCE INVENTORY

A Potential Contaminant Source (PCS) is any substance or activity that could adversely affect the quality of your drinking water supply. The PCS inventory is a complete listing, including mapped locations, of past and present land use activities within the wellhead protection area (WHPA) that threaten groundwater quality.

The inventory process began by gathering information from the NCDEQ Source Water Assessment Program (SWAP) Report for the Beech Mountain Water System. The SWAP reports are compiled by the NCDEQ Public Water Supply (PWS) Section by combining information from twenty (20) State and Federal Databases, and this information is used as a starting point to research files at the various state/federal agencies. More information about each regulatory databases researched, and the associated types of contaminants can be found in the appendix. The Beech Mountain well is located in the mountains of NC that are minimally developed, therefore the SWAP report was researched but it did not reveal sites of concern.

The SWAP information is a valuable starting point for generating the PCS inventory, but because it includes only databases with statewide coverage, PCS information specific to the focus area may not be included in the SWAP reports. Databases (both hardcopy and electronic) maintained by local, county, state and federal agencies may contain additional information about known PCSs occurring within the WHPA (e.g. areas of pesticide or fertilizer application, landfills or dumps, inactive hazardous waste sites, underground storage tanks, well construction, septic tanks, etc.).

After SWAP information was added to the PCS inventory, a windshield survey was conducted to determine if additional sites and facilities that are categorized as potential contaminant source are located in the wellhead protection area. A list of facilities that are generally recognized as a potential contamination source type is included in the appendix. Jordan Jackson, NCRWA Source Water Specialist, researched the WHPA to positively identify each potential contaminant source facility that might exist within the WHPA. An onsite survey was made by Jordan Jackson to obtain additional information regarding quantity and types of contaminants within the WHPA; the survey only identified that single family homes are located in the WHPA. The PCS Data Chart shows the source identified during the inventory, refer to appendix.

The potential contaminant category that is located within Beech Mountain's WHPA is listed below. The PCS Inventory Map shows the location of each of the identified potential contaminant sources within the WHPA.

Table 3-Potential Contaminant Source Inventory with the assigned Map Code.

PCS Categories	Map Code	Risk Category
Septic	A	Low

The sections below briefly describe special details about many of the different categories of potential contaminant sources.

Septic Tanks All houses that have a Beech Mountain water service connection are connected to the town’s sanitary sewer collection system and do not have septic tanks. There are a few houses that are outside the Beech Mountain water service area and therefore have a private well and septic tank.

Abandoned Wells - NCDEQ requires abandoned wells to be properly decommissioned per state regulations. Considered a potential source of contamination because Surface water runoff can travel into groundwater well casing and contaminate the groundwater. No records of abandoned wells have been identified with the creation of this plan.

PCS Inventory

Table 4 lists the potential sources of contamination sites identified within Beech Mountain Wellhead Protection Area and sites are mapped on Figure2. The table uses map codes to identify the potential sources of contamination on the maps created for this plan. For more detailed information about each potential contaminant source, including information relevant in providing educational materials to owners, please see the PCS Data Charts located in the appendix.

Table 4- List of Potential Contaminant Sites located within the Well #2 Wellhead Protection Area.

PCS Category	Map Code	PCS Site
Residential Septic System	A1	133 Buckeye Ridge Road
Residential Septic System	A2	116 Ridge Crest Circle
Residential Septic System	A3	715 Buckeye Ridge Road
Residential Septic System	A4	893 Buckeye Ridge Road

Potential Contaminant Sites

Town of Beech Mountain
PWS# NC 01-95-104

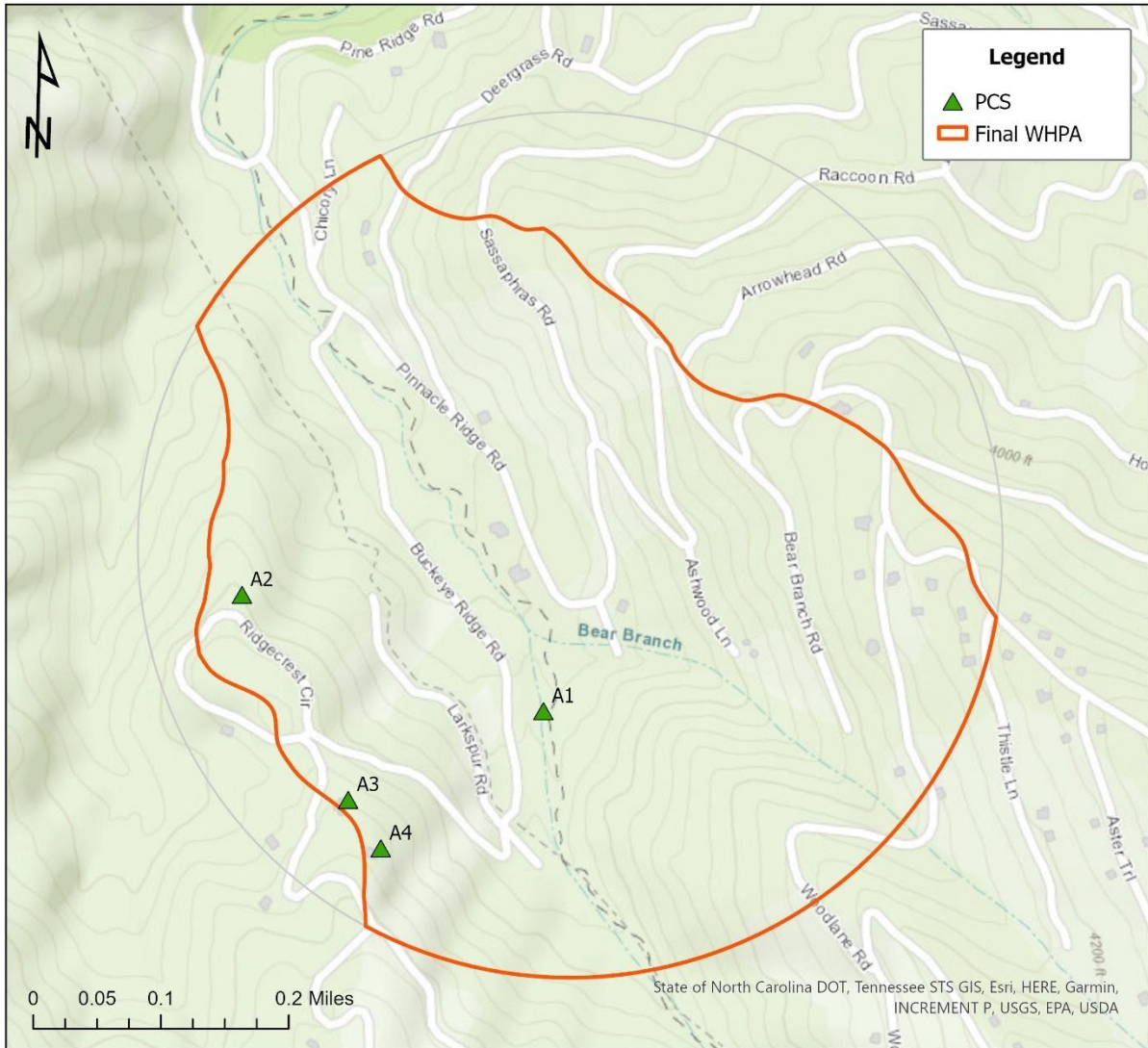


Figure 2- PCS Inventory Map for Beech Mountain Well #2.

IV. RISK ASSESSMENT

A Risk Assessment for Beech Mountain Well can be calculated by ranking the PCSs according to the threat each presents to the water supply well. The following method was used to rank each PCS in the WHPA:

The PCS was assigned to a risk category of *higher, moderate, or lower* based on information adapted from the EPA (1993), and from the Oregon Wellhead Protection Program. The septic tanks were assessed to be a low risk and was assigned a numerical "category" score to correspond with the risk category [e.g., Higher-3, Moderate-2, and Lower-1].

The site of potential contamination was then assigned a "proximity" score calculated with the following equation:

$$\text{proximity score} = 1 - (\text{distance from well} / \text{radius of the WHPA})$$

The final PCS ranking was obtained by multiplying the category score by the proximity score. The result is a relative ranking of the PCS according to the threat it poses to the water supply well. Assessing the relative risk of contamination within each WHPA from the PCS(s) it contains allows for a determination of (1) which water supply wells are at the greatest risk of contamination and (2) which PCSs should be considered first with respect to wellhead protection. Once the risk assessment is carried out, priorities can be set to effectively manage the PCSs.

The risk assessment utilizes the well's individual WHPA radius to assess risk based on proximity. This Plan strives to provide information about all identified PCSs, i.e. septic systems. Management strategies shall be implemented for all PCS sites located in the WHPA.

The chart below shows the results of the risk assessment.

Well #2 Potential Contaminant Ranking								
PCS Category	Map Code	PCS Site	Risk	Distance from Well (ft)	WHPA Radius (ft)	Proximity Score	Category Score*	Final Score
Septic	A1	133 Buckeye Ridge Road	L	690	1787	0.614	1	0.614
Septic	A2	116 Ridge Crest Circle	L	1370	1787	0.233	1	0.233
Septic	A3	715 Buckeye Ridge Road	L	1395	1787	0.219	1	0.219
Septic	A4	893 Buckeye Ridge Road	L	1475	1787	0.175	1	0.175
Total Risk Score								1.241

It is important to understand that the risk ratings do not imply poor water quality. The rating is an indication of the source's potential to become contaminated by the identified PCSs within the wellhead protection area.

NCDEQ Vulnerability Assessment

The NCDEQ Public Water Supply Source Water Assessment Program (SWAP) Report considers potential contaminants and the inherent vulnerability to determine the susceptibility of any public drinking water source. The contaminant rating for the water system was determined based on the number, type, and location of identified PCSs within the delineated assessment area (which may differ from the wellhead protection area in this plan) to receive a rating of higher, moderate, or lower.

The groundwater well for which this plan was developed was not drilled in 2020 when the last SWAP report was developed, therefore the SWAP report only includes the surface water source for the assessment but, the well is drilled close in proximity and there is overlap of the surface water area and the newly developed wellhead protection area which was delineated with this wellhead protection plan.

The inherent vulnerability rating of the surface water source(s) refers to the geologic characteristics or existing conditions of the surface water source and the delineated assessment area (watershed). These characteristics include water supply watershed classification, surface water source location, raw water quality rating, and the watershed characteristics rating. The watershed classification is based on the size of the watershed, development activities and allowable waste treatment and disposal practices. The surface water sources are located in streams, large multi-purpose impoundments or small water supply impoundments. The raw water quality rating assessed turbidity and total coliform values over twelve months. The watershed characteristics rating is an assessment of the likelihood that contaminants will follow the path of overland flow or shallow subsurface flow to the surface water source.

The NC SWAP Report of the inherent vulnerability, contaminant and susceptibility ratings for the Town's main water source was ranked by the NC PWS Section as shown in Table 4. Susceptibility is an indication of a water supply's potential to become contaminated by the identified PCSs within the assessment area. Beech Mountain's entire SWAP Report from the year 2020 can be found on the NC Division of Water Resources PWS website.

https://www.ncwater.org/SWAP_Reports/NC0195104_SWAP_Report-20200909.pdf

Table 5-Beech Mountain SWAP Vulnerability, Sept 2020

Source	Inherent Rating of Vulnerability	Contaminant Rating	Susceptibility Rating
Buckeye Creek	Moderate	Lower	Moderate

V. MANAGEMENT OF THE WELLHEAD PROTECTION AREA

There are two methods of managing Wellhead Protection Areas, regulatory or non-regulatory. The Town of Beech Mountain has selected a non-regulatory approach to manage the wellhead protection area, which will include management strategies that focus on Public Education and Staff Training. Several brochures and bulletin documents are provided in the appendix to assist with public education. Management Strategies are included for all identified potential contaminant sites and can be used as reference.

Public Education

A Wellhead Protection Brochure will be made available to each resident, business, agriculture operation and institution within the Wellhead Protection Area. Copies of this brochure will be made available at Beech Mountain Town Hall, and other locations deemed necessary for public education of Wellhead Protection. The PCS Data Charts provides owner contact information for the identified potential contaminant sources within the WHPA for distribution of educational brochures on best management practices.

In general, the brochure and/or newsletter will convey to each citizen the following information:

- An explanation of what groundwater is and the number of Beech Mountain water wells,
- An explanation of the Wellhead Protection Program,
- Source of groundwater pollution,
- Tips on protecting their water supply,
- Information on proper disposal of household hazardous wastes and oils (i.e., not disposed of through septic systems, pouring on ground, or through regular garbage collection)
- Information on proper use of fertilizers, herbicides, and pesticides,
- Information on household hazardous waste collection opportunities,
- Information on proper maintenance of heating oil tanks and septic systems, and
- Phone numbers to contact for more information.

Staff Training

Beech Mountain employees will be educated on the Wellhead Protection Area and steps they can take to reduce the potential for contamination (e.g. information about source water protection practices). They will be advised to be observant, while performing their duties, for any potential contaminant incidents. They will also be provided training and education on standard operating procedures and emergency measures for dealing with contamination incidents. Personnel at facilities owned and/or operated by the Town will be educated on steps they can take to reduce the potential for contamination (e.g. information about best management practices, standard operating procedures, waste handling practices, etc.). Beech Mountain will also contact the North Carolina Division of Environmental Assistance and Customer Service (DEACS) to investigate steps that can be taken to reduce the amount of waste released into the air and water and on the land at town owned and/or managed facilities.

DEACS serves as a central repository for waste reduction and pollution prevention information. DEACS emphasizes waste reduction through pollution prevention, encourages

companies and government agencies to go beyond compliance, and provides information about the environmental permitting process. This information is provided at no charge to North Carolina businesses, industries, government agencies, and the general public upon request. For additional information, DEACS may be contacted at (877) 623-6748 or <https://deq.nc.gov/about/divisions/environmental-assistance-and-customer-service>

Trash and Recycle

The Town of Beech Mountain provides twice a week curb side trash pickup service to utility customers. Hazardous waste items are not accepted pick-up items. The town also operates a convenience center located at 116 Bark Park Way.

The Watauga County Solid Waste Department also provides solid waste and recycling services to county residents through the operation of multiple convenience centers. Nearby convenience centers include:

-5400 Hwy. 194 South, Valle Crucis

-10307 Hwy. 105 South, Banner Elk

Watauga County has a Hazardous Waste collection facility so households can properly dispose of old paints, solvents, pesticides, mercury items, light bulbs, batteries and automotive products. It is located at 336 Landfill Road in Boone, NC. The site has limited operation, refer to site's calendar for more information or call 828-264-5305.

Septic Tanks

Educational efforts will be focused on owners of septic systems within the wellhead protection area. All residents in the WHPA with septic tanks and home heating oil tanks will be distributed a copy of the Wellhead Protection Brochure and any other information the town can obtain from Federal and State agencies on proper septic tank and heating oil tank maintenance. EPA's SepticSmart Program has educational materials about septic system maintenance and operation. EPA's *Septic Smart Doorhanger* is provided in the appendix and additional information can be found at: www.epa.gov/septic/septicmart.

Improperly Constructed or Abandoned Wells

In the instance that an improperly constructed or abandoned well is discovered and identified within the WHPA, the owner will be provided information regarding the threat posed to the water supply by these wells. Owners of improperly constructed/abandoned wells will be encouraged to have these wells properly abandoned in accordance with N.C.'s well construction standards found at 15A NCAC 2C.0100, "Criteria and Standards Applicable to Water Supply and Certain Other Wells". If information exists that a well is improperly constructed or is contributing to the contamination of groundwater, the town will notify the Division of Water Resources.

Monitoring Groundwater Conditions

Static water levels can be measured (well conditions allowing) quarterly after pumping in the well has stopped for at least 12 hours. The static water levels will be graphed against time to determine trends or changes that can support and assist in long term water supply decision-making. Comparing the intake level with the pumping water levels can be used to estimate the life expectancy of the wells or to predict well maintenance.

The specific capacity of the wells will be taken annually (well conditions allowing). Specific capacity is the pumping rate in gallons per minute, divided by the draw down in feet. Draw down, or pumping water level, is measured after the water has stabilized after pumping. Measuring specific capacity will be part of a well maintenance schedule, to predict:

- The need to repair or rehabilitate a well,
- Life expectancy estimation for the wells,
- Declines in static water levels, and
- Pump failure

VI. EMERGENCY CONTINGENCY PLAN

The primary person responsible for implementing the emergency contingency plan is Beech Mountain's WTP Supervisor, Ronnie McKinney. The secondary (back-up) person responsible is Roger Hicks, the Back-up ORC. All local and state agency emergency contact information is provided in the appendix.

Short Term Contingency Plan (less than 48 hours)

Beech Mountain's water system has a total storage capacity of 1.474 million gallons. This volume provides approximately 3 days of water storage when considering the average daily usage is 0.49 MGD. The Beech Mountain water system includes a surface water source and groundwater source; the system does not have an interconnection with any other system in times of emergency. The surface water source can supply and meet the town's typical water needs. If the groundwater source was discovered to be contaminated, the surface water source would be utilized.

If power is lost, the surface water plant has a permanent diesel generator in place. The groundwater well does not have a generator in place.

Long Term Contingency Plan (more than 48 hours)

If evidence exists that a well is contaminated, it will immediately be taken off-line, the surface water source will be utilized and the well will not return to service until it is determined that water quality from the impacted well is in compliance with standards governing public water supplies. The well can be isolated from the system by using the gate valve. The contaminant source inventory may prove useful in determining sources of contamination and providing emergency response contact numbers. If contamination enters the distribution system, residents will be notified not to drink the water until further notice. The notice would be distributed to customers by using the Town website updates and/or or by going door to door with door hangers. Tier I incidents may involve additional methods of contact based on requirements.

If contamination occurs, the regional office of the Public Water Supply Section shall be notified immediately of the situation and asked for assistance. The Winston-Salem Regional Office Public Water Supply Contact is 336-776-9800. Sampling (i.e. bacteriological, VOCs, SOCs, etc.) will begin to determine the contaminant involved and the extent of contamination. A systematic flushing of the distribution system will begin with follow-up sampling conducted as needed until the system is determined to be free of contamination and in compliance with standards governing public water supplies. Determination shall be made if all or part of the distribution system was affected by through testing and sample analysis. The testing performed would be determined by what the contaminant was thought to be (bacteriological, SOCs, VOCs, etc.). If only a portion of the system was affected, that portion would be isolated from the rest of the system by closing valves around the contaminated section. The affected portion, or the entire system, if necessary, would be systematically flushed and purged until sample results showed the contaminant was no longer present. Once sample analysis showed the contaminant was no longer present in the public water supply system, and after consultation with the Public Water Supply Section of NCDEQ, a

notice would be on the website that Beech Mountain's water system was once again safe for consumption. *Tier I* incidents may involve additional methods of contact based on requirements.

Should a major oil or chemical spill occur within the Wellhead Protection Area, appropriate emergency agencies will be notified. The first agency contacted will be the County Emergency Services.

Avery County Emergency Services: 828-733-8210

Watauga County Emergency Services: 828-265-7625

Fire Department: 911

Additional emergency contact numbers and resources are listed in the appendix.

NC WaterWARN

Water/Wastewater Agency Response Network (WARN), is a group of utilities committed to helping each other conduct response and recovery operations. A WARN provides a system aid that may be utilized by water/wastewater utilities requiring emergency assistance from member utilities. NC WaterWARN provides a voluntary mutual aid and assistance network to combat water-related incidents throughout the state of North Carolina and an organized system for requesting assistance in the form of personnel, emergency equipment, materials and other required resources. If they have not already, Beech Mountain is strongly encouraged to join the NC Water Warn network. They can find additional information and a mutual aid agreement here [Join NCWaterWARN - NC Water WARN](#).

VII. IMPLEMENTING, MAINTAINING, AND UPDATING THE WHP PLAN

Public Participation

The Town of Beech Mountain will have a copy of their Wellhead Protection Plan available on the town's website. A notice will be posted at Town Hall and on the town's website. The public will be invited to review a draft copy of the plan and make comments. Any substantive comments received from the public will be considered for inclusion into the final version of the Beech Mountain's plan. An example of the Public Notification for the intended implementation of this Wellhead Protection Plan is in the appendix.

New Public Water Supply Wells

The Town of Beech Mountain will amend its Local Wellhead Protection Program Plan to include any new wells that are added to its water system. The following steps will be taken to address any new wells added to the water system:

1. Develop a preliminary WHPA for the proposed well to determine the area of vulnerability.
2. Develop a contaminant source inventory for the preliminary WHPA.
3. Submit the information obtained in Steps 1 and 2 above to the Wellhead Protection Committee (WPC). Any information required by the Public Water Supply Section (PWSS) relating to the development and construction of new public water supply (PWS) wells must also be submitted.
4. If the WPC grants provisional approval of the proposed Wellhead Protection Plan, and the PWSS grants approval to construct or expand the PWS well or well system, then work may proceed with well construction.
5. Finalize the WHPA delineation for the new well.
6. Finalize the contaminant source inventory for the WHPA.
7. Submit finalized WHPA and contaminant source inventory to the WPC.
8. Once approval is received, implement any necessary regulatory and/or non-regulatory potential source management practices.
9. Submit the amended WHP Plan and all necessary supporting information to the Public Water Supply Section for review and approval.

Future Wellhead Protection

The Town of Beech Mountain is aware that an effective Local Wellhead Protection Program is an ongoing process requiring monitoring of the Wellhead Protection Area (WHPA) and periodic review and updating of an approved plan. Therefore, Beech Mountain's Wellhead Protection Committee will monitor the Wellhead Protection Area (WHPA) for any new or previously unidentified potential contaminant sources (PCSs) and activities occurring within the approved WHPA. The Town will amend the PCS inventory and other plan components (e.g. the management strategies, emergency contingency plan, etc.) as necessary to incorporate any new threats to the system's groundwater source of drinking water. The PCS

inventory will be updated annually using the same procedures used to develop the original PCS inventory. The Town will also fully update the WHP Plan every five years or at any time a new well is constructed for use with the Town's water supply system, or a major land use change occurs within a WHPA. The individual(s) responsible for implementation of the WHP Plan will submit notification to the Public Water Supply Section annually upon completion of the PCS inventory update or immediately following the completion of a major revision. Any amended or revised sections of the approved WHP Plan resulting from an update or revision will also be submitted upon completion.

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Glossary of Acronyms and Abbreviations

AST – Above ground Storage Tank
CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act
CWA – Clean Water Act
DEACS – Division of Environmental Assistance and Customer Service
DEQ – Division of Environmental Quality
DWR – Division of Water Resources
ECHO – Enforcement and Compliance History Online
EPA – Environmental Protection Agency
EPCRA – Emergency Planning and Community Right to Know Act
Gpm – gallons per minute
LWPPP – Local Wellhead Protection Program Plan
NCDA – North Carolina Department of Agriculture
NCP – National Contingency Plan
NCRWA – North Carolina Rural Water Association
NED - National Elevation Dataset
NPDES – National Pollutant Discharge Elimination System
OERR – Office of Emergency and Remedial Response
ORC – Operator Responsible in Charge
PCS – Potential Contamination Source
PIRF – Pollution Incident Reporting Form
PWS – Public Water Supply
PWSS – Public Water Supply Section
RCRA – Resource Conservation and Recovery Act
SOC – Synthetic Organic Compound
SPCC – Spill Prevention Control and Countermeasures
SWAP – Source Water Assessment Program
SWDA – Solid Waste Disposal Act
TRI – Toxic Release Inventory
UIC – Underground Injection Control
UST – Underground Storage Tank
VOC – Volatile Organic Compound
WHPA – Wellhead Protection Area
WHPP – Wellhead Protection Program or Plan
WPC – Wellhead Protection Committee
WQCS – Water Quality Collection System

References

Environmental Protection Agency. Envirofacts Warehouse. Available at:

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North Carolina Department of Environmental Quality, Division of Environmental Health, Public Water Supply Section, The North Carolina Wellhead Protection Guidebook, Developing a Local Wellhead Protection Program, 2003.

North Carolina Department of Environmental Quality. Division of Water Resources' Ground Water Management Branch Map Interface. Available at:

<https://www.ncwater.org/GWMS/openlayers/ol.php?menulist=bl>

Source Water Assessment Program. Informational Mapper 2.0. Available at:

<https://www.arcgis.com/apps/webappviewer/index.html?id=5fee819063f241d685d569ef1be357cf>

Town of Beech Mountain Website. Available at: <https://townofbeechmountain.com/>

Description of Regulatory Databases Researched for PCSs

Animal Operations

This database contains permitted facilities for animal operations consisting of swine, cattle, poultry and horse farms that are required to have Certified Animal Waste Management Plans (CAWMP). Animal operations are defined by General Statute 143-215.10B as feedlots involving more than 250 swine, 100 confined cattle, 75 horses, 1,000 sheep, or 30,000 poultry with a liquid waste management system.

Division of Water Resources (DWR) rules mandate that all facilities in operation prior to January 1, 1994 register with the division. Since January 1, 1994, any new facilities were required to obtain a CAWMP before starting their animal operation. In addition, any facilities in operation prior to January 1, 1994 were required to obtain a CAWMP by December 31, 1997. As of January 1, 1997, all new facilities were required to obtain a permit from DWR prior to construction and be certified prior to startup, and all existing facilities were to be permitted by DWR over the next 5 years.

The data set was obtained from the DWR, Water Quality Regional Operations, Animal Feeding Operations Branch in February of 2019. For additional information about this data, contact the Animal Feeding Operations staff by phone at 919-707-9129 or visit their website at: <https://deq.nc.gov/about/divisions/water-resources/water-quality-permitting/animal-feeding-operations>.

CERCLA Sites

This data set was provided by the Federal Remediation Branch (FRB), which is part of the Superfund Section within the N.C. Division of Waste Management. It represents sites where the FRB is working with USEPA, and in some cases the Department of Defense, to investigate, assess, remediate, or monitor hazardous waste contamination. These sites are regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), which established authority for the government to respond to the release/threat of release of hazardous waste, including cleanup and enforcement actions. Some of these sites, which meet specific criteria set out in the USEPA's Hazard Ranking System (HRS), are included on the National Priorities List (NPL). The NPL identifies sites that appear to warrant cleanup measures. The NPL sites are eligible for remedial action financed by a federal trust fund with a state cost share or by potential responsible parties (PRP).

The data set was downloaded from the *NC Department of Environmental Quality Online GIS* website at: <https://data.ncdenr.opendata.arcgis.com/datasets/federal-remediation-branch>. It was dated May 23, 2019. For additional information about this data, contact the Division of Waste Management, Federal Remediation Branch by phone at 919-707-8213 or visit their website at: <https://deq.nc.gov/about/divisions/waste-management/superfund-section/federal-remediation-branch>.

Non-Discharge Permits

The non-discharge database identifies domestic, industrial, and municipal facilities that are permitted to apply treated wastewater effluent, reclaimed water, and residuals to the land surface.

Data was obtained from the DWR, Water Quality Permitting Section, Non-Discharge Branch in April of 2019. For additional information about this data, contact the program staff by phone at 919-707-3654 or visit their website at: <http://deq.nc.gov/about/divisions/water-resources/water-resources-permits/wastewater-branch/non-discharge-permitting>.

NPDES Permits

The National Pollutant Discharge Elimination System (NPDES) PCS category consists of multiple data sets identifying 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. The NPDES Permit Program controls water pollution by regulating point sources that discharge pollutants into public waters. This category also include facilities with active and expired State Stormwater Permits. The individual data sets that comprise this category include the following:

NPDES Stormwater Permits

This data set represents the location of facilities with active or expired NPDES Stormwater Permits and facilities with No Exposure Certifications. The goal of the NPDES Stormwater Permitting Program is to prevent stormwater runoff from washing harmful pollutants into surface waters. Both individual and general permits are included.

Data was obtained from the Division of Energy, Mineral, and Land Resources, Stormwater Permitting Program in February of 2019. For additional information about this data, contact the program staff by phone at 919-707-3639 or visit their website at: <https://deq.nc.gov/about/divisions/energy-mineral-land-resources/stormwater>.

NPDES Wastewater General Permits

The non-discharge database identifies domestic, industrial, and municipal facilities that are permitted to apply treated wastewater effluent, reclaimed water, and residuals to the land surface.

Data was obtained from the DWR, Water Quality Permitting Section, Non-Discharge Branch in April of 2019. For additional information about this data, contact the program staff by phone at 919-707-3654 or visit their website at: <http://deq.nc.gov/about/divisions/water-resources/water-resources-permits/wastewater-branch/non-discharge-permitting>.

NPDES Wastewater Individual Permits

This data set represents the location of active wastewater treatment facilities that are permitted under the NPDES Permit Program. Each listed facility is covered by an individual NPDES permit that is written to reflect the site-specific conditions of the facility based on submitted information. The individual NPDES permit is unique to the facility.

Data was obtained from the DWR, Water Quality Permitting Section, NPDES Wastewater Permitting Program in February of 2019. For additional information about this data, contact the program staff by phone at 919-707-3601 or visit their website

at: <https://deq.nc.gov/about/divisions/water-resources/water-resources-permits/wastewater-branch/npdes-wastewater-permits>.

State Stormwater Permits

This data set contains the locations of facilities with active and expired State Stormwater Post-Construction Permits. The Post-Construction Permit Program requires subject new developments to install and maintain permanent stormwater management measures that are designed to protect surface waters from the impacts of the development's stormwater runoff after the construction process is complete.

Data was obtained from the Division of Energy, Mineral, and Land Resources, Stormwater Permitting Program in March of 2019. For additional information about this data, contact the program staff by phone at 919-707-3639 or visit their website at: <https://deq.nc.gov/about/divisions/energy-mineral-land-resources/stormwater>.

Old Landfill Sites

This data set contains the locations of non-permitted landfills that closed prior to January 1, 1983, when waste disposal permitting regulations commenced. These sites are not currently in operation.

The data set was downloaded from the NC Department of Environmental Quality Online GIS website at: <http://data-ncdenr.opendata.arcgis.com/datasets/pre-regulatory-landfill-sites-1>. It was dated November 14, 2018. For additional information about this data, contact the Division of Waste Management, Pre-regulatory Landfill Program staff by phone at 919-707-8327 or visit their website at: <https://deq.nc.gov/about/divisions/waste-management/superfund-section/pre-regulatory-landfill-program>.

PCB Sites

This data set identifies generators, transporters, commercial storers and/or brokers and disposers of Polychlorinated Biphenyls (PCBs). Concern over the toxicity and environmental persistence of PCBs resulted in the Toxic Substances Control Act (TSCA). This act prohibits the manufacture, processing, and distribution in commerce of PCBs. Thus, TSCA legislates true "cradle to grave" (from manufacture to disposal) management of PCBs in the United States. PCBs are mixtures of synthetic organic chemicals with the same basic chemical structure and similar physical properties ranging from oily liquids to waxy solids. Due to their non-flammability, chemical stability, high boiling point and electrical insulating properties, PCBs were used in hundreds of industrial and commercial applications. These included electrical applications, heat transfer materials, hydraulic equipment, plastics, rubber, and many others.

The data set was obtained from the USEPA, Office of Pollution Prevention and Toxics in February of 2019. For additional information about this data, contact the PCB staff at 404-562-8512 or visit their website at: <https://www.epa.gov/pCBS/learn-about-polychlorinated-biphenyls-pCBS>.

Each record that contained a physical address that could be address matched was included in the data set. Public Water Supply Section staff performed the address matching.

Pollution Incidents

The Pollution Incidents PCS category consists of multiple data sets containing information regarding the release of pollutants into the environment that have, or are likely to have, impact on the groundwater resources of the State. The initial information regarding these releases is usually obtained from responsible parties or concerned citizens, who report a release to the NC Department of Environmental Quality. After an incident is reported, regional office staff investigate the reported incident and enter the results of their investigation into a state-wide database. The individual data sets that comprise this category include the following:

AST Incidents

This data set represents sites where there has been a discharge of petroleum to the soil and/or groundwater, from a source other than an Underground Storage Tank (UST) system, e.g., Aboveground Storage Tank (AST) system, spills, dumping, etc. All included records have an incident number and have not been closed out.

This data set was downloaded from the NC Department of Environmental Quality Online GIS website at: <https://data-ncdenr.opendata.arcgis.com/datasets/ast-incidents>. It was dated June 13, 2019. For additional information about this data, contact the Division of Waste Management, Underground Storage Tank Section staff by phone at 919-707-8171 or visit their website at: <https://deq.nc.gov/about/divisions/waste-management/ust/ast-program>.

Dry-Cleaning Sites-Contaminated

This data set contains an inventory of reported incidents from sites contaminated with dry-cleaning solvents. Substances released into the environment include solvents used in the dry-cleaning process.

This data set was downloaded from the NC Department of Environmental Quality Online GIS website at: <https://data-ncdenr.opendata.arcgis.com/datasets/dry-cleaning-sites-contaminated-1>. It was dated May 23, 2019. For additional information contact the Division of Waste Management, Dry-Cleaning Solvent Cleanup Act Program staff by phone at 919-707-8365 or visit their website at: <https://deq.nc.gov/about/divisions/waste-management/dry-cleaning-solvent-cleanup-act-program>.

UST Incidents

This data set represents sites where there has been a release of petroleum to the soil and/or groundwater, from an UST system. All included records have an incident number and have not been closed out.

The data set was downloaded from the NC Department of Environmental Quality Online GIS website at: <https://data-ncdenr.opendata.arcgis.com/datasets/ust-incidents?geometry=-166.201%2C-29.535%2C168.311%2C29.229>. It was dated June 13, 2019. For additional information about this data, contact the Division of Waste Management, Underground Storage Tank Section staff by phone at 919-707-8171 or visit their website at: <https://deq.nc.gov/about/divisions/waste-management/ust>.

Septage Disposal Sites

This data set represents all active and permitted Septage Land Application Site (SLAS) and Septage Detention and Treatment Facility (SDTF) sites in North Carolina. The Septage Management Program assures that septage (a fluid mixture of untreated and partially treated sewage solids, liquids, and

sludge of human or domestic origin that is removed from a septic tank system) is managed in a responsible, safe and consistent manner across the state.

The data set was obtained from the Division of Waste Management, Solid Waste Section in May of 2019. For additional information about this data, contact the Septage Management Program staff by phone at 919-707-8283 or visit their website at: <https://deq.nc.gov/about/divisions/waste-management/waste-management-rules/septage>.

Soil Remediation Sites

This data set represents sites that have received a permit from the NC Underground Storage Tank Section, under the Petroleum Contaminated Soil Remediation Permit Program. These sites are used to bioremediate soil that has been contaminated by leaking petroleum storage tanks. Bioremediation is a treatment process that uses naturally occurring microorganisms (yeast, fungi, or bacteria) to break down, or degrade, hazardous substances. These microorganisms break down organic compounds, such as petroleum products that are hazardous to humans, into harmless products (mainly carbon dioxide and water). Sites that have been "closed out" were excluded.

The data set was obtained from the Division of Waste Management, Underground Storage Tank Section in February of 2019. For additional information about this data, contact the Underground Storage Tank Section staff by phone at 919-707-8171 or visit their website at: <https://deq.nc.gov/about/divisions/waste-management/ust>.

Solid Waste Facilities

This data set represents all the permitted Municipal Solid Waste (MSW), Construction and Demolition (CDLF), Land-Clearing and Inert Debris (LCID) and Demolition (older facilities) landfill facilities. Coal Ash landfills and Tire landfills are also included. These facility types undergo inspections and groundwater monitoring as part of facility management. This data set also includes active solid waste facility types that are not designated as landfills, such as compost, household hazardous waste, incinerators, medical waste, tire processing and transfer stations.

The data set was obtained from the Division of Waste Management, Solid Waste Section in May of 2019. For additional information about this data, contact the Solid Waste Section staff by phone at 919-707-8247 or visit their website at: <https://deq.nc.gov/about/divisions/waste-management/solid-waste-section>.

Tier II Sites

This data set contains an inventory of facilities that store hazardous materials and are subject to the reporting requirements of the Emergency Planning and Community Right to Know Act (EPCRA). EPCRA was authorized by Title III of the Superfund Amendments and Reauthorization Act (SARA). Tier II forms require basic facility identification information, employee contact information for both emergencies and non-emergencies, and information about chemicals stored or used at the facility including:

- The chemical name or the common name as indicated on the Safety Data Sheet (SDS);
- an estimate of the maximum amount of the chemical present at any time during the preceding calendar year and the average daily amount;
- a brief description of the manner of storage of the chemical;

- the location of the chemical at the facility; and
- an indication of whether the owner of the facility elects to withhold location information from disclosure to the public.

Data, from the 2018 reporting year, was obtained from the Department of Public Safety, Division of Emergency Management. For additional information about this data contact the Division of Emergency Management staff at 919-436-2746 or visit their website at: <http://www.ncdps.gov/Emergency-Management/Hazardous-Materials/EPCRA-Tier-2>.

UIC Permits

The Underground Injection Control (UIC) Program protects groundwater quality by preventing illegal waste disposal and by regulating the construction and operation of wells used for injecting approved substances, aquifer recharge, and other activities. The most common types of injection wells in North Carolina are used for:

- Aquifer Storage and Recovery (ASR)
- Geothermal Heating and Cooling
- In-Situ Groundwater Remediation
- Stormwater Infiltration - effective May 1, 2012

The data set was obtained from the DWR, Groundwater Protection Program in March of 2019. For additional information about this data, contact the UIC Program staff by phone at 919-807-6496 or visit their website at: <https://deq.nc.gov/about/divisions/water-resources/water-resources-permits/wastewater-branch/ground-water-protection/injection-wells>.

UST Permits

A UST system is a tank and any underground piping connected to the tank that has at least 10 percent of its combined volume underground. The federal UST regulations apply only to underground tanks and piping storing either petroleum or certain hazardous substances. These facilities are regulated under Subtitle I of RCRA and must be registered with the state and receive an operating permit annually. Until the mid-1980s, most USTs were made of bare steel, which is likely to corrode over time and allow UST contents to leak into the environment. Faulty installation or inadequate operating and maintenance procedures also can cause USTs to release their contents into the environment. The greatest potential hazard from a leaking UST is that the petroleum or other hazardous substance can seep into the soil and contaminate groundwater. A leaking UST can also present other health and environmental risks, including the potential for fire and explosion. The facilities included in this data set have active Underground Storage Tank systems registered with the UST Section.

Data was obtained from the Division of Waste Management, Underground Storage Tank Section in May of 2019. For additional information about this data, contact the Underground Storage Tank Section staff by phone at 919-707-8171 or visit their website at: <https://deq.nc.gov/about/divisions/waste-management/ust>.

Higher, Moderate and Lower Risk Potential Contamination Sources for Ground Water PWS Systems

Higher Risk PCs

COMMERCIAL/INDUSTRIAL

- Automobile body shops
 - Gas stations
 - Repair shops
- Chemical/petroleum processing/storage
- *Sewer lines
- Utility right-of-way/pesticide use
- Chemical/petroleum pipelines
- Wood/pulp/paper processing and mills
- Dry cleaners
- Electrical/electronic manufacturing
- Fleet/trucking/bus terminals
- Furniture repair/manufacturing
- Home manufacturing
- Junk/scrap/salvage yards
- Machine shops
- Metal plating/finishing/fabricating
- Mines/sand or gravel excavations
- Parking lots/malls (> 50 spaces)
- Photo processing/printing
- Plastics/synthetics producers
- Research laboratories

OTHER

- Road salt storage areas
- Military installations
(for classified risks not otherwise listed)

AGRICULTURAL/RURAL

- Farm machinery repair
- Rural machine shops
- *Intensive livestock operations
 - Lagoons, spray fields
- Fertilizer, pesticide, and petroleum storage, distribution, handling, mixing, and cleaning areas
- *Sewage sludge (biosolids) storage, handling, mixing, and cleaning areas
- *Sewage sludge (biosolids) land application
- Unauthorized/illegal disposal of wastes/chemicals

RESIDENTIAL/MUNICIPAL

- Airports – maintenance/fueling areas
- Railroad yards – maintenance/fueling areas
- Landfills/dumps
- Utility stations – maintenance areas
- *Septic systems – high density (>1/acre)
- *Sewer lines
- *Stormwater drains/discharges
- Fertilizer, pesticide, sewage sludge

Notes:

1. *This is a list of potential sources of contamination not a list of known databases of contaminants.*
2. *Higher risk potential contaminant sources are considered to have a higher potential for drinking water contamination than those designated moderate risk or lower risk. Facility-specific management practices are not taken into account in estimating risks and assigning these categories.*
3. *An asterisk [*] indicates activities that may be associated with microbiological contamination.*

Moderate Risk PCSs

COMMERCIAL/INDUSTRIAL

- Car washes
- Cement/concrete plants
- Food processing
- Hardware/lumber/parts stores

AGRICULTURAL/RURAL

- *Auction lots
- *Boarding stables
- Crops: Irrigated
(Berries, Christmas trees, hops, mint, orchards, vineyards, nurseries, greenhouses, vegetables, sod)
- Drinking water treatment plant residuals/sludge application

RESIDENTIAL/MUNICIPAL

- Drinking water treatment plants
- Golf Courses
- Housing – high density
(>1 house/.5 acres)
- Motor pools
- Parks
- Waste transfer/recycling stations
- Wastewater treatment plants collection stations

OTHER

- Above ground storage tanks
- Construction/demolition areas
- Hospitals
- Transportation corridors
 - Freeways/state highways
 - Railroads
 - Right-of-way maintenance
(herbicide use areas)
- Irrigation, water supply, or monitoring wells

Lower Risk PCSs

COMMERCIAL/INDUSTRIAL

- Office buildings/complexes
- RV/mini storage

AGRICULTURAL/RURAL

- Crops: non-irrigated
(grains, grass seeds, hay)
- Crops: drip irrigated
- *Rangeland
- Managed forests/silviculture

RESIDENTIAL/MUNICIPAL

- Apartments and condominiums
- Campgrounds/RV parks
- Fire stations
- Schools
- Housing – low density
(<1 house/.5 acres)

OTHER

- Medical/dental offices/clinics
- Veterinary offices/clinics

SOURCE: Adapted from EPA (1993), and from the Oregon Wellhead Protection Program

Example Public Notice

Town of Beech Mountain Local Wellhead Protection Program Plan Notice

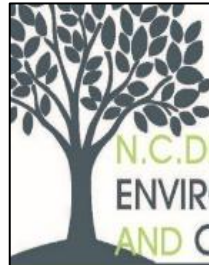
The Town of Beech Mountain, with assistance from the North Carolina Rural Water Association, is in the process of developing a Local Wellhead Protection Program Plan. This is a voluntary program intended to assist us in protecting the system's water supply from contamination, and to identify vulnerable areas around our well called the "Wellhead Protection Area". Another goal of this program is to make residents and businesses aware that chemicals and other pollutants spilled or dumped in the vicinity of the "Wellhead Protection Area" can be drawn into the well, possibly contaminating the system's drinking water supply.

The town is asking for your assistance in developing this program. A draft copy of the Wellhead Protection Plan will be available for review and comment on the Town's website at www.townofbeechmountain.com. You are invited to review the program and submit any comments or suggestions to the town. All written public comments will be reviewed by the Wellhead Protection Committee, and any suggestions or comments that may be beneficial will be incorporated into the program.

If you have any questions or comments, please feel free to contact the Town Hall at 828-387-4236.

N.C. DIVISION OF ENVIRONMENTAL ASSISTANCE AND CUSTOMER SERVICE

Customer service through technical, compliance and financial assistance



N.C. DIVISION OF ENVIRONMENTAL ASSISTANCE AND CUSTOMER SERVICE

The N.C. Division of Environmental Assistance and Customer Service (DEACS) assists citizens, businesses, local governments and communities statewide on a diverse range of environmental issues.

DEACS technical services:

- **Toll-free hotline** with experienced staff to answer your environmental questions
- **On-site assessments** and training for waste, water and energy management
- **Compliance** information and tips
- Environmental **recognition** programs
- **Grants** for recycling businesses and local governments
- **Recycling** infrastructure support
- Statewide points of contact for **permit information** and **environmental assistance**



Within the N.C. Department of Environment and Natural Resources, DEACS works to protect and improve North Carolina's environment while supporting a strong economy.

Environmental Assistance Hotline
1-877-623-6748 (toll-free)
eac@ncdenr.gov
ncenvironmentalassistance.org



2000 copies of this public document were printed on 100% recycled content and FSC certified paper at a cost of \$713.79 or \$0.34 each.




On a septic system?
When's the last time you thought about it?

Your septic system is part of your home and your responsibility.

Don't wait until you have issues with your septic system. Protect your home investment and avoid costly replacement—call a licensed septic tank contractor today.

- Have your septic tank inspected and pumped out by a licensed septic tank contractor as needed (on average every three to five years).
- Protect your system by practicing simple, daily tips (see reverse).

septicSMART
U.S. Environmental Protection Agency



SEPTIC TIPS

- ✓ **Keep it Protected—Get it Inspected!**
Have your septic tank inspected and pumped out by a licensed septic tank contractor as needed (on average every three to five years).
- ✓ **Don't Strain your Drain!**
Use water efficiently to avoid overtaxing your system. Fix household leaks, run the dishwasher and clothes washer only on full loads, and consider installing high-efficiency fixtures.
- ✓ **Think at the Sink!**
Don't pour grease, fats, or harmful chemicals like paints and solvents down your sink. They can clog or harm your system.
- ✓ **Don't Overload the Commode!**
Do not flush non-degradable items such as dental floss, diapers, coffee grounds, or feminine hygiene products.
- ✓ **Shield your Field!**
Care for your drainfield by only planting grass, not driving or parking on it, and reducing roof and surface water drainage near the drainfield.

Know your part, be SepticSmart!
Learn more at www.epa.gov/septicSMART.

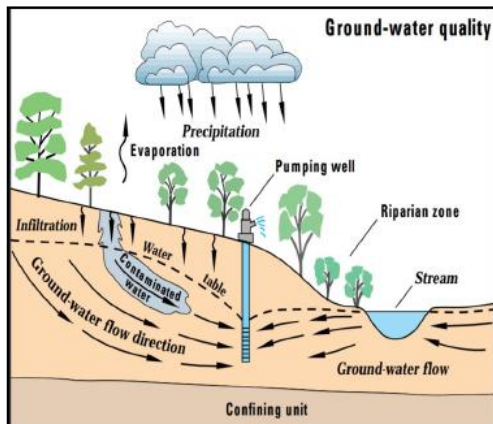
septicSMART
U.S. Environmental Protection Agency

EPA-832-E-12-005 September 2012

Pollution Prevention

Groundwater can be contaminated when hazardous materials are not properly managed. You can help:

- Safely store, handle and use chemicals / fuels,
- Monitor underground fuel tanks and chemical tanks. If possible, replace with above ground tanks (leaks are then visible),
- Reduce or substitute the use of chemicals,
- Keep chemicals protected from rain and prevent runoff,
- Participate in Hazardous Waste Collections.



Reduce, Reuse and Recycle

You can help your community, and the environment by saving money, energy and natural resources by reducing, reusing and recycling. The Watauga County Solid Waste accepts various types of waste, contact 828-264-5305 for more information.

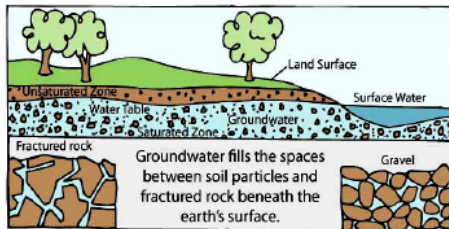
Town of Beech Mountain
403 Beech Mountain Parkway
Beech Mountain, NC 28604
PH: 828-387-4236



The graphic features a light blue background with several large, clear water bubbles of varying sizes. The text 'How Can You Help?' is written in a blue, sans-serif font. Below it, 'Protect our Source Water' is written in a larger, bold, black, sans-serif font.

WHAT IS GROUNDWATER?

Groundwater is the water found underground in the cracks and spaces in soil, sand and rock. It is stored in and moves slowly through geologic formations of soil, sand and rocks called aquifers. The Town of Beech Mountain water system uses groundwater it pumps from the ground using a single well and surface water located in our service area .



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THE WELLHEAD PROTECTION PROGRAM

The Town of Beech Mountain is developing a Local Wellhead Protection Program to protect its water supply from contamination. As a part of the program, we have identified the vulnerable area around our well site called the "Wellhead Protection Area". Chemicals and other pollutants spilled or dumped in this area can be drawn into the well, possibly contaminating our community's drinking water supply. Residents and businesses in this area must be very careful with chemicals and other pollutants. Help us to preserve our water quality for our current and future needs.

POLLUTION SOURCES

Many of our daily activities can pollute our surface water and groundwater. Sources of groundwater pollution include:

-  Used oil, paint thinner, gasoline and other chemicals poured on the ground.
-  Leaking fuel storage tanks (aboveground and underground).
-  Overuse of pesticides and fertilizers on lawns, golf courses and agriculture fields.
-  Chemical spills at businesses, farms and along highways.
-  Illegal dumps and poorly managed landfills.
-  Failing septic tanks.
-  Leaking sewer lines.
-  Improperly abandoned wells.
-  Unlined waste pits, ponds and lagoons.
-  Farm machinery repair shops/ Automobile repair shops
-  Cemeteries/Funeral Homes
-  Golf Courses
-  Animal Feedlot / Animal Waste Storage

HOW CAN YOU HELP?

Water is our most valuable natural resource and we are responsible for protecting it! You can help by doing your part to protect our supply by supporting this program. Here are some tips:

- Never pour used oil, paint thinner or other hazardous chemicals on the ground or down the drain. Take them to the Stanly County Convenience Site or to a Hazardous Waste Collection Event.
- Check for and fix leaks in storage tanks (i.e. home heating oil/kerosene) at your home or business.
- Inspect and pump your septic tank as needed.
- Have any unused wells on your property properly abandoned.
- Minimize your use of pesticides and fertilizers, storing them properly.
- Clean up junk and debris on your property.
- Report all chemical spills immediately.
- Encourage community leaders and businesses to do everything possible to protect our drinking water supply.

