Massachusetts Department of Environmental Protection
Source Water Assessment and Protection (SWAP) Report
for

Amesbury Water Division

What is SWAP?

The Source Water Assessment and Protection (SWAP) Program, established under the federal Safe Drinking Water Act, requires every state to:

- inventory land uses within the recharge areas of all public water supply sources;
- assess the susceptibility of drinking water sources to contamination from these land uses; and
- publicize the results to provide support for improved protection.

Susceptibility and Water Quality

Susceptibility is a measure of a water supply's potential to become contaminated due to land uses and activities within its recharge area.

A source's susceptibility to contamination does *not* imply poor water quality.

Water suppliers protect drinking water by monitoring for more than 100 chemicals, disinfecting, filtering, or treating water supplies, and using source protection measures to ensure that safe water is delivered to the tap.

Actual water quality is best reflected by the results of regular water tests. To learn more about your water quality, refer to your water supplier's annual Consumer Confidence Reports.

Table 1: Public Water System Information

PWS Name	Amesbury Water Division
PWS Address	Utility Department/Town Hall, 62 Friend Street
City/Town	Amesbury, Massachusetts 01453
PWS ID Number	3007000
Local Contact	John Dold
Phone Number	(978) 388-8127

Introduction

We are all concerned about the quality of the water we drink. Drinking water wells may be threatened by many potential contaminant sources, including storm runoff, road salting, and improper disposal of hazardous materials. Citizens and local officials can work together to better protect these drinking water sources.

Purpose of this report:
This report is a planning tool to support local and state efforts to improve water supply protection. By identifying land uses within water supply protection areas that may be potential sources of contamination, the assessment helps focus protection efforts on appropriate best management practices (BMPs) and drinking water source protection measures.

Refer to Table 3 for Recommendations to address potential sources of contamination. Department of Environmental Protection (DEP) staff are available to provide information about funding and other resources that may be available to your community.

This report includes the following sections:

1. Description of the Water System
2. Land Uses within Protection Areas
3. Source Water Protection
4. Appendices

Glossary

Aquifer: An underground water-bearing layer of permeable material that will yield water in a usable quantity to a well.

Hydrogeologic Barrier: An underground layer of impermeable material (i.e. clay) that resists penetration by water.

Recharge Area: The surface area that contributes water to a well.

Zone I: The area closest to a well; a 100 to 400 foot radius proportional to the well's pumping rate. This area should be owned or controlled by the water supplier and limited to water supply activities.

Zone II: The primary recharge area for the aquifer. This area is defined by hydrogeologic studies that must be approved by DEP. Refer to the attached map to determine the land within your Zone II.

Zone A: is the most critical for protection efforts. It is the area 400 feet from the edge of the reservoir and 200 feet from the edge of the tributaries (rivers and/or streams) draining into it.

Zone B: is the area one-half mile from the edge of the reservoir but does not go beyond the outer edge of the watershed.

Zone C: is the remaining area in the watershed not designated as Zones A or B.

The attached map shows Zone A and your watershed boundary.

Section 1: Description of the Water System

Groundwater Sources

Zone II #: 435 ***Susceptibility:*** Moderate

Well Name	***Source ID#***
Well #1	3007000-02G
Well #2	3007000-03G

Surface Water Sources

Source Name	***Susceptibility:*** High
Powwow River	3007000-01S
Lake Attitash	3007000-02S

Amesbury Water Division receives its water from the Powwow River, Lake Attitash, and two wells. The two wells for the Amesbury Water Division are located in the northwest corner of the town near the border with New Hampshire and are used mainly during peak water usage in the summer.

The surface water sources for the Amesbury Water Division are also located in the northwest corner of the town, with the Powwow River east of the wells and Lake Attitash west of the wells. Water from Lake Attitash is pumped in to the Powwow River. The watersheds extend in to South Hampton and Newton, NH. Please refer to the attached map of the watersheds.

The wells share a Zone II that extends into small portions of South Hampton, New Hampshire. Each well has a Zone I radius of 400 feet. The wells are located in aquifers with a high vulnerability to contamination due to the absence of hydrogeologic barriers (i.e. confining clay layer) that can prevent contaminant migration. Please refer to the attached map of the Zone II.

The system water is filtered, chlorinated for disinfection, fluoridated for dental health, and pH adjusted for corrosion control. For current information on monitoring results and treatment, please contact the Public Water System contact person listed above in Table 1 for a copy of the most recent Consumer Confidence Report. Drinking water monitoring reporting data is also available on the web at http://www.epa.gov/safewater/ccr1.html

Section 2: Land Uses in the Protection Areas

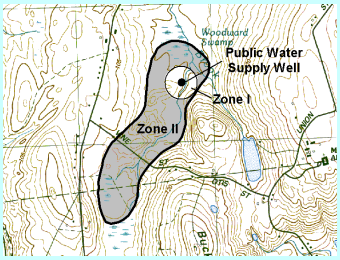
Amesbury's watershed lands and Zone II lands are primarily a mixture of forest, cropland, and residential land use, with smaller portions consisting of commercial land uses, sand and gravel mining, and other land uses (refer to attached map for details). Land uses and activities that are potential sources of contamination are listed in Table 2, with further detail provided in the Table of Regulated Facilities and Table of Underground Storage Tanks in Appendix B.

Key Land Uses and Protection Issues include:

1. Activities in Zone A
2. Residential Land Uses
3. Transportation Corridors
4. Hazardous Materials Storage and Use
5. Agricultural activities
6. Oil or Hazardous Material Contamination Sites
7. Comprehensive Wellhead Protection Planning

What is a Protection Area?

A well's water supply protection area is the land around the well where protection activities should be focused. Each well has a Zone I protective radius and a Zone II protection area.



The ranking of susceptibility to contamination for the Well #1 & Well #2 Zone II is moderate, based on the presence of at least one moderate threat land use within the water supply protection areas, as seen in Table 2. The ranking of susceptibility to contamination for the Powwow River and the Lake Attitash Zone C is high, based on the presence of at least one high threat land use within the water supply protection areas, as seen in Table 2.

1. Activities in Zone As - Land use activities within the Amesbury's Zone As which, if managed improperly may have an impact on surface water sources include: an airport; homes with on-site septic systems; residential storage of heating oil; local roads; stormwater runoff; and a railroad. Wild animals and domestic pets can be carriers of waterborne diseases such as Giardia, Cryptosporidium, Salmonella, etc.

Zone A Recommendations:

- ✓ To the extent possible, remove all activities from the Zone As to comply with DEP's Zone A requirements.
- ✓ Use BMPs for the storage, use, and disposal of hazardous materials such as water supply chemicals and maintenance chemicals.
- ✓ Storage of pesticides, fertilizers or road salt within the Zone A should be covered and contained.
- ✓ Keep any new prohibited activities out of the Zone A.

2. Residential Land Uses – Approximately 18% of the Massachusetts portion of Amesbury's combined Zone II and watershed lands consist of residential areas. Areas of the watershed lands in New Hampshire are also residential land uses. Some of the areas have public sewers, and some use septic systems. If managed improperly, activities associated with residential areas can contribute to drinking water contamination. Common potential sources of contamination include:

- **Septic Systems** – Improper disposal of household hazardous chemicals to septic systems is a potential source of contamination to the groundwater because septic systems lead to the ground. If septic systems fail or are not properly maintained they can be a potential source of microbial contamination.
- **Household Hazardous Materials** - Hazardous materials may include automotive wastes, paints, solvents, pesticides, fertilizers, and other substances. Improper use, storage, and disposal of chemical products used in homes are potential sources of contamination.
- **Heating Oil Storage** - If managed improperly, Underground and Aboveground Storage Tanks (USTs and ASTs) can be potential sources of contamination due to leaks or spills of the fuel oil they store.
- **Stormwater** – Catch basins transport stormwater from roadways and adjacent properties to the ground. As flowing stormwater travels, it picks up debris and contaminants from streets and lawns. Common potential contaminants include lawn chemicals, pet waste, and contaminants from automotive leaks, maintenance, washing, or accidents.

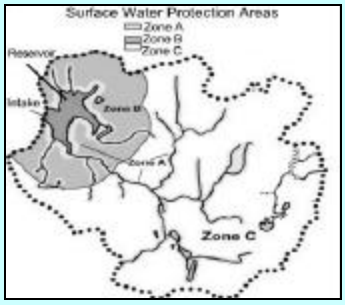
Residential Land Use Recommendations:

- ✓ Educate residents on best management practices (BMPs) for protecting water supplies. Distribute the fact sheet "Residents Protect Drinking Water" available in Appendix A and on www.mass.gov/dep/brp/dws/protect.htm, which provides BMPs for common residential issues.
- ✓ Work with planners to control new residential developments in the water supply protection areas.

3. Transportation Corridors - State and local roads are common in the watersheds and Zone II. Roadway construction, maintenance, and typical highway use can all be potential sources of contamination. Accidents can lead to spills of gasoline and other potentially dangerous transported chemicals. Roadways are frequent sites for illegal dumping of hazardous or other potentially harmful wastes.

What is a Watershed?

A watershed is the land area that catches and drains rainwater down-slope into a river, lake or reservoir. As water travels down from the watershed area it may carry contaminants from the watershed to the drinking water supply source. For protection purposes, watersheds are divided into protection Zones A, B and C.



Catch basins transport stormwater from roadways and adjacent properties to the ground. As flowing stormwater travels, it picks up debris and contaminants from streets and lawns. Common potential contaminants include contaminants from automotive leaks, maintenance, washing, or accidents.

Railroad tracks run through the watershed. Rail corridors serving passenger or freight trains are potential sources of contamination due to chemicals released during normal use, track maintenance, and accidents. Accidents can release spills of train engine fluids and commercially transported chemicals.

Transportation Corridor Recommendations:

- ✓ Regularly inspect watersheds and Zone II for illegal dumping and spills.
- ✓ Work with local emergency response teams to ensure that any spills within the protection areas can be effectively contained.

What are "BMPs?"

Best Management Practices (BMPs) are measures that are used to protect and improve surface water and groundwater quality. BMPs can be structural, such as oil & grease trap catch basins, nonstructural, such as hazardous waste collection days or managerial, such as employee training on proper disposal procedures.

- ✓ Work with the Town and State to have catch basins inspected, maintained, and cleaned on a regular schedule. Regular street sweeping reduces the amount of potential contaminants in runoff.
- ✓ If storm drainage maps are available, review the maps with emergency response teams. If maps aren't yet available, work with town officials to investigate mapping options such as the upcoming Phase II Stormwater Rule requiring some communities to complete stormwater mapping.
- ✓ Promote BMPs for stormwater management and pollution controls.
- ✓ Work with local officials during their review of the railroad right of way Yearly Operating Plans to ensure that water supplies are protected during vegetation control.

4. Hazardous Materials Storage and Use – A small portion of the Zone II and watershed lands for Amesbury are commercial or industrial land uses. Many small businesses and industries use hazardous materials, produce hazardous waste products, and/or store large quantities of hazardous materials in UST/AST. If hazardous materials are improperly stored, used, or disposed, they become potential sources of contamination. Hazardous materials should never be disposed of to a septic system or floor drain leading directly to the ground.

Hazardous Materials Storage and Use Recommendations:

- ✓ Educate local businesses on best management practices for protecting water supplies. Distribute the fact sheet "Businesses Protect Drinking Water" available in Appendix A and on www.mass.gov/dep/brp/dws/protect.htm, which provides BMP's for common business issues.
- ✓ Work with local businesses to register those facilities that are unregistered generators of hazardous waste or waste oil. Partnerships between businesses, water suppliers, and communities enhance successful public drinking water protection practices.

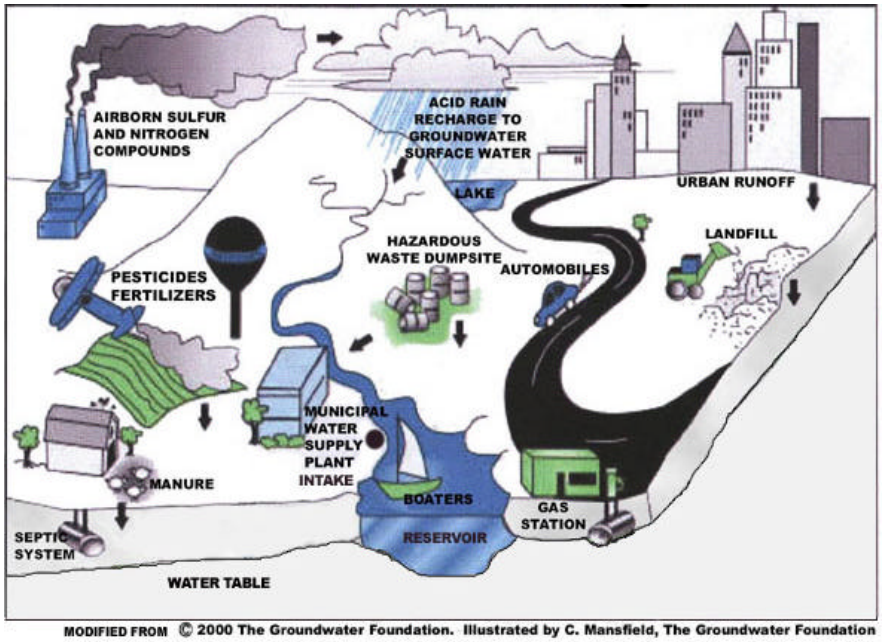


Figure 1: Sample watershed with examples of potential sources of contamination

- ✓ Educate local businesses on Massachusetts floordrain requirements. See brochure "Industrial Floor Drains" for more information.

5. Agricultural Activites – Approximately 10% of Amesbury's water supply protection areas within Massachusetts are cropland and pastureland, with other agricultural land uses. Pesticides and fertilizers have the potential to contaminate a drinking water source if improperly stored, applied, or disposed. If managed improperly, Underground and Aboveground Storage Tanks (USTs and ASTs) can be potential sources of contamination due to leaks or spills of the fuel oil they store.

Potential Source of Contamination vs. Actual Contamination

The activities listed in Table 2 are those that typically use, produce, or store contaminants of concern, which, if managed improperly, are potential sources of contamination (PSC).

It is important to understand that a release may never occur from the potential source of contamination provided facilities are using best management practices (BMPs). If BMPs are in place, the actual risk may be lower than the threat ranking identified in Table 2. Many potential sources of contamination are regulated at the federal, state and/or local levels, to further reduce the risk.

Table 2: Land Use in the Water Supply Protection Areas

For more information, refer to Appendix B: Regulated Facilities within the Water Supply Protection Area

Land Uses	Quantity	Threat	Zone II Number	Watershed Source ID	Potential Contaminant Sources*
Agricultural					
Fertilizer Storage or Use	1	M	530	-	Leaks, spills, improper handling, or over-application of fertilizers
Nurseries	1	M	-	01S, 02S	Fertilizers, pesticides, and other chemicals: leaks, spills, improper handling, or over-application
Commercial					
Airports	1	M	-	01S, 02S	Fuels, de-icers, salt, and other hazardous chemicals: spills, leaks, or improper handling
Body Shops	2	H	-	01S, 02S	Improper management of vehicle paints, solvents, and primer products
Cemeteries	1	L	-	01S, 02S	Over-application of pesticides: leaks, spills, improper handling; historic embalming fluids
Golf Courses	1	M	-	01S, 02S	Over-application or improper handling of fertilizers or pesticides
Railroad Tracks and Yards	1	H	-	01S, 02S	Over-application or improper handling of herbicides, leaks or spills of transported chemicals and maintenance chemicals; fuel storage
Sand And Gravel Mining/Washing	2	M	-	01S, 02S	Heavy equipment, fuel storage, clandestine dumping: spills or leaks
Industrial					
Fuel Oil Distributors	1	H	-	01S, 02S	Fuel oil: spills, leaks, or improper handling or storage
Residential					
Fuel Oil Storage (at residences)	Numerous	M	530	01S, 02S	Fuel oil: spills, leaks, or improper handling
Lawn Care / Gardening	Numerous	M	530	01S, 02S	Pesticides: over-application or improper storage and disposal
Septic Systems / Cesspools	Numerous	M	530	01S, 02S	Hazardous chemicals: microbial contaminants, and improper disposal

Land Uses	Quantity	Threat*	Zone II Number	Watershed Source ID	Potential Contaminant Sources*
Miscellaneous					
Aboveground Storage Tanks	4	M	-	01S, 02S	Materials stored in tanks: spills, leaks, or improper handling
Composting Facilities	1	M	-	01S, 02S	Organic material, animal waste, and runoff: storage and improper handling
Fishing/Boating	Extensive	M	-	01S, 02S	Fuel and other chemical spills, microbial contaminants
Landfills and Dumps	1	H	-	01S, 02S	Seepage of leachate
NPDES Locations	1	L	-	01S	Improper disposal of hazardous material and wastes
Oil or Hazardous Material Sites	1	--	-	02S	Tier Classified Oil or Hazardous Materials Sites are not ranked due to their site-specific character. Individual sites are identified in Appendix B.
Road and Maintenance Depots	1	M	-	01S, 02S	Deicing materials, automotive fluids, fuel storage, and other chemicals: spills, leaks, or improper handling or storage
Stormwater Drains/ Retention Basins	Numerous/ 2	L	530	01S, 02S	Debris, pet waste, and chemicals in stormwater from roads, parking lots, and lawns
Transmission Line Rights-of-Way: electric	1	L	530	01S, 02S	Construction and corridor maintenance, over-application or improper handling of herbicides
Underground Storage Tanks	3	M	-	01S, 02S	Spills, leaks, or improper handling or storage of hazardous materials and waste
Water Treatment Sludge Lagoon	2	L	-	01S, 02S	Sludge and wastewater: improper management

Table Notes:

1. When specific potential contaminants are not known, typical potential contaminants or activities for that type of land use are listed. Facilities within the watershed may not contain all of these potential contaminant sources, may contain other potential contaminant sources, or may use Best Management Practices to prevent contaminants from reaching drinking water supplies.
2. For more information on regulated facilities, refer to Appendix B: Regulated Facilities within the Water Supply Protection Area information about these potential sources of contamination.
3. For information about Oil or Hazardous Materials Sites in your protection areas, refer to Appendix C: Tier Classified Oil and/or Hazardous Material Sites.

- **THREAT RANKING** - Where there are two rankings, the first is for surface water, the second for groundwater sources. The rankings (high, moderate or low) represent the relative threat of each land use compared to other PSCs. The ranking of a particular PSC is based on a number of factors, including: the type and quantity of chemicals typically used or generated by the PSC; the characteristics of the contaminants (such as toxicity, environmental fate and transport); and the behavior and mobility of the pollutants in soils and groundwater.

Agricultural Activities Recommendations:

- ✓ Work with farmers in your protection areas to make them aware of your water supply and to encourage the use of a US Natural Resources Conservation Service (NRCS) farm plan to protect water supplies.
- ✓ Encourage the farmers to incorporate an Integrated Pest Management (IPM) approach into their pest management program. IPM is an ecologically-based approach to pest control that links together several related components, including monitoring and scouting, biological controls, mechanical and/or other cultural practices, and pesticide applications. By combining a number of these different methods and practices, satisfactory pest control can be achieved with less impact on the environment.
- ✓ Promote Best Management Practices (BMPs) for fuel oil storage, hazardous material handling, storage, disposal, and emergency response planning.
- ✓ Work with farmers and nurseries to ensure that pesticides and fertilizers are being stored within a structure designed to prevent runoff.

6. Presence of Oil or Hazardous Material Contamination Site – The Zone II contains a MADEP Tier Classified Oil and/or Hazardous Material Release Site indicated on the map as Release Tracking Number 3-0015208. Refer to the attached map and Appendix C for more information.

Oil or Hazardous Material Contamination Sites Recommendation:

- ✓ Monitor progress on any ongoing remedial action conducted for the known contamination site.

7. Protection Planning – Protection planning protects drinking water by managing the land area that supplies water to a well or reservoir. Currently, the Town does not have water supply protection controls that have been approved as meeting DEP's Wellhead Protection regulations 310 CMR 22.21(2) or Surface Water Protection regulations 310 CMR 22.20 (b) and (c). Wellhead Protection and Surface Water Supply Protection Plans coordinate community efforts, identifies protection strategies, establishes a timeframe for implementation, and provides a forum for public participation. There are resources available to help communities develop plans for protecting drinking water supply sources.

Top 5 Reasons to Develop a Local Wellhead and Surface Water Protection Plan

❶ Reduces Risk to Human Health

❷ Cost Effective! Reduces or Eliminates Costs Associated With:

- Increased monitoring and treatment
- Water supply clean up and remediation
- Replacing a water supply
- Purchasing water

❸ Supports municipal bylaws, making them less likely to be challenged

❹ Ensures clean drinking water supplies for future generations

❺ Enhances real estate values – clean drinking water is a local amenity. A community known for its great drinking water in a place people want to live and businesses want to locate.

Protection Planning Recommendations:

- ✓ Develop and implement Surface Water Supply and Wellhead Protection Plans. Refer your protection team to http://mass.gov/dep/brp/dws/protect.htm for a copy of DEP's guidance on developing plans.

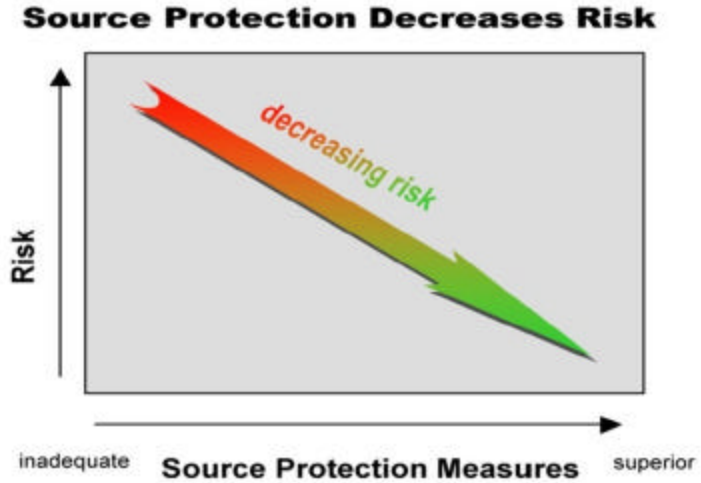


Figure 2: Risk of contamination decreases as source protection increases. This is true for public water systems of any susceptibility ranking, whether High, Moderate, or Low.

- ✓ If your local surface water supply protection controls do not meet the current regulations, coordinate efforts with local officials to adopt local water supply protection controls that meet current MA regulations 310 CMR 22.21(2) and 310 CMR 22.20 (b) and (c). For more information on DEP land use controls see http://mass.gov /dep/brp/dws/protect.htm.
- ✓ If local controls do not regulate floordrains, be sure to include floordrain controls that meet 310 CMR 22.21(2).
- ✓ Work with town boards to review and provide recommendations on proposed development within your water supply protection areas. To obtain information on build-out analyses for the town, see the Executive Office of Environmental Affairs' community preservation web site, http://commpres.env.state.ma.us/.

Other land uses and activities within the Zone II that are potential sources of contamination are included in Table 2. Refer to Appendix B for more information about these land uses. Identifying potential sources of contamination is an important initial step in protecting your drinking water sources. Further local investigation will provide more in-depth information and may identify new land uses and activities that are potential sources of contamination.
Once potential sources of contamination are identified, specific recommendations like those below should be used to better protect your water supply.

Section 3: Source Water Protection Conclusions and Recommendations

Current Land Uses and Source Protection:
As with many water supply protection areas, the system Zone II and watersheds contain potential sources of contamination. However, source protection measures reduce the risk of actual contamination, as illustrated in Figure 2. The water supplier is commended for taking an active role in promoting source protection measures in the Water Supply Protection Areas through:

- Creating a source protection team to work with New Hampshire watershed towns.
- Applying for and receiving a grant to create a surface water supply protection plan, improve emergency planning, and foster greater cooperation with watershed areas in New Hampshire.
- Land acquisition within the watersheds for source protection.
- Restricting access to the treatment plant and other water supply facilities through fencing.
- Encouraging sewering in watershed areas.
- Receiving a grant to eliminate direct discharge of stormdrains into Lake Attitash.

What is a Zone III?

A Zone III (the secondary recharge area) is the land beyond the Zone II from which surface and ground water drain to the Zone II and is often coincident with the watershed boundary.

The Zone III is defined as a secondary recharge area for one or both of the following reasons:

1. The low permeability of underground water bearing materials in this area significantly reduces the rate of groundwater and potential contaminant flow to the Zone II.

2. The groundwater in this area probably discharges to surface water feature such as a river rather than discharging directly into the aquifer.

The land uses within the Zone III are assessed only for sources that are shown to be groundwater under the direct influence of surface water.

Source Protection Recommendations:
To better protect the sources for the future:

- ✓ Educate residents on ways they can help you to protect drinking water sources.
- ✓ Inspect the Zone Is and As regularly, and when feasible, remove any non-water supply activities.
- ✓ Work with emergency response teams to ensure that they are aware of the stormwater drainage in your Zone II and to cooperate on responding to spills or accidents.
- ✓ Partner with local businesses to ensure the proper storage, handling, and disposal of hazardous materials.
- ✓ Monitor progress on any ongoing remedial action conducted for the known oil or contamination sites.
- ✓ Work with farmers in your protection areas to make them aware of your water supply and to encourage the use of a NRCS farm plan to protect water supplies.
- ✓ Develop and implement a Wellhead and Surface Water Protection Plan.

Conclusions:
These recommendations are only part of your ongoing local drinking water source protection. Additional source protection recommendations are listed in Table 3, the Key Issues above and Appendix A.

DEP staff, informational documents, and resources are available to help you build on this SWAP report as you continue to improve drinking water protection in your community.

The Department's Wellhead Protection Grant Program and Source Protection Grant Program provide funds to assist public water suppliers in addressing water supply source protection through local projects. Protection recommendations discussed in this document may be eligible for funding under the Grant Program. Please note: each spring DEP posts a new Request for Response for the grant program (RFR).

Table 3: Current Protection and Recommendations

Protection Measures	Status	Recommendations
Zone I and Zone A		
Does the Public Water Supplier (PWS) own or control the entire Zone I and/or Zone A?	**YES** (Zone I for Well #1 & Well #2)	Follow Best Management Practices (BMP's) that focus on good housekeeping, spill prevention, and operational practices to reduce the use and release of hazardous materials.
	NO (Powwow River & Lake Attitash)	To the extent possible, remove prohibited activities in Zone A to comply with DEP's Zone A requirements. Investigate options for gaining ownership or control of the Zone A.
Are the Zone I and Zone A posted with "Public Drinking Water Supply" Signs?	**YES**	Additional economical signs are available from the Northeast Rural Water Association (802) 660-4988.
Are the Zone I and Zone A regularly inspected?	**YES**	Continue daily inspections of drinking water protection areas.
Are water supply-related activities the only activities within the Zone I and Zone A?	**YES** (Zone I for Well #1 & Well #2)	Monitor for any non-water supply activities in Zone I and prohibited activities in Zone A, and investigate options for removing these activities.
	NO (Powwow River & Lake Attitash)	Monitor prohibited activities in Zone A, and investigate options for removing these activities.
Municipal Controls (Zoning Bylaws, Health Regulations, and General Bylaws)		
Does the municipality have Surface Water Protection Controls that meet 310 CMR 22.20C and Wellhead Protection Controls that meet 310 CMR 22.21(2) ?	**NO**	Continue working with the Planning Board and the Board of Selectmen to compare land use controls to see that they meet current requirements of 310 CMR 22.21(2) and 310 CMR 22.20C. Refer to mass.gov/dep/brp/dws/ for model bylaws and health regulations, and current regulations.
Do neighboring communities protect the water supply protection areas extending into their communities?	**NO**	Work with the communities of Merrimac, MA, and Newton and South Hampton, NH to encourage them to protect watershed and Zone II lands.
Planning		
Does the PWS have a local surface water and wellhead protection plan?	**NO**	Develop and implement a surface water supply and wellhead protection plan. Follow "Developing a Local Wellhead Protection Plan" and Developing a Local Surface Water Supply Protection Plan" available at: www.state.ma.us/dep/brp/dws/.
Does the PWS have a formal "Emergency Response Plan" to deal with spills or other emergencies?	**YES**	Supplement plan by developing a joint emergency response plan with fire department, Board of Health, DPW, and local and state emergency officials. Coordinate emergency response drills with local teams.
Does the municipality have a watershed and wellhead protection committee?	**YES**	Encourage committee to include representatives from citizens' groups, neighboring communities, and the business community.
Does the Board of Health conduct inspections of commercial and industrial activities?	**YES**	Floor drain inspection was conducted in conjunction with DEP. For more guidance see "Hazardous Materials Management: A Community's Guide" at www.state.ma.us/dep/brp/dws/files/hazmat.doc
Does the PWS provide watershed protection education?	**YES**	Increase residential outreach through bill stuffers, school programs, Drinking Water Week activities, and coordination with local groups. Aim additional efforts at commercial, industrial and municipal uses within the Zone II and watershed.

Other grants and loans are available through the Drinking Water State Revolving Loan Fund, the Clean Water State Revolving Fund, and other sources. For more information on grants and loans, visit the Bureau of Resource Protection's Municipal Services web site at: http://mass.gov/dep/brp/mf/mfpubs.htm.

The assessment and protection recommendations in this SWAP report are provided as a tool to encourage community discussion, support ongoing source protection efforts, and help set local drinking water protection priorities. Citizens and community officials should use this SWAP report to spur discussion of local drinking water protection measures. The water supplier should supplement this SWAP report with local information on potential sources of contamination and land uses. Local information should be maintained and updated periodically to reflect land use changes in the watershed and Zone II. Use this information to set priorities, target inspections, focus education efforts, and to develop a long-term drinking water source protection plan.

Section 4: Appendices

A. Protection Recommendations
B. Regulated Facilities within the Water Supply Protection Area
C. Table of Tier Classified Oil and/or Hazardous Material Sites within the Water Supply Protection Areas
D. Additional Documents on Source Protection

Additional Documents:

To help with source protection efforts, more information is available by request or online at www.state.ma.us/dep/brp/dws including:

1. Water Supply Protection Guidance Materials such as model regulations, Best Management Practice information, and general water supply protection information.

2. MA DEP SWAP Strategy

3. Land Use Pollution Potential Matrix

4. Draft Land/Associated Contaminants Matrix

For More Information

Contact Anita Wolovick in DEP's Wilmington Office at (978) 661-7768 for more information and assistance on improving current protection measures.

Copies of this report have been provided to the public water supplier and town boards.

APPENDIX A: DEP PERMITTED FACILITIES WITHIN AMESBURY WATER SUPPLY PROTECTION AREAS

DEP FACILITY NUMBER	FACILITY NAME	STREET ADDRESS	TOWN	PERMITTED ACTIVITY	ACTIVITY CLASS
326139	CHALLENGE ENGINEERING, INC	271 LIONS MOUTH ROAD	AMESBURY	HANDLER	VERY SMALL QUANTITY GENERATOR
208033	BROX INDUSTRIES, INC.	10 NORTH STREET	MERRIMAC	TURA REPORTER	BELOW TOXICS USE REDUCTION REGULATION LEVELS

UNDERGROUND STORAGE TANKS

FACILITY NAME	ADDRESS	TOWN	DESCRIPTION	CAPACITY (GAL)	CONTENTS
BROX INDUSTRIES, INC.	10 NORTH STREET	MERRIMAC	INDUSTRIAL	10000	FUEL OIL

For more information on underground storage tanks, visit the Massachusetts Department of Fire Services web site: http://www.state.ma.us/dfs/ust/ustHome.htm

Note: This appendix includes only those facilities within the water supply protection area(s) that meet state reporting requirements and report to the appropriate agencies. Additional facilities located within the water supply protection area(s) should be considered in local drinking water source protection planning.

APPENDIX B – Table of Tier Classified Oil and/or Hazardous Material Sites within Amesbury Water Supply Protection Areas

DEP's datalayer depicting oil and/or hazardous material (OHM) sites is a statewide point data set that contains the approximate location of known sources of contamination that have been both reported and classified under Chapter 21E of the Massachusetts General Laws. Location types presented in the layer include the approximate center of the site, the center of the building on the property where the release occurred, the source of contamination, or the location of an on-site monitoring well. Although this assessment identifies OHM sites near the source of your drinking water, the risks to the source posed by each site may be different. The kind of contaminant and the local geology may have an effect on whether the site poses an actual or potential threat to the source.

The DEP's Chapter 21E program relies on licensed site professionals (LSPs) to oversee cleanups at most sites, while the DEP's Bureau of Waste Site Cleanup (BWSC) program retains oversight at the most serious sites. This privatized program obliges potentially responsible parties and LSPs to comply with DEP regulations (the Massachusetts Contingency Plan – MCP), which require that sites within drinking water source protection areas be cleaned up to drinking water standards.

For more information about the state's OHM site cleanup process to which these sites are subject and how this complements the drinking water protection program, please visit the BWSC web page at http://www.state.ma.us/dep/bwsc. You may obtain site -specific information two ways: by using the BWSC Searchable Sites database at http://:www.state.ma.us/dep/bwsc/sitellst.htm, or you may visit the DEP regional office and review the site file. These files contain more detailed information, including cleanup status, site history, contamination levels, maps, correspondence and investigation reports, however you must call the regional office in order to schedule an appointment to view the file.

The table below contains the list of Tier Classified oil and/or Hazardous Material Release Sites that are located within your drinking water source protection area.

Table 1: Bureau of Waste Site Cleanup Tier Classified Oil and/or Hazardous Material Release Sites (Chapter 21E Sites) - Listed by Release Tracking Number (RTN).

RTN	Release Site Address	Town	Contaminant Type
3-0015208	72 East Main Street	Merrimac	Oil and Hazardous Material

For more location information, please see the attached map. The map lists the release sites by Release Tracking Number (RTN).

APPENDIX A: DEP PERMITTED FACILITIES WITHIN AMESBURY WATER SUPPLY PROTECTION AREAS

DEP FACILITY NUMBER	FACILITY NAME	STREET ADDRESS	TOWN	PERMITTED ACTIVITY	ACTIVITY CLASS
326139	CHALLENGE ENGINEERING, INC	271 LIONS MOUTH ROAD	AMESBURY	HANDLER	VERY SMALL QUANTITY GENERATOR
208033	BROX INDUSTRIES, INC.	10 NORTH STREET	MERRIMAC	TURA REPORTER	BELOW TOXICS USE REDUCTION REGULATION LEVELS

UNDERGROUND STORAGE TANKS

FACILITY NAME	ADDRESS	TOWN	DESCRIPTION	CAPACITY (GAL)	CONTENTS
BROX INDUSTRIES, INC.	10 NORTH STREET	MERRIMAC	INDUSTRIAL	10000	FUEL OIL

For more information on underground storage tanks, visit the Massachusetts Department of Fire Services web site: http://www.state.ma.us/dfs/ust/ustHome.htm

Note: This appendix includes only those facilities within the water supply protection area(s) that meet state reporting requirements and report to the appropriate agencies. Additional facilities located within the water supply protection area(s) should be considered in local drinking water source protection planning.

APPENDIX B – Table of Tier Classified Oil and/or Hazardous Material Sites within Amesbury Water Supply Protection Areas

DEP's datalayer depicting oil and/or hazardous material (OHM) sites is a statewide point data set that contains the approximate location of known sources of contamination that have been both reported and classified under Chapter 21E of the Massachusetts General Laws. Location types presented in the layer include the approximate center of the site, the center of the building on the property where the release occurred, the source of contamination, or the location of an on-site monitoring well. Although this assessment identifies OHM sites near the source of your drinking water, the risks to the source posed by each site may be different. The kind of contaminant and the local geology may have an effect on whether the site poses an actual or potential threat to the source.

The DEP's Chapter 21E program relies on licensed site professionals (LSPs) to oversee cleanups at most sites, while the DEP's Bureau of Waste Site Cleanup (BWSC) program retains oversight at the most serious sites. This privatized program obliges potentially responsible parties and LSPs to comply with DEP regulations (the Massachusetts Contingency Plan – MCP), which require that sites within drinking water source protection areas be cleaned up to drinking water standards.

For more information about the state's OHM site cleanup process to which these sites are subject and how this complements the drinking water protection program, please visit the BWSC web page at http://www.state.ma.us/dep/bwsc. You may obtain site -specific information two ways: by using the BWSC Searchable Sites database at http://:www.state.ma.us/dep/bwsc/sitellst.htm, or you may visit the DEP regional office and review the site file. These files contain more detailed information, including cleanup status, site history, contamination levels, maps, correspondence and investigation reports, however you must call the regional office in order to schedule an appointment to view the file.

The table below contains the list of Tier Classified oil and/or Hazardous Material Release Sites that are located within your drinking water source protection area.

Table 1: Bureau of Waste Site Cleanup Tier Classified Oil and/or Hazardous Material Release Sites (Chapter 21E Sites) - Listed by Release Tracking Number (RTN).

RTN	Release Site Address	Town	Contaminant Type
3-0015208	72 East Main Street	Merrimac	Oil and Hazardous Material

For more location information, please see the attached map. The map lists the release sites by Release Tracking Number (RTN).