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

Southampton Water Department

What is SWAP?

The Source Water Assessment Program (SWAP), 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	Southampton Water Department
PWS Address	17 Gilbert Road
City/Town	Southampton
PWS ID Number	1276000
Local Contact	Mr. Joseph Slattery
Phone Number	413-527-3664

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.

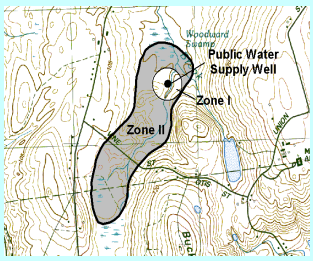
Refer to Table 3 for Recommendations to address potential sources of contamination. Department of Environmental Protection (DEP) staff are available to provide information about funding and other resources that may be available to your community.

This report includes the following sections:

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

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.



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.

Section 1: Description of the Water System

Zone II # 201 ***Susceptibility: High***

Source Name:	***Source ID***
College Highway	1276000-01G

Southampton is a small, agricultural/residential town in the Connecticut River Valley of western Massachusetts. The Southampton Water Department maintains and operates a single groundwater source and supplements the system by drawing raw surface water from the City of Holyoke's 42-inch transmission main (by legislated right), served by the Tighe-Carmody Reservoir. For information regarding that source, please refer to the Source Water Assessment and Protection Report for the City of Holyoke. Southampton is in the process of developing a replacement well for 01G as the well has been experiencing diminished capacity due to deterioration of the screen. The replacement well is located immediately adjacent to (within 50 feet of) the College Highway Well (01G) and the Zone II recharge area will be the same. The well has a Zone I protective radius of 400 feet and approved withdrawal rate of 0.792 MGD. The Zone I includes a small area of College Highway and an undeveloped field. The Zone II was delineated utilizing data developed during an extended duration pumping test, geological mapping and analytical modelling.

The aquifer is part of the Barnes Aquifer, an extensive sand and gravel aquifer that has been designated by the EPA as a "Sole Source Aquifer". The aquifer extends through Holyoke, Westfield, Southampton and Easthampton. The Zone II for the College Highway well is aerially extensive and extends through Southampton and into Westfield to the south. The Barnes Aquifer Protection Committee consists of representatives of each of the communities to work together on a regional basis to promote education about and protection of the aquifer. The well is located downgradient (north) of a point at which two, one-half mile wide, buried valley (Manhan River and Moose Brook) aquifers merge and discharge further to the north and east into the Connecticut River Valley. The aquifer is comprised of glacially deepened bedrock valleys that were filled with sand and gravel during the glacial recession (melting) some 10,000 years ago. Glacial Lake Hitchcock was formed throughout much of the Connecticut River Valley leaving some areas with an extensive clay confining unit. The College Highway well is a flowing artesian well due to a thick, confined clay unit located in the immediate vicinity of the well. However, the confining clay unit thins outs and is non-existent in some portions of the Zone II. Much of the recharge to the aquifer occurs in the unconfined portions of the aquifer and some potentially from the bedrock.

The wells are located in an aquifer with a high vulnerability to contamination due to the absence of a continuous hydrogeologic barrier (i.e. clay) that can prevent contaminant migration from the ground surface. Please refer to the attached map to view the boundaries of the Zone II.

Water from the College Highway well is not treated prior to distribution. Soda ash is added to the water from the Holyoke surface water supply to adjust the pH for corrosion control and disinfected with chlorine prior to distribution. For current information on water quality 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.

Section 2: Land Uses in the Protection Areas

The Zone II for Southampton has primarily residential and agricultural land uses; there are a few commercial, and some industrial 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. Non-conforming Zone I
2. Residential land uses
3. Transportation corridors
4. Hazardous materials storage and use
5. Oil or hazardous material contamination sites
6. Comprehensive wellhead protection planning
7. Agricultural activities
8. Rights-of-Way

The overall ranking of susceptibility to contamination for the system is high, based on the presence of several high threat land uses within the water supply protection areas, as seen in Table 2. However, there are numerous safeguards in place to minimize the threat from some of the potential threats. The following summarizes the potential threats and recommendations.

1. Non-conforming Zone I – The Zone I for the well is a 400 foot radius around the wellhead. Massachusetts drinking water regulation (310 CMR 22.00 Drinking Water) requires public water suppliers to own the Zone I, or control the Zone I through a conservation restriction. Only water supply activities are allowed in the Zone I. However, many public water supplies were developed prior to the Department's promulgation of regulations and contain non water supply activities such as homes and public roads. The Zone I for well 01G and the replacement well extends into College Highway. It is unlikely that the Water Department will be able to acquire ownership of the entire Zone I. The Water Department owns the remaining land area within the Zone I for the wells.

Benefits of Source Protection

Source Protection helps protect public health and is also good for fiscal fitness:

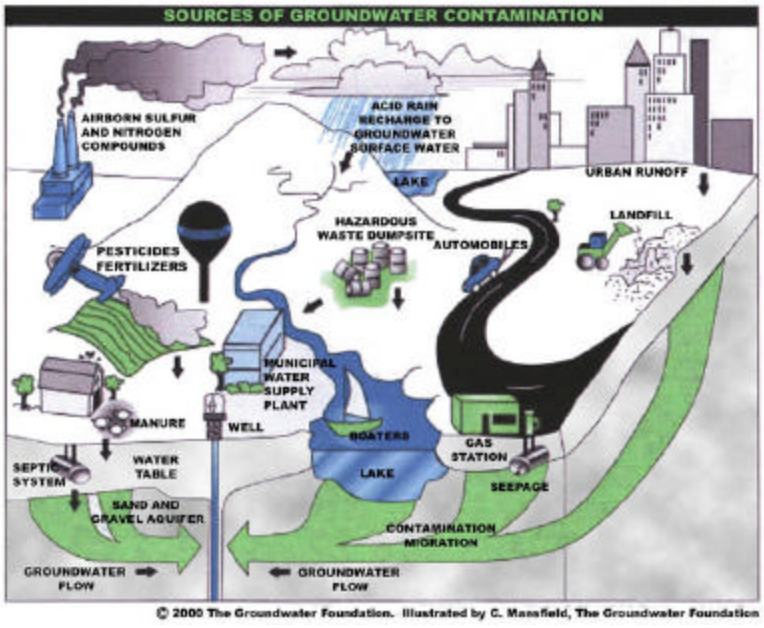
- Protects drinking water quality at the source
- Reduces monitoring costs through the DEP Waiver Program
- Treatment can be reduced or avoided entirely, saving treatment costs
- Prevents costly contamination clean-up
- Preventing contamination saves costs on water purchases, and expensive new source development

Contact your regional DEP office for more information on Source Protection and the Waiver Program.

Zone I Recommendations:

- ✓ Use BMPs for the storage, use, and disposal of hazardous materials such as water supply chemicals and maintenance chemicals.
- ✓ Do not use or store pesticides, fertilizers or road salt within the Zone I.
- ✓ Keep any new non-water supply activities out of the Zone I.

2. Residential Land Uses – Approximately 14% of the Zone II land area is residential. The entire Zone II, with the exception of that one commercial area on the northern edge of the Zone II is served by on-site septic disposal 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 (UST and AST) can be potential sources of contamination due to leaks or spills of the fuel oil they store.

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.

- **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.
- ✓ Promote BMPs for stormwater management and pollution controls.

3. Transportation Corridors – Many state routes run through the Zone IIs of the wells. Local roads are common throughout the Zone IIs. 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. De-icing salt, automotive chemicals and other debris on roads are picked up by stormwater and wash in to catch basins.

Transportation Corridor Recommendations:

- ✓ Identify stormwater drains and the drainage system along transportation corridors. Wherever possible, ensure that drains discharge stormwater outside of the Zone IIs.
- ✓ Work with the Town and State to have catch basins inspected, maintained, and cleaned on a regular schedule. Street sweeping reduces the amount of potential contaminants in runoff. For information on DEP's Nonpoint Competitive Grants Program Upcoming Funding Opportunity refer to: http://www.state.ma.us/dep/brp/mf/mfpubs.htm#wpa.
- ✓ Work with local emergency response teams to ensure that any spills within the Zone IIs can be effectively contained.
- ✓ 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.
- ✓ Notify City and town officials of potential USDA funding for mitigation and prevention of runoff pollution through the Environmental Quality Incentives Program (EQIP).

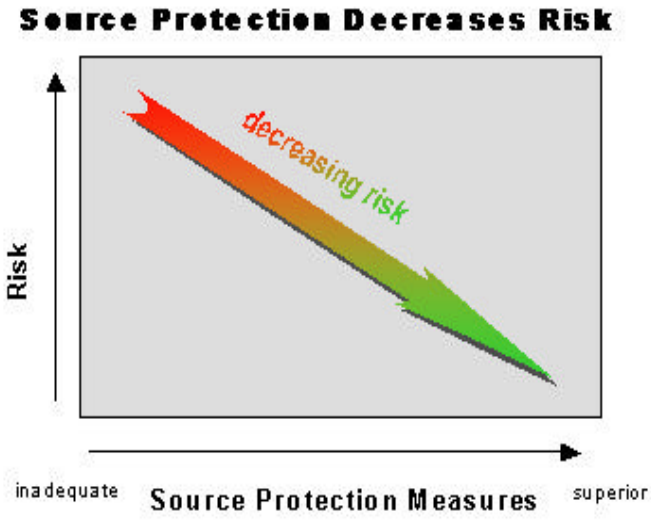


Figure 2: Risk of contamination decreases as source protection increases. This is true for public water systems of any susceptibility ranking, whether High, Moderate, or Low.

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 Protection Areas (Zones I and II)

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

Activities	Quantity	Threat*	Potential Source of Contamination
Agricultural			
Dairy Farms	2	M	Manure (microbial contaminants): improper handling
Fertilizer Storage or Use orchards/crops	Several	M	Fertilizers: leaks, spills, improper handling, or over-application
Livestock Operations other than dairy	3	M	Manure (microbial contaminants): improper handling
Pesticide Storage or Use Orchards/crops	Several	H	Pesticides: leaks, spills, improper handling, or over-application
Pesticide/Fertilizer Storage—Farm store	1	H	Leaks, spills, improper handling
Commercial			
Cemeteries	1	M	Over-application of pesticides: leaks, spills, improper handling; historic embalming fluids
Furniture Stripping and Refinishing	1	H	Hazardous chemicals: spills, leaks, or improper handling
Gas Stations	1	H	Automotive fluids and fuels: spills, leaks, or improper handling or storage
Golf Courses	1	M	Fertilizers or pesticides: over-application or improper handling
Junk Yards and Salvage Yards	5	H	Automotive chemicals, wastes, and batteries: spills, leaks, or improper handling
Medical Facilities	1	M	Biological, chemical, and radioactive wastes: spills, leaks, or improper handling or storage
Sand And Gravel Mining/Washing	2	M	Heavy equipment, fuel storage, clandestine dumping: spills or leaks
Hazardous Materials Storage	Several	H	Hazardous materials: spills, leaks, or improper handling or storage
Confirmed Hazardous Waste Sites	2	-	Refer questions to Bureau of Waste Site Cleanup

Activities	Quantity	Threat*	Potential Source of Contamination
Residential			
Fuel Oil Storage (at residences)	Numerous	M	Fuel oil: spills, leaks, or improper handling
Lawn Care / Gardening	Numerous	M	Pesticides: over-application or improper storage and disposal
Septic Systems / Cesspools	Numerous	M	Hazardous chemicals: microbial contaminants, and improper disposal
Industrial			
Forestry Operation—Sawmill	1	M	Herbicides or pesticides, equipment maintenance materials: leaks, spills, or improper handling; road building
Miscellaneous			
Clandestine Dumping	Numerous	H	Debris containing hazardous materials or wastes
Landfills (closed/capped)	1	H	Seepage of leachate
Small quantity hazardous waste generators	Numerous	M	Hazardous materials and waste: spills, leaks, or improper handling or storage
Rights-of-Way - Type: Natural gas	1	L	Corridor maintenance pesticides: over-application or improper handling; construction
Transportation Corridors	Numerous	M	Fuels and other hazardous materials: accidental leaks or spills; pesticides: over-application or improper handling
Underground Storage Tanks	4	H	Stored materials: spills, leaks, or improper handling
Utility Substation Transformers	1	L	Chemicals and other materials including PCBs: spills, leaks, or improper handling
Very Small Quantity Hazardous Waste	Numerous	L	Hazardous materials and waste: spills, leaks, or improper handling or storage
Stormwater Drains/ Retention Basins	Numerous	L	Debris, pet waste, and chemicals in stormwater from roads, parking lots, and lawns
Railroad Tracks	1 spur	H	Herbicides; fuel storage, transported chemicals, and maintenance chemicals: leaks or spills

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 -** 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.

- ✓ Storm Drain Stenciling Program - Work with local watershed groups to institute a Storm Drain Stenciling Program. For more information on how to develop a storm drain stenciling program go to http://www.earthwater-stencils.com

4. Hazardous Materials Storage and Use – A small percentage (less then 1%) of the land area within the Zone IIs is commercial/industrial land use. Even though it is a small percentage of land use, many small businesses and industries use hazardous materials, produce hazardous waste products, and/or store hazardous materials in UST/AST (see Appendix B for a list of registered facilities). 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 BMPs for common business issues.
- ✓ Work with local businesses to register those facilities that are unregistered generators of hazardous waste or waste oil. Partnerships among businesses, water suppliers, and communities enhance successful public drinking water protection practices.
- ✓ Educate local businesses on Massachusetts floordrain requirements. See brochure "Industrial Floor Drains" for more information.
- ✓ Promulgate a local hazardous materials handling regulation, conduct routine inspections and provide assistance to businesses.
- ✓ The USDA has various funding sources for government, non-government organizations and agricultural facilities in small communities through programs such as those listed on the USDA web site http://search.sc.egov.usda.gov/. Additional information is available on the web site www.ruraldev.usda.gov or call Paul D. Geoffroy, Rural Development Manager at the local office in Hadley at 413-585-1000 ex.4.

5. Presence of Oil or Hazardous Material Contamination Sites – The Zone II contains DEP Tier Classified Oil and/or Hazardous Material Release Sites indicated on the map as Release Tracking Numbers 1-0011448 and 1-0000264. Refer to the attached map and Appendix 3 for more information.

Oil or Hazardous Material Contamination Sites Recommendation:

- ✓ Monitor progress on any ongoing remedial action conducted for the known oil or contamination sites.

6. Agricultural Activities – There are several farms within the Zone IIs. Approximately 29% of the land use within each of the Zone IIs is as cropland and pasturelands. Pesticides and fertilizers have the potential to contaminate a drinking water source if improperly stored, applied, or disposed. If not contained or applied properly, animal waste from barnyards, manure pits and field application are potential sources of contamination to ground and surface water.

Agricultural Activities Recommendation:

- ✓ 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. Review the fact sheet available on line and call the local office (Amherst 413-253-4350) of the NRCS for assistance http://www.nrcs.usda.gov/programs/farmbill/2002/pdf/EQIPFct.pdf.
- ✓ Encourage the farmers and golf course managers to incorporate an Integrated

Top 5 Reasons to Develop a Local Wellhead Protection Plan

❶ Reduces Risk to Human Health

❷ Cost Effective! Reduces or Eliminates Costs Associated With:

- Increased groundwater 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 is a place people want to live and businesses want to locate.

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.

- ✓ Work with farmers, nurseries, and golf courses to ensure that pesticides and fertilizers are being stored within a structure designed to prevent runoff.
- ✓ The USDA also has various funding sources for government, non-government organizations and agricultural facilities through programs such as those listed on the USDA web site http://search.sc.egov.usda.gov/. One program in particular, the Environmental Quality Incentives Program (EQIP) may be utilized in a variety of projects from DPW stormwater management to farm nutrient management designed to protect surface and groundwater. Review the fact sheet available on line and call the local office of the NRCS for assistance http://www.nrcs.usda.gov/programs/farmbill/2002/pdf/EQIPFct.pdf.
- ✓ Work with hobby farmers by supplying them with information about protecting their own wells and the public water supply by encouraging the use of BMPs. Refer to http://www.state.ma.us/dep/brp/dws/dwspubs.htm and http://www.state.ma.us/dep/consumer/animal.htm#dwqual for additional resources.

7. Protection Planning – Currently, the Town has water supply protection controls. However they do not meet DEP's Wellhead Protection regulation 310 CMR 22.21(2). In addition, the Easthampton water supply Zone II is within Southampton but that area is not protected by Southampton's bylaws. Westfield does have an ordinance protecting Southampton's Zone II. Protection planning protects drinking water by managing the land area that supplies water to a well. A Wellhead Protection Plan coordinates 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 a plan for protecting drinking water supply wells.

Protection Planning Recommendations:

- ✓ Develop a Wellhead Protection Plan. Establish a protection team, and refer them to http://mass.gov/dep/brp/dws/protect.htm for a copy of DEP's guidance, "Developing a Local Wellhead Protection Plan".
- ✓ Coordinate efforts with local officials to compare local wellhead protection controls with current MA Wellhead Protection Regulation 310 CMR 22.21 (2). If there are no local controls or they do not meet the current regulation, adopt controls that meet 310 CMR 22.21(2). For more information on DEP land use controls see http://mass.gov /dep/brp/dws/protect.htm.
- ✓ If local controls do not regulate floor drains, be sure to include floor drain controls that meet 310 CMR 22.21(2).

8. Rights-of-Way – There are two rights-of-way within the Zone IIs: railroad and electric. Rail corridors that serve passenger and/or freight trains are a potential source of contamination due to chemicals released during normal use, track maintenance, and accidents. Leaks or spills of transported chemicals or train/track maintenance chemicals are also potential sources of contamination to the water supply. Normal maintenance of any right-of-way, including electrical line rights-of-way, can introduce contaminants to a water supply through herbicide application for vegetation control. The over-application or improper handling of herbicides is a potential source of contamination.

Rights-of-Way Recommendations:

- ✓ Review the railroad and electricity right-of-way Yearly Operating Plan to

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 a 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.

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

Additional Information

To help with source protection efforts, more information is available by request or online at mass.gov/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

Contact Catherine V. Skiba in DEP's Springfield Office at (413) 755-2119 for more information and assistance on improving current protection measures.

Copies of this report have been provided to the public water supplier, board of health, and the town.

ensure Best Management Practices are implemented with regard to vegetation control in the Zone II, and that the utility has accurate information regarding the locations of the wells and the Zone I. Review the maps the utilities use, and provide them with up-to-date maps if necessary.

- ✓ Work with your local fire department to review emergency response plans. Updates to this plan should include the railroad rights-of-way including coordination with the owner/operator of the pipeline, electricity lines, and track and trains using the right-of-way.
- ✓ Request emergency response teams to coordinate Emergency Response Drills and practice containment of potential contaminants from train accidents within the Zone II, which should attempt to include representatives from the owner/operator of the trains utilizing the right-of-way.

Other land uses and activities within the Zone II that are potential sources of contamination are included in Table 2. There are several salvage yards and junk yards within the Zone II. The Board of Health is aware of these areas and is considering various actions to minimize or eliminate the threat from these facilities. 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 IIs 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:

- Inventorying many of the land uses throughout the Zone II.
- Persistent efforts resulting in the removal of a 125,000 tire pile, 500 yards from the well at a cost of more than 3 million dollars.

Source Protection Recommendations:

To better protect the sources for the future:

- ✓ Inspect the Zone I regularly, and when feasible, remove any non-water supply activities.
- ✓ Educate residents on ways they can help you to protect drinking water sources.
- ✓ 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.
- ✓ Coordinate and implement a plan for Easthampton and surrounding communities to remove underground storage tanks to protect the unconfined aquifer from contamination.
- ✓ Monitor progress on any ongoing remedial action conducted for the known 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 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).

➢ **Plan for the Future:**

One of the most effective means of protecting water supplies is local planning, including adoption of local controls to protect land use, regulations related to watersheds and groundwater protection. These controls may include health

ordinances/regulations, discharge prohibitions, general ordinances, and zoning bylaws/ordinances that prohibit or control potential sources of contamination within the protection areas.

- **Other Funding Sources:**

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 USDA also has various funding sources for government, non-government organizations and agricultural facilities through programs such as those listed on the USDA web site http://search.sc.egov.usda.gov/nrcs.asp?qu=eqip&ct=NRCS. One program in particular, the Environmental Quality Incentives Program (EQIP) may be utilized in a variety of projects from DPW stormwater management to farm nutrient management designed to protect surface and groundwater. Review the fact sheet available online and call the local office of the NRCS for assistance http://www.nrcs.usda.gov/programs/farmbill/2002/pdf/EQIPFct.pdf.

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 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

Table 3: Current Protection and Recommendations

Protection Measures	Status	Recommendations
Zone I		
Does the Public Water Supplier (PWS) own or control the entire Zone I?	**NO**	Follow Best Management Practices (BMPs) that focus on good housekeeping, spill prevention, and operational practices to reduce the use and release of hazardous materials.
Is the Zone I posted with "Public Drinking Water Supply" Signs?	**YES**	Additional economical signs are available from the Northeast Rural Water Association (802) 660-4988.
Is Zone I regularly inspected?	**YES**	Continue daily inspections of drinking water protection areas.
Are water supply-related activities the only activities within the Zone I?	**YES**	Continue monitoring non-water supply activities in Zone Is.
Municipal Controls (Zoning By-laws/Ordinances, Health Regulations, and General By-laws/Ordinances)		
Does the municipality have Wellhead Protection Controls that meet 310 CMR 22.21(2)?	**Partial**	The Town does have wellhead protection by-laws but they do not meet DEP regulatory requirements. Refer to www.state.ma.us/dep/brp/dws/ for model by-laws and health regulations and continue efforts to pass by-laws.
Do neighboring communities protect the Zone II areas extending into their communities?	**YES**	Westfield has ordinances protecting the aquifer.
Planning		
Does the PWS have a Wellhead Protection Plan?	**NO**	Develop a wellhead protection plan. Follow "Developing a Local Wellhead 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?	**NO**	Augment 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 wellhead protection committee?	**NO**	Establish committee; include representatives from citizens' groups, neighboring communities, and the business community.
Does the Board of Health conduct inspections of commercial and industrial activities?	**Partial**	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 wellhead protection education?	**YES**	Aim additional efforts at commercial, industrial and municipal uses within the Zone II.