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

Egremont 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	Egremont Water Department
PWS Address	133 Mt. Washington Road
City/Town	Egremont
PWS ID Number	1090000
Local Contact	Mr. Jack Muskrat
Phone Number	413-644-9614

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.

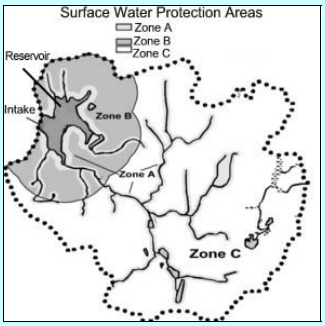
Refer to Table 3 for Recommendations to address potential sources of contamination. Department of Environmental Protection (DEP) staff are available to provide information about funding and other resources that may be available to your community.

This report includes the following sections:

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

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.



Glossary
Protection Zones

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

Surface Water Sources ***Susceptibility:*** Moderate

Source Name:	***Source ID***
Karner Brook Reservoir	1090000-01S

Egremont is a small rural residential community in the Berkshire hills of southwestern Massachusetts with the Egremont Water Department supplying drinking water to a small portion of the town. The Water Department maintains an intake structure on Karner Brook. The watershed of the Karner Brook Reservoir lies within the towns of Egremont and Mount Washington and a small portion within the state of New York. Approximately 86% of the watershed is protected through ownership by the Water Department or is part of the Taconic State Park in New York and the Mount Washington State Forest in Massachusetts. Greater than 90% of the land use within the watershed is as forested land. The remaining small percentage is residential and agricultural uses. Please refer to the attached map to view the boundaries of the protective zones.

Water from the brook is filtered through a slow sand filter and disinfected with chlorine prior distribution. 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.

Section 2: Land Uses in the Protection Areas

There are few activities that pose significant anthropogenic threats to the reservoirs. However, due to the nature of surface water supplies, the sources are considered highly vulnerable to potential contamination. Land uses and activities that are considered potential sources of contamination are listed in Table 2.

Key Land Uses and Protection Issues include:

1. Residential land use in Zone A and watershed
2. Transportation corridors
3. Forestry/Watershed Management
4. Protection Planning
5. Water Treatment Facility

The overall ranking of susceptibility to contamination for the system 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. Residential Land Uses – Approximately 21 acres (2%) of the watershed consists of residential areas. None of the areas have public sewers, therefore on-site septic systems are used. If managed improperly, activities associated with residential areas can contribute to drinking water contamination. The closest use to the intake structure is a bridge constructed of treated timbers providing access to a resident. 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.
- **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.
- ✓ Consider negotiating a Right of First refusal agreement or conservation restrictions for land not currently owned by the Town.
- ✓ Consider alternative access for this resident. If no alternative can be found, use BMPs for the crossing to prevent erosion and to protect from accidental release along this access.
- ✓ Inspect the bridge semi-annually. Review construction materials and consider materials that are not potential source of contamination in any reconstruction of bridge.

2. Transportation Corridors – There are many roads located throughout the watersheds, including many that are dirt roads. Though most are low-use roadways, the close proximity of some of the roads to the brook and typical roadway maintenance and use can pose a potentially significant source of contamination from accidents and washouts along the dirt road. De-icing materials, automotive chemicals and other debris on roads are picked up by stormwater washed into catch basins and discharge into the reservoirs. The Conservation Commission required BMPs along the road close to the intake that include detention basins.

Transportation Corridor Recommendations:

- ✓ Evaluate all options for management of access to local roads. Include evaluation of continuing current practice of full access, closing roads to all traffic (abandonment of road), closing road to all commercial traffic and limiting access to residents with a locked gate and key for residents only.
- ✓ Identify stormwater drains and the drainage system along the many local

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.

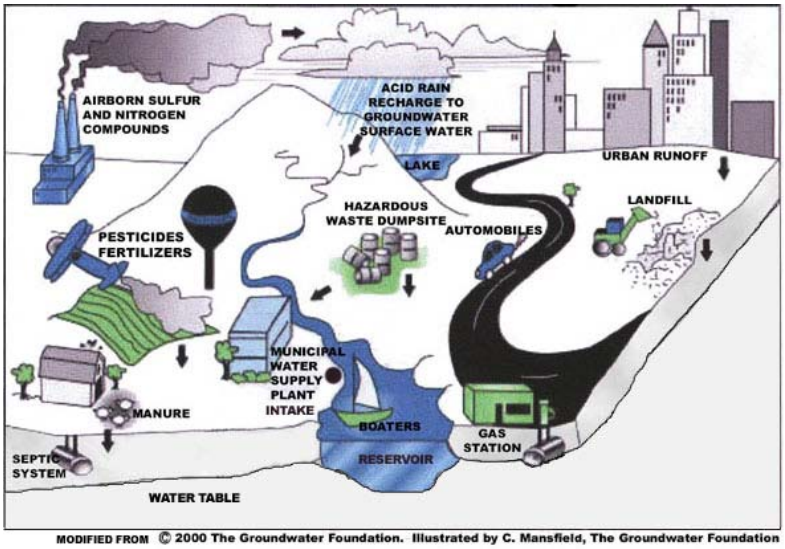


Figure 1: Sample watershed with examples of potential sources of contamination

roads in the watershed. Alternatively consider various strategies to detain/ slow the flow and retain sediments for dirt roads within the watershed.

- ✓ Inspect, maintain, and clean catch basins and retention basins on a regular schedule.
- ✓ Work with local emergency response teams to ensure effective management of potential spills.
- ✓ Work with the resident to protect the water supply along the right-of-way.

3. Forestry/Watershed management – The majority of the watershed is not currently logged, but there is a potential for this practice to occur in the future. There is no watershed/forest management plan at this time. There is no evidence of significant aquatic wildlife such as beavers or muskrats in the watershed at this time.

- ✓ Include in the protection plan, an evaluation of the need for a forest inventory and forest management plan specifically designed for watershed management.
- ✓ Evaluate whether there are impacts associated with access and determine what, if any, management strategies are required for public access to the watershed.
- ✓ Continue to inspect the watershed regularly.
- ✓ Right of way maintenance should be conducted by mechanical means. Supply all utilities and road maintenance crews with detailed maps of the watershed area where they may be conducting maintenance. Meet with the staff in charge of conducting the maintenance and confirm all stream crossings and Zone A areas are accurately mapped.
- ✓ Continue contact with the DEM regarding activities within the watershed, specifically those related to access and forest operations.

4. Protection Planning – Currently, Egremont does not have a Watershed Protection District and Bylaw, which should be approved by DEP for compliance with water supply protection control regulations 310 CMR 22.21(2). A Watershed Protection Plan has not been prepared and submitted for approval of content and procedures by the Department's Boston office. These types of protection plans coordinate community efforts, identify protection strategies, establish a timeframe for implementation, and provide a forum for public education and outreach. The development of a successful Watershed Protection Plan is outlined in DEP's "Developing a Local Watershed Protection Plan" (see Appendix A for the full report).

Protection Planning Recommendations:

- ✓ Develop a Watershed Protection Plan that will focus on public access. 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 review local watershed protection controls. If there are no local controls or they do not meet the current regulations, adopt controls or strategies that will meet 310 CMR 22.21(2) and protect the source. For more information on DEP land use controls see http://mass.gov /

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.

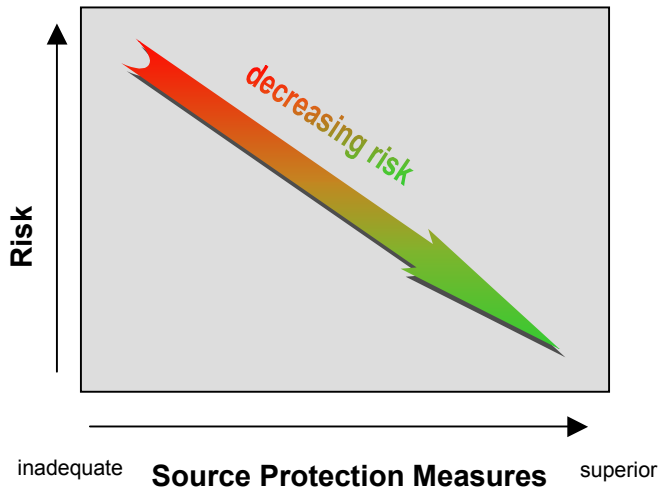


Figure 2: Risk of contamination decreases as source protection increases. This is true for public water systems of any susceptibility ranking, whether High, Moderate, or Low.

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 Watershed

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

Land Uses	Quantity	Threat	Potential Contaminant Sources*
Agricultural			
Forestry Operation	Historical, DEM	L	Leaks, spills, or improper handling of hazardous materials, erosion. No current logging.
Residential			
Fuel Oil Storage (at residences)	Numerous	M	Fuel oil: spills, leaks, or improper handling
Lawn Care / Gardening	Numerous	M	Pesticides/Fertilizers: over-application or improper storage and disposal
Septic Systems / Cesspools	Numerous	M	Hazardous chemicals: microbial contaminants, and improper disposal
Miscellaneous			
Clandestine Dumping	Historical	M	Debris may contain hazardous materials or wastes
Fishing	Numerous (in brook)	L	Debris, microbial contaminants
Tire Dumps	1 (small)	M	Tires: improper handling or management
Transportation Corridors	Numerous	M	Fuels and other hazardous materials: accidental leaks or spills; pesticides: over-application or improper handling
Transformers: Pole Mounted	Numerous	L	MODF spills from accidents, potentially PCBs in older transformers

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.

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).

5. Water Treatment Facility - The Egremont water treatment facility is located within the Zone A of the source. Activities associated with water treatment involve storage and use of hazardous materials such as chlorine, sodium hydroxide. All chemicals are stored above ground and within secondary containment. According to the watershed protection plan, storm water from the facility discharges outside of the watershed. Spills or leaks of hazardous materials during handling and delivery and storm water are a potential source of contamination.

Water Treatment Facility Recommendations:

- ✓ Ensure water treatment facility is operated and maintained according to DEP requirements.
- ✓ Ensure stormwater drains and the drainage system around the treatment plant do drain outside of the watershed. Maintain catchbasins as necessary.
- ✓ Continue current use of best management practices for proper handling of materials and in containing spills and leaks.
- ✓ Update emergency plans as necessary.

Land uses and activities within the watershed that are potential sources of contamination are included in Table 2. 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.

Top 5 Reasons to Develop a Local 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.

Section 3: Source Water Protection Conclusions and Recommendations

Current Land Uses and Source Protection:

As with many water supply protection areas, the system's watershed contains 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:

- Maintaining high awareness of the watershed

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

Source Protection Recommendations:

To better protect the sources for the future:

- ✓ Inspect the protection areas 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 watershed and to cooperate on responding to spills or accidents.
- ✓ Work with landowners in your protection areas to make them aware of your water supply and to encourage the use of a best management practices for residential and recreational uses.
- ✓ Develop and implement Forest Management Plan and a Watershed Management Plan for water supply protection.

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 Source Protection Grant Program provides 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, about May 1, the Department posts a new Request for Response (RFR- the grant application form) for the grant program.

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. 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. Additional Documents on Source Protection

For More Information

Contact Catherine V. Skiba in DEP's Springfield Regional 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, town boards, and the local media.

Table 3: Current Protection and Recommendations

Protection Measures	Status	Recommendations
Zone A		
Does the Public Water Supplier (PWS) own or control the entire Zone A?	**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. Make every effort to obtain remaining Zone A land. Watershed lands have recently been purchased and will be protected from development.
Is the Zone A posted with "Public Drinking Water Supply" Signs?	**YES**	Additional economical signs are available from the Northeast Rural Water Association (802) 660-4988.
Is the Zone A regularly inspected?	**YES**	Continue monthly inspections of drinking water protection areas. Increase frequency when possible.
Are water supply related activities the only activities within the Zone A?	**NO**	Continue monitoring non-water supply activities in Zone As.
Municipal Controls (Zoning Bylaws, Health Regulations, and General Bylaws)		
Does the municipality have Surface Water Protection Controls that meet 310 CMR 22.20 C?	**NO**	The Town does not meet DEP's best efforts for watershed protection. Refer to www.state.ma.us/dep/brp/dws/ for model bylaws, health regulations, and current regulations.
Do neighboring communities protect the water supply protection areas extending into their communities?	**NO**	Work with Mount Washington to develop a protective bylaw and include Karner Brook watershed in the water supply protection controls.
Planning		
Does the PWS have a local Surface Water Protection Plan?	**NO**	Develop a surface water protection plan. Follow "Developing a Local Surface Water 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**	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 and be sure they are aware of the watershed boundary areas.
Does the municipality have a watershed 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?	**N/A**	
Does the PWS provide watershed protection education?	**YES**	Aim additional education efforts at residents within the watershed and those using the watershed for recreation.