



# Massachusetts Department of Environmental Protection Source Water Assessment and Protection (SWAP) Report For Eagleton School Main Campus

## 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.

## SWAP and Water Quality

Susceptibility of a drinking water source does *not* imply poor water quality. Actual water quality is best reflected by the results of regular water tests.

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

Prepared by the  
Massachusetts Department of  
Environmental Protection,  
Bureau of Resource Protection,  
Drinking Water Program

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**Table 1: Public Water System (PWS) Information**

<b>PWS Name</b>	Eagleton School Main Campus
<b>PWS Address</b>	446 Monterey Road
<b>City/Town</b>	Great Barrington, Massachusetts
<b>PWS ID Number</b>	1113023
<b>Local Contact</b>	Bruce Bona
<b>Phone Number</b>	(413) 528-4385

<b>Well Name</b>	<b>Source ID#</b>	<b>Zone I (in feet)</b>	<b>IWPA (in feet)</b>	<b>Source Susceptibility</b>
Kitchen/Classroom (01G)	1113023-01G	138	440	Moderate
T House Well (02G)	1113023-02G	125	433	Moderate
Well No. 3	1113023-03G	235	576	Moderate

## Introduction

We are all concerned about the quality of the water we drink. Drinking water wells may be threatened by many potential sources of contamination, including septic systems, 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. 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:

1. Description of the Water System
2. Discussion of Land Uses in the Protection Areas
3. Protection Recommendations
4. Attachments, including a Map of the Protection Areas

## 1. Description of the Water System

Eagleton School is located in Great Barrington, a medium sized town in south Berkshire County. The school is a residential school for boys age 9 through 22 with emotional and/or learning difficulties. The staff and student population is presently approximately 60 people per day. Great Barrington does have a municipal water system and wastewater treatment facility however, they do not serve this section of town. Therefore the school is

### 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 an Interim Wellhead Protection Area (IWPA).

- **The Zone I** is the area that should be owned or controlled by the water supplier and limited to water supply activities.
- **The IWPA** is the larger area that is likely to contribute water to the well.

In many instances the IWPA does not include the entire land area that could contribute water to the well. Therefore, the well may be susceptible to contamination from activities outside of the IWPA that are not identified in this report.

### What is Susceptibility?

Susceptibility is a measure of a well's potential to become contaminated due to land uses and activities within the Zone I and Interim Wellhead Protection Area (IWPA).

served by three, on-site water supply wells and an on-site wastewater disposal system. The school's three wells are located on the north side of Monterey Road; the Kitchen/Classroom Well 01G, is located immediately adjacent to the pool and a parking area; the T-House Well 02G, is located next to a day use building east of the parking area; the Mountain Well 03G, is located remote from the facility and was developed and tested through the New Source Approval Process. However, Well #3 has not yet been activated for use in the system.

The facility is located on the side of a brook valley where the bedrock rises sharply with numerous locations of bedrock outcrop. Geologic mapping in the area indicates shallow overburden of till. The bedrock mapping shows a contact through the site between the carbonate rocks of the Stockbridge Formation and the metamorphic rocks of the Berkshire Highlands/Green Mountain Core.

The Zone I is the area immediately around the well where only activities associated with supplying water or other non-threatening activities are allowed to occur. The Interim Wellhead Protection Area (IWPA) is a larger area that potentially contributes water to the well. The IWPA is only an interim protection area until an actual Zone II contribution area is delineated; the actual area of contribution to the wellhead may be larger or smaller than the IWPA. The Zone I radius and IWPA radii of well 01G are 138 feet and 440 feet; the Zone I and IWPA radii for well 02G are 125 feet and 433 feet; and the Zone I and IWPA radii for well 03G are 235 feet and 576 feet. There is no evidence of a confining clay layer or a thick till layer at the site. In fact, as noted previously, there are numerous locations of exposed, fractured bedrock on-site. Therefore, the Department has determined that the wells are located in an aquifer with a high vulnerability to contamination due to the absence of hydrogeologic barriers that can prevent contaminant migration. Please refer to the attached map of the Zone Is and IWPAs.

The wells serving the facility have no treatment at this time. The DEP requires public water suppliers to monitor the quality of the water. For current information on monitoring results and treatment, please contact the Public Water System contact person listed above in Table 1. Drinking water monitoring reporting data is also available on the web via EPA's Envirofacts website at [http://www.epa.gov/enviro/html/sdwis/sdwis\\_query.html](http://www.epa.gov/enviro/html/sdwis/sdwis_query.html).

## 2. Discussion of Land Uses in the Protection Areas

There are a number of land uses and activities within the drinking water supply protection areas that are potential sources of contamination.

**Table 2: Table of Activities within the Water Supply Protection Areas**

Potential Contaminant Sources	Zone I	IWPA	Threat	Comments
Fuel Oil Storage (at residences)	No	All Wells	Moderate	Spills, leaks, or improper handling of fuel oil from surrounding residences
Lawn Care / Gardening	01G & 02G	All Wells	Moderate	Over-application or improper storage and disposal of pesticides and fertilizers
Septic Systems Components	01G & 02G	All Wells	Moderate	Microbial contaminants, and improper disposal of hazardous chemicals
School/parking	01G & 02G	All Wells	Moderate /High	Fuel oil, laboratory, art, photographic, machine shop, and other chemicals: spills, leaks, or improper handling or storage
Transportation Corridor	No	All Wells	Moderate	Fuels and other hazardous materials: accidental leaks or spills; pesticides: over-application or improper handling

\* -For more information on Contaminants of Concern associated with individual facility types and land uses please see the SWAP Draft Land Use / Associated Contaminants Matrix on DEP's website - [www.state.ma.us/dep/brp/dws/](http://www.state.ma.us/dep/brp/dws/).

## Glossary

**Zone I:** The area closest to a well; a 100 to 400-foot radius proportional to the well's pumping rate. To determine your Zone I radius, refer to the attached map.

**IWPA:** A 400-foot to ½ mile radius around a public water supply well proportional to its pumping rate; the area DEP recommends for protection in the absence of a defined Zone I. To determine IWPA radius, refer to the attached map.

**Zone II:** The primary recharge area defined by a hydrogeologic study.

**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 that resists penetration by water.

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

## Key issues include:

1. **Non-conforming Zone Is;**
2. **Residential Land Uses;**
3. **School; and**
4. **Transportation Corridor.**

The overall ranking of susceptibility to contamination for the wells is moderate, based on the presence of at least one moderate threat land use or activity in the IWPA's, as seen in Table 2. The proximity of Well #1 to parking and other activities prompted the Department to consider the school and parking a moderate to high threat to well #1. The Department's conditional approval for Well #3 is that Well #1 must be abandoned as a source of water.

1. **Non-conforming Zone Is** – Currently the wells do not meet DEP's restrictions, which only allow water supply related activities or other non-threatening activities in the Zone I. The school's Zone Is (except 03G) contain school buildings, roads/driveways, parking areas, a recreational pool, and pool chemicals. Systems not meeting DEP Zone I requirements must get DEP approval and address Zone I issues prior to increasing water use or modifying systems.

## Recommendations:

- ✓ Remove all non-water supply activities from the Zone I to comply with DEP's Zone I requirements, as is reasonable.
  - ✓ Do not store pool chemicals within the Zone I unless they are within containment. Do not use or store pesticides, fertilizers, or road salt within Zone I.
  - ✓ Restrict automobile parking within the Zone I of Well 02G and direct runoff away from the well.
2. **Residential Land Uses** – Portions of several residential properties fall within all of the IWPA's. All of the residences have on-site 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) and associated fuel lines 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

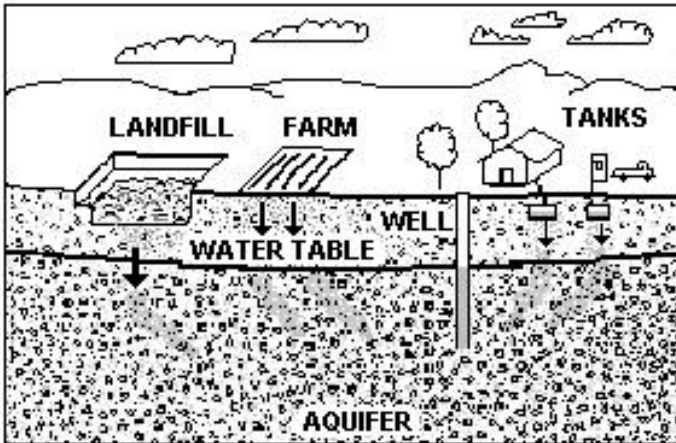


Figure 1: Example of how a well could become contaminated by different land uses and activities.

### For More Information:

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

More information relating to drinking water and source protection is available on the Drinking Water Program web site at:

[www.state.ma.us/dep/brp/dws/](http://www.state.ma.us/dep/brp/dws/)

### Additional Documents:

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

Copies of this assessment have been made available to the public water supplier and town boards.

"Residents Protect Drinking Water" available in Appendix A and on [www.mass.gov/dep/brp/dws/protect.htm](http://www.mass.gov/dep/brp/dws/protect.htm), which provides BMPs for common residential issues.

- ✓ Promote BMPs for stormwater management and pollution controls.

3. **School** – Activities associated with schools commonly involve hazardous materials such as fuel oil and laboratory, art, photographic, machine shop, and other chemicals. These hazardous materials have the potential to impact drinking water supplies if they are improperly handled, stored, or materials are improperly disposed into septic systems.

#### School recommendations:

- ✓ Implement BMPs that can be used to reduce the risk of contamination.
- ✓ Provide source protection education for maintenance staff, food preparation staff, teachers and students.
- ✓ Provide appropriate disposal for all cleaning and household hazardous waste at the school.

4. **Transportation Corridor** – Monterey Road (Route 23) is located within the IWPA's. Major roads are potential sources of contamination due to salting of roadways and leaks or spills of fuels and other hazardous materials during accidents.

#### Recommendation:

- ✓ Contact the local fire department to ensure that the IWPA's are included in Emergency Response Planning.

Implementing the following recommendations will reduce the system's susceptibility to contamination.

## 3. Protection Recommendations

Implementing protection measures and best management practices (BMPs) will reduce the wells' susceptibility to contamination. Eagleton School is commended for development of Well #3 and for the use of a propane generator. Eagleton School Main Campus should review and adopt the key recommendations above and the following:

#### Priority Recommendations:

- ✓ Do not use or store pesticides, fertilizers, road salt, or pool chemicals within the Zone I.
- ✓ Redirect road and parking lot drainage in the Zone I away from well.

#### Zone I:

- ✓ Keep non-water supply activities out of the Zone I.
- ✓ Remove all non-water supply activities from the Zone I to comply with DEP's Zone I requirements.

- ✓ Consider well relocation if Zone I threats cannot be mitigated.
- ✓ If the school intends to continue utilizing the structures in the Zone I, use BMPs and restrict activities that could pose a threat to the water supply.

#### Training and Education:

- ✓ Train staff on proper hazardous material use, disposal, emergency response, and best management practices; include custodial staff, groundskeepers, certified operator, and food preparation staff. Post labels as appropriate on raw materials and hazardous waste.
- ✓ Incorporate groundwater education into the school curriculum.
- ✓ Work with your community to ensure that stormwater runoff is directed away from the well and is treated according to DEP guidance.

**Facilities Management:**

- ✓ Implement standard operating procedures regarding proper storage, use and disposal of hazardous materials. To learn more, refer to <http://www.state.ma.us/dep/bwp/dhm/files/sqgsum.pdf> for the Requirements for Small Quantity Generators.
- ✓ Implement Best Management Practices (BMPs) for the use of fertilizer, herbicides and pesticides on school property.
- ✓ Septic system components should be located, inspected, and maintained on a regular basis.
- ✓ For utility transformers that may contain PCBs, contact the utility to determine if PCBs have been replaced. If PCBs are present, urge their immediate replacement. Keep the area near the transformer free of tree limbs that could endanger the transformer in a storm.

**Planning:**

- ✓ Work with local officials in town to include the facility IWPA in Aquifer Protection District Bylaws and to assist you in improving protection.
- ✓ Have a plan to address short-term water shortages and long-term water demands. Keep the phone number of a bottled water company readily available.
- ✓ Supplement the SWAP assessment with additional local information and incorporate it into water supply educational efforts. Use a land use inventory to assist in setting priorities, focusing inspections, and creating educational activities.

**Funding:**

The Department's Wellhead Protection Grant Program provides funds to assist public water suppliers in addressing Wellhead protection through local projects. Protection recommendations discussed in this document may be eligible for funding under the "Wellhead Protection Grant Program". For additional information, please refer to the attached program fact sheet. If funds are available, each program year the Department posts a new Request for Response for the Grant program (RFR). Other funding opportunities are described in "Grant and Loan Programs: Opportunities for Watershed Protection, Planning and Implementation" at <http://www.state.ma.us/dep/brp/mf/files/glprgm.pdf>.

These recommendations are only part of your ongoing local drinking water source protection. Citizens and community officials should use this SWAP report to encourage discussion of local drinking water protection measures.

**4. Attachments**

- Map of the Public Water Supply (PWS) Protection Areas
- Recommended Source Protection Measures Fact Sheet
- Your Septic System Brochure
- Pesticide Use Fact Sheet
- Healthy Schools Fact Sheet