



# Source Water Assessment Program (SWAP) Report for Farmington River Regional Elementary School

## 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.

## 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**

<i>PWS Name</i>	<b>Farmington River Regional Elementary School</b>
<i>PWS Address</i>	<b>555 North Main Road</b>
<i>City/Town</i>	<b>Otis, Massachusetts</b>
<i>PWS ID Number</i>	<b>1225040</b>
<i>Local Contact</i>	<b>Mr. Garth Story</b>
<i>Phone Number</i>	<b>413-269-4466</b>

<i>Well Name</i>	<i>Source ID#</i>	<i>Zone I (in feet)</i>	<i>IWPA (in feet)</i>	<i>Source Susceptibility</i>
Well #1	1225040-01G	200	503	Low

## 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 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 contaminant sources, 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 within Protection Areas
3. Recommendations for Protection
4. Attachments, including a Map of the Protection Areas

## Description of the Water System

The Farmington River Regional Elementary School (the school) is a rural, elementary school located on the west side of North Main Road in Otis. The school student and staff population is approximately 235 people per day and is served by a single potable supply well (Well #1) located southeast of the school. The school is served by the Town's municipal sewer system; all sewer components are located outside of the Zone I.

The well has a Zone I protective radius of 200 feet and an Interim Wellhead Protection Area (IWPA) radius of 503 feet based on a pumping rate that was approved by the DEP in 1995. Please refer to the attached map that shows the Zone I and IWPA. The Zone I

### 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.

is the area immediately around the wellhead while the IWPA is a larger area that likely contributes water to the wellhead. The IWPA is only an interim protection area; the actual area of contribution to the wellhead may be larger or smaller.

The 6-inch diameter bedrock well is 405 feet deep. It is located approximately 425 feet southeast of the school. Geological mapping in the area identifies the bedrock as the Taconic-Berkshire Zone, consisting of granite, diorite and granitic gneiss. There is no evidence of a confining unit such as clay in the area. In fact, bedrock outcrops of granite were noted throughout the area during the site visit. Wells drilled in these conditions are considered highly vulnerable to potential contamination from the ground surface because there is no significant hydrogeologic barrier, such as clay, to prevent surface contamination from migrating into the bedrock aquifer. The water does not require and is, at the time this report was prepared, not treated. You may request additional information regarding the quality of the water, from the local contact listed in Table 1.

Please refer to the following section, attached maps of the Zone Is and IWPA's and Table 2 for additional assessment information. Please note that the land use descriptions are limited and the school area is described as Urban Open space for lack of a better descriptor.

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

During the assessment, very few land uses and activities within the drinking water supply protection areas that are potential sources of contamination.

### Key issues include:

1. School facilities
2. Town facilities

The Farmington River School well is fairly well protected. There were no activities within the Zone I that pose a significant threat to the water supply. Although there are a few activities of concern within the IWPA, based on the topography, it appears those activities are primarily downgradient of the well. The overall ranking of susceptibility to contamination for the well is low. Please refer to Table 2.

1. **School Facilities** – Elementary schools generally use only household type hazardous materials for cleaning, pest control and lawn care. Part of the recreation field is within

### 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).

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

Potential Sources of Contaminants	Zone I	IWPA	Threat	Comments
Town salt shed	No	Yes	Moderate	Salt shed on the edge of IWPA, is covered and downgradient
School building and athletic fields	No	Yes	Moderate	Use BMPs for household type hazardous materials; do not use pesticide/fertilizers on fields
Transportation corridor	No	Yes	Moderate	Route 8
Residential development	No	Yes	Low	100% municipal sewer
Town garage	No	No	--	Currently not registered as a VSQG

- -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/den/hrn/dws/](http://www.state.ma.us/den/hrn/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.

the IWPA of the well. Potential exists for contamination of the well by fertilizers, herbicides, and pesticides, all of which can be of concern.

### Recommendations:

- ✓ Continue the use of Best Management Practices for all activities at the school and at the athletic fields. Consider drought resistant grasses and/or low release nutrient fertilizers as required.
- ✓ Investigate Integrated Pest Management and Best Management Practices for field maintenance within the IWPA as necessary.
- ✓ Use secondary containment as necessary for any petroleum products kept for maintenance and lawn care equipment.

**2. Town facilities** – A section of roadway (Route 8) is within the IWPA of the well. However, drainage discharges away from the well. In addition, the Town salt shed and the Town garage are partially in or just outside of the IWPA. All of these appear to be topographically down gradient of the well. The Town highway garage is not registered as a very small quantity generator. To enhance protection of the public and private water supplies in the area, BMPs should be utilized at all facilities.

### Recommendations:

- ✓ Monitor the parking lot and roadside for spills and leaks. Be sure the highway and police departments are aware of the well locations and notify you in the event of an accident on the roadway that results in a release that may impact the well.
- ✓ Use BMPS for handling of all hazardous materials.
- ✓ A copy of "A Summary of Requirements for Small Quantity Generators of Hazardous Waste" and a fact sheet for Very Small Quantity Generators have been sent to the Board of Selectmen. Although the Town's Transfer station is registered, it is recommended that the Town Highway Department review it's status and register as required.

## 3. Protection Recommendations

Implementing protection measures and best management practices (BMPs) will further reduce the well's susceptibility to contamination. Farmington River Regional Elementary School and the Town of Otis are commended for the effort shown in siting the well connecting to the municipal sewer and current protection efforts.

Please review and adopt the key recommendations listed above and as follows:

### Zone I and IWPA:

- ✓ Keep non-water supply activities out of the Zone I.
- ✓ Conduct regular inspections of the Zone I.
- ✓ Monitor activities and if there is evidence of increased activity or access, consider gating the wellhead.
- ✓ Post drinking water supply signs in key location such as along the access road and in the parking area.
- ✓ Provide information to staff and pertinent school organizations about the potential hazards of household chemicals, lawn care chemicals and fertilizers.
- ✓ Use Best Management Practices (BMPs) for the use of petroleum products, lawn care products, pesticides and household hazardous waste.

### Training and Education:

- ✓ Incorporate groundwater education into school curriculum (K-6 curricula available; contact DEP for copies).

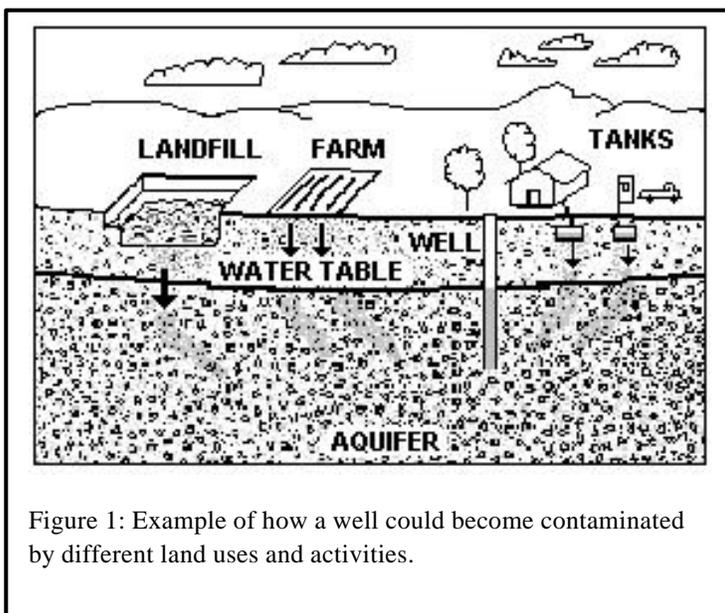


Figure 1: Example of how a well could become contaminated by different land uses and activities.

### For More Information:

Contact Catherine V. Skiba in DEP's Springfield Regional 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 provided to the public water supplier, town boards, the town library and the local media.

### Facilities Management:

- ✓ Staff should be instructed on the proper disposal of spent household chemicals. Include custodial staff, groundskeepers, and certified operator. In order to participate in a Community Hazardous Waste Pick-up day, the school must be registered as a Very Small Quantity Generator. The school is currently not registered as a generator of hazardous waste or waste oil. Review the enclosed document "A SUMMARY OF REQUIREMENTS FOR SMALL QUANTITY GENERATORS OF HAZARDOUS WASTE" and register to participate, if necessary.

### Planning:

- ✓ Work with local officials to develop an Aquifer Protection District Bylaw that includes the school well's IWPA and to assist you in continued protection of the water supply.
- ✓ 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 potential contaminant threat inventory to assist in setting priorities, focusing inspections, and creating educational activities.

### Funding:

The Department's Wellhead Grant Protection 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 2001 "Wellhead Protection Grant Program". For additional information, please refer to the attached program fact sheet. Please note that each program year, on or about May 1 the Department posts a new Request for Response (RFR), grant application form. Generally, the applications are due on or about June 30. 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 spur discussion of local drinking water protection measures.

## 4. Attachments

- Map of the Public Water Supply (PWS) Protection Area
- Developing a Wellhead Protection Plan
- Recommended Source Protection Measures Fact sheet
- Grant Program Fact Sheet
- Source Protection Sign
- Very Small Quantity Generator (VSQG) information