Massachusetts Department of Environmental Protection
Source Water Assessment and Protection (SWAP) Report
For
Westport Country Day School

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

Date Prepared:
September 2003

Table 1: Public Water System (PWS) Information

PWS NAME	Westport Country Day School
PWS Address	1128 State Road
City/Town	Westport, Massachusetts 02790
PWS ID Number	4334073
Local Contact	Ann Mota, Randall Clarkson
Phone Number	508- 636-8404, 508-636-4330

Well Name	*Source ID#*	*Zone I (in feet)*	*IWPA (in feet)*	*Source Susceptibility*
Well #1	01G	100	422	High

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 is 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. Recommendations for Protection
4. Attachments, including a Map of the Protection Areas

1. Description of the Water System

The well for the Westport Country Day School is located adjacent to the school. The well has a Zone I of 100 feet and an Interim Wellhead Protection Area (IWPA) of 422 feet. The IWPA provides an interim protection area for a water supply well when the actual recharge area has not been delineated. The actual recharge area to the well may be significantly larger or smaller than the IWPA. The well is 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 I and IWPA. The well serving the facility has no treatment at this time. The DEP requires public water suppliers to monitor the quality of the water. For current information on monitoring

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).

results and treatment, please contact the public water system contact person listed above in Table 1 for a copy of the most recent Consumer Confidence Report. Drinking water monitoring reporting data is also available on the web via EPA's Envirofacts website at 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.

Key issues include:

1. **non-water supply activities in Zone I;**
2. **above ground storage tank (AST) with heating oil;**
3. **septic system;**
4. **residential development; and**
5. **road.**

The overall ranking of susceptibility to contamination for the well is HIGH, based on the presence of multiple MODERATE rankings of non-water supply uses within the Zone I and the lack of ownership or control of the entire Zone I.

1. **Zone I –** Currently, the well does not meet DEP's Zone I regulations, which allow only water supply related activities in the Zone I and require that the land within the Zone I be owned or controlled by the public water system. The facility's Zone I contains part of the school building, playground, and a parking area. The public water supplier does not own or control all the land encompassed by the Zone I. Please note that 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:
   Do not use or store pesticides, fertilizers or road salt within the Zone I.

2. **Aboveground Storage Tank (AST) –** There is an AST with containment located within the IWPA. If managed improperly, above ground storage tanks can be a potential source contamination due to leaks or spills of the chemicals they store.

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

Potential Contaminant Sources	Zone I	IWPA	Threat	Potential Concern
school	Yes	Yes	Moderate	solvents & other materials used in classrooms
parking lot	Yes	Yes	Moderate	stormwater runoff, spills
lawn/playground	Yes	Yes	Moderate	fertilizer and pesticide use
above ground storage tank	No	Yes	Moderate	leaks, spills
septic system	No	Yes	Moderate	bacteria, improper disposal of hazardous materials
residential development	No	Yes	Moderate	runoff from lawns, septic systems, underground/above ground storage tanks
portion of road	No	Yes	Moderate	stormwater runoff, spills, road salt

*** 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/.**

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 that resists penetration by water.

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

Recommendation:
Inspect and maintain the integrity of the containment structure.

3. **Septic System –** The septic system for the school is located within the IWPA.
   Recommendation:
   Septic system components should be inspected and maintained on a regular basis.

4. **Residential Development –** There is medium density residential development within the IWPA. Residential development totals 41% of the IWPA.
   Recommendation:
   If possible, contact residents in the IWPA about water supply protection. A brochure is included in this packet.

5. **Road –** Part of a road is located within the IWPA. Runoff and spills from roads can contaminate public wells.
   Recommendation:
   Continue to maintain contact with the Fire Department about spills.

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

3. Recommendations for Protection

Implementing protection measures will reduce the well's susceptibility to contamination. The Westport Country Day School is commended for replacing their underground storage tank with an above ground tank with containment. School officials should review and adopt the key recommendations above and the following:

Priority Recommendations:

Zone I:

- ✓ Keep additional 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.

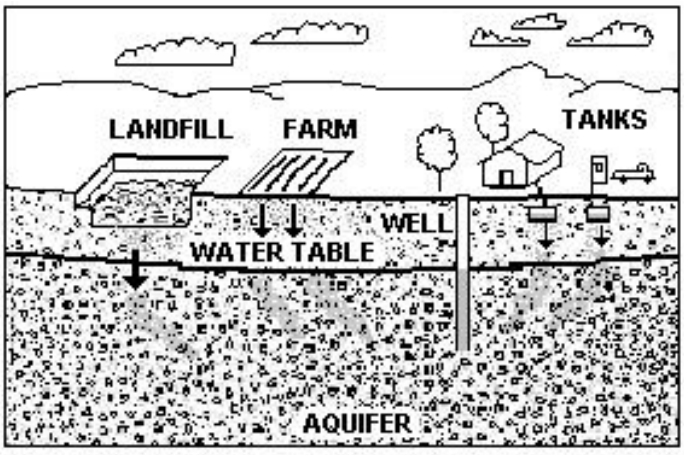

Figure 1: Example of how a well could become contaminated by different land uses and activities.

- ✓ Post water supply protections signs in the Zone I and IWPA.
- ✓ Prohibit public access to the well and pumphouse by locking facilities.
- ✓ Conduct regular inspections of the Zone I. Look for illegal dumping or evidence of vandalism.
- ✓ Use Best Management Practices (BMPs) and restrict activities that could pose a threat to the water supply.
- ✓ If it's not feasible to purchase privately owned land within the Zone I at this time, consider a conservation restriction that would prohibit potentially threatening activities or a right of first refusal to purchase the property.
- ✓ Keep driveway and parking lot drainage away from the well.
- ✓ Do not use or store pesticides, fertilizers or road salt within the Zone I.

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.
- ✓ Post drinking water protection area signs at key visibility locations.
- ✓ Incorporate groundwater education into school curriculum (K-6 and 7-12 curricula available; contact DEP for copies).
- ✓ Work with your community to ensure that stormwater runoff at the road is directed away from the well and is treated according to DEP guidance.

Facilities Management:

- ✓ Inspect and maintain the integrity of the containment structure for the AST.
- ✓ Septic system components should be inspected and maintained on a regular basis.

Planning:

- ✓ Work with local officials in town to make sure that the school's IWPA is included in the local Aquifer Protection District Bylaw and to assist you in improving protection.
- ✓ Supplement the SWAP assessment with additional local information and incorporate it into water supply educational efforts.

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 that program. For additional information, please refer to DEP's web site. 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.

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 Area
- Recommended Source Protection Measures fact sheet
- Your Septic System brochure
- Healthy Schools fact sheet
- Residents Protect Drinking Water fact sheet
- Source Protection Sign Order Form

For More Information

Contact Isabel Collins in DEP's Lakeville Office at (508) 946-2726 for more information and for assistance in improving current protection measures.

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

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