Source Water Assessment Program (SWAP) Report For Westport Village Commons

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

Date Prepared: August 22, 2001

Table 1: Public Water System (PWS) Information

PWS NAME	Westport Village Commons
PWS Address	770 Main Road
City/Town	Westport, Massachusetts
PWS ID Number	4334015
Local Contact	Mary Pasquariello
Phone Number	(603) 644-5236

Well Name	*Source ID#*	*Zone I (in feet)*	*IWPA (in feet)*	*Source Susceptibility*
Well #1	4334015-01G	180	479	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 within Protection Areas
3. Recommendations for Protection
4. Attachments, including a Map of the Protection Areas

1. Description of the Water System

The well for Westport Village Commons is a public water supply well currently serving a small shopping center consisting of a restaurant, pizza place, hair salon, veterinarian, video store, travel agency, optical center and one vacant unit. The well for Westport Village Commons is located in a forested area approximately 250 feet east of the rear parking lot. The well is six inches in diameter and is drilled to a depth of 125 feet. Well #1 has a Zone I of 180 feet and Interim Wellhead Protection Area (IWPA) of 479 feet that was established in a 1995 sanitary survey. 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 (i.e. clay) that can prevent contaminant migration.

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).

Please refer to the attached map of the Zone I and IWPA.

The well serving the facility has no treatment at this time. For current information on monitoring results and treatment, please contact the Public Water System contact person listed above in Table 1.

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. **Lack of Ownership of Zone I,**
2. **Septic System,**
3. **Industrial Wastewater,**
4. **Veterinarian,**
5. **Stormwater Catchbasin.**

The overall ranking of susceptibility to contamination for the well is Moderate, based on the presence of at least one Moderate threat land use or activity in the IWPA, as seen in Table 2.

1. **Zone I**–Currently, the well does not meet the Department requirements that the public water supplier own or control all land encompassed by the Zone I. The Department records indicate that the northern edge of the Zone I for the well is 170 feet from the property line. The facility's Zone I is comprised entirely of forested woodland. Please note that systems not meeting Department Zone I requirements must get DEP approval and address Zone I issues prior to increasing water use or modifying systems.

   Recommendations:

   - 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.
   - Well #1 casing exhibited significant corrosion. Inspect well casing to determine if repairs are necessary to prevent surface water infiltration into the well.
   - Keep non-water supply activities out of the Zone I.

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

Potential Contaminant Sources	Zone I	IWPA	Threat	Comments
Septic System	No	Well #1	Moderate	Refer to septic systems brochure in the attachments
Parking lot, driveways & roads	No	Well #1	Moderate	Limit road salt usage and provide drainage away from wells
Possible discharge of Industrial Wastewater to Septic System	No	Well #1	Moderate	Hair salon
Medical Facility	No	Well #1	Moderate	Veterinarian
Agricultural	No	Well #1	Moderate	Crop land
Structures	No	Well #1	-	

*** -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

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 II. 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.

- Do not use or store pesticides, fertilizers or road salt within the Zone I.

2. **Septic Systems** - If a septic system fails or is not properly maintained it could be a potential source of nutrients and microbial contamination. Improper disposal of household hazardous chemicals or industrial wastewater to the septic system is a potential source of contamination to the water supply.
   Recommendations:
   - Septic system components should be located, inspected, and maintained on a regular basis. Refer to attachment for more information regarding septic systems.
   - Educate tenants on private septic systems about using cleaning compounds that are safe for the septic system, on proper disposal practices, i.e. only sanitary waste in the septic system. Tenants should dispose of used oil, antifreeze, paints, and other houses hold chemicals properly-not in septic systems. Information on septic systems can be found at mass DEP web site http://www.state.ma.us/dep/brp/files/yoursyst.htm.

3. **Industrial Wastewater to Septic System**-Non-Sanitary and process flows from hair salons are classified as industrial wastewater and cannot be discharged to dry wells, storm drains or septic systems. If this wastewater was disposed to the ground or to storm drains this might endanger drinking water or surface waters.
   Recommendations:
   - Determine if the hair salon has an industrial holding tank. If not contact the Westport Board of Health for additional guidance.
   - If the holding Tank is present, keep a monitoring log detailing inspections, maintenance and pump outs from the holding Tank on the premises. Monitor and maintain the holding tank in accordance with Department regulations and Board of Health requirements. Contact your local Board of Health to ensure that the holding Tank has been installed in accordance with Board of Health requirements.

4. **Veterinarian** - An animal hospital is located in the Westport Village Commons Plaza. Veterinarians may produce hazardous waste from photo processing (x-ray developing). Additionally, syringes, sharps, blood and blood products and, cultures are regulated by the Department of Public Health, state sanitary code Title VIII (105 CMR 480.000).

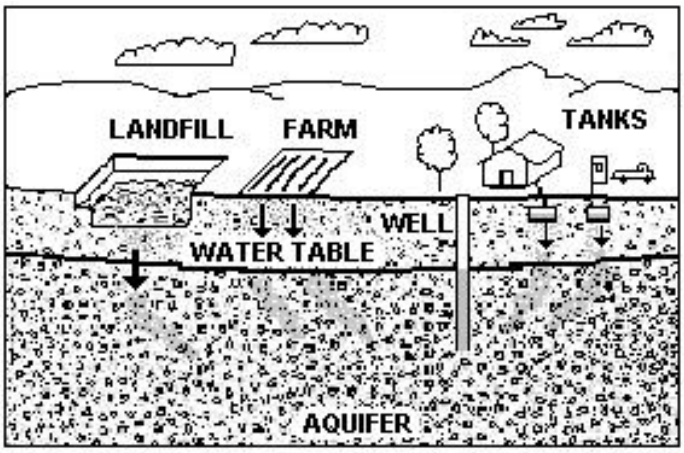

Figure 1: Example of how a well could become contaminated by different land uses and activities.

Recommendations:
- For additional information refer to the Department fact sheet "Hazardous Waste Information for Medical Offices" which discusses xray waste and infectious waste recycling and disposal options.

5. **Storm Water Catch Basin –** East of the Zone I for Well #1 is the shopping center's paved parking area. Additionally, there are unpaved parking areas and driveways within the IWPA of Well #1. As flowing storm water travels, it picks up debris and contaminants from streets, parking areas and lawns. Common potential contaminants include lawn chemicals, pet waste, leakage from dumpsters, household hazardous waste, and contaminants from vehicle leaks, maintenance, washing or accidents. Catch basins transport storm water from the roadway and adjacent properties to the ground.
   Recommendations :
   - Have catch basins inspected, maintained, and cleaned on a regular schedule.

For More Information:

Contact Mark Dakers in DEP's Lakeville Office at (508) 946-2847 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/

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 provided to the public water supplier, town boards, and the local media.

- The Department recommends the public water supplier consider nonstructural techniques such as parking lot sweeping to reduce the amount of potential contaminants in storm water runoff. Additionally, the public water supplier may want to consider structural BMPs (e.g. stormwater swales, installation of curbs along the paved areas, detention basin, etc.) as part of a comprehensive storm water management plan for the site (refer to Storm Water Management Handbook, Volume 1 and 2 for information on BMPs).

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 well's susceptibility to contamination. Westport Village Commons should review and adopt the **key recommendations above** and the following:

Zone I:

- Keep non-water supply activities out of the Zone I.
- Prohibit public access to the well and pump house by locking facilities, gating roads, and posting signs.
- Conduct regular inspections of the Zone I. Look for illegal dumping, evidence of vandalism; check any above ground tanks for leaks, etc.

Training and Education:

- Drinking water protection signs were not posted at the time of the SWAP site visit. The Department recommends posting drinking water protection signs at key visibility locations.
- 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, see the hazardous materials guidance manual at www.state.ma .us/dep/bwp/dhm/dhmpubs.html.
- Eliminate non-sanitary wastewater discharges to on-site septic systems. Instead, in areas using hazardous materials, discharge drains to a tight tank or sanitary sewer.
- Floor drains in areas where hazardous materials or wastes might reach them need to drain to a tight tank and be sealed.
- Implement Best Management Practices (BMPs) for the use of fertilizer, herbicides and pesticides on facility property.
- Concrete pads should slope away from well and well casing should extend above ground.

Planning:

- Work with local officials in Westport 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.

Agricultural:

- Encourage farmers in the IWPA to seek assistance from the Natural Resource Conservation Service (NRCS) in addressing

manure management issues.

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. Please note: 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 spur discussion of local drinking water protection measures.

4. Attachments

- Map of the Public Water Supply (PWS) Protection Area.
- Recommended Source Protection Measures Factsheet
- Your Septic System Brochure
- Industrial Floor Drains Brochure
- Wellhead Protection Grant Program Fact Sheet
- Source Protection Sign Order Form
- Hazardous Waste Information for Medical Offices