



Source Water Assessment Program (SWAP) Report For Curtis Hill Condominiums

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:
February 14, 2001

Table 1: Public Water System (PWS) Information

<i>PWS NAME</i>	Curtis Hill Condominiums
<i>PWS Address</i>	Village Lane
<i>City/Town</i>	Tyngsboro
<i>PWS ID Number</i>	2301035
<i>Local Contact</i>	Kevin Riney
<i>Phone Number</i>	(978) 258-7751

<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	2301035-01G	254	635	Moderate
Well #3	2301035-03G	254	635	Moderate

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

1. Description of the Water System

The wells for the facility are located northwest of the on-site building. Each well has a Zone I of 254 feet and an Interim Wellhead Protection Area (IWPA) of 635 feet. Well #2 is a rock well, and well #3 is a gravel packed well. Located in the same area is a well and pump house for a neighboring condominium - River Crossing Condominiums. The water supplies for Curtis Hill and River Crossing Condominiums are interconnected so that they can supply water for each other during periods of water shortage. 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 I's and IWPA's.

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).

The wells serving the facility has no treatment at this time. For current information on monitoring results and treatment and, for a copy of the most recent Consumer Confidence Report 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. **Inappropriate Activities in the Zone Is,**
2. **An Aboveground Storage Tank (AST) with Heating Oil,**
3. **Septic Systems,**
4. **Aquatic wildlife and**
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 Is** – Currently, the wells do not meet DEP's restrictions, which only allow water supply related activities in Zone Is. The facility's Zone Is contain parking areas and private homes with the access roads leading to them. The public water supplier does not own and/or control all land encompassed by the Zone Is. 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:

- ✓ Remove all non-water supply activities from the Zone I to comply with DEP's Zone I requirements. The Public Water supplier should seek ownership and or control of development of land within the Zone I not currently owned.
 - ✓ Do not use fertilizers, pesticides or road salt within the Zone I.
2. **Aboveground Storage Tank (AST) containing fuel oil** – The private residences have ASTs. The houses are new, so the ASTs are new and meet fire safety standards. If managed improperly, Aboveground Storage Tanks can be a potential contaminant source due to leaks or spills of the fuel oil they store.

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

Potential Contaminant Sources	Zone I	IWPA	Threat	Comments
Parking lot, driveways & roads	Wells #1 & #3	Wells #1 & #3	Moderate	Limit road salt usage and provide drainage away from wells
Septic Systems are they associated with condo or private homes	No	Well #3	Moderate	See septic systems brochure in the appendix
Fuel Storage Above Ground (AST)	No	Wells #1 & #3	Moderate	Tanks are on paved surface in the basement
Stormwater catch basin	No	Wells #1 & #3	Low	Catch basins should be cleaned regularly

* -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 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.

3. Septic systems – Septic systems are located within the IWPA of both wells. If improperly used and/or maintained, septic systems are a potential source of nitrate contamination and improperly disposed household hazardous waste in groundwater.

Recommendation:

- ✓ Residents and maintenance staff should be instructed on proper disposal of spent household chemicals.

4. Aquatic Wildlife – A pond is located within the Zone I and IWPA of the wellfield. The wildlife inhabitants of the pond are a potential source of contamination to the water supply.

5. Storm Water Catch Basin – Catch basins transport storm water from the roadway and adjacent properties to the ground. 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.

Recommendation:

- ✓ Work with the Town of Tyngsboro to have the catch basins inspected, maintained, and cleaned on a regular schedule. Additionally, street and parking lot sweeping reduces the amount of potential contaminants in storm runoff.

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. Curtis Hill Condominiums should review and adopt the key recommendations above and the following:

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.
- ✓ Prohibit public access to the well by gating roads, and posting signs.
- ✓ Redirect road and parking lot drainage in the Zone I away from well.
- ✓ Do not use fertilizers, pesticides 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, and certified operator.
- ✓ Post drinking water protection area signs at key visibility locations.
- ✓ Work with your community to ensure that storm water runoff is directed away from the well and is treated according to DEP guidance.

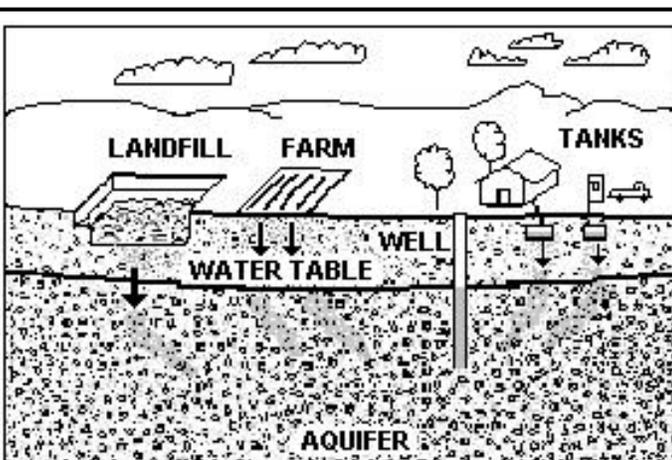


Figure 1: Example of how a well could become contaminated by different land uses and activities.

For More Information:

Contact **Josephine Yemoh-Ndi** in DEP's **Worcester Office** at (508) 792-7650 x 5030 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
5. Source Protection Fact Sheets

Copies of this assessment have been provided to the public water supplier, town boards, the town library and the local media.

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 <http://www.dep.state.ma.us/dep/bwp/dhm/dhmpubs.htm>
- ✓ 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.
- ✓ Implement Best Management Practices (BMPs) for the use of fertilizer and pesticides.
- ✓ Septic system components should be located, inspected, and maintained on a regular basis. Refer to the attachments for more information regarding care of septic systems.

Planning:

- ✓ Work with local officials in Tyngsboro to include the facility IWPA in Aquifer Protection District Bylaws and to assist you in improving protection.
- ✓ 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 –'01 (Please note: each program year the Department posts a new Request for Response for the Grant program (RFR)).

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
- Pesticide Use Factsheet
- Fertilizer Use Factsheet
- Wellhead Protection Grant Program Fact Sheet
- Source Protection Sign Order Form

