Massachusetts Department of Environmental Protection
Source Water Assessment and Protection (SWAP) Report
For
Shaggy Dog Studios

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:
December 11, 2003

Table 1: Public Water System (PWS) Information

PWS Name	Shaggy Dog Studios
PWS Address	Wallace Road
City/Town	Stockbridge, Massachusetts
PWS ID Number	1283017
Local Contact	Mr. William Enser
Phone Number	413-243-1416

Source Name	*Source ID#*	*Zone I (in feet)*	*IWPA (in feet)*	*Source Susceptibility*
Well #1	1283017-01G	114	428	Moderate

Introduction

We are all concerned about the quality of the water we drink. Drinking water supplies may be threatened by many potential sources of contamination, including septic systems, road deicing, 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 Shaggy Dog Studios complex is located off of Route 7 in the town of Stockbridge in south Berkshire County. The facility served by the public water system consists of two buildings: a 10 unit, 18-bedroom apartment building and the barn, a former music studio that is now vacant. Stockbridge does have a municipal water and wastewater treatment system but they do not serve this section of town. There is no municipal sewer available and therefore all of the facilities are served by on-site wastewater disposal.

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).

Water is supplied by a single source, Well #1 that is located between the barn and the pond, approximately 60 feet south of the barn. Well #1 is a 720 feet deep, 6-inch diameter well drilled into the bedrock aquifer. There are two other wells on site that are both severed from the system. Well #2 is located east of the facility across the access road; Well #3 is located immediately west of the apartments and was abandoned as a source to accommodate an expansion of the facility. Only Well #1 is addressed in this report; both of the other wells should be secured at all times to ensure no down-hole contamination is possible. The facility is served by an on-site wastewater disposal system located northeast of the facility.

The Zone I is the area immediately around the wellhead, while the Interim Wellhead Protection Area (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 wells may be smaller or much larger than the IWPA. The Zone I and IWPA radii for Well #1 are 114 feet and 428 feet, respectively. The protective radii were based on maximum water use at the facility. Please refer to the attached map that shows the Zone I and IWPA radii.

The complex is located in an area where the geologic mapping indicates thin till overburden covering the bedrock. The bedrock at the site is mapped as carbonate rocks, primarily quartzite and dolomitic marble of the Stockbridge Formation. There is no evidence of a protective till or clay layer in the vicinity of the wells. 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 facility's well water is treated through an ion exchange unit to remove iron and hardness utilizing potassium chloride. Public water suppliers are required to monitor water quality at the facility. For current information on monitoring results, please review the Consumer Confidence report (CCR) that is issued annually by the water supplier or refer questions to the water supply contact listed above in Table 1.

2. Discussion of Land Uses in the Protection Areas

There are 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
Non-conforming Zone I	-	-	-	Contact DEP before expanding or modifying the facility.
Transportation corridors/parking	Yes	Yes	Moderate	Manage stormwater and limit road salt usage.
Above ground storage tank (fuel oil)	No	Yes	Moderate/ High	Fuel lines are sleeved but the basement floor is dirt under the tanks and there is a sump and pump in the basement.
High density/low density residential	No	Yes	Moderate	Provide BMPs for household hazardous waste management. Use IPM for lawn maintenance.
Septic system components	Yes	Yes	Moderate	Leachfield is located outside of the protection areas. Some components are within the Zone I and IWPA.

*** -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.

Key issues include:

1. **Non-conforming Zone I;**
2. **Transportation corridors/parking; and,**
3. **Residential development.**

The overall ranking of susceptibility to contamination for the well is moderate, based on the presence of several moderate threat land use or activity in the Zone I and/or IWPA, as seen in Table 2.

1. Non-conforming Zone I – Zone I restrictions allow only water supply related activities or other non-threatening activities in Zone I. Currently, the system does not meet DEP's Zone I requirements as the Zone I includes road, parking, housing, fuel oil tanks and septic system components. Although the fuel lines from the oil tanks are sleeved, part of the basement is dirt and a potential conduit for oil to seep into the ground in the event of a spill.

Recommendations:

- ✓ Do not allow any additional non-water supply activities in the Zone I.
- ✓ Inspect the casing regularly to ensure the integrity of the cap and seal and to ensure there is no standing water near the casing.
- ✓ Continue to prohibit storage and use of hazardous materials in Zone I.
- ✓ Control activities in Zone I as is reasonable.
- ✓ Provide containment for the oil tanks in the basement to prevent a release from an overfill or leak.

2. Transportation corridor/parking – Wallace Road and the facility roadways and parking are located within the Zone I and IWPA. Accidents and normal use and maintenance of corridors and parking areas may pose a potential threat to water quality. Catch basins transport stormwater from roadways and adjacent properties to the ground, streams, rivers or reservoir. As flowing stormwater travels, it picks up de-icing materials, petroleum chemicals and other debris on roads and contaminants from streets and lawns. Common potential contaminants in stormwater originate from automotive leaks, automobile maintenance and car washing, accidental spills as well as, waste from wildlife and pets.

Recommendations:

- V Prepare an Emergency Response Plan that includes coordination among town emergency responders to be sure they area aware of the location of your well.
- V Continue to manage on–site stormwater to ensure it flows away from the well.

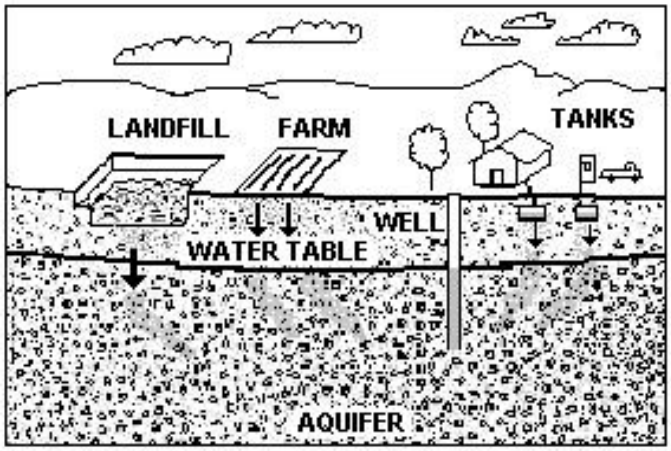

Figure 1: Example of how a well could become contaminated by different land uses and activities.

3. Residential Land Uses – The apartment complex consists of 18 units and there are a few private homes within the protection areas. The facility utilizes a single on-site septic disposal system; the leachfield is outside of the IWPA although some components are within the Zone I. The private homes use private septic systems located within the IWPA. The complex utilizes oil for heat and although the tanks are new and the lines are sleeved, the two storage tanks are located in a partially dirt floored basement. If a release occurred in the basement, the dirt floor would act as a direct conduit to the ground. It is unknown what fuel sources the surrounding residences utilize. If managed improperly, activities associated with residential areas can contribute to drinking water contamination. Common potential sources of contamination include:

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/

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.

- **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 could 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/Kerosene Storage** - If managed improperly, Underground and Aboveground Storage Tanks (USTs and ASTs) and their piping can be potential sources of contamination due to leaks or spills of the fuel oil/kerosene 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 "Residents Protect Drinking Water" attached to this report and at the DEP website www.mass.gov/dep/brp/dws/protect.htm, which provides BMPs for common residential issues.
- Promote BMPs for stormwater management and pollution controls.
- Provide containment for the tanks and the furnace to prevent potential for a leak. A dirt floor and the sump and pump in the basement may be pathways for an accidental release of oil to migrate into the environment. Consider alternatives for containment of the tanks.
- Contact the Underground Injection Department Regulations (refer to Industrial Floor Drain Brochure attached).
  - Contact the UIC coordinator for the Western Region Office of the Department (Rick Larson 413-755-2207 or Tony Zaharias 413-755-2122).
- Containment of the fuel system to prevent accidental releases to the floor drain may be an option. Contact the regional DEP contact for the UIC program listed above. Oil lines from the tank to the boiler are presently sleeved so that any leaks would drain back to the tank or minimal oil would leak to the room. Prepare a policy and a plan for maintenance operations, especially when oil filters are changed. DEP recommends that you require that your boiler maintenance contractor use containment, protect the drain and have absorbent materials on hand to prevent accidental leaks while conducting routine maintenance. The contractor should be responsible for the off-site disposal of any boiler blow down generated during maintenance.
- Seal all cracks in the floor and the floor drain if it cannot be adequately protected to prevent a prohibited discharge.

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. Review and adopt the key recommendations above and the following:

Zone I:

- ✓ Keep non-water supply activities out of the Zone I.
- ✓ Direct stormwater away from well.
- ✓ Conduct regular inspections of the Zone I.

- ✓ Do not use or store pesticides, fertilizers, petroleum products or road salt within the Zone I.
- ✓ Consider providing containment for the oil tanks.
- ✓ Ensure that Well #2 is secured or decommission the well in accordance with the DEP guidance.

Facilities Management:

- ✓ 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.
- ✓ Continue to educate the residents and control the use of household hazardous materials in the Zone I.

Planning:

- ✓ Request that the Planning Board include your IWPA in the Aquifer Protection District along with IWPAs for other public water supplies in town.
- ✓ 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.
- ✓ Continue long term planning for the system that includes maintenance of the water and wastewater systems.

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 program fact sheet. Each program year, if funds area available, 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