Massachusetts Department of Environmental Protection
Source Water Assessment and Protection (SWAP) Report
For
SEMASS

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	SEMASS Resource Recovery Facility
PWS Address	141 Cranberry Highway
City/Town	Rochester, MA 02770
PWS ID Number	4250007
Local Contact	Matthew Sears
Phone Number	508-291-4400

Well Name	*Source ID#*	*Zone I (in feet)*	*IWPA (in feet)*	*Source Susceptibility*
Well #1	01G	100	400	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 you.

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 SEMASS is located adjacent to the facility. The well has a Zone I of 100 feet and an Interim Wellhead Protection Area (IWPA) of 400 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. The IWPA is 80% forested and 20% industrial land use. Please refer to the attached map of the Zone I and IWPA.

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 well serving the facility is treated with an ortho\polyphosphate blend primarily for corrotion control and secondly for iron and manganese removal. The DEP requires public water suppliers to monitor the quality of the water. For current information on monitoring results and treatment, please contact the public water system 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. **Zone I issues;**
2. **waste to energy facility/waste incinerator/LQG/LQTU; fuel distribution**
3. **stormwater (culvert);**
4. **aquatic wildlife;**
5. **transmission line; and**
6. **DEP Tier Classified Oil/Hazardous Material Release Sites.**

The overall ranking of susceptibility to contamination for the well is HIGH based on the presence of at least one HIGH ranking in Table 2.

1. **Zone I –** The public water system owns or controls, and maintains only water supply activities within, the Zone I. The system conducts inspections, posts water supply protection signs and has installed a fence for security purposes.

   Recommendations:

   Continue with protection measures.

2. **Waste to energy facility/waste incinerator/Large Quantity Hazardous Waste Generator (LQG)/Large Quantity Toxic User (LQTU)** – SEMASS is a waste to energy facility. Parts of the facility are located within the IWPA. The system reports that there are no wastes stored in the IWPA. All employees are trained

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

Potential Contaminant Sources	Zone I	IWPA	Threat	Potential Concern
solid waste landfill; waste incinerator; LQG; LQTU; fuel oil distribution	Yes	Yes	H	leaks or spills of toxic or hazardous materials & wastes & fuels
stormwater (culvert)	No	Yes	L	nutrients, debris, pet wastes, chemicals
transmission line	No	Yes	L	over-application or spills of pesticides
aquatic wildlife	No	Yes	L	microbial contaminants

*** 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.

annually in emergency response.

Recommendation:
Continue to conduct BMPs related to handling, storage, use and disposal of hazardous or toxic materials and wastes.

3. **Stormwater (culvert) –** A culvert is located within the IWPA. Stormwater can carry nutrients, debris, chemicals and other contaminants.
   Recommendation:
   Use best management practices to control and filter stormwater runoff.

4. **Aquatic Wildife –** Aquatic wildlife from a nearby pond sometimes stray into the IWPA.
   Recommendation:
   Keep aquatic wildlife away from the well.

5. **Transmission Line –** There is a transmission line located within the IWPA. If pesticides are used to manage vegetation, the potential for spills, leaks or over-application exists.
   Recommendation:
   Be aware of how vegetation is managed on the right-of-way.

6. **DEP Tier Classified Oil or Hazardous Material Release Sites –** these are located at the SEMASS site.

   Recommendations:
   Reduce the use of oil or hazardous materials.
   Use BMPs for storing, handling and disposing of these materials.
   Install and maintain spill containment structures.

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

3. Recommendations for Protection

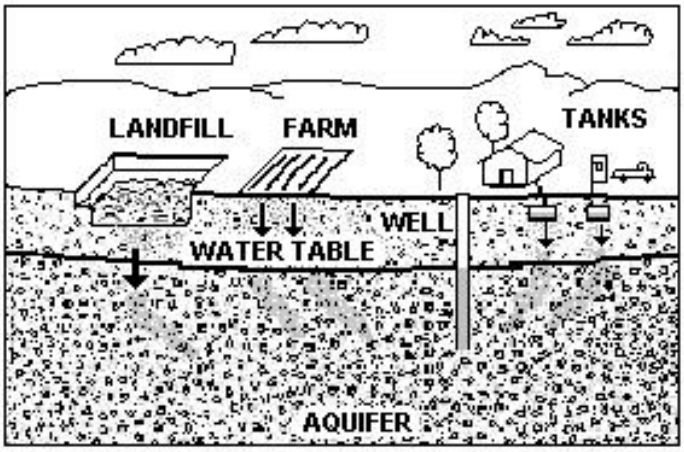

Figure 1: Example of how a well could become contaminated by different land uses and activities.

Implementing protection measures will reduce the well's susceptibility to contamination. SEMASS is commended for conducting inspections, posting signs and keeping non-water supply activities out of the Zone I. Facility operators should review and adopt the key recommendations above and in the following sections.

Priority Recommendations:

Zone I:

- ✓ Keep non-water supply activities out of the Zone I.
- ✓ Use Best Management Practices (BMPs) and restrict activities that could pose a threat to the water supply.
- ✓ Do not use or store pesticides, fertilizers or road salt within the Zone I.

Training and Education:

- ✓ Continue to train employees on the proper use, handling, storage and disposal of hazardous materials and wastes.

Facilities Management:

- ✓ Inspect and maintain the integrity of any spill containment structures.

Planning:

- ✓ Work with local officials in town to make sure that SEMASS's IWPA is included in the local Aquifer Protection District Bylaw and to assist you in improving protection.

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.

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.

4. Attachments

- Map of the Public Water Supply (PWS) Protection Area
- Recommended Source Protection Measures fact sheet
- Source Protection Sign Order Form