



Massachusetts Department of Environmental Protection Source Water Assessment and Protection (SWAP) Report For American Polymers, INC.

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

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Table 1: Public Water System (PWS) Information

PWS NAME	American Polymers, Inc.
PWS Address	1 Webster Road
City/Town	Oxford, Massachusetts
PWS ID Number	2226012
Local Contact	Mr. Richaerd Lavengood
Phone Number	(508) 987-1547

Well Name	Source ID#	Zone I (in feet)	IWPA (in feet)	Source Susceptibility
Well #1	2226012-01G	100	411	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 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

American Polymers, Inc. obtain its water supply from a deep bedrock well with a jet pump about 10 feet from the road within an adjacent building. The well has a Zone I of 100 feet and an Interim Wellhead Protection Area (IWPA) of 411 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 results and treatment, please contact the Public Water System contact person listed above in Table 1. 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.

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).

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 Zone I;**
2. **Junk yard and Salvage Yard/Body Shop;;**
3. **Machine Metalworking Shop;**
4. **Large Quantity Hazardous Waste Generator;**
5. **Very Small Quantity Hazardous Waste Generator;**
6. **Aboveground Storage Tank (AST) with fuel oil; and**
7. **Utility Transformer.**

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

1. **Zone I** – Currently, the well does not meet DEP's restrictions, which only allow water supply related activities in Zone I. The facility's Zone I contains the on-site building, local road, and parking areas. The public water supplier does not own and/or control all land encompassed by the Zone 1. 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.
- ✓ Do not use road salt within the Zone I.

2. **Aboveground Storage Tank (AST)** – There is an AST located in an enclosed room within the IWPA. If managed improperly, Aboveground Storage Tanks can be a potential source contamination due to leaks or spills of the chemicals they store.

Recommendations:

- ✓ Aboveground storage tanks in your IWPA should be located on an impermeable surface, and also contained in an area large enough to hold the complete liquid volume, should a spill occur.
- ✓ Upgrade all oil/hazardous material storage tanks to incorporate proper containment and safety practices. Any modifications to the AST must be accomplished in a manner

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

Potential Contaminant Sources	Zone I	IWPA	Threat	Comments
Storage, use, and improper disposal of hazardous materials	No	All Wells	Moderate	Materials in photographic, art, science, and vocational classrooms
Parking lot, driveways & roads	Well # 1	Well #1	Moderate	Limit road salt usage and provide drainage away from wells
Machine Metalworking Shop	Yes	Yes	High	Chemical Use
Junk Yard, Salvage Yard/Body Work/Repair Shop	Yes	Yes	High	Chemical Use
Fuel Storage Above Ground	No	Yes	Moderate	Fuel Oil
Structures	Yes	Yes	-	Non-water supply structures in Zone I

* -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.

consistent with Massachusetts's plumbing, building, and fire code requirements. Consult with the local fire department for any additional local code requirements regarding ASTs.

3. **Automotive/Body Shop-** The automotive business, Body shop is located on the premises, within the Zone 1 and IWPA. If not handled properly leaks and spills of paints and other hazardous materials used in their daily activities can potentially contaminate the water supply.

Recommendations:

- ✓ The body shop should be encouraged to use BMP's for the storage, handling, and disposal of all hazardous chemicals.
- ✓ If the auto body facility has floor drains, ensure that the floor drains lead to a tight tank or municipal sewer as required by the plumbing code and Underground Injection Control Regulations, 310 CMR 27.00.

4. **Large Quantity/Very Small Quantity Generator/Hazardous waste & Chemical storage within the IWPA** – Due to the daily operations at the site as a Junk/Salvage Yard, and Vehicle Repair Shop, waste fluids, oils, and antifreeze/paints is generated. Paints and welding supplies are also used and stored at the site. Hazardous wastes are removed by a licensed hauler. If improperly managed, spills or leaks of the chemicals can potentially contaminate the water supply.

Recommendation:

- ✓ Continue to segregate and properly store the hazardous wastes and chemicals.

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. American Polymers should review and adopt the key recommendations above and the following:

Zone I:

- ✓ Keep non-water supply activities out of the Zone I.
- ✓ Consider well relocation if Zone I threats cannot be mitigated.

- ✓ Since American Polymer intends to continue utilizing the structures in the Zone I, use 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.

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 labels as appropriate on raw materials and hazardous waste.

Facilities Management:

- ✓ Implement standard operating procedures regarding proper storage, use and disposal of hazardous materials. To learn more, refer to <http://www.state.ma.us/dep/bwp/dhm/files/sqgsum.pdf> for

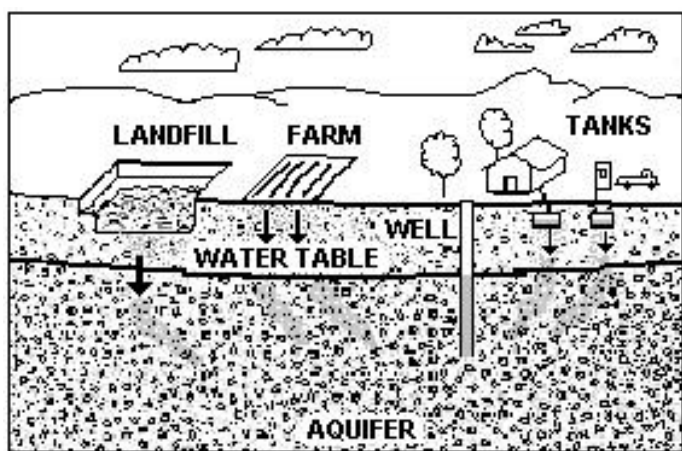


Figure 1: Example of how a well could become contaminated by different land uses and activities.

For More Information:

Contact **Josephine Yemoh-Ndi** in DEP's **Worcester Office** at **(508) 792-7650 x 4030** 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.

the Requirements for Small Quantity Generators.

- ✓ In case there are floor drains on the premises, bring the floor drain into compliance with DEP Regulations (refer to attachment "Industrial Floor Drain Brochure
- ✓ Septic system components should be located, inspected, and maintained on a regular basis.
- ✓ 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.
- ✓ The facility is currently not registered as a generator of hazardous waste or waste oil. Review enclosed document "A Summary of Requirements for Small Quantity Generators of Hazardous Waste" to determine your status and regulatory requirements.

Planning:

- ✓ Work with local officials in Oxford 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.

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

