

# Integrating P2 into the Permitting and Enforcement Process

## Dry Cleaning Industry

The dry cleaning industry sector is divided into three distinct types of operations: commercial, industrial, and coin-operated, with most of the more than 30,000 nationwide operations being commercial, single facility, "mom and pop" operations.

Traditionally dry cleaners have used perchloroethylene (PCE, or "perc"). Nationally, 80-90% of dry cleaners use perc, and about 70% of registered Kansas dry cleaners use perc. This industry has become heavily regulated due to the fact that perc has been readily released and is highly toxic to human health and the environment. In Kansas, dry cleaners of all size that use perc and even some perc alternatives are regulated through the Bureaus of Air, Remediation, and Waste Management.

### **Pollution prevention opportunities during the permitting process**

Encourage new dry cleaning operations to avoid or minimize the need for registration and any permits by offering information about:

- Perc alternative machines and technologies, wet-cleaning, CO<sub>2</sub>, glyco ether or petroleum
- Highly efficient perc machines that minimize perc waste and use reusable filters.

### **Pollution prevention opportunities during the enforcement process**

Several opportunities exist ranging from machinery upgrades to providing educational training or starting an industry recycling program. Some of these opportunities include the following:

- Use perc alternative machines and technologies, wet-cleaning, CO<sub>2</sub>, glycol ether or petroleum
- Use highly efficient perc machines that minimize perc waste and use reusable filters
- Fund and/or coordinate an environmental compliance educational program for Kansas dry cleaners.
- Send wet cleaning technicians from around the state to specialized schooling offered by the *National Fabric Care Institute*, then promote increased wet cleaning services
- Hire a wet cleaning consultant to train employees on site
- Institute a hanger plastic garment bag and card paper roll collection and recycling program, or supplement and promote an existing program.

### **Wet Cleaning**

The oldest solvent, water, is becoming increasingly popular. In fact most dry cleaners around the country utilize some wet cleaning even if they use perc as their primary cleaner. The reason...less hazardous waste, less regulation, less liability, less expense, and better smelling clothes. Wet cleaning is very popular with the

portion of the population that is chemically sensitive. In fact, many clothes such as wedding dresses, suedes, and leathers, come much cleaner in water.

Wet cleaning is done in specialized machines that use less agitation than a normal washing machine. Specialized detergents are often used. The wet cleaning machine consumes a great deal of water since water, rather than a chemical solvent, is the cleaning medium. Thus, the environmental impacts of using and treating water are much higher with wet cleaning than with dry cleaning. Further study is being done on recycling water, which can reduce wet cleaning's negative environmental impacts. Other studies include wastewater analysis for purposes of discharge to a POTW with strict pretreatment limits.

Wet cleaning involves significantly fewer up-front capital expenditures than dry cleaning. The following are costs/potential savings associated with wet cleaning:

- Cost of an Aqua Clean System washer and dryer is roughly \$30,000 to \$40,000.
- A similar-size perc dry cleaning machine costs roughly \$54,000.
- Wet cleaning training costs range from \$199 to \$299 per student for a two-day class held in Maryland.
- A wet cleaning consultant doing on-site training costs \$500 per day plus travel expenses.
- Savings associated with raw material and avoided hazardous waste disposal \$2000 annually, based on 100 gallons annual usage.

### **High-technology, perc-efficient machines**

As costs and regulatory burdens associated with the use of perc rise, new products on the market have adapted to using perc more efficiently, generating less waste.

These products feature items such as:

- Stainless steel, self-cleaning filters which reduce hazardous waste volume and weight
- Units that use a dual condenser distillation unit, resulting in decreased energy use
- Unique air curtains for maximum operator safety
- Multiple-program cycles for different load types
- Average unit costs can range from \$40,000 to \$70,000
- Some units claim to cut perc consumption by up to 80%

### ***Additional Resources***

- The Small Business Environmental Assistance Program, SBEAP, is a confidential non-regulatory program to assist small business with environmental concerns. Fact sheets and other detailed P2 and regulatory information can be obtained by contacting the SBEAP at 800-578-8898 or [www.sbeap.org](http://www.sbeap.org).
- Center for Neighborhood Technology has a lot of information on perc alternatives, especially wet cleaning at [www.cnt.org](http://www.cnt.org).
- The International Fabricare Institute offers general dry cleaning information and wet cleaning classes at their Maryland facilities. Call 301-622-1900.
- Read about one vendor's highly efficient perc machines/products at [www.technodry.com/index.html](http://www.technodry.com/index.html).