Dry cleaning is an undeniably convenient process, one we often rely on to clean our soiled clothes and other fabrics. But it uses solvents strong enough to remove stains and volatile enough to allow rapid drying, and that is where we can run into problems. Perchloroethylene ("PCE" or "perc"), a possible cancer-causing pollutant, has been the dry cleaning solvent of choice for many years. While the industry has worked at reducing the health and environmental risks posed by these solvents, problems still exist at some dry cleaning sites.

Properties where a dry cleaning business once operated may be contaminated through spills and releases of perc that occurred many years before. Because of the health and environmental risks, these contaminated properties pose a liability both for the dry cleaner who was responsible for the spills and releases, and for the current owner of the property.

To address the cleanup of such sites in our own state, the South Carolina Dry Cleaning Restoration Trust Fund was set up in 1995. The program is voluntary, and dry cleaning facilities can decide for themselves whether to apply. The following information comes from a letter mailed out last year by the Department of Health and Environmental Control to dry cleaners in the state.
How the fund works
The fund exists to help clean up the environmental problems at eligible dry cleaning facilities. Once a facility is determined to be eligible for the fund, the owner or operator pays an out-of-pocket deductible that goes toward any required cleanup costs. The fund pays all other costs of assessment and cleanup, regardless of how expensive they prove to be.

Even though participation in the fund is voluntary, a facility cannot be eligible unless it has filed an application. If dry cleaners delay filing or decide not to file an application, they should be aware of the financial consequences. Applications received today carry a $10,000 deductible, and they will increase to $25,000 this year. Furthermore, there is an absolute final filing deadline of September 30, 2004, for most dry cleaning facilities. If a facility does not file an application before that deadline, it can never become eligible, regardless of how much it may have already paid into the fund through yearly fees and solvent surcharges. Not having filed, owners would be expected to pay all of the environmental cleanup costs associated with their dry cleaning operations.

Registered dry cleaning facilities are locked into the fund with the one-time deductible—the only cost that is paid by the dry cleaner beyond the yearly fees and solvent surcharges paid by all registered dry cleaning facilities. These dry cleaners are liable only for the deductible amount, even if the fund spends a half-million dollars or more to clean up their property. In addition, a purchaser of the business or property is also covered by the fund, so there is no loss of value in the investment the dry cleaner has built up over the years.

A look at the numbers
You may think the environmental costs resulting from the cleanup of a small dry cleaning plant can’t be all that high. Actually, cleanups can prove to be very expensive operations. The U.S. EPA Technology Innovation Office has calculated the average dry cleaning assessment and cleanup costs based on reliable information it received from six states. The figures show an average of $111,000 at each dry cleaning plant just to determine the extent of contamination. On average, an additional $275,000 was required for cleanup at these plants. Many of the sites in the EPA study have not yet been completed, so it’s likely the final costs will end up averaging much higher.

The average costs in South Carolina may go even higher than those in the EPA survey because of the highly complex geology underlying a large portion of the state. One dry cleaning site has already required over $400,000 just to determine the extent of the contamination. So far, the dry cleaning fund has averaged around $109,000 per site for assessment costs. DHEC, however, is seeing some larger price tags coming in as it moves into the different geologic regions. The agency says it’s committed to using innovative ways to pare the costs of an assessment and cleanup, but it will likely have several sites that end up costing more than $500,000 apiece. So far, only one site—with a budgeted amount of $306,000—has started the cleanup process. At the other end of the cost spectrum, the least DHEC has spent has been $35,000 for site assessment, and it will probably be able to close out the site with another $20,000 for long-term monitoring.

The extent of the problem
While the cost figures may seem out of proportion to the size of a dry cleaning plant, they are due to the type of contamination that typically occurs with dry cleaning facilities. Even the best-run plants have had minor leaks and drips of dry cleaning solvents from around the machine fittings or during the transfer of solvents. The same properties that make dry cleaning solvents so useful for cleaning clothes also make every little drip of solvent or spotting agent into a potential environmental release. The small drips easily penetrate through the floors of the plants and

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into the underlying soil. There they collect to form a small reservoir of solvent trapped in the soil and then eventually work their way into the groundwater. Incredibly, just one ounce of dry cleaning solvent can contaminate several million gallons of groundwater underlying the plant. As the groundwater flows underground, it spreads the contamination over an area of several acres.

Older plants typically have even larger groundwater plumes because of the disposal of waste solvents into sewers or onto the ground when such activities were legal. So far, DHEC does not have a typical size for a groundwater plume at a dry cleaning facility. Nevertheless, the agency has seen some underground contamination plumes from older plants covering several city blocks.

Even newer operations are environmentally suspect because a lot of the equipment and common practices did not prevent all of the dry cleaning solvent from reaching the environment. In fact, there is probably less than a one percent chance that any dry cleaning facility is environmentally clean, unless it has just started operating with fully contained, state-of-the art equipment.

To make matters worse, that small reservoir of solvent trapped in the soil continues to slowly dissolve and feeds the growing contaminant plume over several decades, because the dry cleaning solvents do not quickly break down when released into the environment. It has been estimated that some dry cleaning solvents such as perc and the older carbon tetrachlorides may last more than 300 years in some geologic formations. Even the petroleum-based solvents may have contamination life spans exceeding several decades. DHEC is currently investigating a closed petroleum-based solvent plant with contamination from a release that occurred somewhere between twenty and fifty years ago. A couple of groundwater plumes under investigation undoubtedly started back in the 1920s and still have contamination problems eighty years later.

Even minimal sampling has found that 70 percent of dry cleaning facilities have some contamination (170 out of 244 dry cleaning plants). DHEC believes that most of the remaining 30 percent simply missed finding contamination because the samples were not collected deep enough or were taken in the wrong place. Even though the samples showed the sites to be “clean,” these dry cleaners were allowed to submit an application to lock in their deductible at the then-current level in the event contamination is actually found at the facility at some point. DHEC assigned priorities to these sites under the assumption that contamination—somehow missed by the original sampling procedure—could actually exist.

The agency completed “Secondary Assessment” procedures at three of these “clean” sites. The “Secondary Assessment” procedure allows collection of more samples under DHEC’s oversight. Not surprisingly, each of the “clean” sites was found to have significant concentrations of dry cleaning solvents in the soils at depths just slightly more than what had previously been sampled. These findings only further strengthen DHEC’s suspicions that every dry cleaning plant most likely has some environmental contamination.

Sources of contamination
Dry cleaners who operated their plants in the days before environmental regulations were passed can probably recall various common practices that led to the release of the solvents:

- Venting machines to the outside
- Using separator water for mopping floors or pouring it out (either behind the plant or down the drain)
- Disposing of spent filter cartridges into “green-box” dumpsters
- Using transfer machines, with solvents dripping onto the floor as the clothes were transferred to the dryers
- Disposing of muck cooker bottoms or still resi-
dues onto the grounds around the dry cleaning plant

Using dry cleaning solvents for general housekeeping around the plant (degreasing equipment, insect and weed control, etc.)

Experiencing drips from pipes and fittings around the back of the machines and solvent storage tanks

For most dry cleaning plants, the question is one of when and how contamination will be found and not whether it will be found. In all likelihood, it’s only a matter of time before the contamination is found and reported to DHEC. Once the contamination is reported, state law requires that DHEC seek out the responsible parties to immediately assess and remediate the contamination at the responsible parties’ expense. (Note: An exception to the requirement for an immediate assessment occurs with sites that are eligible for the dry cleaning fund because of a moratorium imposed by the dry cleaning law.)

A question of liability
Liability for contamination does not end simply because a dry cleaner is no longer involved with a particular location. DHEC’s Enforcement section assigns liability to all parties who have ever been responsible for a contaminated site. Enforcement is empowered to collect all of DHEC’s expenditures from all potentially responsible parties through the appropriate legal processes. Its definition of responsible parties, as the term pertains to dry cleaning plants, includes all owner-operators of the dry cleaning business and all owners of the property after it has become contaminated.

It’s often convenient for DHEC to settle financially with the owners of the property so that they can proceed with the economically beneficial reuse of the property. If DHEC settles with one responsible party, the law allows that party to seek compensation from any other party that may have responsibility for the contamination of the site. This option carries the risk that dry cleaners may be sued for contaminating properties even many years after they stopped operating there.

The Dry Cleaning Restoration Trust Fund law allows eligibility for the fund to be transferred to the current property owner (with his or her concurrence). DHEC has found that most property owners prefer this approach as it offers them the same financial protection for the contaminated site as the dry cleaners enjoy. For this approach to be effective, the law requires the registered dry cleaner to file an application to make the site eligible. Once it is eligible, the eligibility can easily be transferred to the property owner. Any unpaid balance of the deductible is also transferred to the property owner.

For more information about the Dry Cleaning Restoration Trust Fund, contact Craig Dukes, DHEC’s environmental health manager for the Federal & Dry Cleaning Section, Division of Site Assessment and Remediation, at 1-866-DHECDRY (1-866-343-2379), or at dukescv@dhec.sc.gov.

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