Help us save tax dollars by protecting our environment and our Publicly Owned Treatment Works…

Dry Cleaners

Whether your business is two blocks or 20 miles from the water, it has two connections to the Monterey Bay. Indoor drains such as sinks, toilets, and most floor drains convey wastewater through the sanitary sewer system to a treatment plant where the water is treated before it is discharged into the Bay. Outside your business, rainwater, wash water from buildings, road surfaces, vehicles, and equipment pick up oil, grease, cleaning compounds, pesticides, paint, garbage and other pollutants. Storm drains carry theses pollutants through the storm drain system directly into local creeks and the Bay. They are not filtered or treated in any way. Whether you pour something down the sanitary sewer drain or down a storm drain, it will eventually end up in the Bay.

Dry Cleaning businesses have a high potential to impact storm water and sewer wastewater with contaminants. These contaminants can damage sensitive creek habitats and eventually pollute our bay and ocean. Yet many consider these industries to be important to our community. The good news is that implementing the best management practices detailed in this pamphlet can drastically reduce environmental impacts from dry cleaners.

This pamphlet has been prepared to familiarize dry cleaning shop owners and their employees with the best management practices for dealing with typical wastes generated in the industry. It also details the County of Santa Cruz Industrial Wastewater Pretreatment requirements specific to your facility. ***Use this pamphlet as a tool to ensure that your business is compliant, to save money on costly spill cleanups and waste disposal, and to train all shop employees.*** Leave it posted in a visible location.

Best Management Practices

Dry cleaners in California have been regulated by environmental agencies since 1993. These regulations are codified in Title 17 of the California Code of Regulations (CCR), sections 93109 and 93110. Most dry cleaning shop owners are aware of air pollution control measures and hazardous materials management due to this regulation. Under these regulations, dry cleaning shop owners and/or managers are required to adhere to certain operating rules and to obtain Environmental Training. For information on the Dry Cleaner ATCM course, contact Tom Raschke with the California Air Resources Board at (916)445-0961.

The Curriculum for the Environmental Training Program for Perchloroethylene (PCE) Dry Cleaning Operations was designed to help dry cleaners understand and comply with the Dry Cleaning ATCM and other regulations that affect the dry cleaning industry. Complying with these requirements will allow dry cleaners to operate their facilities more efficiently, thereby reducing costs, PCE emissions to the air, and worker exposure to PCE. The course is also intended to provide dry cleaners with information on other regulations from agencies involved with water, worker exposure, emergency response, and hazardous waste disposal.

This pamphlet is supplemental to the Environmental Training course and addresses mainly the concern for any potential discharges to the sanitary sewer (any hazardous material, such as perchloroethylene, that may go down the drain). Much of this pamphlet will overlap with material covered in the course, but will also contain helpful hints on achieving compliance.

Regulations: What You Already Know

It is illegal to put any quantity or concentration of PCE in the sewer! PCE is a listed waste under RCRA. This means that no matter how low the PCE concentration in the water is, you must dispose of it as a hazardous waste through a licensed hazardous waste hauler. **This includes separator water.**

The County of Santa Cruz requires that you be able to provide proof that your shop is removing hazardous waste appropriately. Maintain at least 3 years of Hazardous Waste Manifests for all wastes containing PCE. Ensure that the final disposition (TSDF) manifest is returned and maintained in the records. Typical hazardous wastes produced by dry cleaning facilities are the following:

- Separator water
- Cartridge filters
- Wash water from in-house cleaning of filters
- Still bottom water
- Spent solvent

If your particular dry cleaning system produces these wastes, regulators and inspectors will want to see records of their disposition. If there are no records available to indicate that hazardous materials were removed from the site, regulators may require further investigation, which could lead to costly remedial projects. PCE is highly mobile in soil and even concrete and can travel outside of the sewer line and into groundwater or can pass through the water treatment plant and into the Monterey Bay.

Regulations: What You May Not Know

Your shop, by the nature of what you are doing, is recycling dry cleaning fluids. The question is whether or not you are recycling these fluids with the highest degree of efficiency: the higher the recycling efficiency, the less solvent that is released to the environment.

Maintain dry cleaning equipment and auxiliaries according to specifications. Implement a regular maintenance and inspection program that includes a checklist with corrective actions noted (see the Green Clean Inspection Checklist at the end of this pamphlet). The checklist should include inspection and repair of leaks in the dry cleaning system and any containers with dry cleaning solvent or waste.

Keep track of the amount of separator water generated. If there is an unexplained increase in separator water, it could signify a leak in a cooling coil or another equipment problem. Where applicable, steam strip carbon adsorbers according to the manufacturer's recommended maintenance schedule.

Equipment Maintenance

Perchloroethylene (PCE or PERC), like many industrial solvents, was originally a solution to both a safety hazard and an environmental problem. Petroleum-based solvents were the original dry cleaning solvent. Since Stoddard solvent is considered flammable and is not fully recoverable for reuse, the search for an alternative began. Perchloroethylene is a non-flammable solvent that has a very high rate of recovery for reuse. Hence, the widespread use of perchloroethylene began by shop owners wishing to do the right thing.

Unfortunately, based on over two decades of epidemiological (people) data, PCE has implicated it as one of the leading causes of cancer in the South Coast Air Quality Management District in California, second only to diesel exhaust. The people most affected by PCE are those working in dry cleaners and living nearby dry cleaners. PCE has been implicated to cause kidney cancer when ingested in drinking water. Since PCE can rapidly travel through most surfaces, including soil, cement and brick, it can reach water bodies readily.

Both the public and government regulatory agencies are moving toward supporting dry cleaning business owners who wish to switch to alternatives to PCE. Many public agencies are voting to phase-out the use of PCE. Two of the alternatives to PCE are "wet-cleaning" using water and special detergents or using liquid carbon dioxide.

Wet-cleaning is a welcome alternative, considering that it generates no hazardous waste, and does not produce toxic air emissions. Contrary to prior beliefs, wet-cleaning is safe to use on clothes with a "dry-cleaning" only label. Most dry-cleaning operations have involved some wet-cleaning operations for years. Although wet-cleaning requires more labor to get a garment clean, there are less equipment costs and hazardous waste disposal costs.

Try projecting your current maintenance and hazardous waste disposal costs for the next 3-10 years and comparing it to the costs for switching to a wet-cleaning process. Your business may find that it will save money within a decade, if not sooner. Many cleaners that have switched to a wet-cleaning process have discovered that their business increased significantly, attracting customers that previously did not use commercial cleaners for environmental reasons.

Save $$ and the Environment: Alternatives to Perchloroethylene

What is the Green Clean? It is having the optimum system that has the highest recycling efficiency and releases the least amount of PCE to the environment. The ideal Green Clean is wet-cleaning. However, if you are not able to make the switch currently, make sure you are able to do the following:

Dry-to-Dry Closed Loop System

Although there are many different types of dry cleaning machines, the type that is going to save your shop money and benefit the environment is a Dry-to-Dry Closed Loop System. Other systems, such as transfer machines or dry-to-dry systems with carbon adsorbers (sniffers), are currently being phased out in California. Here is what your shop can do to achieve the Green Clean:

- ✓ **Upgrade your system.** If you have one of these older systems, you may want to look at the cost of operating such a system over a period of five years verses the cost of purchasing a new system and saving money on operating costs. Generally, it has proven cheaper to upgrade. Replacing carbon adsorbers, or sniffers, with refrigerated condensers results in significantly less separator water generation (up to 10 times less wastewater!). Your business will benefit from long-term savings on hazardous waste management costs.
- ✓ **Do not add separator water to boilers or cooling towers!** Not only is this illegal, but this will result in PCE entering the sewer system during boiler blow down and cooling tower overflows. It will also rapidly corrode the boiler, resulting in the need for a costly replacement.
- ✓ **You are liable for your waste even after it leaves your facility!** Collect all wastes, store in compatible containers, label properly, and have them removed by certified hazardous waste haulers. Make sure you know where your waste is going and how it is being treated. It is best to specify how you wish to handle your waste in a contract with a certified waste hauler.
- ✓ **Install secondary containment and spill containment.** Dry cleaning solvent, such as PCE, is highly mobile in brick and cement; therefore you will need to line any secondary containment that is made out of these materials. Spill containment should be adequate enough to contain 110% of the largest possible spill. **Develop a Spill Response Plan.** There are some simple and inexpensive approaches to Spill Control for Dry Cleaners. See the Spill Prevention Control and Response for more details.
- ✓ **Discharge of any wastewater other than storm water directly or indirectly to a storm drain, a creek, an underground percolation sump, or other water body is strictly prohibited.** All indoor floor drains and/or sumps that are connected to the storm drain system or sanitary sewer must be permanently plugged.
- ✓ **Minimize your wastewater.** Avoid adding damp clothes or additional water to the dry cleaning machine. This will result in greater quantities of separator water and increased cost for disposal. Keep solvents protected from other wastes, sunlight, heat, and rain to prevent contamination of your solvent, resulting in additional hazardous waste disposal costs.
- ✓ **Consider purchasing a Separator Water Evaporator.** There is a commercially available separator water treatment system that removes trace amounts of PCE and evaporates the remaining water.

The Green Clean

The best spill control is prevention! Spills are cheaper to clean up when quickly contained. Write a Spill Response Plan. Post a short version of the plan throughout the shop (see the following page for an example Posted Spill Control Plan). Train employees on the plan annually. During the required annual training, perform drills to ensure that employees can put the Plan into action safely. Adequate spill prevention and clean-up materials must be kept on-site and readily available for use. Make sure these materials are stored in the areas where PCE and dry cleaning wastes are stored, as well as near the dry cleaning machine. The following are the different types of spills that can occur and how they should be dealt with:

- ✓ Solvent spills: keep old comforters, rags, or dirty clothes in the vicinity of dry cleaning equipment and PCE storage to soak up spills. That way the items soaking up the spill can be placed through the machine to recover and reuse PCE.
- ✓ Residue spills: keep a scoop and dry sweep brush in the vicinity of residue waste storage. Spills of residues should be scooped up and segregated appropriately and disposed of as a hazardous waste.
- ✓ Separator water spills: keep a mop and bucket near the separator water hazardous waste storage area. Separator water should be mopped up and then placed in the appropriate hazardous waste container. Do not put the mop water or mop rinsate down the drain! Collect this as well and dispose of as hazardous waste.

Other material that may be necessary for spill response:

- ✓ Absorbent mats - When obtaining mats, ensure that the material you have chosen will absorb the appropriate fluids. Some only absorb water-based fluids, or solvents, while others absorb oil and grease.
- ✓ Portable berms and dikes - such as absorbent socks, plastic berms.
- ✓ Drain blockers - These are rubber mats that are generally stored on the walls and can be quickly thrown down to cover a drain to prevent a spill from going into the drain.
- ✓ Absorbent "socks" - These can be used as a temporary berm.
- ✓ Waste containers – Drums or other UN-rated, Department of Transportation (DOT) approved containers for any wastes generated during cleanup.
- ✓ Personal protective equipment such as gloves, bunny suits, safety goggles, face shields, etc.

There are several commercial vendors that distribute these materials. They can usually be found on the Internet. Some of the larger suppliers are Lab Safety Supply (www.labsafety.com) and New Pig (www.pigalog.com 1.800.hot.hogs). Minimize the distance between waste collection points and storage areas and, when transferring wastes, keep lids and containers secured. Attempt to use secondary containment "carboys" when transferring wastes so that if there is a spill, it will hopefully be contained in the carboy. Always use both hands when carrying wastes.

Spill Prevention Control and Response

Posted Example
Spill Control Plan

Spill Response Procedures:

1. **Protect yourself first. Be sure and put on the appropriate personal protective equipment: gloves, goggles, and an apron.**
2. **Contain the spill with trays, or absorbent materials. Do not allow the material to reach storm or sewer drains.**
3. **Check the MSDS for the spilled substance for safe handling and disposition.**
4. **Clean up the spill as directed on the MSDS.**
5. **Use dry clean-up methods. Do not send any wash water to the storm drain!**
6. **Package and label all contaminated materials (absorbents, PPE, liquids) for off-site disposal.**
7. **Notify the manager/owner that a spill has occurred (see below).**
8. **Notify the appropriate government agency (see below)**

Spill Response Personnel

Manager Name:	**Pager/Phone:**
Owner Name:	**Pager/Phone:**
Government Entities	***Phone***
Santa Cruz County Sanitation District	**831.477.3907**
Fire Department	
Environmental Health Services	**831.454.2022**

Posted Spill Control Plans do not need to be elaborate. They should be short and to the point so that they are just enough information to quickly and efficiently prevent a spill from spreading. However, if your facility has an Industrial Wastewater Discharge permit, a written Spill Control Plan is required. Call the County of Santa Cruz Industrial Wastewater Pretreatment Program (831) 477-3907 if you would like an example template.

Make sure that all employees understand and follow Best Management Practices. Mistakes and misunderstandings can lead to violations and costly cleanups!

The following page can be used as a training log. Ensure that all employees are trained on Best Management Practices upon hiring and annually thereafter. Log the training. See the following page for an example training log. Use the following as training and education tools:

- This Best Management Practice pamphlet.
- Your written Spill Response Plan.
- Drills on emergency spill cleanup.

Post and/or label the following:

- Post multiple copies of this pamphlet throughout your facility.
- Emergency telephone numbers to your local Fire Department and Wastewater Treatment Facility (831.420.6050).
- Post signs above all sinks prohibiting the discharge of dry cleaning solvents and wastes.
- Label all drains and pipes within your facility indicating whether they flow to a treatment system, directly to the sanitary sewer, or to the storm drain.
- Stencil or post signs near all storm drains on your property with a message- "No Dumping-Flows to Ocean."

How do you know you're complying? Use the Green Clean Inspection Checklist at the end of this pamphlet. Enlist a different employee to perform this inspection every month so that they familiarize themselves with the Best Management Practices and solidify their training.

Training

Training Record

Date: _____

Training Topic _____

Trainer Name _____

Trainer Signature _____

Printed Name of Attendee	Attendee Signature

Date: _____

Training Topic _____

Trainer Name _____

Trainer Signature _____

Printed Name of Attendee	Attendee Signature

GREEN CLEAN INSPECTION CHECKLIST

All items marked "NO" will require corrective action. Items marked "N/A" do not apply to this area.

Yes	No	INSPECTION ITEM	CORRECTIVE ACTIONS/COMMENTS/DATES OF COMPLETION
☐	☐	1. Are there any visible leaks in the dry cleaning machine and/or auxiliary equipment?	
☐	☐	2. Are carbon adsorbers or sniffers still in use that generate large quantities of separator water?	
☐	☐	3. All waste containers are properly labeled.	
☐	☐	4. Only appropriate containers are used for hazardous wastes and all containers are in good condition.	
☐	☐	5. Are larger quantities than normal of separator water being generated? This indicates a leak or lack of efficiency in the	
☐	☐	6. Dry clean up methods are being used in preference or always before wet clean up methods (those using water).	
☐	☐	7. Staff has been trained within the last year on the appropriate disposal and storage of waste..	
☐	☐	8. An evaporator is being used to treat separator water, thereby reducing hazardous waste disposal costs?	
☐	☐	9. Spill cleanup material is available in the immediate area of the dry cleaning equipment and hazardous materials storage.	
☐	☐	10. Are all chemical and waste containers (in storage or in use) in secondary containment?	
☐	☐	11. Employees are trained appropriately to cleanup spills and are familiar with the Spill Response Plan (ask a random	
☐	☐	12. All fluids are secondarily contained and are stored in the appropriate waste drums for waste removal and treatment.	
☐	☐	13. Hazardous waste manifests for the past three years are maintained in the shop and the final disposition (TSDF)	
☐	☐	14. Areas that are bermed with concrete or brick are lined to prevent migration of PCE through these materials.	
☐	☐	16. There are no indoor floor drains and/or sumps that are connected to the sewer or storm drain system.	
☐	☐	17. Wet clothes and/or excess water is not being added to the dry cleaning system, thereby generating more separator water.	
☐	☐	18. Virgin solvents are stored away from waste, sunlight, heat, and rain to avoid contamination that could result in additional	
☐	☐	20. Lids, bungs, and tops are secured on containers at all times, excepting when adding waste to containers or	
☐	☐	21. Separator water is not being added to boilers or chillers.	
☐	☐	22. Employees have been trained on these BMPs and can give an example of a Dry Cleaning BMP (ask a random employee).	