

Memorandum

Florida Department of Environmental Protection

TO: Directors of District Management
Waste Program Administrators

FROM: Mary Jean Yon, Director 
Division of Waste Management

DATE: April 12, 2006

SUBJECT: Management of Drycleaning Separator Water

This memo and the attachment, "State of Florida Guidelines for Proper Management of Drycleaning Separator Water," apply only to drycleaning facilities that utilize perchloroethylene and generate separator water containing perchloroethylene ("PERC or PCE"). This memo supersedes the memorandum dated December 9, 1996, Subject: Management of Drycleaning Separator Water.

The Division recommends that the attachment be detached from this memo and provided to drycleaning facilities as a "fact sheet."

In general, separator water that contains PERC at a concentration of 0.7 milligrams per liter (a/k/a parts per million or ppm) (or more) is considered to be a D039 toxicity characteristic hazardous waste pursuant to 40 Code of Federal Regulations (CFR) 261.24 and must be treated and/or disposed of in accordance with the requirements of 40 CFR Parts 262 & 268. Separator water that mixes with domestic sewage in sewer lines and that passes through the sewer lines for treatment at a publicly owned treatment works (POTW) is excluded from hazardous waste regulation under 40 CFR 261.4(a)(1). However, if a sewer line is broken or leaking so that the separator water does not reach the POTW, the drycleaning facility will have caused an illegal disposal of hazardous waste. If the separator water has been treated to remove the hazardous characteristic but not to meet the universal treatment standard (UTS) of 0.056 ppm, the PERC leaking from sewer lines will have been land disposed in violation of 40 CFR Part 268.

In addition to hazardous waste regulations, all non-domestic wastewater discharges must comply with the list of prohibited discharges found at Rule 62-625.400 (2) (g), Florida Administrative Code (F.A.C.). This rule prohibits the discharge of pollutants which result in the presence of toxic gases, vapors, or fumes in a quantity that will cause acute worker health and safety problems. According to the EPA publication entitled "Guidance to Protect POTW Workers from Toxic and Reactive Gases and Vapors" (EPA 812-6-92-001), 0.53 ppm is the suggested sewer discharge screening level. 0.53 ppm is used as the regulatory limit unless the local utility has a more stringent local pretreatment discharge standard.

Proper maintenance and operation of drycleaning treatment units is essential for compliance with hazardous waste regulations.

The Division suggests that the Districts consider the following when performing compliance inspections at drycleaning facilities:

- 1) Observe the separator wastewater treatment unit in operation;
- 2) When appropriate based on information gathered during the inspection, sample treated separator wastewater for compliance with the requirement to reduce the PERC concentration to below the toxicity characteristic hazardous waste regulatory concentration of 0.7 ppm;
- 3) Examine documentation that demonstrates the treatment unit has been maintained in accordance with the manufacturer's recommendations (i.e. that carbon filters are routinely changed to prevent chemicals from passing through the filter);
- 4) Inspect any air dispersion unit (evaporator, mister, or functionally equivalent unit) to determine if it is operating correctly and verify that PERC is not being land disposed in areas under or near the air dispersion system.

If the Department discovers a discharge with the potential to contaminate groundwater, including any apparent land discharges from an air dispersion system, inspection staff should collect a few preliminary samples for laboratory analysis or require a facility-specific preliminary assessment.

Please call Doug Outlaw at (850) 245-8786 (SUNCOM 205-8786) or Mike Redig at (850) 245-5774 (SUNCOM 245-5774) if you have any questions.

MJY/do

cc Michael Cooke, DARM/DEP
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STATE OF FLORIDA GUIDELINES FOR PROPER MANAGEMENT OF DRYCLEANING SEPARATOR WATER

The separator water waste stream produced by most drycleaning machines consists of water mixed with perchloroethylene (PERC.) A waste that contains PERC at a concentration of 0.7 parts per million (ppm) is regulated as a toxicity characteristic hazardous waste. (One ppm is about the same as one teaspoon of PERC in 1000 gallons of water.) Typically, separator water will contain PERC at a concentration of about 150 ppm. Therefore, drycleaning facilities must manage and dispose of separator water as hazardous waste in accordance with the management guidelines listed below.

PROHIBITION ON DISCHARGE OF PERC-CONTAMINATED WATER TO THE GROUND OR SEPTIC TANKS

Any PERC contact water, including but not limited to separator water, treated separator water, vacuum water (press return water), or floor wash water, may not be discharged to the groundwater (whether by way of a septic system or directly onto the ground). Discharge of PERC-contaminated separator water to the ground, even unintentionally through broken sewer pipes, is a serious violation of environmental protection regulations that may cause the site to become ineligible to participate in the state-funded drycleaner cleanup program.

TREATMENT/DISPOSAL OPTIONS

The drycleaning facility may either:

1. manifest the separator water offsite to a permitted treatment, storage or disposal (TSD) facility in accordance with hazardous waste management requirements of Chapter 62-730, Florida Administrative Code (F.A.C.); OR
2. treat the separator water onsite to remove the hazardous characteristic (that is, reduce the concentration of PERC to less than 0.7 ppm) in accordance with the management practices specified in this memo, and AFTER TREATMENT:
 - disperse the treated separator water into the ambient air via vented evaporation units or misting units. The Department strongly recommends special care in using misters, because experience indicates that separator water systems with a spray mister nozzle are susceptible to improper operation and often result in a direct discharge (stream or trickle) of separator water to the ground rather than dispersion into the air; or
 - discharge the treated separator water to a Publicly Owned Treatment Works (POTW) in accordance with all applicable sewer discharge requirements. (“Publicly owned” means owned by a governmental agency. Sewer discharge requirements are outlined below and include a treatment standard more stringent than 0.7 ppm. However, even if the local sewer system will accept the separator water, drycleaners are encouraged to use other disposal methods. PERC can migrate through the concrete pipes or leak through broken pipes, contaminating the underlying soil and groundwater.)

SEWER DISCHARGE REQUIREMENTS

Most publicly-owned utilities have local discharge standards that regulate what can be discharged to collection systems. The utilities must be notified and/or a permit must be obtained, prior to discharge, to ensure that the wastewater will comply with any local requirements. **A copy of the notification to the POTW and permit, if required, must be maintained onsite.**

If there are no local requirements that are more stringent, then 0.53 ppm is the maximum concentration of PERC that can be discharged to a sewer system. Discharges that exceed that limit are considered a violation of Rule 62-625.400(2)(g), F.A.C.

BEST MANAGEMENT PRACTICES FOR THE TREATMENT OF SEPARATOR WATER ONSITE

Drycleaning facilities may use an onsite system to treat and subsequently disperse or discharge separator water to a sewer system as long as the system meets the following criteria.

- Any treatment system must be able to bring the PERC concentration of the separator wastewater below the hazardous waste toxic characteristic concentration of 0.7 ppm prior to dispersion to the ambient air, or below 0.53 ppm (or the more stringent local requirement) prior to discharge to the sewer system.
- Unless the drycleaner has analytical results on a treated sample to demonstrate the effectiveness of the treatment system, the drycleaner must have documentation from the treatment system manufacturer that demonstrates that under the drycleaner's actual operating conditions the system is capable of reducing separator water PERC concentrations to less than 0.7 ppm for air dispersion or 0.53 ppm (or local requirement) for sewer discharge.
- Carbon filters, located in treatment units, must be changed routinely in accordance with manufacturer specifications. If filters are not changed regularly, waste waters pass through the treatment system untreated and become highly contaminated with PERC.
- **The drycleaning facility must follow the treatment unit operation instructions and maintenance schedule recommended by the manufacturer;** document the maintenance performed including dates of filter changes; and keep the records onsite for a three-year period. (The maintenance records may be retained with the files required under the general air permit). Proper operation of treatment units is essential for compliance with hazardous waste regulations.
- The treatment system and the air dispersion unit (evaporator, mister, or functionally equivalent unit) must remain closed except when adding wastewater. "Closed" means entirely connected with pipes or a comparable enclosed method that will minimize emissions prior to treatment. The air dispersion unit must be vented to the outside ambient air. **Using crock-pots or pans heated over hot plates to evaporate separator water is prohibited.**

- The Department recommends that separator water treatment systems be hard-piped to the drycleaning unit to eliminate unnecessary handling of hazardous waste and reduce the potential for spills. Separator water that is hard-piped through a fully-functioning treatment system that reduces PERC concentrations to below 0.7 ppm is not counted toward the hazardous waste generation status of drycleaning facilities.
- If the drycleaning unit is not hard-piped to the treatment unit, the untreated separator water must be accumulated in a closed container (drum, bucket) and transferred to the treatment unit. The closed container must be labeled with the words “Hazardous Waste,” “Perchloroethylene Separator Wastewater,” or other words that clearly identify the contents as hazardous wastewater. The volume of hazardous wastewater stored in this way must be counted toward the drycleaner’s hazardous waste generator status.
- If the separator water treatment system is not hard-piped directly to the air dispersion unit, the separator water should be accumulated in a closed container and transferred to the air dispersion unit. The closed container should be labeled with the words “Treated Separator Wastewater,” or other words that clearly identify the contents.
- Secondary containment requirements apply to all containers of separator water (including treated separator water) and all components of any separator water treatment system.
- All spent absorption media filters (normally activated carbon) must be disposed of as a hazardous waste unless the filter media is regenerated onsite and reused.

Although not required, a separator water treatment unit works best with

- A solvent/wastewater separation chamber prior to the PERC adsorption filter for additional recovery of PERC (or free solvent) not dissolved in the wastewater.
- A sensor to detect PERC breakthrough following the first carbon filtration unit.

ADDITIONAL CONSIDERATIONS

Facilities using 2100 gallons or less/year (1800 gallons or less/year for facilities with transfer machines) of PERC must be entitled to operate under the Title V Air General Permit Program. Facilities using more than 2100 gallons/year (more than 1800 gallons for facilities with transfer machines) of PERC must be entitled to operate under a major source Title V Air Permit.

Solvent-contaminated wastewater from spotting boards should be managed as separator water. The Department recommends that vacuum water be managed as separator water, unless the vacuum water contains rust. Rusty water consumes the treatment filter and frequently disables the unit. The Department recommends that rusty vacuum water be managed as hazardous waste and manifested offsite to a permitted treatment, storage or disposal facility.

Mop water containing soap/detergent and contaminated with PERC or any other chlorinated solvent should not be processed through a carbon adsorption unit since the unit will not operate

properly if soap/detergent is present. The Department recommends that mop water containing PERC and soap/detergent be managed as hazardous waste and manifested offsite to a permitted treatment, storage or disposal (TSD) facility. Mop water that does not contain PERC may be discharged to the POTW.

No PERC-contaminated waste or materials should be discarded in a solid waste dumpster.