Dry Cleaner Residual Risk Rule Program Implementation

Public Workshop

Regulation 1138 – Subpart M

October 29, 2007

November 5 and 6, 2007

Permit to Operate

- Delaware's Air Quality Regulation 1102 and 30 require Dry Cleaners to obtain an operating permit.
- Permits are the legal document outlining the requirements for monitoring, repairing and recording dry cleaner operations.
- Operating permits were issued to 81 perchloroethylene (PERC) dry cleaning facilities in Delaware

Permit Applicability

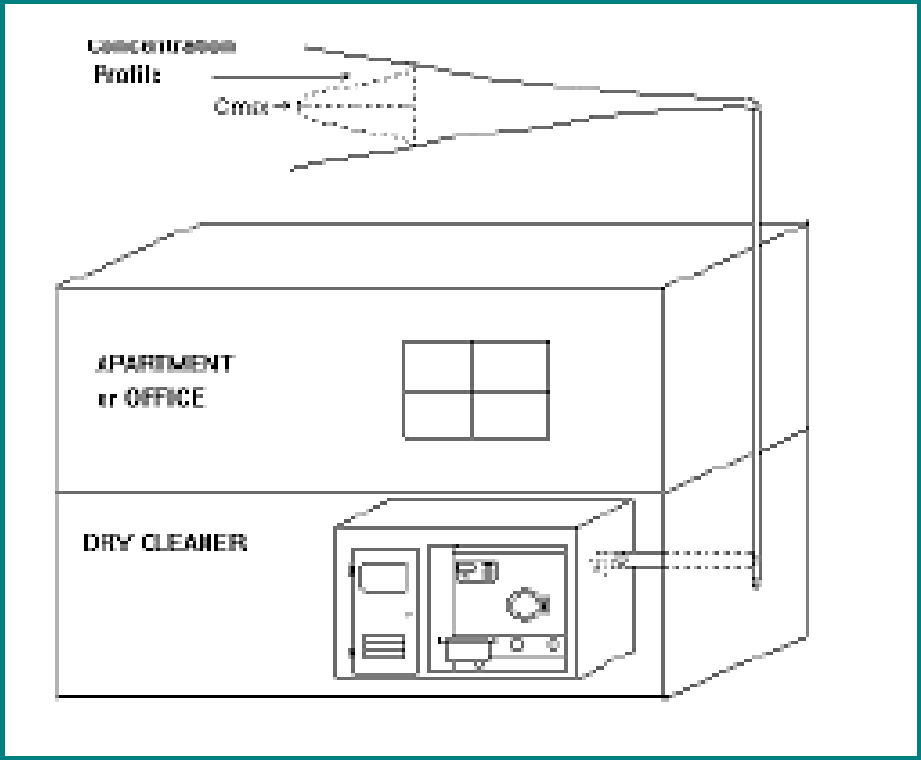
- State regulations require that all equipment and facilities that emit more than 10 pounds of an air contaminant on any day (before controls) must have a permit to operate.

Control Technology

- 2nd Generation
  - Carbon Absorber Only
- 3rd Generation
  - Refrigerated Condenser Only
- 4th Generation
  - Refrigerated Condenser & Secondary Carbon Absorber
- 5th Generation
  - RC/CA with interlock and PERC sensor

Co-located with a residential unit

- Vapor Barrier



- A vapor barrier room restricts diffusion and transport of solvent vapors that escape from a dry cleaning machine; a ventilation fan collects virtually all of these vapors and exhausts them through a stack above the building. The machine is completely inside the room.

Leak Detection - WEEKLY

- System components to inspected weekly for leaks with either a handheld halogenated hydrocarbon detector OR perchloroethylene gas analyzer.
  - Hose and pipe connections, fittings, couplings, and valves;
  - Door gaskets and seatings;
  - Filter gaskets and seatings;
  - Pumps;
  - Solvent tanks and containers;
  - Water separators;
  - Muck cookers;
  - Stills;
  - Exhaust dampers;
  - Diverter valves; and
  - All filter housings.

Leak Detection

- Handheld halogenated hydrocarbon detector

- Perchloroethylene gas analyzer

Comparison of Cost for Perc Concentration Detectors Product List Price

Product	List Price	Product	List Price
TIFXL-1A1	$ 170	TEK-Mate	$ 160
TIFXL-1A1	$ 170	D-TEK	$ 350
TIF 8800 Combustible Gas Detector	$ 210	Aeroqual Monitor Series 200	$ 580
TIF 8800A Combustible Gas Detector	$ 240	Aeroqual Monitor Series 500	$1,200
TIFRX-1A1	$ 240	Micro5 PID	$1,305
TIFRX-1A1	$ 240	Draeger	$1,600
TIFRX-1A1	$ 240	ToxiRAE Plus PID	$2,050
TIF 5750A1	$ 240	MiniRAE 2000 PID	$2,995
TIF 8850 Combustible Gas Detector	$ 250	PhoCheck 1000 PID	$2,745
C-21 Gas Sensor	$ 300		

Monitor & Record - WEEKLY

- Refrigerated Condensers
  - Pressure Gauges
    - (Range specified by manufacturer's instructions)
      - High
      - Low
  - Temperature Gauge (0 < 45° F ±2° F)
    - ONLY if not equipped with pressure gauges
    - Record the difference between the Inlet/Outlet streams of the RC
      - Greater than or equal to 20°F

Monitor & Record - WEEKLY

- 2nd Generation Machines equipped with only a Carbon Absorber
  - Measure and record PERC emitted from carbon absorber exhaust
    - Colorimetric detector tube OR
    - PERC gas analyzer
  - Exhaust is equal to OR less than 100 ppm

Monitor & Record - WEEKLY

- 4th and 5th Generation Machines equipped with both a Refrigerated Condenser AND secondary Carbon Absorber
  - Measure and record PERC in the dry cleaning DRUM at the end of the dry cleaning cycle
    - Colorimetric detector tube OR
    - PERC gas analyzer
  - Equal to OR less than 300 ppm

Dry Cleaner Calendar

POLLUTION PREVENTION, MONITORING AND RECORDKEEPING LOGS

Yearly PERC Consumption Log

Yearly PERC consumption from December 2007	+
PLUS Total PERC purchased in December 2007	+
LESS Total PERC purchased in December 2006	-
Yearly PERC consumption for January 2008	=

PERC Purchases - This Month

Dates	Amount	Total
/		
/		

Refrigerated Condenser (RC) System Temperature Log

Dates	Temp.	Is temp. 45° F (7.2°C) or less?	
/		Y	N
/		Y	N
/		Y	N
/		Y	N
/		Y	N

Refrigerated Condenser (RC) System Pressure Log

Dates	Pressure Reading High	Pressure Reading Low	Are high and low pressures in recommended range?	
/			Y	N
/			Y	N
/			Y	N
/			Y	N
/			Y	N

Manufacturer's Recommended Pressure Ranges

High Pressure Range _____

Low Pressure Range _____

Pollution Prevention Inspection Log

Inspected Dates >>	/		/		/		/		/	
	WERE ANY LEAKS FOUND ?									
Hoses & pipe connections	Y	N	Y	N	Y	N	Y	N	Y	N
Fittings, couplings & valves	Y	N	Y	N	Y	N	Y	N	Y	N
Door gaskets & seatings	Y	N	Y	N	Y	N	Y	N	Y	N
Filter gaskets & seatings	Y	N	Y	N	Y	N	Y	N	Y	N
Pumps	Y	N	Y	N	Y	N	Y	N	Y	N
Solvent containers	Y	N	Y	N	Y	N	Y	N	Y	N
Water separators	Y	N	Y	N	Y	N	Y	N	Y	N
Muck cookers	Y	N	Y	N	Y	N	Y	N	Y	N
Stills	Y	N	Y	N	Y	N	Y	N	Y	N
Exhaust dampers	Y	N	Y	N	Y	N	Y	N	Y	N
Diverter valves	Y	N	Y	N	Y	N	Y	N	Y	N
All filter housings	Y	N	Y	N	Y	N	Y	N	Y	N
Waste containers: Leak free, properly labeled and dated	Y	N	Y	N	Y	N	Y	N	Y	N
Sensory or Electronic Inspection ?	S	E	S	E	S	E	S	E	S	E

Equipment Repair Log

Date Part Ordered	Date Part Received	Date Repair Completed
Part Ordered:		
/	/	/
Part Ordered:		
/	/	/
Part Ordered:		
/	/	/

NOTES:

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4.3 The owner or operator shall measure the temperature of the air-perchloroethylene gas-vapor stream on the outlet side of the refrigerated condenser weekly with a temperature sensor to determine if it is equal to or less than 45°F (7.2°C). The temperature sensor shall be used according to the manufacturer's instructions and shall be designed to measure a temperature of 45°F (7.2°C) to an accuracy of ±2°F (±1.1°C).

5. Record Keeping Requirements

5.1 The owner or operator shall maintain all records necessary for determining compliance with this permit onsite for five (5) years and shall make these records available to the Department upon written or verbal request.

5.2 The following information shall be recorded and maintained in a log as specified below or in the DNREC Air Quality Management Section, Engineering & Compliance Branch Dry Cleaning Compliance Calendar:

5.2.1 The volume of perchloroethylene purchased each month by the dry cleaning facility as recorded from the perchloroethylene purchases; if no perchloroethylene is purchased during a given month then the owner or operator shall enter zero (0) gallons into the log;

5.2.2 The calculations and result of the yearly perchloroethylene consumption determined on the first day of each month as specified in Condition 4.2;

5.2.3 The dates when the dry cleaning system comp[Full Screen / Close Full Screen]nspected for perceptible leaks as specified in Condition 3.1.8;

5.2.4 If any leaks are discovered pursuant to Condition 3.1.8, the name and location of dry cleaning system components where perceptible leaks are detected;

July 2008

DNREC Dry Cleaning Compliance Calendar

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1 Record Results - Calculate PERC Consumption	**2** Record Results - P2 Inspection Log - RC System Log - CA Exhaust Log - Drum Log	**3**	**4**	**5**
6	**7**	**8**	**9** Record Results - P2 Inspection Log - RC System Log - CA Exhaust Log - Drum Log	**10**	**11**	**12**
13	**14**	**15**	**16** Record Results - P2 Inspection Log - RC System Log - CA Exhaust Log - Drum Log	**17**	**18**	**19**
20	**21**	**22**	**23** Record Results - P2 Inspection Log - RC System Log - CA Exhaust Log - Drum Log	**24**	**25**	**26**
27	**28**	**29**	**30** Record Results - P2 Inspection Log - RC System Log - CA Exhaust Log - Drum Log	**31**		

Carbon Adsorber Exhaust Log

Dates	Reading p.p.m.	Is reading 100 p.p.m. or less?
/		Y N
/		Y N
/		Y N
/		Y N
/		Y N

Machine Drum Log

Dates	Reading p.p.m.	Is reading 300 p.p.m. or less?
/		Y N
/		Y N
/		Y N
/		Y N
/		Y N

Compliance Notification

- Submit by July 28, 2008 or within 30 days of startup, whichever is later
  - Notification of Compliance Status
    - Name/address owner/operator
    - Address of dry cleaning facility
    - Located in a building with a residence
    - Located in a building with other tenants
    - Refrigeration system has High/Low pressure gauges
    - Date dry cleaning equipment installed
    - Description of vapor barrier room system
    - Annual PERC consumption
    - Statement of compliance/accurate/true

Revised Permits

- Updated permits reflecting the rule changes will be sent to each dry cleaning facility holding a current operating permit upon receipt of the compliance notification.