



Year 2011
Air Quality Division

ANNUAL AIR EMISSIONS INVENTORY QUESTIONNAIRE

Dry Cleaning Equipment

The 2011 Dry Cleaning Annual Emissions Inventory Questionnaire includes 4 forms that are required to be completed and submitted to the Air Quality Division. Instructions for each form are included below. Upon completion, submit all forms along with the signature by the Responsible Official of the facility within 90 days of receipt of a letter from the Department to the address below.

FORM 1: Facility General Information

Complete all fields as requested.

FORM 2: Equipment, & Process Data

- Table 1: List equipment, source category, gallons of PERC purchased, ATO # and the emission control device if any.
- Table 2: List the total monthly PERC purchased and the amount consumed.

FORM 3: Emissions Data **Input all calculation results in the appropriate spaces provided in the form.**

Input the total PERC used for the year 2011. To calculate PERC emissions, take the total gallons, multiply by emission factor, and divide by 2000.
Based on the type of fuel used (Gasoline, Diesel, or Natural Gas/Liquid Propane), choose the appropriate table to input the boiler heat input rate (MM Btu/hr) and the total hours operated during the calendar year 2011. To calculate the emission for the boiler, you take the heat input rate multiply by total hours, multiply by pollutant emission factor, and divide by 2000. A sample of the boiler calculations are provided on Form 2.

FORM 4: Summary & Certification

A summarization of all the emissions by each pollutant will be listed within this form. All reports submitted to the Department should be certified true and accurate by the Responsible Official of the facility. This person is the owner or operator of the facility. **If there is a change of the Responsible Official of the facility, please notify the Department with an additional letter stating the change.**

If you have any question or have difficulty completing this form, please contact Darlene Celaya at (602) 771-7662. Remember to make photocopies of the completed questionnaire prior to mailing for your records/reference. Please mail the emission inventory questionnaire form to the following address:

**Arizona Department of Environmental Quality
Attention: Darlene Celaya, Emission Inventory Team
Air Quality Division, Compliance Section 3415A-3
1110 West Washington Street
Phoenix, AZ 85007**

SECTION I: Plant Identification & Mailing Information

Company Name: _____

Place Name: _____ Place ID # : _____

Mailing Address: _____ City: _____ State: _____

County: _____ Zip Code: _____

Phone: _____ Fax: _____

Permit # or LTF #: _____ General Permit: Yes No

SECTION II: Emissions Inventory Contact

Name: _____ Title: _____

Phone: _____ Fax: _____

E-mail Address: _____

SECTION III: Confidential Request

Pursuant to Arizona Revised Statutes §49-432 and §49-201, do you claim the Emissions Inventory data submittal confidential. Yes No

If yes include which portions of the inventory are confidential along with a brief explanation:

FORM 2: EQUIPMENT & PROCESS DATA

YEAR 2011

Table 1: Equipment & Process Data

Equipment (check all equipment on-site)	<input type="checkbox"/> Only Dry-toDry <input type="checkbox"/> Only Transfer <input type="checkbox"/> Combination <input type="checkbox"/> Boiler
Source Category (check one)	<input type="checkbox"/> Small Area Source <input type="checkbox"/> Large Area Source
Gallons of Perchloroethylene purchased in 2010	
ATO#	
Emission Control Device (check one)	<input type="checkbox"/> Refrigerated Condenser <input type="checkbox"/> Carbon Absorber <input type="checkbox"/> None

Table 2: Yearly Perchloroethylene Purchase & Consumed

	Month	Perchloroethylene Purchased (Gallons)	Perchloroethylene Consumed (Gallons)
Perchloroethylene purchase & consumed for the year 2011	January		
	February		
	March		
	April		
	May		
	June		
	July		
	August		
	September		
	October		
	November		
	December		
	Totals		

Sample Calculation: Emissions = Maximum Heat Input Rate (MM Btu per hr) x Hours of Operation (hrs) x Emission Factor (pounds per MM Btu per hr)
 2000 pounds per ton

For a Boiler with a maximum heat input rate of 20MM Btu per and using Natural Gas fuel and operated for 1500 hours during the year 2011, the emissions of Nitrogen Oxides (Nox) will be as follows:

$$\text{Emissions} = \frac{20 \text{ MM Btu per hr} \times 1500 \text{ hours} \times 0.0952 \text{ pounds per MM Btu per hr}}{2000 \text{ pounds per ton}} = 1.428 \text{ tons per year}$$

FORM 3: EMISSIONS CALCULATIONS

YEAR 2011

Dry Cleaning Process

Pollutants	(1) Total PERC. Consumed gallons/year	(2) Emission Factor pounds/gallon	Emissions = (1)x(2)/2000 tons/year
PERC		13.5	

Conversion Factors - MM = 1,000,000 M = 1,000 1 Therm = 100,000 BTUs. 1 MMBTU = 1,000,000 BTUs. 1HP-hr = 2546.15 BTUs

Boiler	FUEL - NATURAL GAS		FUEL - DIESEL		FUEL - BUTANE		FUEL - PROPANE	
	Max. Rated Capacity (MMBtu- hr) (1)	Operational Hours (hours/year) (2)	Max. Rated Capacity (MMBtu-hr) (1)	Operational Hours (hours/year) (2)	Max. Rated Capacity (MMBtu-hr) (1)	Operational Hours (hours/year) (2)	Max. Rated Capacity (MMBtu-hr) (1)	Operational Hours (hours/year) (2)
Pollutants	Emission Factor (3) pounds/MMBtu	Emissions = (1)x(2)x(3)/2000 tons/year	Emission Factor (3) pounds/MMBtu	Emissions = (1)x(2)x(3)/2000 tons/year	Emission Factor (3) pounds/MMBtu	Emissions = (1)x(2)x(3)/2000 tons/year	Emission Factor (3) pounds/MMBtu	Emissions = (1)x(2)x(3)/2000 tons/year
NOx	0.0980		0.1460		0.2059		0.2077	
CO	0.0824		0.0365		0.0353		0.0350	
PM10	0.0075		1.56E-06		0.0059		0.0066	
PM	0.0075		0.0240		0.0059		0.0066	
SOx	0.0006		0.8290		-	-	-	-
VOCs	0.0054		0.0025		0.0041		0.0033	
HAPs	1.33E-02		1.51E-02		0.0020		0.0022	

FORM 4: SUMMARY & CERTIFICATION**YEAR 2011**

All the emissions for each pollutant are totalled and entered in the table below.

Pollutant	Tonnage (tons per year)
Particulate Matter (PM)	
Particulate Matter Less Than 10 Microns (PM10)	
Nitrogen Oxides (NOx)	
Sulfur Oxides (SOx)	
Volatile Organic Compounds (VOC)	
Carbon Monoxide (CO)	
Perchloroethylene (PERC)	
Hazard Air Pollutants - excluding PERC (HAPs)	

Certification of Truth & Accuracy

I certify that based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. All information not identified by me as confidential in nature shall be treated by the Arizona Department of Environmental Quality as public record.

Signature of Responsible Official:

Date:

Print Name:

Title: