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Process Guidance Note 6/46 (11)

Statutory Guidance for Dry Cleaning

Revised March 2011

Department of the Environment
www.doeni.gov.uk

Llywodraeth Cynulliad Cymru
Welsh Assembly Government

The Scottish Government

defra
Department for Environment Food and Rural Affairs

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Revision of the Guidance

The electronic version of this publication is updated from time to time with new or amended guidance. The table below is an index to the latest changes (minor amendments are generally not listed).

Date of amendment	Section/paragraph where amendment can be found	Nature of amendment - what paragraphs have been inserted, deleted or amended - what subject matter is covered by amendment
09 March 2011	Table 1 Table 2	Tables altered to identify the change of waste solvent content.
09 March 2011	Appendix 3	Additional text added to enhance calculation sheet.

Contents

1. Introduction

Legal basis

1.1 This note applies to the whole of the UK. It is issued by the Secretary of State, the Welsh Assembly Government, the Scottish Government and the Department of the Environment in Northern Ireland to give guidance on the conditions appropriate for the control of emissions into the air from the dry cleaning sector. It is published only in electronic form and can be found on the Defra website. It supersedes PG6/46 (04) and NIPG6/46 in Northern Ireland.

1.2 This guidance document is compliant with the Code of Practice on Guidance on Regulation page 6 of which contains the "golden rules of good guidance". If you feel this guidance breaches the code, or notice any inaccuracies within the guidance, please contact us.

1.3 This is one of a series of statutory notes[1] giving guidance on the Best Available Techniques (BAT).[2] The notes are all aimed at providing a strong framework for consistent and transparent regulation of installations regulated under the statutory Local Air Pollution Prevention and Control (LAPPC) regime in England and Wales, Scotland and Northern Ireland. The note will be treated as one of the material considerations when determining any appeals against a decision made under this legislation.

1.4 In general terms, what is BAT for one installation in a sector is likely to be BAT for a comparable installation; but in each case it is, in practice, for regulators (subject to appeal) to decide what is BAT for each individual installation, taking into account variable factors such as the configuration, size and other individual characteristics of the installation, as well as the locality (eg proximity to particularly sensitive receptors).

1.5 The note also, where appropriate, gives details of any mandatory requirements affecting air emissions which are in force at the time of publication, such as those contained in Regulations or in Directions from the Government. In the case of this note, at the time of publication the mandatory requirements are those contained in the EU Solvent Emissions Directive. The Regulations referenced in paragraph 1.3 put the Directive requirements into UK law.

1.6 Most dry cleaning plant will have essentially the same characteristics and is expected that the outline application form and permit in Appendices 1 and 2 will normally be used in order to simplify for businesses the process of applying for a permit and to

[1] this and other notes in the series are issued as statutory guidance in England and Wales under regulation 64(2) of the Environmental Permitting Regulations. The notes are also issued as statutory guidance in Northern Ireland and guidance in Scotland.

[2] further guidance on the meaning of BAT can be found for England and Wales, Scotland, and Northern Ireland by following the links.

simplify for regulators the process of issuing a permit. The outline permit compromises conditions 1- 25 which are likely to be needed in all cases, and then additional conditions 26 -35 to cater for three additional circumstances:

- New and substantially changed installations (although substantial changes are likely to be rare)
- Cases where dry cleaning solvents are stored on-site in tanks (bulk storage)
- The very unlikely event that a dry cleaner uses substances or preparations containing or comprising risk phrases R45, R46, R49, R60 or R61[3]. Dry cleaner suppliers should be able to advise if this is the case.

Who is the guidance for?

1.7 This guidance is for:

- **Regulators**
  - local authorities in England and Wales, who must have regard to the guidance when determining applications for permits and reviewing extant permits
  - the Scottish Environment Protection Agency, (SEPA), in Scotland, and local authorities or the Northern Ireland Environment Agency, (NIEA), in Northern Ireland.
- **Operators**, who are best advised also to have regard to it when making applications and in the subsequent operation of their installation
- **Members of the public**, who may be interested to know what the Government considers, in accordance with the legislation, amounts to appropriate conditions for controlling air emissions for the generality of installations in this particular industry sector.

Updating the guidance

1.8 The guidance is based on the state of knowledge and understanding, at the time of writing, of what constitutes BAT for this sector. The note may be amended from time to time to keep up with developments in BAT, including improvements in techniques, changes to the economic parameters, and new understanding of environmental impacts and risks. The updated version will replace the previous version on the Defra website and will include an index to the amendments.

1.9 Reasonable steps will be taken to ensure that those who need to know about changes to the guidance are informed of any published revisions. However, because there can be rapid changes to

[3] Risk phrases classifications in SED will be replaced in June 2015 by “hazard statements”. From December 2010 to June 2015 both classifications apply. (See section 6).

matters referred to in the guidance – for example to legislation – it should not be assumed that the most recent version of this Note reflects the very latest legal requirements; these requirements apply.

Consultation

1.10 This note has been produced in consultation with relevant trade bodies, representatives of regulators including members of the Industrial Pollution Liaison Committee, and other potentially-interested organisations.

Policy and procedures

1.11 General guidance explaining LAPPC and setting out the policy and procedures is contained in separate documents for England and Wales, Scotland and Northern Ireland.

EU Solvent Emissions Directive (SED)

1.12 The SED is primarily concerned with emissions to air, but contains implied controls on discharges to water and land. This Note delivers the latter objective via the inherent controls of the solvent management plan that restricts losses via water and land, Specific controls on these discharges are delivered by other legislation that is not considered further in this Note.

In order to reduce VOC emissions from installations covered by this Note, the compliance objective being used is detailed in Section 4.

The SED gives limited discretion to Member States to adopt different measures if the Directive requirements are demonstrated not to be technically and economically feasible. Any such alternative measures would need to be clearly justified and approved by the regulator. The operator must demonstrate to the satisfaction of the regulator that the best available technique is being used and that there are no significant risks to human health or the environment. Before the derogation is permitted for SED activities, the regulator must notify Defra and give full justification of each case where SED requirements are not applied.

This note includes SED boxes. These are provided to specifically detail the requirements of the Directive for this particular sector. Where they apply, these are mandatory.

2 Timetable for compliance and reviews

Existing activities

2.1 This Note contains all the provisions from previous editions which have not been amended or removed. For installations in operation at the date this Note is published, the regulator should have already issued or varied the permit having regard to the previous editions. If they have not done so, this should now be done.

2.2 There are only two changes since the 2004 edition of this note which are likely to require existing permits to need varying. They both relate to the calculation of the solvent content of the still bottoms (see paragraph 4.2 on page 14). There is a new factor of 0.35 for ecological filter rake out, and the factor for plumbed pump-out systems has been reduced from 0.6 to 0.5. In both cases, variations should be made as soon as reasonably practicable.

New activities

2.3 **For new activities**, the permit should have regard to the full standards of this guidance from the first day of operation.

Substantially changed activities

2.4 **For substantially changed activities**, the permit should normally have regard to the full standards of this guidance with respect to the parts of the process that have been substantially changed and any part of the activity affected by the change, from the first day of operation.

Permit Reviews

2.5 Under LAPPC the legislation requires permits to be reviewed periodically but does not specify a frequency. It is considered for this sector that a frequency of once every eight years ought normally to be sufficient for the purposes of the legislation. Further guidance on permit reviews is contained the relevant Guidance Manual for England and Wales, Scotland and Northern Ireland. Regulators should use any opportunities to determine the variations to permits necessitated by paragraph 2.2 above in conjunction with these reviews. Conditions should also be reviewed where complaint is attributable to the operation of the process and is, in the opinion of the regulator, justified.

3 Activity description

Regulations

3.1 This Note applies to LAPPC installations at which dry cleaning operations[4] are carried out. This category of installation is listed in Schedule 1 [Part B[5], Section 7] of the Regulations referred to in paragraph 1.3 of this Note.

Activity

3.2 This note refers to any dry cleaning using organic solvents in particular: perchloroethylene (PER), hydrocarbon solvent (HCS) and siloxane. The use of carbon dioxide in dry cleaning is not covered by this note.

In the rest of this section only “process” should be understood to describe the various stages involved in the dry cleaning operations. It does not necessarily have the same meaning as elsewhere in this note.

3.3 In the context of this note the activity comprises the whole process from receipt of raw materials, via processing, to dispatch of finished products, including the treating, handling and storage of all materials and wastes relating to the process.

3.4 The vast majority of machines within the UK are PER machines, although both HCS and siloxane machines are used in some installations. HCS machines use flammable solvents. As such they have specific controls and interlocks placed on them to prevent possible ignition of the solvent. The majority of the PER machines operating within the UK are the refrigerated closed circuit type, though the closed circuit carbon adsorption type are becoming more common. A small number of open circuit machines may still be in operation in existing installations. However, this type of machine will not comply with the 31 October 2007 compliance requirements. When a machine is changed, or substantially upgraded, the operator should notify the regulator of this change,

3.5 Products to be dry cleaned are received at the installation; ticketed, checked for foreign objects (coins etc.), and loose items (buttons), then sorted by colour (lights and darks) and material (woollen blankets, suits etc.). Sorting is with the intention of producing the optimum load weight to minimise solvent consumption. Components of the load should have similar drying times. Unfortunately operators offering a quick turn round service may achieve this by cleaning part loads. As the solvent consumption per load is fairly constant this will lead to higher solvent consumption per kg cleaned, with possible non compliance.

[4] The few mobile dry cleaning plants present in the UK are not subject to regulation as the SED definition of “installation” just covers stationary technical units.
[5] Where this document refers to Part B processes, In Northern Ireland this is a reference to the equivalent Part C processes.

3.6 Before or after sorting of the products for cleaning, stains which may require additional assistance for removal are treated with spot cleaning solutions. Most of these solutions are supplied by specialist suppliers to the industry and the amount of organic solvent is usually very low. Where dry cleaning installations still make up their own spot cleaning or soap solutions containing dry cleaning solvent the use of such solutions should be discouraged as not only is the VOC contained within them released to environment, but the use may not be recorded and storage conditions are normally inadequate.

3.7 Before loading into the machine the load must be weighed, (in kilograms), to optimise the loading of the machine and to ensure that the machine is not over loaded. Overloading and under loading of the machine will increase solvent consumption.

3.8 Most modern machines have set programmes for different types of cleaning cycles. Cleaning materials using the appropriate programme will reduce the solvent consumption.

3.9 The materials to be cleaned are taken to the machine and the door of the machine is then opened and the materials loaded in. Care is required to ensure that door seal is not damaged in anyway during the loading operation. The door of the machine is then closed and not opened again until the machine cycle has finished.

3.10 Once the cleaning and drying cycle is completed the materials are removed from the machine. A very strong solvent odour associated with the load indicates that the solvent recovery process may not have been optimised. This may be due to a number of reasons: poor loading of the machine (over loading or inadequate sorting of materials to be cleaned); use of the wrong programme for the particular load, leading to poor solvent recovery as a result of insufficient drying time, poor maintenance, or a possible fault within the machine.

3.11 During the drying cycle of the machine, water which was present in the garments cleaned and within the atmosphere of the dry cleaning machine is condensed out within the water separator. This water is likely to contain small quantities of the dry cleaning solvent. Secondary treatment of this water is normally required, after which careful disposal of the final water stream will be needed. In some cases approval for this disposal will require agreement from the local sewage undertaker.

3.12 Dirt from clothes cleaned has to be removed from the dry cleaning solvent. This is done by draining the dirty solvent from the wash drum to a still, where distillation takes place, the solvent is then condensed and returned to the clean solvent tank. The clean solvent is used to rinse the clothes being cleaned and this solvent is passed through a filter before returning to the clean solvent tank. Two types of filter are in use, being a powder filter or an “ecological” filter. The latter spins to remove the dirt, (and associated solvent), from the filter surface.

3.13 In both cases the material removed from the filters is also sent to the still for solvent recovery. After a number of distillation operations the build up of residues in the still must be removed. On powder systems this is done by distilling to near dryness the contents of the still. Once cooled the residues are then raked out. Residues from “ecological” filters may either be pumped out, via an integral pump on the machine, or, as with powder systems, raked out manually. On pumpable systems the residue is distilled until the remaining product can just be pumped, the residues then being transferred into a sealed holding container. Whichever method is used the residues, with any remaining solvent, are removed by a licensed waste contractor.

Daily, weekly and other checks

3.14 Manufacturers of machines supply operating and maintenance manuals for their machines in order to optimise the machine performance. Good practice and common requirements in these manufacturers’ manuals are checks daily, weekly and at other intervals in the areas listed below. (The following describes typical checks found in machine manufacturers’ manuals).

Daily leak tests from areas such as:

- cage door gasket
- button trap lid
- air duct inspection hatch
- filter seals
- lint filter
- main bearing seal
- vapour line
- fan housing inspection hatch
- heating coil battery
- solvent valves
- recovery head
- cooling coil battery
- still doors
- solvent tank sight glasses
- solvent pipe flanges

Vapour leaks are best detected during the early stages of the drying cycle.

Weekly checks of common components:

- all drying and still temperature control settings
- draining line on the drum
- for by-passing of the lint filter, which may lead to blocking of the drying circuit

- button trap is functioning correctly and debris cannot pass the trap.

Common parts on machines which may need replacement or cleaning include:

- door seals: wipe clean all door seals daily and replace annually
- button trap (manual): clean sieve twice daily and after lint loads
- lint filter (manual): clean twice daily
- water separator: drain and clean every two weeks; drain excess water daily
- solvent pump: check for leaks after repair or maintenance
- filters: drain spent cartridges in the machine overnight; check for leaks after replacement
- still: empty at least once per week, or at manufacturers recommended time interval
- recovery condensers: clean accessible condenser fins on air cooled refrigeration systems on a six/twelve monthly basis.

Self service machines

3.15 Only PER self service machines are found in the UK. Un-manned coin operated machines are unlikely to comply with the requirements of the Directive.

Self service machines will only comply if all of the below are in place in addition to all the other relevant provisions of this note:

- the manufacture of the machine can guarantee that under all load conditions the compliance requirements of this note will be met;
- the machine has some method of measuring the weight of the garments etc, loaded into the machine;
- a method of measuring the PER concentration in the cage at the end of each cleaning cycle
- a continuous method of detecting leakage of solvent whilst the machine is unattended is provided.

3.16 The SED requires that dry cleaning installations are operated in such a manner that no more than 20 grams of solvent per kilogram of product cleaned and dried shall be emitted as measured on an annual basis. The 20 grams includes all organic solvents used within the installation e.g. dry cleaning solvent and spot cleaning solutions. The regulator will be required to check compliance with this directive requirement using the return submitted by the operator to demonstrate compliance. Other information may be used by the regulator to audit the returns from the operator for example:

- Turnover of the installation;
- Customer/ticket counts;
- Solvent purchased reconciliation

- Cycle counts

Figure 3.1: Potential VOC release points from a typical dry cleaning machine

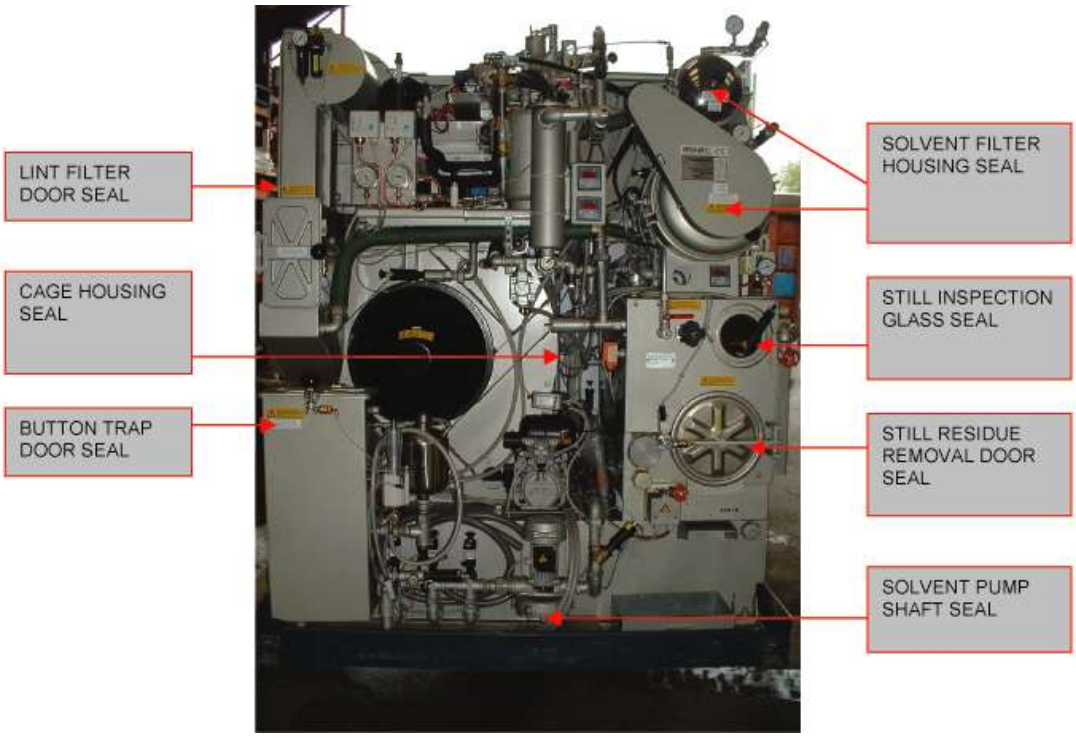
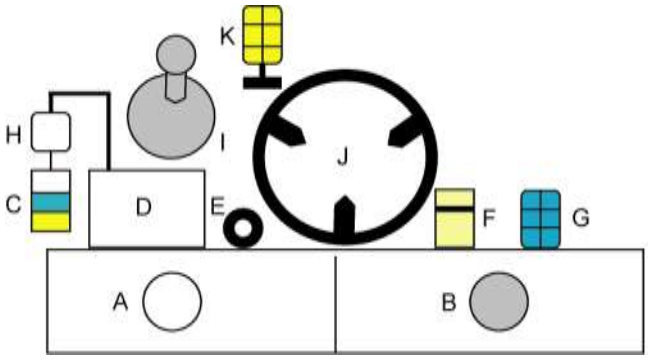
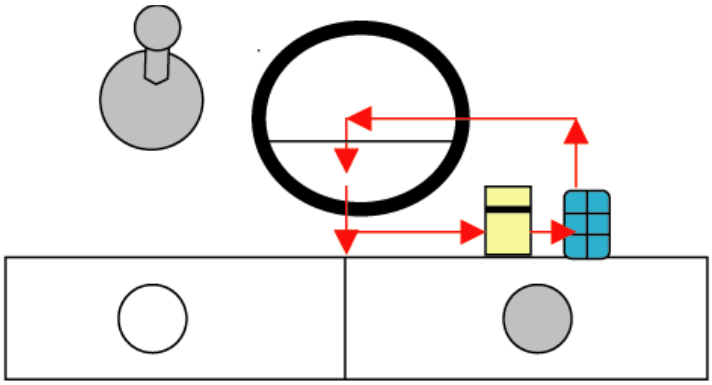


Figure 3.2: Schematic of a typical dry cleaning machine



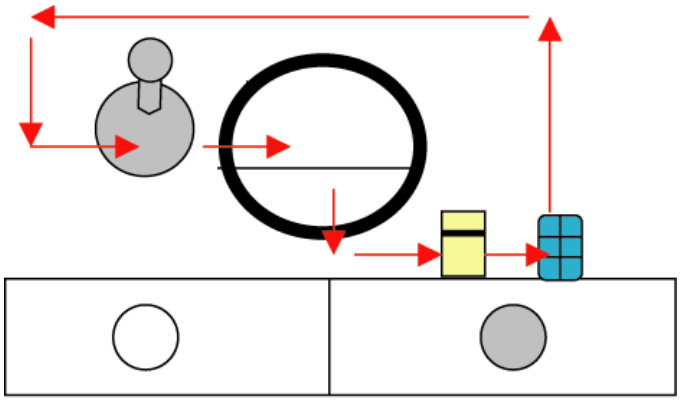
A.	Distilled Tank
B.	Working Tank
C.	Separator
D.	Distillation Unit (Still)
E.	Motor
F.	Button Trap
G.	Pump
H.	Condenser
I.	Filter
J.	Cage (Illustrates Lifter)
K.	Fan

Figure 3.3: By pass wash for typical dry cleaning operation



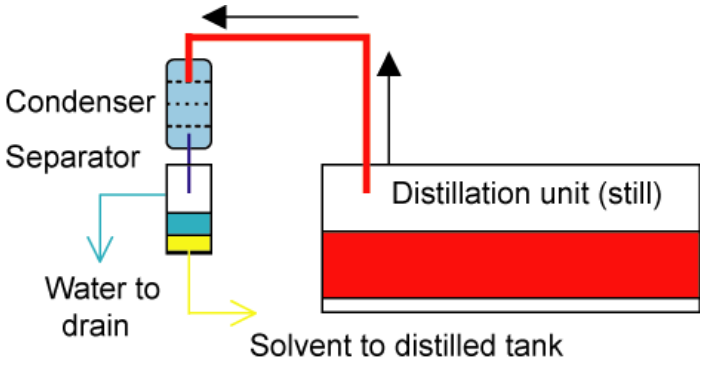
The By pass wash.
Solvent is pumped into the cage from either tank, once the correct level is reached; the solvent is circulated between the cage, button trap, and pump.

Figure 3.4: Filter Wash for typical dry cleaning operation



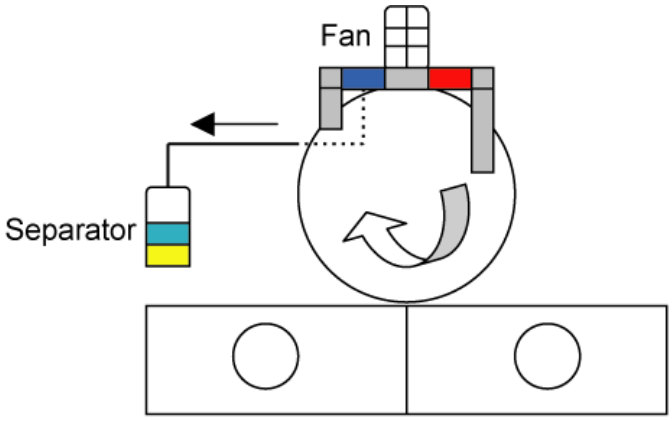
The Filter wash.
Solvent is pumped into the cage from either tank, once the correct level is reached; the solvent is circulated between the cage, button trap, pump and filter.

Figure 3.5: Distillation cycle for a typical dry cleaning operation



The Distillation Cycle.
Contaminated solvent is pumped to the still.
The solvent is heated to it's boiling point;
the vapour is cooled in the condenser and
passed on as solvent and water to the separator.
The lighter water goes to drain the heavier
solvent flows back to the clean tank.

Figure 3.6: Drying cycle for a typical dry cleaning operation



The Drying Cycle;
Air is driven by the fan through the heating battery
The hot air is then circulated around the cage
absorbing the solvent in the garments. The air is then
sucked into the cooling battery and condensed
back into a liquid.
The solvent and water then flow back into the separator.

4 Emission limits, monitoring and other Provisions

4.1 Emissions of substances listed in SED Box 1 below should be controlled.

SED Box 1 - VOC emissions

Total Emission Limit	Equivalent to	Monitoring
20 grams of solvent released per kilogram of product cleaned and dried per installation	**For PER** - 80 kilograms of product cleaned and dried per litre emitted	Monitoring of solvent input Monitoring of solvent losses Monitoring of mass of garments, etc, cleaned By weekly recording and annual mass balance to demonstrate compliance
	For Hydrocarbons - 48.5 kilograms of product cleaned and dried per litre emitted	
	For Siloxane - 48.5 kilograms of product cleaned and dried per litre emitted	

Compliance with Total Emission Limit Value

4.2 To determine compliance with the requirements of SED Box 1 above requires records to be kept of the following:-

The weight of each load of clothes cleaned. This should be recorded on a weekly basis in kilograms.
Solvent added to the machine.

Figure 4.1 shows the solvent mass balance across a typical dry cleaning machine. For compliance purposes the important material streams are solvent input (I1), and solvent remaining in collected waste, (O8). Solvent losses in the separated water (O5) are negligible and can be ignored. Allowance must be made for the spot cleaning solvents used (O4) as these are lost to atmosphere as fugitive emissions. O4 is calculated on an annual basis only.

I1 is determined by recording the amount of solvent used during the reporting period to top up the machine solvent storage tanks.

Where a mixture of solvents are used, (including PER), then the amount of each individual solvent used will be required.

Solvent sent for recovery (O8) that is contained in the residue from the solvent distillation still is recorded on a monthly basis. However, this material stream may be stored for many months and an allowance may have to be made if waste collection is made just before or just after the annual accounting date.

Example sheets that could be used for recording the above information are in Appendix 3 of this Note.

For a new, or re-installed machine, additional solvent may be used if the solvent tank is filled following installation. This solvent can normally be ignored for mass balance purposes as it is presumed it remains within the machine throughout it's operating life. However it will be good practice to check the monthly level of solvent in the base tanks and, when refilling, to top up to a known level or mark. Only if the machine fails to comply with the required emission limits should a check be made to ensure excess solvent has not been lost/removed from the storage tanks.

Solvent content of residues

4.3 The solvent content of the still bottoms is determined by the nature of the filtration and distillation processes within the machine. *(See section 3 for a description of these operations).*

For older machines with a powder filter, the used powder is dropped to the solvent recovery still where the majority of the solvent is recovered. The remaining residue is emptied from the still by removing a plate on the back of the machine and "raking" the residue out. This is stored in a drum until full when it is taken away by a licensed waste contractor.

More modern machines use an "ecological" filter without a solid filter medium and therefore the still residue may be removed either by pumping it out via a plumbed system to the residue container, or raked out as described previously. Different solvent contents are assumed for the three circumstances, being:-

0.15 for powder filter rake out,
0.35 for ecological filter rake out[6], and
0.5 for plumbed pump out systems.

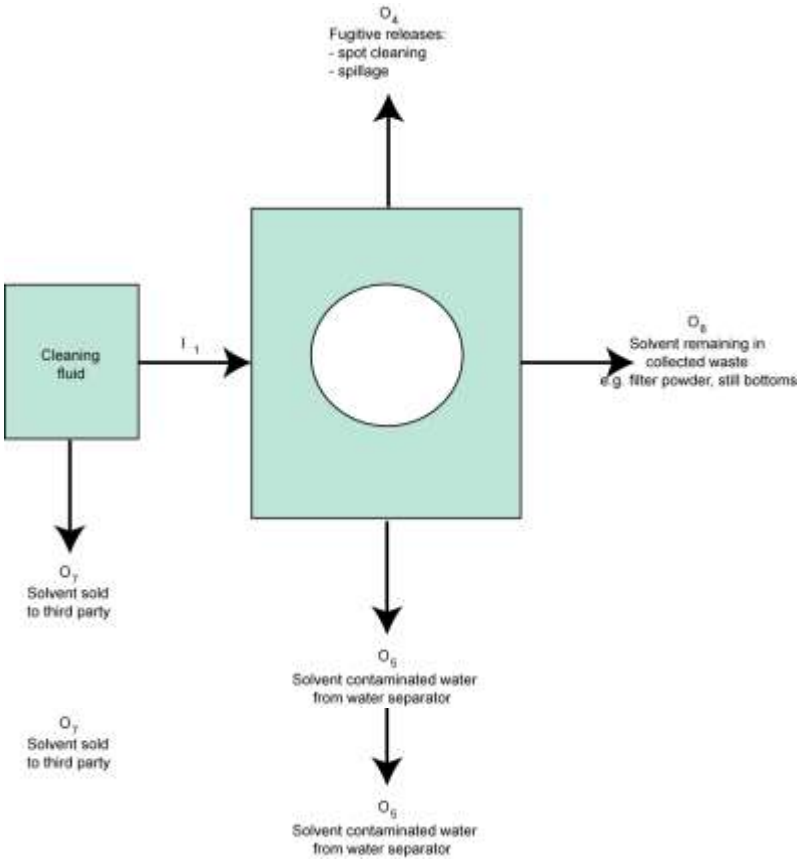
Calculation of compliance

4.4 The compliance performance of the machine is calculated from the total weight of clothes cleaned during the year and the solvent usage, including that used for spot cleaning. For compliance when the weight of products cleaned and dried in kilograms is divided by

[6] This factor should also be used for a) residues from decolourant filter cartridges where the solvent is only recovered by draining the unit to the still and b) residues from those machines, normally using siloxane, where the solvent is only filtered to remove solids, with no distillation taking place.

the annual solvent use the result should be equal to or greater than the figures for the appropriate solvent(s) in column 2 of SED Box1.

Figure 4.1: Solvent Management Plan Inputs and Outputs



5 Summary of changes

5.1 The main changes to this Note, with the reasons for the change, are summarised below in Table 1. Minor changes that will not impact on the permit conditions, eg slight alterations to the Process Description, have not been recorded.

Table 1: Summary of Changes

Section / Paragraph / Row	Change	Reason	Comment
Emission limits, monitoring and other provisions			
4.3	Higher waste solvent content allowance reduced to 0.5%. New 0.35% waste solvent content allowance for ecological filter machines	The old allowances of 0.15% for rake-out and 0.6% for pump out did not fully reflect the % content and range of wastes produced.	Permits should be varied as necessary for allowances to take effect as soon as reasonably practicable
Control techniques			

6 Further information

Definitions – SED activities

Definitions used by the Solvent Emissions Directive can be found in Annex 2 of the Core Guidance to the Environmental Permitting Regulations. (See link below).

http://www.defra.gov.uk/environment/epp/documents/sed-guidance.pdf

A change that can be considered as a “Substantial change” is discussed/defined in the relevant Guidance Manual for England and Wales, Scotland and Northern Ireland.

Health and safety

Operators of processes and installations must protect people at work as well as the environment:

- requirements of a permit or authorisation should not put at risk the health, safety or welfare of people at work
- equally, the permit or authorisation must not contain conditions whose only purpose is to secure the health of people at work. That is the job of the health and safety enforcing authorities

Where emission limits quoted in this guidance conflict with health and safety limits, the tighter limit should prevail because:

- emission limits under the Environment Protection Act 1990 or Pollution Prevention and Control Act 1999 relate to the concentration of pollutant released into the air from prescribed activities
- exposure limits under health and safety legislation relate to the concentration of pollutant in the air breathed by workers
- these limits may differ since they are set according to different criteria. It will normally be quite appropriate to have different standards for the same pollutant, but in some cases they may be in conflict (for example, where air discharged from a process is breathed by workers). In such cases, the tighter limit should be applied to prevent a relaxation of control.

Training

The following organisations can offer training on PPC and dry cleaning.

The Guild of Cleaners and Launderers offer a competence-based certificate on "Handling Dry Cleaning Solvents Safely" following a 75-minute exam. Its aim is to qualify dry cleaners and regulators in the requirements of SED, but also includes understanding and

optimisation of the dry cleaning operation. (Tel 0161 483 4655 www.gcl.org.uk)

EHRC (Environmental Health Resource Centre Ltd) are providers of bespoke small group and one-to-one training sessions for regulators involved in permitting and regulating dry cleaners, including theory and practice at a dry cleaner of your choice (www.ehrc.org.uk or telephone Fay Rushby on 07802 349 581)

Martin Cranfield Associates can provide courses around the country on inspecting dry cleaning installations. The course has been designed in association with **Parrisianne Ltd**, who are approved trainers to the Guild of Cleaners and Launderers. www.cranfieldassociates.co.uk/

SATRA, based in Kettering, runs a Solvent Emissions Directive practical 1 day course for regulators and cleaners. Their premises include working dry cleaning equipment. (Tel 01536 410000 www.satra.co.uk)

(It should be noted that **SLEAT**, (Society of Laundry Engineers and Allied Trades), has issued a Code of Practice that indicates when a machine has been designed to meet the SED standards. This should be made available by the operator to the regulator if requested).

References –

a. Defra – General Guidance Manual on Policy and Procedures for A2 and B Installations.
b. Defra – Environmental Permitting Guidance – The Solvent Emissions Directive
c. Envirowise publications
   - GG87 Solvent Consumption in Dry- Cleaning
   - ETBPP GG28: Good Housekeeping Measures for Solvents

Table 2 Classification of hazardous materials.

			SED only catches halogenated VOC with the phrases/statements in this column
Risk Phrases	**class 1 'known to'**	**class 2 'treat as'**	**class 3 'cause concern'**
Hazard statements **categories** **They are NOT exact equivalents to risk phrase classes**	category 1a **known** from human evidence	category 1b **presumed** from animal evidence	category 2 **suspected** human carcinogens
	H340, H350, H350i, H360D or H360F		H341 H351
Carcinogens	R45 may cause cancer H350 May cause cancer	R45 may cause cancer H350 May cause cancer	R40 Limited evidence of a carcinogenic effect H351 Suspected of causing cancer
Mutagens	R46 May cause heritable genetic damage H340 May cause genetic defects	R46 May cause heritable genetic damage H340 May cause genetic defects	**new to SED** R68 possible risk of irreversible effects H341 Suspected of causing genetic defects
Carcinogen by inhalation	R49 may cause cancer by inhalation H350i may cause cancer by inhalation	R49 may cause cancer by inhalation H350i may cause cancer by inhalation	(Covered by R40 and H351 above)
Toxic to reproduction,	R60 may impair fertility - and R61 may cause harm to the unborn child H360D or H360F May damage fertility or the unborn child	R60 may impair fertility - and R61 may cause harm to the unborn child H360D or H360F May damage fertility or the unborn child	**Outside SED** - R62 and R63 for the suspected R phrases say possible risk to.

Appendix 1: Outline Application Form

Local Authority Pollution Prevention and Control

Pollution Prevention and Control Act 1999
The Environment (Northern Ireland) Order 2002
The Pollution Prevention and Control Regulations (Northern Ireland) 2003
Environmental Permitting (England and Wales) Regulations 2010

When to use this form
Use this form if you are applying for a permit to a regulator to operate a dry cleaning installation as defined in the appropriate legislation of the UK region in which the installation is sited.

The appropriate fee must be enclosed with the application to enable it to be processed further. When complete send the form and fee and any additional information to:

Insert local authority address

A1.1. Name of the premises
……

A1.2. Please give the address of the premises
……
……
……
Postcode .....Telephone.....

Ordnance Survey national grid reference 8 characters,
(for example, SJ 123 456.....there are a number of internet mapping sites which will convert a Post Code to a grid references).

A1.3. Do you have an existing permit for a dry cleaning installation?.....

A2.1. The Applicant - Please provide the full name of company or corporate body or the name of the sole trader or the names of the partners
……
Trading/business name (if different)
……
Registered Office address
……
……
……
Postcode .....Telephone.....

A2.2. Holding Companies

Is the operator a subsidiary of a holding company within the meaning of Section 1159 of the Companies Act 2006?
No?

Yes? Name of ultimate holding company.....
Ultimate holding company Registered office address
……
……
……
Postcode .....Telephone.....

B. About the installation

B1.2. A plan of the premises must be attached showing the location of:
(a) the premises
(b) where the dry cleaning machine(s) will be installed
(c) where the dry cleaning solvents will be stored
(d) where the dry cleaning residue will be stored
(e) any drains within the installation and in the immediate area of the installation which may be affected as a result of any potential Volatile Organic Compound (VOC) release from the dry cleaning operations

B1.3. A description of the location and methods of storage of:
(a) dry cleaning solvents
(b) dry cleaning residue
must be supplied.

B1.4. Make, model name and number, serial number, load capacity, date of installation and type of dry cleaning solvent used, plus method of removal of residue from the machine.

B1.5. Provide details, including a schedule, of checking and maintenance procedures for each machine. This should include the machine manufacturers' recommended operating procedures, checking and maintenance requirements and any other additional procedures undertaken by the operator. (This should be submitted in a form of a list of the activities carried out and their frequencies, for additional guidance see Section 3, paragraph 3.14)

B1.6. Provide details of any other activities carried out within the dry cleaning installation which involve the use of organic solvents in particular spot clean solutions, water-proofing solutions and any other solvents or solvent borne preparations

B1.7. Provide details on the training and relevant qualifications regarding operating and maintaining the dry cleaning machine in accordance with this guidance.

B1.8. Specify how the product will be weighed and recorded weekly and annually, including details of scales.

B1.9. Provide details how the mass or volume of solvent used will be determined and recorded weekly and annually (due to the low use, spot cleaning solvents need only be determined annually).

C1. Fees and Charges
For details of how to calculate the application fee please consult the appropriate charging scheme via the Defra web site, (England & Wales), the SEPA web site, (Scotland) or the DOENI web site, (Northern Ireland). Your application cannot be processed unless the application fee is correct and enclosed.

C1.1. Please state the amount enclosed as an application fee for this installation.
£.....
Cheques should be made payable to:

We will confirm receipt of this fee when we write to you acknowledging your application.

C1.2. Please give any company purchase order number or other reference you wish to be used in relation to this fee.

C2. Annual charges

If we grant you a permit, you will be required to pay an annual subsistence charge.
If you don't pay, your permit can be revoked and you will not be able to operate your installation.

C2.1. Please provide details of the address you wish invoices to be sent to and details of someone we may contact about fees and charges.
……
……
……
Postcode.....Telephone.....

C3. Commercial confidentiality

C3.1. Is there any information in the application that you wish to justify being kept from the public register on the grounds of commercial confidentiality?
If Yes, please provide full justification, considering the definition of commercial confidentiality within the Regulations (See the appropriate general guidance manual).

C4. Data Protection
The information you give will be used by the regulator to process your application. It will be placed on the relevant public register and used to monitor compliance with the permit conditions. We may also use and/or disclose any of the
information you give us in order to:
• consult with the public, public bodies and other organisations,
• carry out statistical analysis, research and development on environmental issues,
• provide public register information to enquirers,
• investigate possible breaches of environmental law and take any resulting action,
• prevent breaches of environmental law,
• assess customer service satisfaction and improve our service.

We may pass on the information to agents/ representatives who we ask to do any of these things on our behalf.
It is an offence under the relevant regulations, for the purpose of obtaining a permit (for yourself or anyone else) to:
• make a false statement which you know to be false or misleading in a material particular,
• recklessly make a statement which is false or misleading in a material particular.

If you make a false statement we may prosecute you, and if you are convicted, you are liable to a fine or imprisonment (or both).

C5. Declaration

C5.1. Signature of current applicant(s)*
I / We certify that the information in this application is correct. I / We apply for a permit in respect of the particulars described in this application (including supporting documentation) I / We have supplied.

Please note that each individual applicant must sign the declaration themselves, even if an agent is acting on their behalf.

For the application from:
Premises
name:.....
Signature:
.....
Name:.....

Position:.....

Date:.....
Signature:
.....
Name:.....

Position:.....

Date:.....
* Where more than one person is defined as the applicant, all should sign. Where a company or other body corporate - an authorised person should sign and provide evidence of authority from the board of the company or body corporate.

Appendix 2: Outline Permit

ANY PLACE DISTRICT COUNCIL

Pollution Prevention and Control Act 1999
The Environment (Northern Ireland) Order 2002
The Pollution Prevention and Control (Northern Ireland) 2003
Environmental Permitting (England and Wales) Regulations 2010

Permit ref. no.

Installation Details (i) Name and address of operation: + (if appropriate) registered number and office of company.

(ii) Address of permitted installation: [outlined on attached plan; + include location of dry cleaning machine(s), storage for dry cleaning solvents, residues and drains -see condition].

The above named company is permitted to operate a dry cleaning installation containing the dry cleaning machine(s) [insert details from application],

subject to compliance with the following conditions:

Residual BAT condition

The best available techniques shall be used to prevent, or where that is not practicable, reduce emissions from the installation in relation to any aspect of the operation of the activity which is not specifically regulated by any condition of this permit.

Permit Conditions

(1) Operations must be carried out in such a manner that no more than 20 grams of solvent per kilogram of product cleaned and dried shall be emitted as measured and reported annually. The 20 grams includes all organic solvents used within the installation e.g. dry cleaning solvent, water-proofing solutions and spot cleaning solutions.

(2) A weekly inventory of solvent usage, product cleaned and solvent waste sent for recovery or disposal shall be maintained and held on site for inspection by the regulator for at least 12 months. Further, the operator should retain records of solvent purchased for at least 12 months.
– Note: The solvent management balance sheet for dry cleaning installations in Appendix 3 can be used to demonstrate compliance with conditions (1) and (2) (above).

(3) On a date stipulated by the local authority regulator a copy of the following shall be sent to the Council at the frequency given below:

Information to be sent to the Council	Frequency at which information should be sent
(i) the monthly inventory sheets for the previous quarter **or** (ii) with the written agreement of the Council**	Once a quarter Once a year
the record of regular maintenance during the previous 12 months, referred to in condition 3, once a year on [date]	Once a year
a list of staff nominated and trained, in accordance with conditions (5) and (6)	Once a year

** it is expected that local authorities will specify quarterly submission of data initially unless they are satisfied from the inventory data already received that condition (1) is being consistently met and, having regard to operator competence, that it is likely to be met in future. Where quarterly submission is initially required, the operator may at any time ask the authority to agree an annual submission. Agreement by the regulator should be notified in writing, such a request being judged on the same criteria.

(4) The operator, (or a suitably qualified engineer), shall implement the schedule of procedures, checks and maintenance requirements to each dry cleaning machine as listed in B1.5 of the permit application dated [date].

(5) The regulator shall be advised in writing 14 days prior to any proposed significant alteration to the operation, or modification of the installation which may have an effect on emissions of VOC from the installation, in particular changes to the matters listed in condition (4).

(6) All operating staff shall know where the operating manual for each dry cleaning machine can be found and have ready access to it.

(7) All operating staff shall be trained in the operation of each dry cleaning machine and the control and use of dry cleaning solvents. The training received shall be recorded.

(8) The machine shall be installed and operated in accordance with supplier recommendations, so as to minimise the release of VOC to air, land and water.

(9) In the case of abnormal emissions, malfunction or breakdown leading to abnormal emissions the operator shall:
– investigate immediately and undertake corrective action; adjust the activity to minimise those emissions; and
– adjust the activity to minimise those emissions; and
– promptly record the events and actions taken.
– In this condition abnormal emission will include any detectable solvent smell other than in the area of the dry cleaning machine.

(10) In cases of non-compliance causing immediate danger to human health, operation of the activity shall be suspended; and the regulator informed within 24 hours.

(11) Dry cleaning machines shall be operated as full as the type of materials to be cleaned will allow. (e.g. Full loads for light non delicates materials such as suits. Delicates and heavy materials, such as, wedding dresses and blankets may need to be cleaned in part loads).

(12) Where cleaning solvents containing VOC are not received in bulk they shall be stored:
– in the containers they were supplied in with the lid securely fastened at all times other than when in use; and
– within spillage collectors, of suitable size, made of impervious and corrosion-proof materials; and
– away from sources of heat and bright light; and
- with access restricted to only appropriately trained staff, and
- the lids of the containers shall only be removed when the container is next to the cleaning machine ready for filling. Cleaning solvents shall be obtained in containers of a size which allows the entire container to be emptied into the machine at each topping up. Once emptied the lid of the container shall be replaced securely.

(Note: from a health and safety point of view: a well ventilated area should be used).

(13) Spot cleaning with organic solvents or organic solvent borne preparations shall only be carried out if no other method of treating a particular stain on the material to be cleaned is available.

(14) The dry cleaning machine loading door shall be kept closed when not in use.
(Note - Where an extract fan is fitted to maintain a negative pressure within the machine during unloading, the exhaust from this fan should be directed to a carbon adsorption filter prior to discharge to atmosphere).

(15) The dry cleaning machine loading door shall be closed before the start-up of the machine, and kept closed at all times through the drying and cleaning cycle.
– All machines installed after 19 May 2005 shall have interlocks to prevent start-up of the machine until the loading door is closed and to prevent opening of the loading door until the machine cycle has finished and the cage has stopped rotating.
– All machines installed after 19 May 2005 shall have interlocks to automatically shut down the machine under any of the following conditions: cooling water shortage, failure of the cooling ability of the still condenser, failure of the cooling ability of the refrigeration system or failure in the machine heating system resulting in the inability to dry the load.

(16) The still, button trap and lint filter doors shall be closed before the start-up of the machine and kept closed at all times through the drying and cleaning cycle.
– All machines installed after 19 May 2005 shall have interlocks to automatically shut down the machine if the still, button trap and lint filter doors are not properly closed.

(17) The still shall have a thermostatic control device or equivalent with which to set a maximum temperature, in accordance with manufacturers' recommendations for the solvent used. (In those cases where several machines are supplied by a steam supply, where the operator can demonstrate that the maximum temperature can be controlled via the steam pressure controller, then this should be accepted by the local authority).

(18) All new, and substantially refurbished machines, shall have a spillage tray with a volume greater than 110% of the volume of the largest single tank within the machine[7].

(19) All machines installed after 19 May 2005 shall have a secondary water separator to minimise potential solvent losses. Where this is not an integral part of the machine then the operator should select and install a method that will achieve an equivalent degree of separation. [Where this is followed by a an activated carbon unit then the operator will need to demonstrate adequate procedures are in place to detect when the unit requires disposal via an acceptable route].

(20) Prior to disposal, containers contaminated with solvent shall be stored with the lids securely fastened to minimise emissions from residues during storage prior to disposal, and labelled so that all that handle them are aware of their contents.
Note - Empty containers should, where possible, be returned to the supplier.

(21) Solvent contaminated waste, for example still residues, shall be stored:
– in suitable sealed containers with the lid securely fastened at all times other than when in use; and
– on a suitable impervious floor[8]; and
– away from any drains which may become contaminated with residues as a result of spillage,
– away from sources of heat and bright light; and
– with access restricted to only appropriately trained staff.
– Note: from a health and safety point of view: a well ventilated area should be used.

(22) Equipment to clean up spillages shall be quickly accessible in all solvent handling and storage areas.

(23) The operator shall maintain records incorporating details of all maintenance, testing, repair work carried out on each dry cleaning machine and the scales used to weigh the loads, along with details of training required under condition 6. The records shall be available within 7 days upon request by the regulator

[7] This does not remove the need to comply with Health & Safety recommendations relating to the fitting of spill trays to existing machines.
[8] A concrete floor, (if necessary coated with flooring paint), is seen as sufficient to demonstrate compliance with this requirement

(24) Spares and consumables in particular, those subject to continual wear shall be held on site, or should be available at short notice from guaranteed suppliers, so that plant breakdowns can be rectified rapidly.

New and Substantially Changed Installations Using PER Only

The following requirements only apply to new or substantially changed installations using PER.

(25) Where a continuous PER monitoring device has been fitted for Health and Safety reasons it shall be maintained and calibrated in accordance with the manufacturers recommendations. As a high reading on the monitor indicates leaks and other malfunctions which have lead to the release of PER then this will also indicate potential non compliance with the environmental requirements of this permit. (An alternative is to use an hand held device to detect leaks, as this can be used in close proximity to the machine to detect minor leaks that would not be detected by a remote monitor).

Bulk Storage of Dry Cleaning Solvents

The following requirements only apply where bulk storage of dry cleaning solvents is carried out.

(26) Where delivery vehicles are equipped with back-vent facilities, bulk storage tanks for dry cleaning solvents shall be back-vented to the delivery tank during filling.

(27) When connecting hoses prior to delivery, the vapour return hose shall be connected before any delivery hose. The vapour return hose shall be connected at the road tanker end first, and then at the storage tank end.

(28) Bulk storage tanks for solvent storage shall be light coloured to reduce potential breathing losses from storage tanks and located away from potential source of heat [where practicable bulk storage tanks should be located outside].

(29) Delivery connections to bulk storage tanks shall be located within a bunded area, fixed, clearly labelled and locked when not in use.

(30) Bulk storage tanks shall be fitted with a reliable means of measuring their contents. { For example a dial gauge; dipsticks are not recommended as they act as potential source of release; if they are used a screw cap must be fitted to
prevent release of solvent when not in use.}
– All bulk storage installed after 19 May 2005 shall be fitted with high-level (visual and audible alarms or volume indicators to warn of overfilling.

(31) Prior to receipt of a bulk delivery of cleaning solvent the receiving tank shall be checked to ensure that it has sufficient capacity.

(32) Bunding and containment of bulk tanks shall:
– completely surround the bulk liquid storage tanks; and
– be impervious and resistant to the liquids in storage; and
– be capable of holding 110% of the capacity of the largest storage tank.

(33) Emissions from the filling and topping up of the dry cleaning machine from bulk storage shall be minimised, by the use of closed transfer systems between the bulk storage tank and the machine.

(34) Where solvent is hard piped from bulk storage tanks to machines, appropriate measures shall be in place to prevent storage tanks from draining into machines for example: prevention of gravity flow, or syphoning of solvent from the storage tank into the dry cleaning machine.

(35) A competent person shall remain near the tanker and keep a constant watch on hoses and connections during unloading.

Appendix 3: Solvent and Product Cleaned Inventory

Weekly Inventory Sheet: All installations

Premises name:			Machine name or reference number:			Solvent Used			Week start date or week number				
Load Number		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**Daily total weight (kg)**	**Solvent added (litres)**
Monday	**Weight (kg)**														
Tuesday	**Weight (kg)**														
Wednesday	**Weight (kg)**														
Thursday	**Weight (kg)**														
Friday	**Weight (kg)**														
Saturday	**Weight (kg)**														
Sunday	**Weight (kg)**														

Make a note of the reason why any under-weight load was cleaned:
B = Blankets D = Delicates L = Lights O = Other W = Wedding dress

Total for week:		

Maintenance or testing required this week	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Still maintenance							
Lint filter checked & cleaned							
Button trap checked & cleaned							
Notes:							

List your planned preventative maintenance in the 'maintenance or testing required this week' boxes. Record what you have done for each maintenance item with a tick. Make notes about Solvent tank levels, other maintenance, servicing or solvent leaks / spills in the space above.

Signed:	

Note – where the weight of clothes added is recorded in units other than kilograms, then all other measurements must be made using units that are compatible with the unit used for the weight of clothes.

Monthly Inventory Sheet: All installations

Site: _____ **Solvent:** _____

Machine: _____ **Month and Year:** _____

Week starting (date)

Weight of work processed (kg)

					Monthly Total (A)

Solvent added (litres)

					Monthly Total (B)

Solvent sent for disposal

	Monthly Total
Total waste drum volume (litres)	**(C)**
Still cleaning correction factor : **0.15 for powder filter rake-out, or** **0.35 for ecological filter rake out, or** **0.5 for pump out**	**(D)**

Compliance this month

Table A:

Weight cleaned (kg) (A)	**Solvent added (litres) (B)**	**Solvent disposed (litres) (C x D = E)**	**Net solvent use (litres) (B – E = F)**	**Consumption (kg/litres) (A ÷ F = G)**	**On target? ** (Yes / No)**

** The monthly result should only be used to provide a guide as to the performance of the machine. Solvent input and waste recovered will vary each month, affecting the Consumption (G).

Where:

Perchloroethylene is used, if G >80 kg/l = on target

Siloxane is used, if G >48.5 kg/l = on target

Hydrocarbons are used, if G >48.5 kg/l = on target

Notes:

Annual Inventory Sheet: All installations

Site: _____ Year: _____

Machine: _____ Solvent: _____

Monthly Compliance
(complete "Table 1" with results from "Table A" from monthly inventory sheet)
Table 1:

Month	Weight cleaned (kg)	Solvent added (litres)	Solvent disposed (litres)	Net solvent use (litres)	Consumption (kg/litres)
Total	**(A)**	**(B)**	**(C)**	(**D**)	

Annual Compliance

Spot cleaning correction factor (litres)* **(E)**	
Corrected solvent input (litres) **(D + E = F)**	

Solvent efficiency (kgs/litre) **(A ÷ F = G)**	
Specific Gravity of Solvent being used : **(H)** **Perchloroethylene : 1600g/l** **Siloxane : 970 g/l** **HCS : 970 g/l**	
Solvent emission (g/kg) **(H ÷ G = I)**	

Have you met the requirement of the regulations? (Is "I" >20g/kg ?)	

* **Spot Cleaning Correction Factor -** A figure of 6.25 litres per annum should be used as the spot cleaning factor, whichever solvent is used for cleaning purposes.