Sample Toxics Use Reduction Plan

(Dry Cleaner Name)

Date
Sample Toxics Use Reduction Plan for Dry Cleaners

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Note – this sample TUR plan is intended for use by Massachusetts dry cleaners required to conduct planning activities geared toward reducing their use of the toxic chemical perchloroethylene. All required elements of a TUR plan are covered in this Sample Plan. Suggestions for activities and considerations associated with a good faith exploration of TUR opportunities are provided, but are not intended to be exhaustive. Cleaners are encouraged to be creative in their TUR planning activities.
Facility-Wide Information

Statement of Management Policy

Sample Management Policy

______________________________________________________________

(Dry Cleaner Facility Name)

_______________________________ (Dry Cleaner Facility Name) is committed to reducing the use of toxic chemicals in our processes. In support of this commitment, our facility plans to:

- Conduct continual research and improvement of dry cleaning operations with an eye towards toxic chemical use reduction, worker safety, and energy efficiency.
- Involve both employees and facility management in toxics use reduction (TUR) research and modifications to the extent practical.
- Implement, monitor, and maintain technically feasible and cost effective TUR options.

Through this commitment, _____________________________ (Dry Cleaner Facility Name) will continue to produce quality products that we can take pride in and add value for our customers while striving for a healthier and safer workplace, community, and environment.

_______________________________

(Signature of facility Owner/Management)
Employee Notification

Check all that apply:

☐ ☐ We gave notice to employees of the pending TURA plan by January 1, 2012. (The plan is due July 1, 2012.)

The method(s) included:

☐ ☐ Posted a notice on the facility bulletin board.

☐ ☐ Included notice in employee pay stubs.

☐ ☐ Discussed the planning process at staff meeting(s).

☐ ☐ Offered incentives for good ideas.

☐ ☐ Other: ____________________________________

☐ ☐ Other: ____________________________________
Scope of Plan

___________________________________________________________________ (Dry Cleaner Facility Name)
___________________________________________________________________ (Address Location)

This location of _____________________________________________________________________ (Dry Cleaner Facility Name) cleans garments using the following technologies in the percentages noted here:

<table>
<thead>
<tr>
<th>Solvent</th>
<th>% of Garments Cleaned Using this Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perc</td>
<td></td>
</tr>
<tr>
<td>Other (please identify)</td>
<td></td>
</tr>
</tbody>
</table>

PRODUCTION UNIT #1:

Production Unit(s) Description:

Production Unit Processes: The processes associated with Production Unit #1 include dry cleaning, shirt laundering and garment pretreatment.

Toxics chemical used: Perchloroethylene, or perc, CAS # 127-18-4, which is used at the facility to clean garments in dry cleaning equipment. Perc is also used in spotting agents as identified above for particularly difficult garment stains.

Unit of Product used for this Production Unit:

Perc use, Production Unit #1:

<table>
<thead>
<tr>
<th>Equipment or Materials</th>
<th>Amount or % of perc</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
The processes we used for identifying TUR options for this Production Unit include *(check all that apply)*:

- Brainstorming with workers
- Conformance with ERP Best Practices described in the “Dry Cleaners Environmental Certification Workbook” to assure operations and maintenance practices are met
- Discussion with peers and attendance at pertinent process demonstrations at their garment cleaning facilities
- Direct contact with our vendors and manufacturers of equipment and alternative materials
- Review of trade literature and research, including TURI’s *Assessment of Alternatives to Perchloroethylene for the Professional Garment Care Industry*, 2011
- Periodic outreach to the Massachusetts Office of Technical Assistance (OTA) to identify specific new opportunities not previously considered.

- Other __________________________________________________________________________
- Other __________________________________________________________________________

The checklist included in Attachment D – TUR Opportunity Matrix is used to assist us in monitoring our TUR options identification process.

Based on our TUR options identification activities during this planning cycle, _____________ (dry cleaner name) has identified the following TUR Options for implementation:

- Purchased ______________________new equipment using ___________________ solvent.
- Changed pre-spotting and other treatment products to products that do not contain perc.
- Modified percentages of garments cleaned in various machines
- Implemented additional operational and maintenance control on existing equipment (see Attachment D)

- Other __________________________________________________________________________
- Other __________________________________________________________________________

**REPEAT THIS SECTION FOR ADDITIONAL PRODUCTION UNITS**
**Predicted Reductions**

In 2011, _______________ (pounds of perc) were used at this facility. All perc was then generated as byproduct – in hazardous waste, fugitive air emissions, and residual amounts on the cleaned clothes.

Our two-year projection for 2012 is that the use of perc will be reduced by _____________%

This is the equivalent of reducing the use of perc by ____________ (pounds of perc).

As all perc is generated as a byproduct in the cleaning process, the generation of perc byproducts (waste, air, residuals on clothes) is the same as the amount of perc used.

During the next several years, __________________________ (Dry Cleaner Facility Name) will work towards implementing additional toxics use reduction measures. Research will continue so as to learn about additional TUR options applicable to perc usage at the facility.

At this point, our five-year projection for 2016 is that the use of perc will be reduced by ____________ %.
Production Unit Information

Production Unit #1: Perc Dry Cleaning. The following process flow diagram illustrates the movement of perc throughout this production unit.

(Add additional Process Flow Diagrams if more than one Production Unit is used)
Purpose of Chemical: Perc is used at the facility to clean garments in dry cleaning equipment. Perc is also used in spotting agents as identified previously for particularly difficult garment stains.

Unit of Product: ____________________________

Use of Perc and Generation of By-Product and Emissions:

For the year 2011, the following is the amount per unit of product of perc used at the facility and its fate.

Calculation Worksheet for Per Unit of Product Values

<table>
<thead>
<tr>
<th>Unit of product (lb cleaned in 2011)</th>
<th>Perc used per unit of product</th>
<th>Perc generated as byproduct per unit of product</th>
<th>Perc released or transferred off-site per unit of product</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Summary of Byproduct and Emissions Reporting (for reference)

<table>
<thead>
<tr>
<th>Row ID</th>
<th>Byproducts and Emissions</th>
<th>Calculation Elements</th>
<th>Form R and/or Form S Report Location</th>
<th>Value for Reporting Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Total Perc usage for the year</td>
<td>Beginning inventory + Purchased amount – End inventory</td>
<td>Form S, Sec. 1e</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Treated on site</td>
<td>We do not treat any perc waste on site</td>
<td>Form S, Sec. 8.6</td>
<td>0</td>
</tr>
<tr>
<td>C</td>
<td>Treated off-site</td>
<td>= amount in waste sludge + amount in spent filters + amount spilled + separator wastewater (typically this wastestream is incinerated)</td>
<td>Form R, Sec. 6.2 Form S, Sec. 8.1c</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td></td>
<td>= amount in separator wastewater sent to municipal POTW (i.e., not included in hazardous waste amount)</td>
<td>Form R, Sec 6.1A</td>
<td>0</td>
</tr>
<tr>
<td>E</td>
<td>Total Treated Off-Site</td>
<td>= C + D</td>
<td>Form S, Sec. 8.7</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>Recycled On-Site</td>
<td>(other than integral recycling within our machines, we do not recycle perc waste on site)</td>
<td>Form S, Sec. 8.4</td>
<td>0</td>
</tr>
<tr>
<td>Row ID</td>
<td>Byproducts and Emissions</td>
<td>Calculation Elements</td>
<td>Form R and/or Form S Report Location</td>
<td>Value for Reporting Year</td>
</tr>
<tr>
<td>--------</td>
<td>--------------------------</td>
<td>----------------------</td>
<td>--------------------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>G</td>
<td>Recycled Off-Site</td>
<td>Unless your hazardous waste treatment facility recycles perc waste, assume this is zero</td>
<td>Form S, Sec. 8.5</td>
<td>0</td>
</tr>
<tr>
<td>H</td>
<td>Disposed On-Site</td>
<td>No on site disposal occurs</td>
<td>Form R, Sec. 5.4 and Sec. 5.5</td>
<td>0</td>
</tr>
<tr>
<td>I</td>
<td>Disposed Off-Site</td>
<td>No off site disposal occurs</td>
<td>Form S, Sec. 8.1c</td>
<td>0</td>
</tr>
<tr>
<td>J</td>
<td>Total Byproduct Released</td>
<td>E + K</td>
<td>Form S, Sec. 8.7</td>
<td></td>
</tr>
<tr>
<td>K</td>
<td>Emissions released to the environment on-site (= fugitive air emissions)</td>
<td>A - E</td>
<td>Form R, Sec. 5.1</td>
<td></td>
</tr>
<tr>
<td>L</td>
<td>Air emissions (stack or point source)</td>
<td>We do not have point source emissions</td>
<td>Form R, Sec. 5.2</td>
<td>0</td>
</tr>
<tr>
<td>M</td>
<td>Total on-site releases</td>
<td>K</td>
<td>Form R, Sec. 5.1</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>Total Emissions</td>
<td>total used (A)</td>
<td>Form S, Sec 1f</td>
<td></td>
</tr>
</tbody>
</table>

**Identification of Potential TUR Techniques**

The following people comprise the facility TUR Team, which conducted the planning activities associated with identifying feasible alternatives to perc:

- ____________________________________________________________
- ____________________________________________________________
- ____________________________________________________________
- ____________________________________________________________
- ____________________________________________________________
- ____________________________________________________________
- ____________________________________________________________
- ____________________________________________________________
- ____________________________________________________________
The following sources were used by the TUR Team to help in identifying TUR Techniques that are options for this facility:

- 
- 
- 
- 
- 
- 

The following technologies, procedures, and programs were identified as potentially achieving TUR at the facility:

- 
- 
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The following alternative solvents/cleaning systems were considered for implementation at the facility:

- 
- 
- 
- 
- 
- 
- 
- 
- 

### Technical Evaluation: TUR Options Matrix

<table>
<thead>
<tr>
<th>TUR Technique</th>
<th>Description</th>
<th>Resources Used</th>
<th>Feasible? (yes/no)</th>
<th>Explanation</th>
<th>Estimate of Perc Use Reduction</th>
<th>Estimated Costs/Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improved Operations and Maintenance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In-Process Recycling and Reuse</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Process Modification or Redesign</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Process modernization</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input Substitution (Perc alternatives)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Product Reformulation</td>
<td></td>
<td></td>
<td>No</td>
<td>Not Applicable</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total** (to go in the “Predicted Reductions Section”) % $
# Financial Evaluation

Supply information only for those financial aspects relevant for comparison.

<table>
<thead>
<tr>
<th>Cost Item</th>
<th>Perc</th>
<th>Alternative #1</th>
<th>Alternative #2</th>
<th>Alternative #3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material Purchase (solvent, detergent, spotting agents, etc.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Equipment Purchase</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filters</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disposal</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity Use</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural Gas Use</td>
<td></td>
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<tr>
<td>Oil Use</td>
<td></td>
<td></td>
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<tr>
<td>Water Use</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Machine Maintenance</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Labor</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regulatory Costs (time and fees)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Health &amp; Safety Issues</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insurance Issues</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Other, if relevant for comparison</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Summary & Schedule of Implementation

______________________________(Dry Cleaner Facility Name) has chosen the following TUR measures for this facility:

<table>
<thead>
<tr>
<th>TUR Option</th>
<th>Schedule of Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

TUR Options Requiring Further Evaluation: We are interested in the following additional technologies and/or processes and/or modifications:

• ____________________________________________________________________
• ____________________________________________________________________
• ____________________________________________________________________
• ____________________________________________________________________

TUR Options Rejected As Inappropriate: The following toxics use reduction options do not work for our facility:

• ____________________________________________________________________
• ____________________________________________________________________
• ____________________________________________________________________
• ____________________________________________________________________
Plan Certification

**TUR Planner Certification**

Based on my independent professional judgment as a toxics use reduction planner, I certify under penalty of law that the following is true:

(a) I have examined and am familiar with this toxics use reduction plan;
(b) the plan satisfies the requirements of 310 CMR 50.40; and
(c) the plan demonstrates a good faith and reasonable effort to identify and evaluate toxics use reduction options.

Toxics Use Reduction Planner: ______________________________
Signature: _______________________ Date:________________

**Senior Management Official Certification**

I certify under penalty of law that the following is true:

(a) I have personally examined and am familiar with this toxics use reduction plan;
(b) I am satisfied that any supporting documentation used in the development of the plan exists and is consistent with the plan;
(c) Based on my inquiry of those individuals immediately responsible for the development of this plan, I believe that the information in the plan and any supporting documentation used in the development of the plan is true, accurate, and complete;
(d) The plan, to the best of my knowledge and belief, meets the requirements of 310 CMR 50.40;
(e) I am aware that there are penalties for submitting false information, including possible fines and imprisonment.

Senior Management Official: ______________________________
Signature: _______________________ Date: ________________
Attachment A – Plan Summary

Chemical Name: Perchloroethylene or perc
CAS #: 127-18-4

Two year Projected Changes (Total lbs.):
  Use: ______________________
  Byproduct: _________________

Five-year Projected Changes (Total lbs.):
  Use: ______________________
  Byproduct: _________________

Options Considered:
- Input Substitution: ____________________________________________
  __________________________________________________________________
- Improved Operation & Maintenance: ________________________________
  __________________________________________________________________
- Process Modification: ____________________________________________
  __________________________________________________________________
- Other: __________________________________________________________
  __________________________________________________________________

Options Selected:
  • _________________________________________________________________
  • _________________________________________________________________
  • _________________________________________________________________
  • _________________________________________________________________

Additional information:
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
Attachment B – Facility Form S
Attachment C – Perc Purchase and Machine O&M Records
Attachment D – Completed Toxics Use Reduction Opportunities Matrix