Proposed Amendments to the Dry Cleaning Regulation

May 25, 2006

California Environmental Protection Agency
Air Resources Board
Agenda

- Background
- Proposed Regulation
- Impacts
- Key Issues
- Next Steps
- Recommendations
Background
Perc Regulatory Efforts

- ARB identifies Perc as a toxic (1991)
- ARB adopts control measures:
  - Dry Cleaning (1993)
  - Aerosol Adhesives (2000)
  - Automotive Products (2000)
- Districts adopt degreasing rules (1990s)
Background

**Perc Ambient Air Risk**

<table>
<thead>
<tr>
<th>Year</th>
<th>Risk (Chances Per Million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993</td>
<td>11</td>
</tr>
<tr>
<td>1994</td>
<td>7</td>
</tr>
<tr>
<td>1995</td>
<td>6</td>
</tr>
<tr>
<td>1996</td>
<td>5</td>
</tr>
<tr>
<td>1997</td>
<td>4</td>
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<td>2004</td>
<td>4</td>
</tr>
<tr>
<td>2005</td>
<td>4</td>
</tr>
</tbody>
</table>

Risk values show a decreasing trend from 1993 to 2005, indicating a reduction in ambient air risk over time.
## Statewide Average Ambient Risk Levels for Selected Toxics

<table>
<thead>
<tr>
<th>Ranking</th>
<th>Average risk (per million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diesel PM</td>
<td>540</td>
</tr>
<tr>
<td>Benzene</td>
<td>46</td>
</tr>
<tr>
<td>1,3-Butadiene</td>
<td>41</td>
</tr>
<tr>
<td>Carbon Tetrachloride</td>
<td>29</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>21</td>
</tr>
<tr>
<td>para-Dichlorobenzene</td>
<td>10</td>
</tr>
<tr>
<td><strong>Perchloroethylene</strong></td>
<td><strong>2</strong></td>
</tr>
<tr>
<td>Methylene Chloride</td>
<td>1</td>
</tr>
</tbody>
</table>
**Near Source Risk With Current Controls**

<table>
<thead>
<tr>
<th>Potential Cancer Risk (Chances Per Million)</th>
<th>Percent of Facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 10</td>
<td>28</td>
</tr>
<tr>
<td>10 to 25</td>
<td>56</td>
</tr>
<tr>
<td>&gt; 25</td>
<td>16</td>
</tr>
</tbody>
</table>

Based on computer modeling, 2003 survey of facilities, and lifetime exposure of 70 years
Why the Need for Additional Controls

- 80% of Perc emitted from dry cleaning
- Near source risk too high
  ⇒ 70% of facilities have risk greater than 10 in a million
- Provide separation between facilities, homes/schools
Dry Cleaning Industry

- 4,300 Perc facilities statewide
- Small businesses; owner-operated
  - Annual average revenue about $250,000
  - 85% less than five employees
  - 92% operate a single machine
- Often located near residences
- About 80 are co-residential facilities
Background

Machine Types for Perc Dry Cleaning

Converted Machines

Vented Machine

Primary Control Machine

Secondary Control Machine

BACT is an integral secondary control machine
Perc Dry Cleaning Machines

- Distribution of Perc machines (2003)
  - Converted: 2%
  - Primary: 64%
  - Secondary: 34%

- Emissions
  - Converted: 3%
  - Primary: 75%
  - Secondary: 22%
Ventilation Systems

- Existing systems are ineffective

- Enhanced ventilation systems:
  - capture fugitive emissions
  - release via a stack
  - reduce worker and near source exposure
Dry Cleaning Alternatives

<table>
<thead>
<tr>
<th>Perc Dry Cleaning Alternatives</th>
<th>Market share (percent)*</th>
<th>Cost compared to Perc</th>
<th>Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrocarbon</td>
<td>8</td>
<td>+10% to +18%</td>
<td>Cost, smog</td>
</tr>
<tr>
<td>Green Earth</td>
<td>2</td>
<td>+50%</td>
<td>Cost, uncertain toxicity</td>
</tr>
<tr>
<td>Water</td>
<td>&lt;1</td>
<td>+30%</td>
<td>Cost, acceptability, new technology</td>
</tr>
<tr>
<td>Carbon Dioxide</td>
<td>&lt;1</td>
<td>+108%</td>
<td>Cost, new technology</td>
</tr>
</tbody>
</table>

*2003 data
## Current Market Share

<table>
<thead>
<tr>
<th>Perc Dry Cleaning Alternatives</th>
<th>Market share (percent)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrocarbon</td>
<td>30</td>
</tr>
<tr>
<td>Green Earth</td>
<td>3</td>
</tr>
<tr>
<td>Water</td>
<td>1</td>
</tr>
<tr>
<td>Carbon Dioxide</td>
<td>&lt;1</td>
</tr>
</tbody>
</table>

*2006 data
Summary of the Proposed Regulation
Key Considerations

- Apply to areas outside SCAQMD
- Eliminate Perc use at co-residential facilities
- Reduce near source risk at existing facilities
- Provide a separation zone for new facilities
- Reduce economic impacts
Emissions

- 2,300 facilities outside South Coast
- 2,460 machines
- Emissions - 2.6 tons/day outside South Coast
Co-Residential Facilities

Proposed Action:

- Prohibit new co-residential Perc operations
- Remove existing Perc machine

Results:

- Eliminates potential source of high localized risk
**Existing Facilities**

**Proposed Actions:**

- Replace machines with non-Perc or Perc machines with BACT
- Install enhanced ventilation systems
- Quicker phase-in for machines located within 100 feet of a sensitive receptor
- Complete conversion to BACT for Perc machines by 2016
Existing Facilities

Results:

- About 1,500 facilities required to replace existing machines
- Achieve 40% reduction in Perc emissions
- Achieve 65-75% reduction in near source risk
Proposed Actions:

- Prohibit Perc facilities:
  - within 300 feet from sensitive receptors and
  - within 300 feet from the boundary of any area zoned residential

- For all others, install non-Perc machine or Perc machine with BACT and enhanced ventilation
New Facilities

Results:

- Ensure very low risk levels for sensitive receptors
- All Perc machines will have BACT and enhanced ventilation systems
Summary

Implementation Schedule

- **Co-residential facilities**
  - New: July 2007
  - Existing: July 2010

- **New Perc facilities**
  - July 2007
Summary

Implementation Schedule

- Existing facilities
  - 840 machines Already use BACT
  - 480 machines July 2009
  - 590 machines July 2010
  - Rest (550 machines) July 2011-2016

- Enhanced ventilation
  - 810 machines July 2009
  - 1450 machines July 2010
Other Requirements

- Good operating practices
- Recordkeeping
- Reporting
- Certification procedure for integral secondary control machines
Potential Impacts of the Proposed Regulation
Benefits of Proposed Action

- Eliminates risk at co-residential facilities
- Existing facilities
  - 65 to 75 percent risk reduction
  - Most will have risk <10 in a million
  - Reduced worker exposure
- Ensures very low risk levels at new facilities
Ambient Perc Risk Reduction

(Outside of South Coast)
Near Source Risk Reduction

CURRENT *

- Percent of Machines (%)
- Potential Cancer Risk at 100 feet (Chances Per Million)

< 10 | 10 to 25 | > 25

FULL COMPLIANCE (outside SC)

- Percent of Machines (%)
- Potential Cancer Risk at 100 feet (Chances Per Million)

< 10 | 10 to 25 | > 25

* Based on 2003 survey data
Cost to Dry Cleaners

- Annual costs is between $2,000 to $15,500 per year for 5 years
- To recover costs, a dry cleaning bill of $15 would increase by 10 cents to 90 cents.
- About 40% of facilities may have significant adverse impacts if unable to pass on costs
Key Issues
Several commenters have recommended a phase-out of Perc at a future date similar to the approach used by the SCAQMD.
Phase-out of Perc

- SCAQMD amended Rule 1421 in 2002

- Major requirements:
  - Secondary control for existing Perc machines and meet specified risk levels
  - Remove all Perc machines by the end of 2020
Response:

- **Proposed rule reduces risk to low levels**
  - 70% will be under 10 in a million
  - 99% will be under 25 in a million
- **Phase-out imposes greater costs**
- **Lessens increase in hydrocarbon emissions**
- **Local districts may adopt own rule**
Key Issues

Use of HC Machines

Issue:

- Several commenters suggested we prohibit HC machines because of impacts on smog
- Several other commenters supported the use of HC machines with HC impacts mitigated in upcoming SIPs
Use of HC Machines

Response:

- HC machines are most common alternative
- Non-Perc, non-HC machines are more costly, not widely accepted within industry, or have uncertain health effects
- HC emissions increases fairly small (~1 ton/day outside of South Coast)
- Second generation HC machines may be needed
Industry Concerns

Issues:

- Dry Cleaners are small, family-owned businesses
- Costs to comply will force some to close
- Machines can last longer than 15 years
- Alternatives uncertain
Industry Concerns

Response:

- Near source risk too high and most machines no longer represent BACT
- Provide at least 2 to 3 years lead time
- Allow full useful life for two-thirds of machines
- Reasonable opportunity to recover costs
Other Comments

- Technical
- Regulatory language
- Implementation/timing
- Siting criteria
Next Steps
Next Steps

- Continue review of technologies for opportunities to further reduce Perc and hydrocarbons
- Develop amendments to the existing training requirements
- Continue implementing AB 998
Next Steps

**AB 998 Program**

- Encourage use of non-toxic, non-smog forming alternatives (water-based, CO2)

- Grant Program
  - 14 grants awarded in 2005
  - 30 applications in process for 2006

- Demonstration Program
  - Currently requesting proposals
Recommendations
Recommendations

- Adopt the proposed regulatory amendments
- Direct staff to review technical comments and propose 15 day changes, if appropriate
- Promote non-toxic and non-smog forming alternatives
- Direct staff to closely track alternatives and report back to the Board on progress