

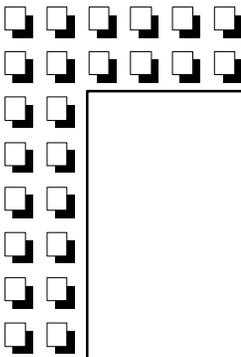
Public Workshop
Update of
Architectural Coatings
Suggested Control Measure
June 3, 1999

Criteria Pollutants Branch
Stationary Source Division

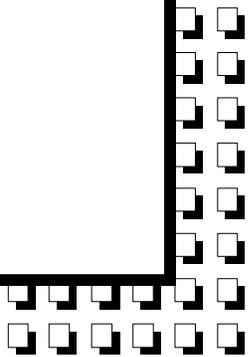
California Environmental Protection Agency

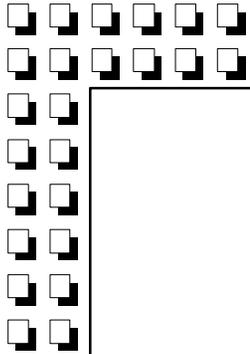


Air Resources Board

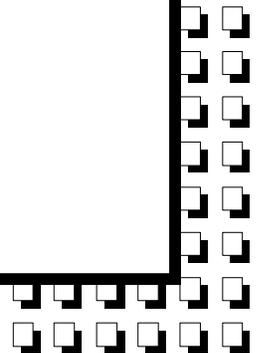


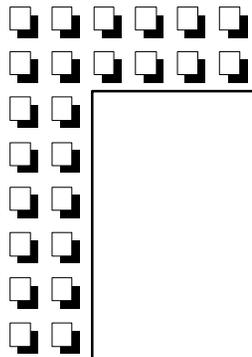
Agenda

- **Welcome and Introductions**
 - **Background**
 - **1998 Survey Update**
 - **SCM Update Process**
 - **Overview of Draft Changes to SCM**
 - **Discussion on the Proposal**
 - **Adjourn**
- 

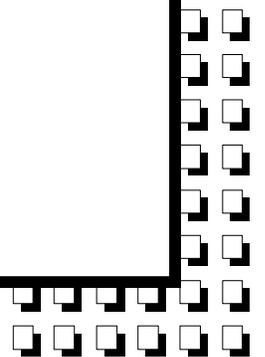


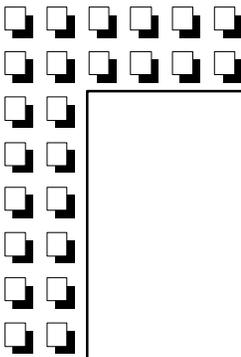
Welcome and Introductions



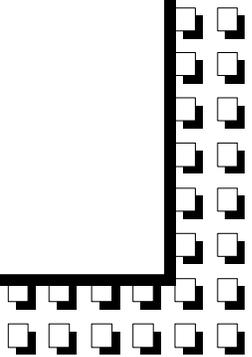


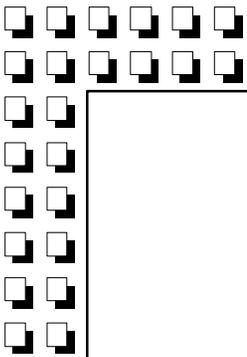
Background



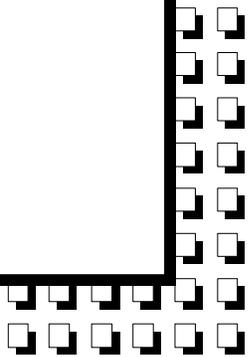


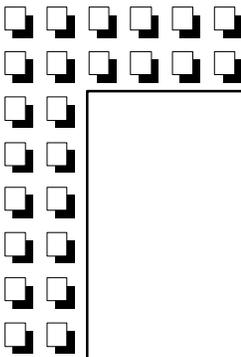
ARB's Role

- **Technical assistance to districts**
 - **Industry surveys**
 - **Research**
 - **Emissions inventory**
 - **Regulatory/policy guidance**
 - **SCM development (last amended 1989)**
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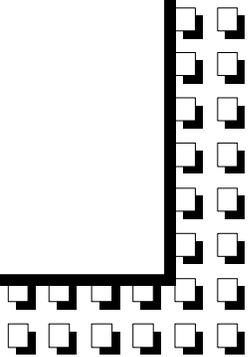


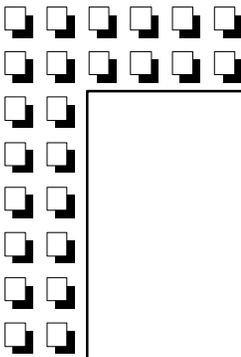
Districts' Role

- **Districts have regulatory authority**
 - **18 of 35 districts have adopted architectural coating rules; others will be covered by National Rule**
 - **Districts may use SCM as model for their rules, with separate rulemaking process**
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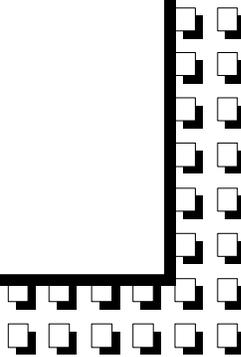


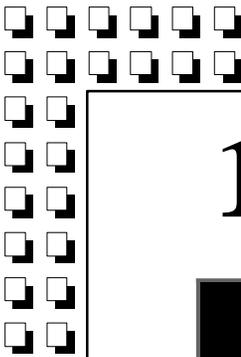
Reason for SCM Revision

- **Update 1989 SCM**
 - **Available for districts to use for federal and State plan commitments**
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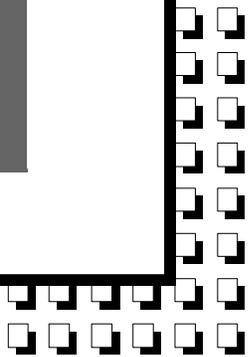
Emissions

- **VOC emissions about 126 TPD**
 - **About 8% of stationary source VOC emissions; about 4% of total VOC**
 - **More than petroleum refining and marketing combined**
 - **Comparable to consumer products, degreasing, and all other coatings**
- 



1990/1996 Survey Comparison

	<i>1990</i>	<i>1996</i>
<i>Total volume, gal.</i>	77.1 million	87.5 million
<i>WB/SB split by volume</i>	74%/26%	82%/18%
<i>Estimated annual average emissions</i>	126 TPD	117 TPD
<i>Gallons per capita</i>	2.6	2.7
<i>Emissions per capita (pounds)</i>	3.1	2.6



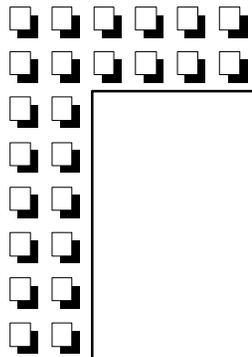
Sales Volume of Coatings Categories (Millions of Gallons)

	<i>WB</i>	<i>SB</i>	<i>Total</i>
<i>Flat</i>	31.8	<0.1	31.8
<i>Non-Flat</i>	21.2	1.1	22.3
<i>Specialty</i>	18.8	14.6	33.4
<i>Total</i>	71.8	15.7	87.5
<i>Percent</i>	82	18	100
<i>Source: 1998 Survey</i>			

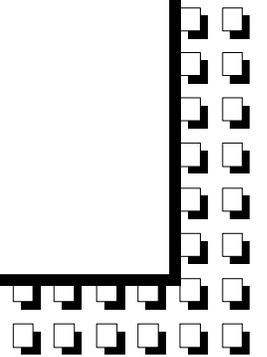
Contributions of Categories to VOC Emissions (Tons Per Day)

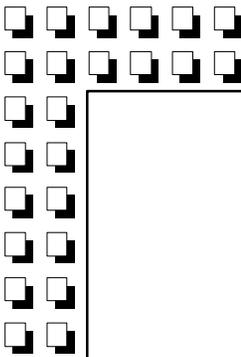
	<i>WB</i>	<i>SB</i>	<i>Cleanup/ Thinning</i>	<i>Total</i>
<i>Flat</i>	14	<1	0	15
<i>Nonflat</i>	15	4	1	20
<i>Specialty</i>	9	57	16	82
<i>Total</i>	39	61	17	117
<i>Percent</i>	33	52	15	100

Source: 1998 Survey

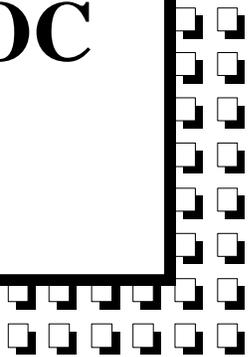


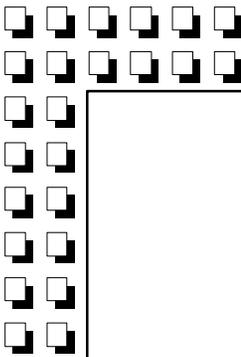
1998 Survey Update





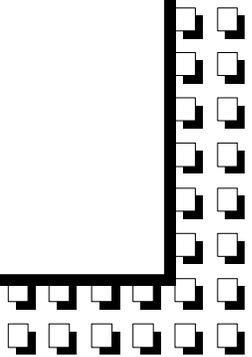
1998 Survey Update

- Received data from 155 companies
 - Recorded total of 87.5 million gallons
 - Estimate over 95% of market represented
 - Draft report issued March 1999
 - In addition to histograms, also include graph of percent market share by VOC content
- 

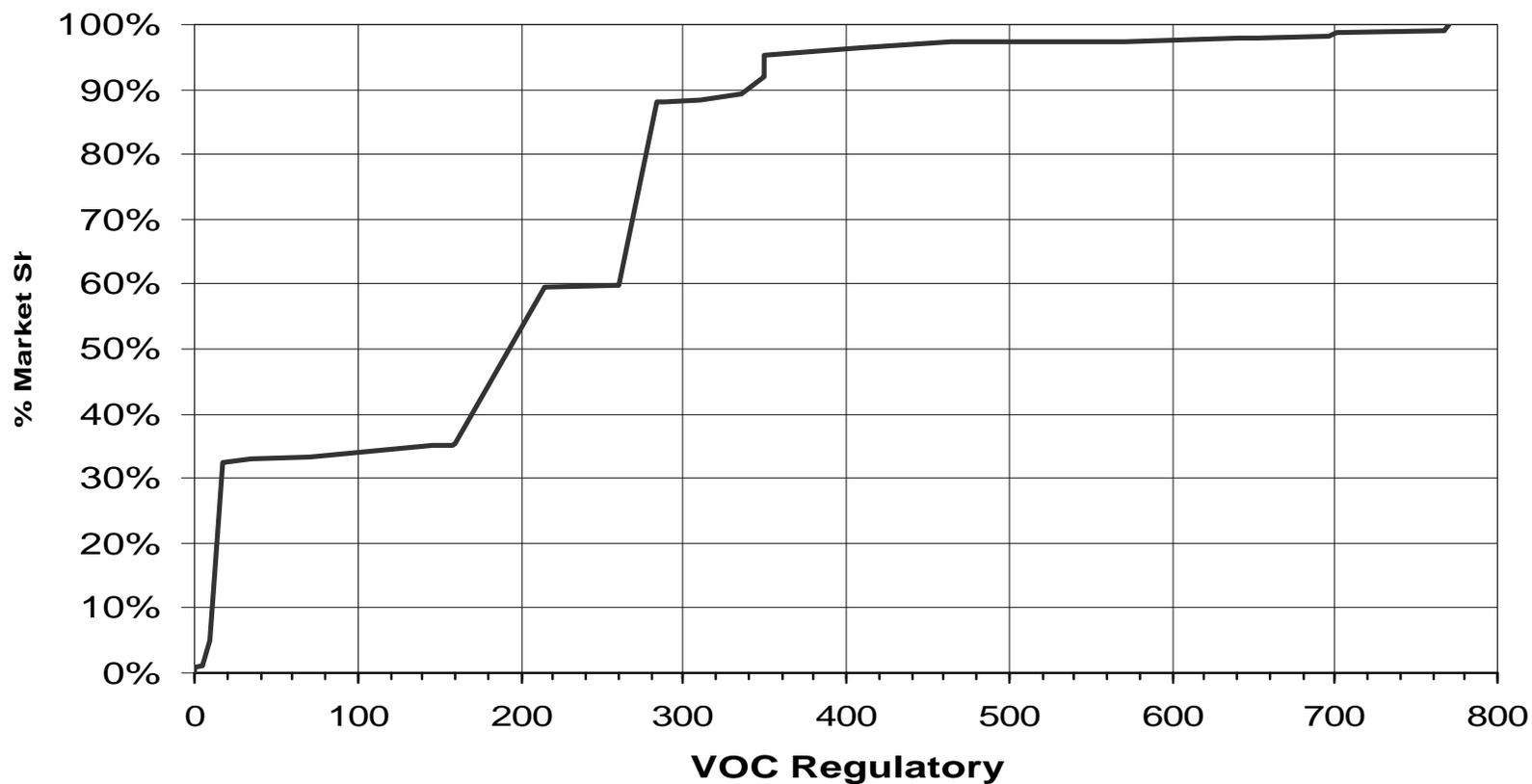


1998 Survey Update

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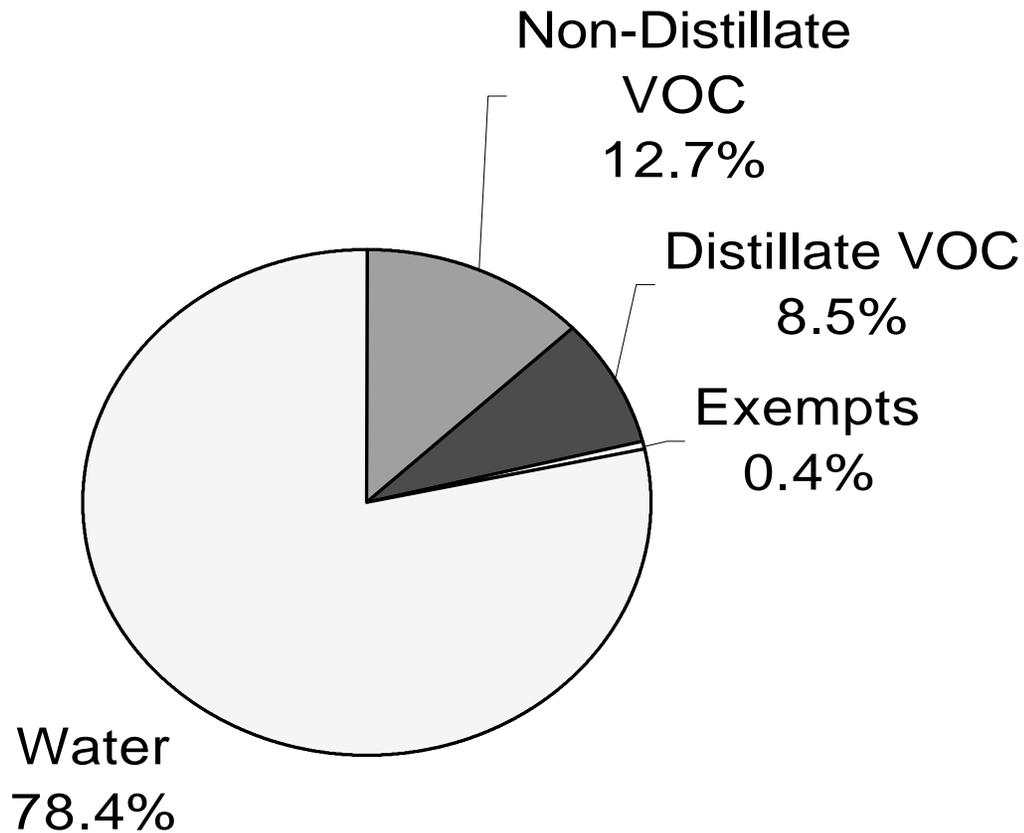
- **Prepared speciation profiles by coating category**
 - **Compiled tables comparing 1993 and 1998 SB and WB survey data; included percent by volume solids, and percent change from 1993 for all parameters**
 - **Final report to be issued in June 1999**
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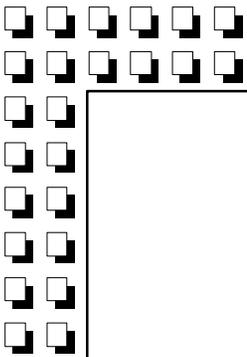
Percent Market Share Concrete Curing Compounds



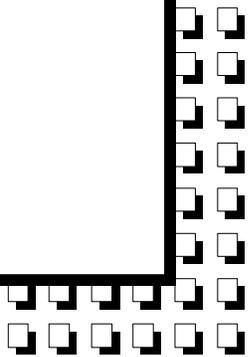
Total Volatiles in Coatings

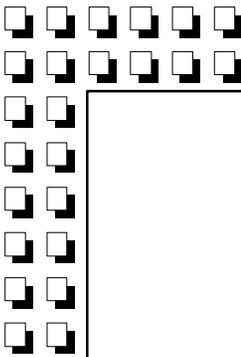
(% by weight)



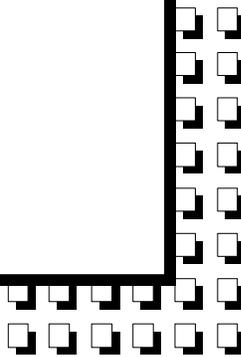


Top Ten VOCs in Coatings

- Distillates
 - Propylene glycol
 - 2,2,4-trimethyl-1,3-pentanediol isobutyrate
 - Ethylene glycol
 - Xylenes
 - Toluene
 - 2-(2-butoxyethoxy) ethanol
 - Methyl ethyl ketone
 - Ethyl alcohol
 - Butyl acetate
- 

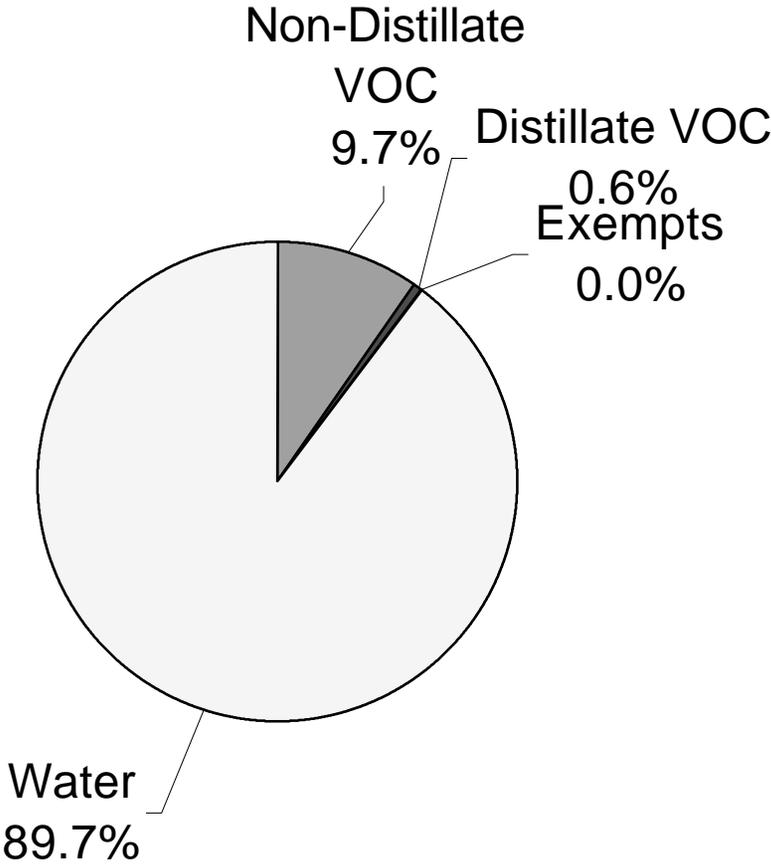


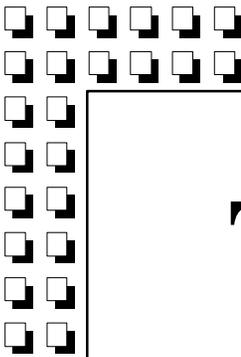
Top Three Exempts in Coatings

- 1,1,1-trichloroethane
 - Dichloromethane
 - Acetone
- 

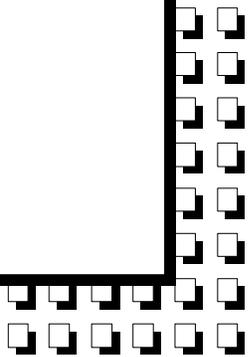
Water-borne Volatiles

(% by weight)



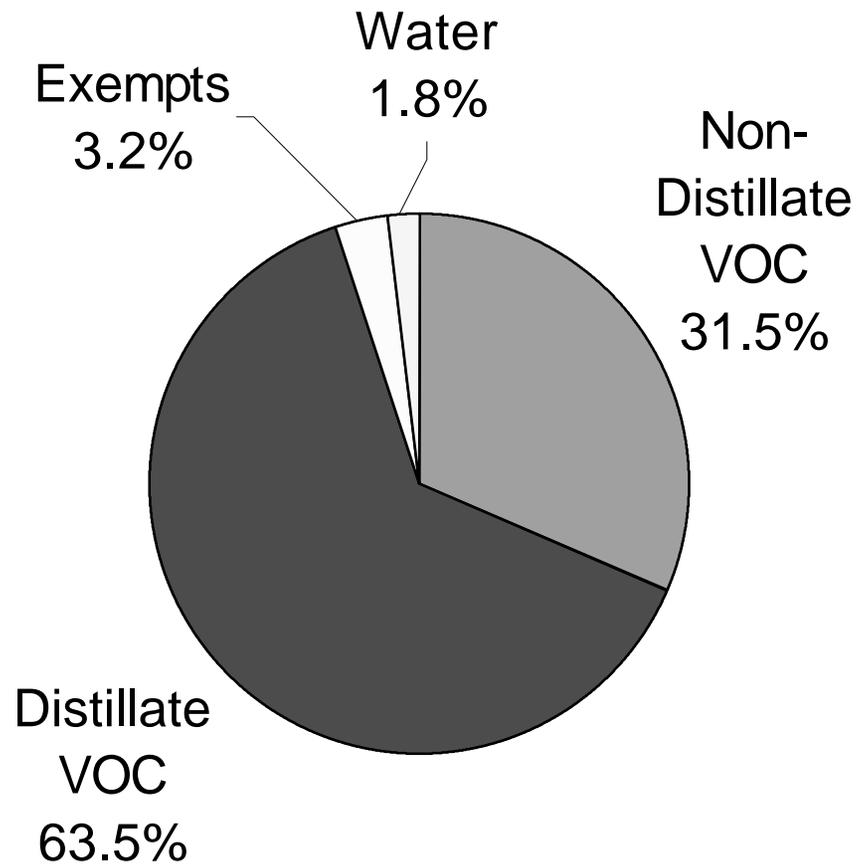


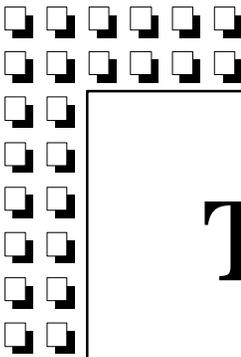
Top Ten Water-borne VOCs

- 2,2,4-trimethyl-1,3-pentenediol isobutyrate
 - Propylene glycol
 - Ethylene glycol
 - Distillates
 - 2-(2-butoxyethoxy) ethanol
 - Methanol
 - Vinyl acetate
 - 2-(2-methoxyethoxy) ethanol
 - 2-butoxy ethanol
 - Iodopropynyl butylcarbamate
- 

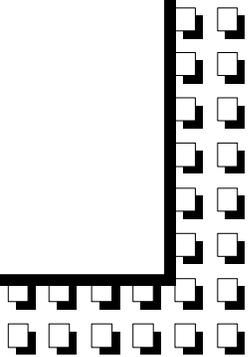
Solvent-borne Volatiles

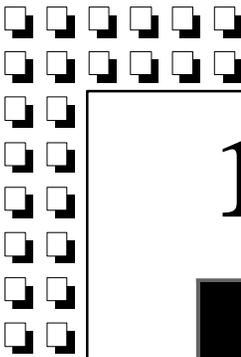
(% by weight)





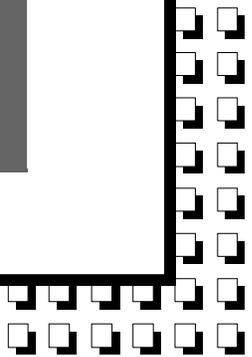
Top Ten Solvent-borne VOCs

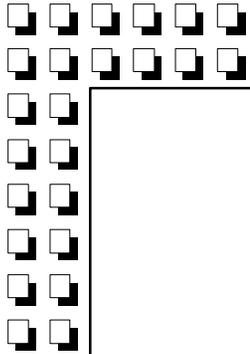
- Distillates
 - Xylenes
 - Toluene
 - Methyl ethyl ketone
 - Ethyl alcohol
 - Butyl acetate
 - Oil of linseed
 - 2-propanol
 - Isobutyl acetate
 - 1,3,4-trimethyl benzene
- 



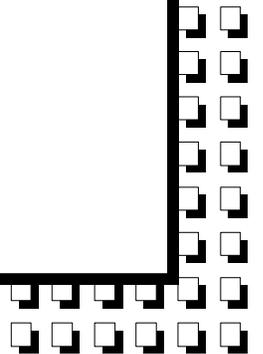
1990/1996 Survey Comparison

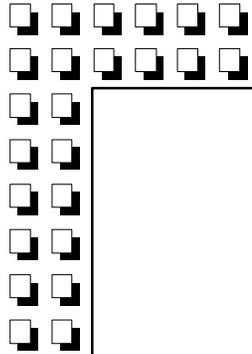
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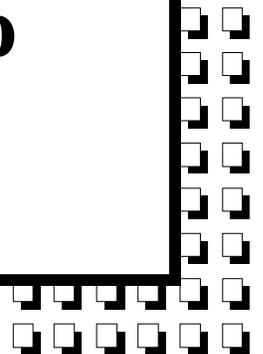
Process for SCM Update

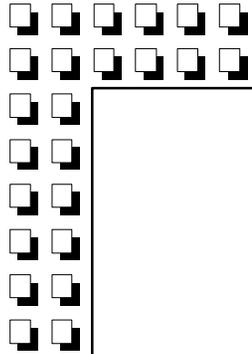




Process for SCM Update

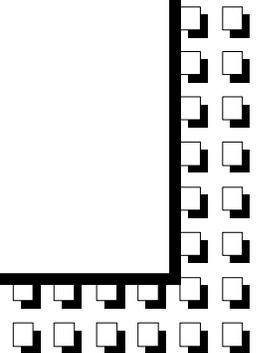
- **Conduct, analyze, and publish results of 1998 survey**
- **Assess National Rule**
- **Participate in SCAQMD Rule 1113 amendment process and performance research committee**
- **Collaborate with districts to develop SCM language**

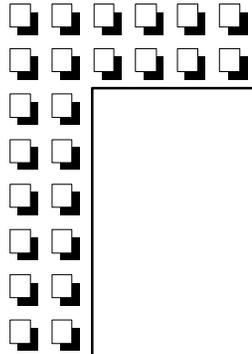




Process for SCM Update (continued)

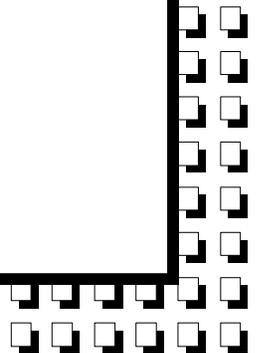
- **Use survey data and SCAQMD technology assessments**
- **Evaluate existing research and seek funding for new research**
- **Perform environmental and economic assessments**

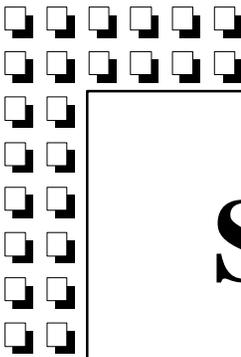




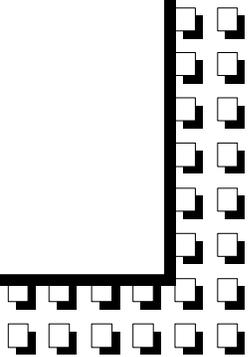
Process for SCM Update (continued)

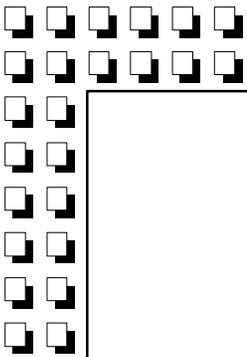
- **Explore flexibility options**
- **Individual company meetings**
- **Conduct workshops**
- **ARB Board meeting**



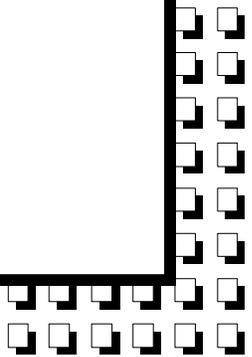


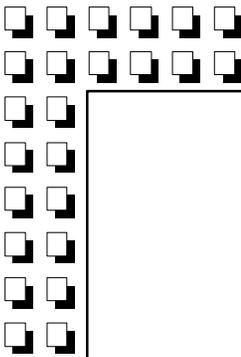
SCM Language Development

- **Considered National Rule categories, definitions, and requirements**
 - **Evaluated future effective VOC limits from SCAQMD 5/14/99 Rule 1113 amendment**
 - **Considered flexibility options**
- 

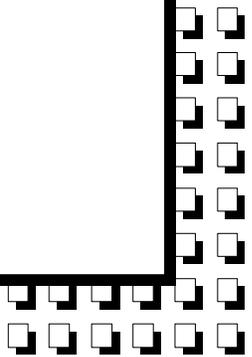


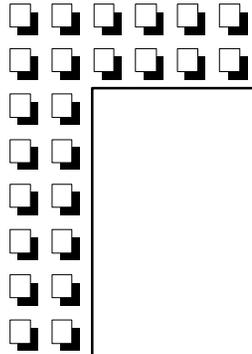
Environmental Assessment

- **Issue Initial Study and Notice of Preparation of Draft EIR in June 1999**
 - 30 day comment period
 - **Issue Draft Environmental Impact Report in August 1999**
 - 45 day comment period
- 

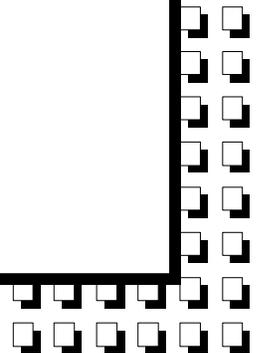


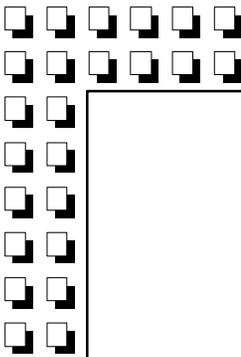
Public Process

- **Workshops: March 30, June 3, July 1**
 - **Tentative August/September workshops**
 - **Issue Staff Report, DEIR, and SCM language concurrently**
 - **Board hearing in November 1999**
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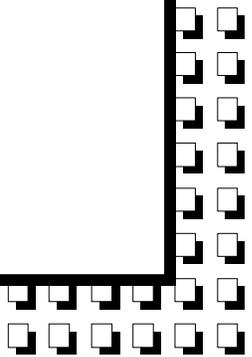


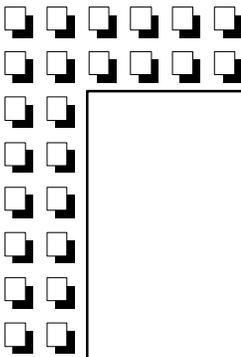
Summary of Draft Changes from 1989 SCM



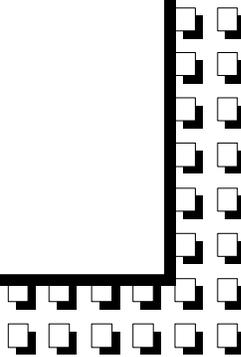


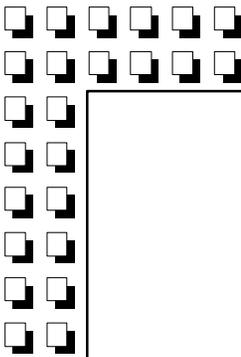
New Categories

- **Bituminous**
 - **Floor**
 - **Low solids coatings**
 - **Quick-dry enamels**
 - **Rust preventative coatings**
 - **Concrete waterproofing sealers**
 - **Wood waterproofing sealers**
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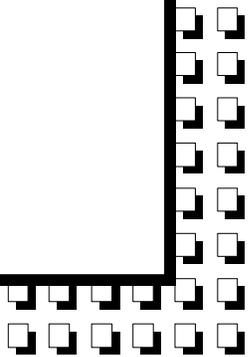


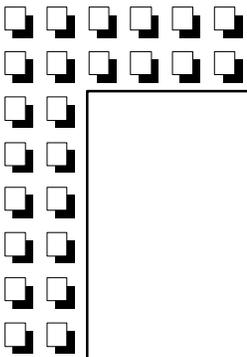
New SCAQMD Categories to Consider

- **Chemical storage tank**
 - **Essential public services**
 - **Recycled coatings**
 - **Specialty primers**
- 

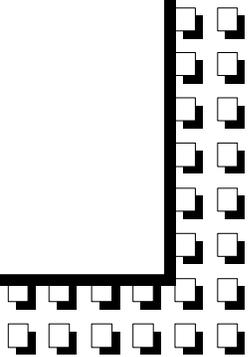


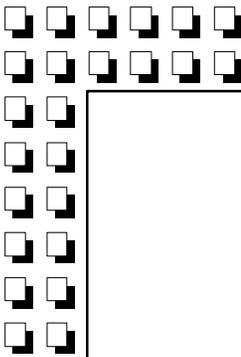
Dropped Categories

- **Anti-graffiti**
 - **Swimming pool repair and maintenance**
- 

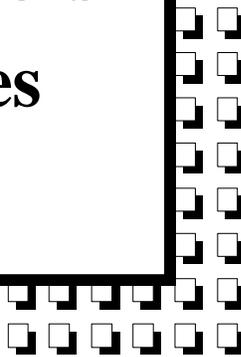


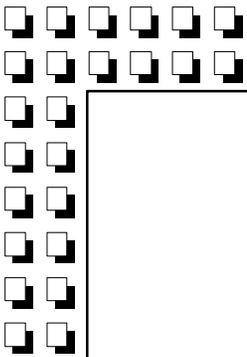
Collapsed Categories

- **Below ground wood preservatives**
 - **Semitransparent and clear wood preservatives**
 - **Opaque wood preservatives**
- 

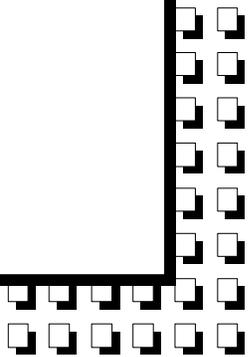


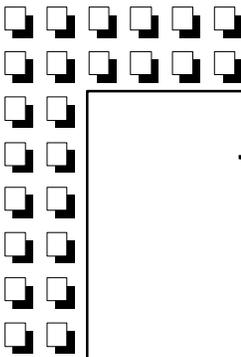
No Change in VOC Limits

- Bond breakers
 - Sanding sealers
 - Varnishes
 - Concrete curing compounds
 - Dry fog
 - Form release compounds
 - High temperature
 - Magnesite cement
 - Metallic pigmented
 - Opaque shellacs
 - Swimming Pool
 - Concrete waterproofing sealers
 - Wood preservatives
- 

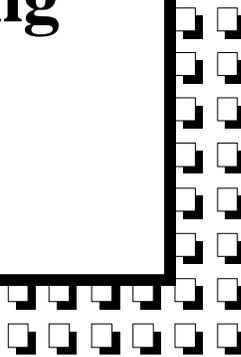


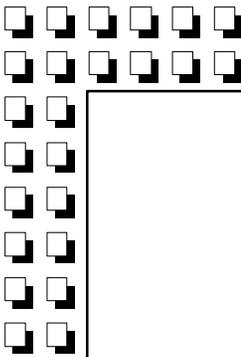
VOC Limits Consistent with National Rule

- **Low solids**
 - **Traffic**
- 

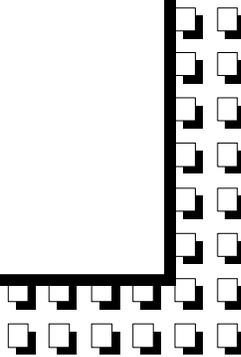


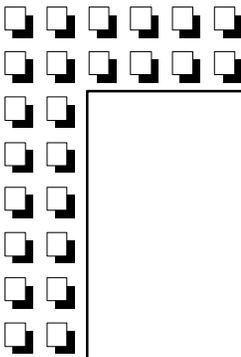
VOC Limits Consistent with SCAQMD Rule

- Flats
 - Nonflats
 - Floor
 - Industrial maintenance
 - Primers, sealers, and undercoaters
 - Lacquers
 - Multicolor
 - Quick-dry enamels
 - Rust preventative
 - Stains-clear and ST
 - Wood waterproofing sealers
- 

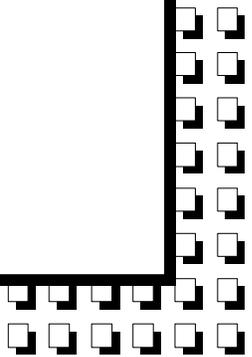


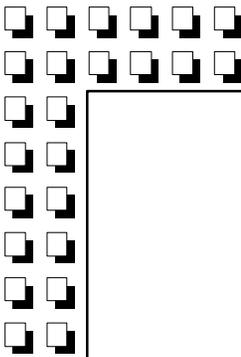
Additional VOC Limits Proposed

- **Bituminous**
 - **Fire retardant**
 - **Graphic arts**
 - **Mastic texture**
 - **Opaque stains**
 - **Pre-treatment wash primers**
 - **Roof**
 - **Clear shellacs**
- 

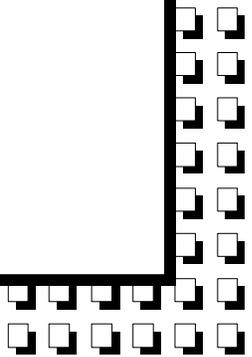


New Provisions from 1989 SCM

- **Thinning prohibitions**
 - **Industrial maintenance usage prohibitions**
 - **Coating category labeling requirement**
 - **Test methods section expanded**
- 

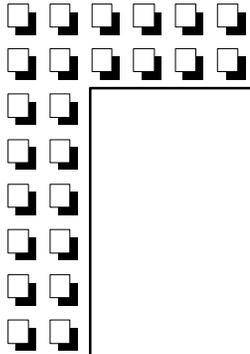


New Provisions (continued)

- **VOC content calculations**
 - **New most restrictive VOC limits**
 - **“Default” based on flat or nonflat gloss**
 - **Reference table to determine analogous SCM and National Rule categories**
- 

Potential Emission Reductions from Proposal (TPD)

	<i>Interim</i>	<i>Final</i>
<i>South Coast</i>	1.0	--
<i>Remainder of State</i>	16.0	13.2



Discussion on the Proposal

