

**Proposed Amended Rule 1107:** *Coating of Metal Parts and Products*

**Proposed Amended Rule 1124:** *Aerospace Assembly and Component Manufacturing Operations*

**Proposed Amended Rule 1136:** *Wood Products Coatings*

**Working Group Meeting #1**  
July 9, 2024



**Join Zoom Webinar**

<https://scaqmd.zoom.us/j/95678446098>

**Webinar ID: 956 7844 6098**

**Teleconference Dial-In: +1 669 900 6833**

# AGENDA

South Coast AQMD Background

Rule Development Process

VOCs and Exempt Compounds Background

Impacts on Rule 1401

Rule Developments to Address pCBtF and tBAc

Stakeholder Survey

Next Steps

# South Coast Air Quality Management District

- Local air pollution control agency for Orange County and large portions of Los Angeles County, Riverside County, and San Bernardino County
  - Largest of the 35 local air agencies in CA and in the US
  - 10,743 square miles
  - ~17 million residents (45% of CA population)
- Responsibilities include:
  - Regulate emissions from stationary sources
  - Permit and inspect over to 28,000 facilities
  - Administer over \$100 million of incentive funding annually

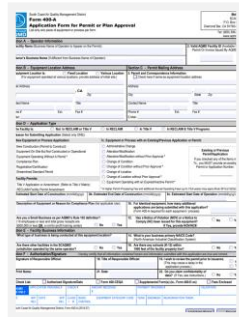


# Key South Coast AQMD Activities



## Air Quality Management Plan

- Blueprint to attain air standards



## Permits to Operate

- Issue permits to limit equipment/ facility emissions



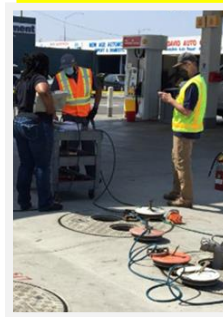
## Complaint Investigations

- Respond to air quality concerns from public



## Rules and Regulations

- Reduce emissions from facilities or equipment



## Compliance Inspections

- Periodic inspections to enforce rules and permits



## Ambient Air Monitoring

- Quantify air quality including special studies (e.g. MATES)
- Monitor toxics and air emissions at facility fencelines



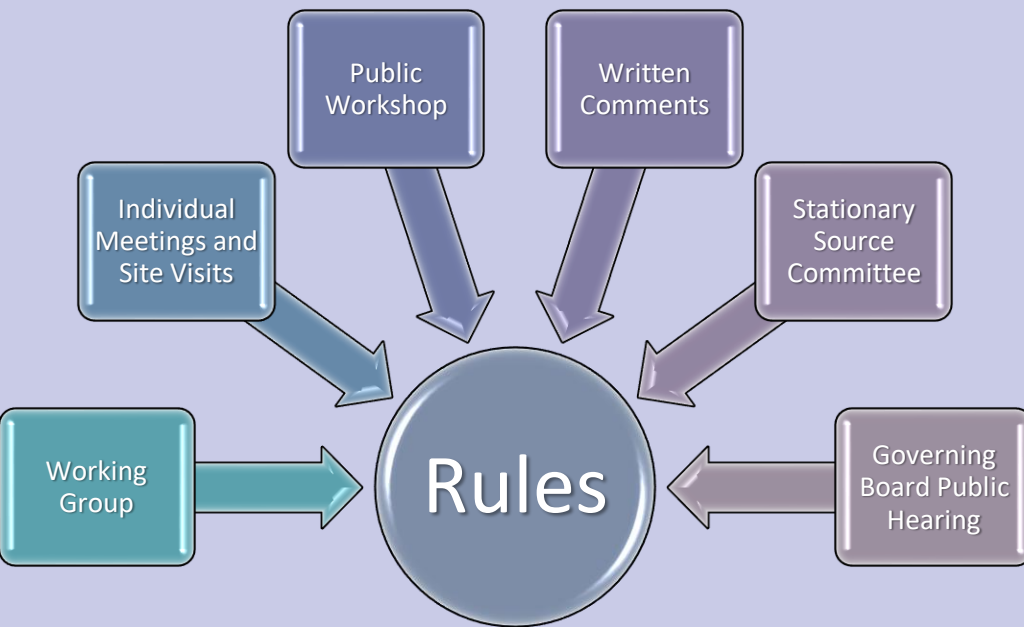
# Rule Development Process



# Overview of Rule Development Process



# Public Input



- Stakeholders can provide input during Working Group Meetings and throughout the rulemaking process
- Early input is strongly encouraged to help develop proposed rule amendments and to address issues
- Working Group Meetings, individual meetings, and site visits allow stakeholders to dialogue directly with staff to discuss individual issues

# Information Gathering



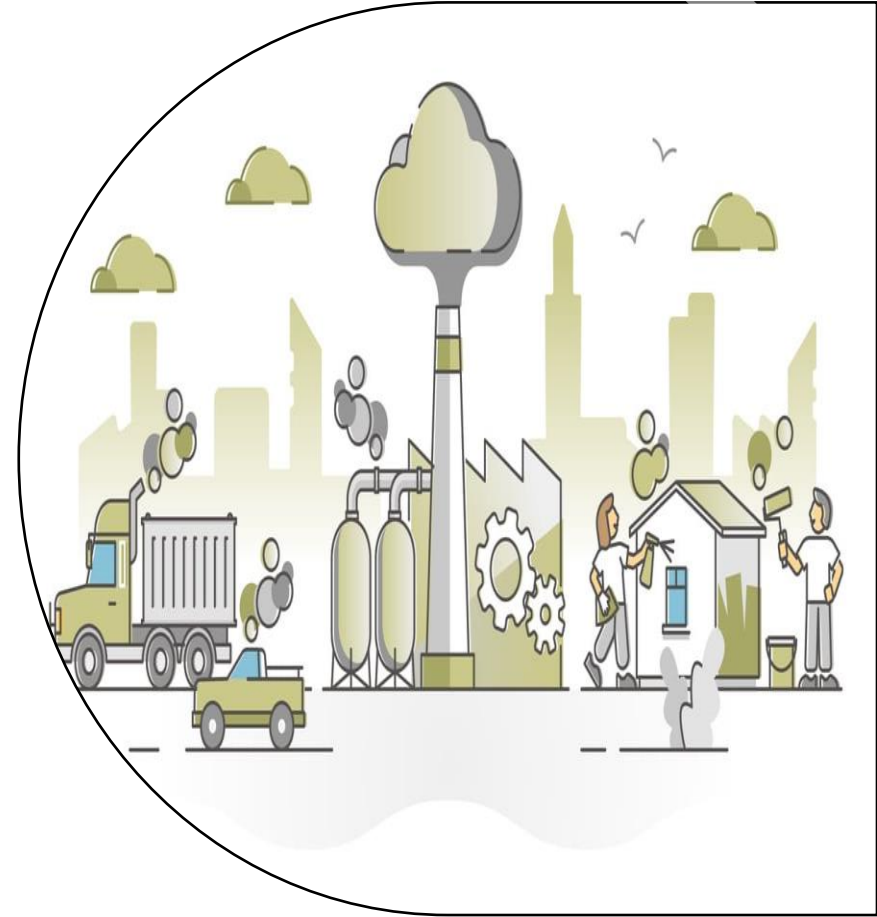
- Staff gathers information from multiple sources:
  - Internet searches
  - Manufacturer meetings/surveys
  - Internal expertise and data
  - Facility permits
  - Inspection reports and compliance history
  - Previous rule files and other rule amendments
  - Product datasheets
  - Site visits
- Information includes types of products being used, volatile organic compound content, product cost, etc.
- Information used to inform staff recommendations

A 3D molecular model of a chemical structure, likely a volatile organic compound (VOC), is shown in the background. The model features blue spheres representing carbon atoms and white spheres representing hydrogen atoms, connected by grey rods representing chemical bonds. The structure is partially obscured by a dark blue horizontal band that contains the title text.

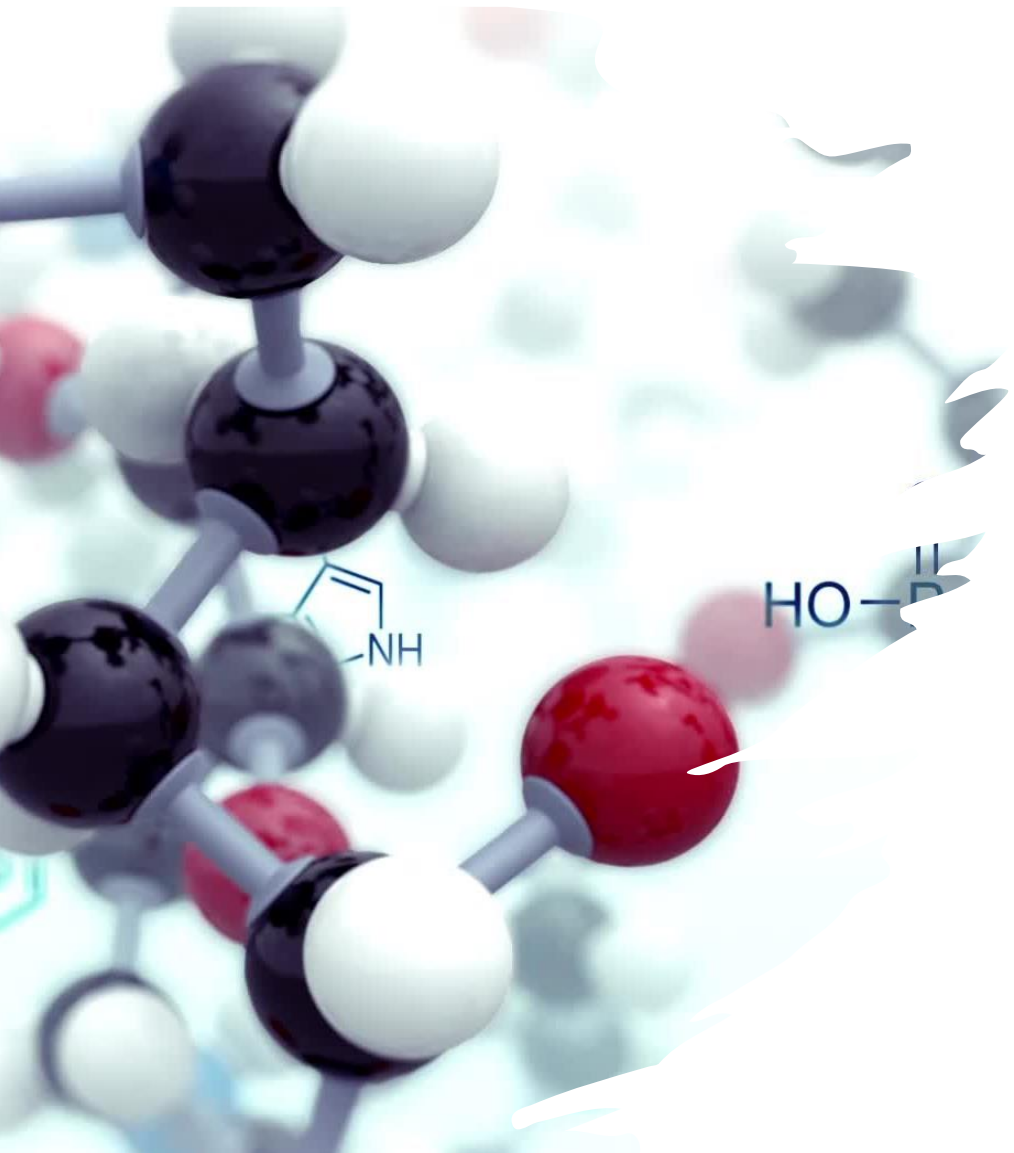
# **Volatile Organic Compounds (VOCs) and Exempt Compounds Background**

# Volatile Organic Compounds (VOC)

- Rule 1107, 1124, and 1136 regulate VOC emissions from coating applications in various industries
- VOC is defined in Rule 102 – Definition of Terms (Rule 102) as any volatile compound made of carbon, excluding methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, and exempt compounds
- Can be photochemically reactive and contribute to the formation of ground-level ozone (smog)
- South Coast AQMD partially controls VOC emissions from facilities by establishing VOC content limits for coatings
- Common sources of VOC include:
  - Motor vehicles
  - Coatings, paint, inks, and solvents
  - Industrial processes
  - Consumer products
  - Biogenic (especially fires)



# Exempt Compounds



- Certain solvents are defined as exempt from the definition of VOC by the U.S. EPA if they are negligibly photochemically reactive
  - Defined as less reactive than ethane
- Exempt compounds are not considered toward the VOC content of regulated materials
- U.S. EPA does not consider toxicity when making their designation
- Two exempt compounds of focus are parachlorobenzotrifluoride (pCBtF; CAS #:98-56-6) and *tert*-Butyl Acetate (tBAc; CAS #:540-88-5)

# South Coast AQMD's Defined Exempt Compounds

- South Coast AQMD considers compounds designated as exempt by U.S. EPA, but also considers the toxicity, ozone depletion potential, and other environmental impacts
- Rule 102 breaks exempt compounds into two groups:
  - Group I: exempt compounds that are not expected to be restricted in the future
  - Group II: exempt compounds that are prohibited from use in many VOC rules
- South Coast AQMD sometimes includes limited exemptions to address potential toxicity concerns
  - Rule 1113 – Architectural Coatings (Rule 1113) and Rule 1151 – Motor Vehicle and Non-assembly Line Coating Operations (Rule 1151) includes limited exemptions for tBAC

## Rule 102 (Cont.)

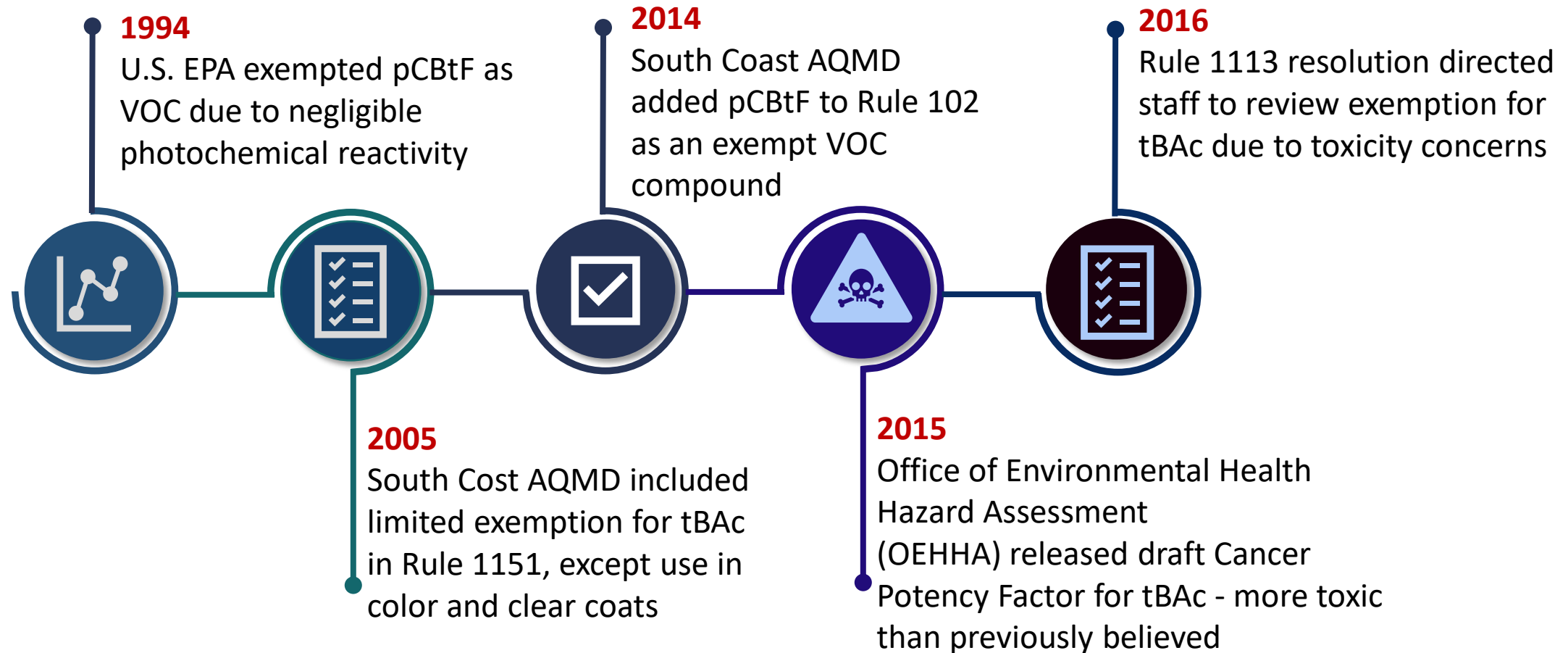
(Amended January 10,

### (B) Group II

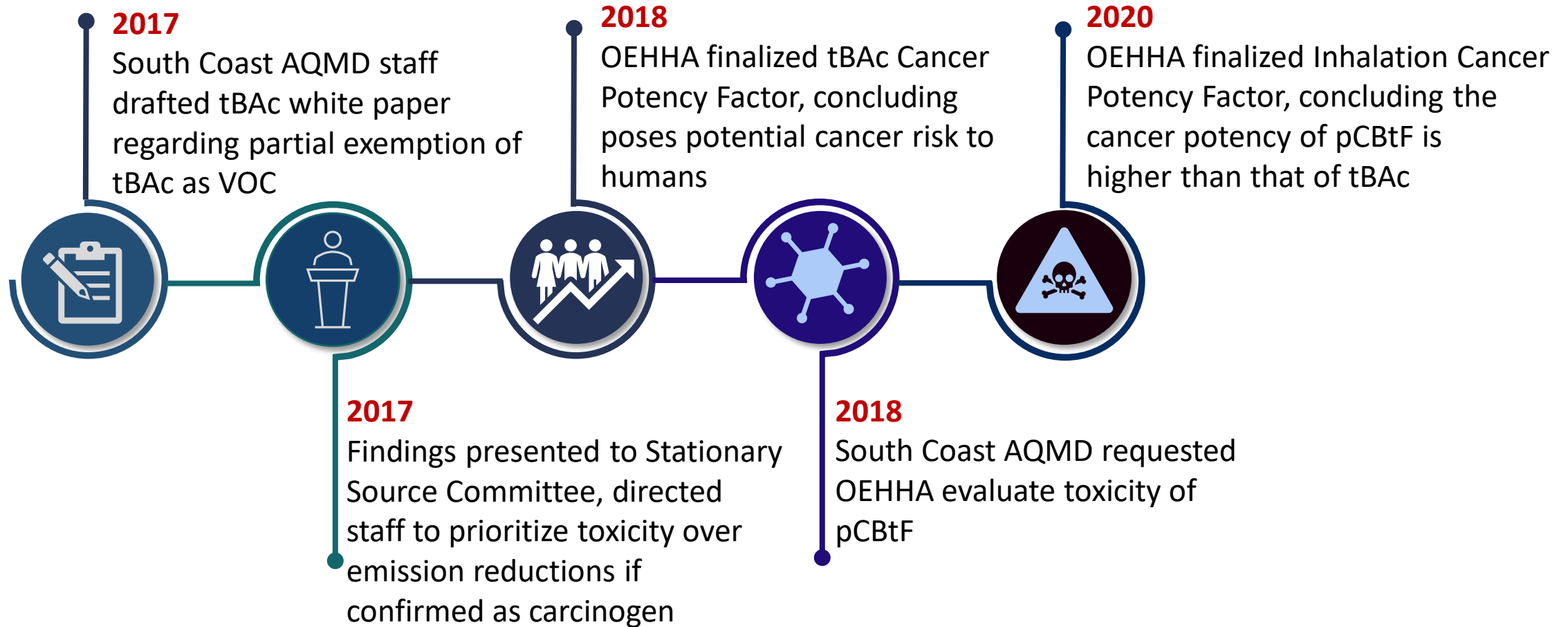
methylene chloride (dichloromethane)  
1,1,1-trichloroethane (methyl chloroform)  
trichlorofluoromethane (CFC-11)  
dichlorodifluoromethane (CFC-12)  
1,1,2-trichloro-1,2,2-trifluoroethane (CFC-113)  
1,2-dichloro-1,1,2,2-tetrafluoroethane (CFC-114)  
chloropentafluoroethane (CFC-115)  
cyclic, branched, or linear, completely methylated siloxanes (VMS)  
tetrachloroethylene (perchloroethylene)  
ethylfluoride (HFC-161)  
1,1,1,3,3,3-hexafluoropropane (HFC-236fa)  
1,1,2,2,3-pentafluoropropane (HFC-245ca)  
1,1,2,3,3-pentafluoropropane (HFC-245ea)  
1,1,1,2,3-pentafluoropropane (HFC-245eb)  
1,1,1,3,3-pentafluoropropane (HFC-245fa)  
1,1,1,2,3,3-hexafluoropropane (HFC-236ea)  
1,1,1,3,3-pentafluorobutane (HFC-365mfc)  
chlorofluoromethane (HCFC-31)  
1,2-dichloro-1,1,2-trifluoroethane (HCFC-123a)  
1 chloro-1-fluoroethane (HCFC-151a)

The use of Group II compounds and/or carbon tetrachloride may be restricted in the future because they are either toxic, potentially toxic, upper-atmosphere ozone depleters, or cause other environmental impacts. By January 1, 1996, chlorofluorocarbons (CFC), 1,1,1-trichloroethane (methyl chloroform), and carbon

# pCBtF and tBAc Background



# pCBtF and tBAc Background (Cont.)



# Actions Taken Following OEHHA Assessments



- Rule 1168 was the first VOC rule amended after pCBtF and tBAc OEHHA assessments were finalized
  - Prior amendment in 2017 required staff to conduct a technology assessment for certain future effective VOC limits
  - Technology assessment determined some of the effective dates needed to be delayed
  - Staff initiated the rule amendment in 2022 which also considered the use of pCBtF and tBAc

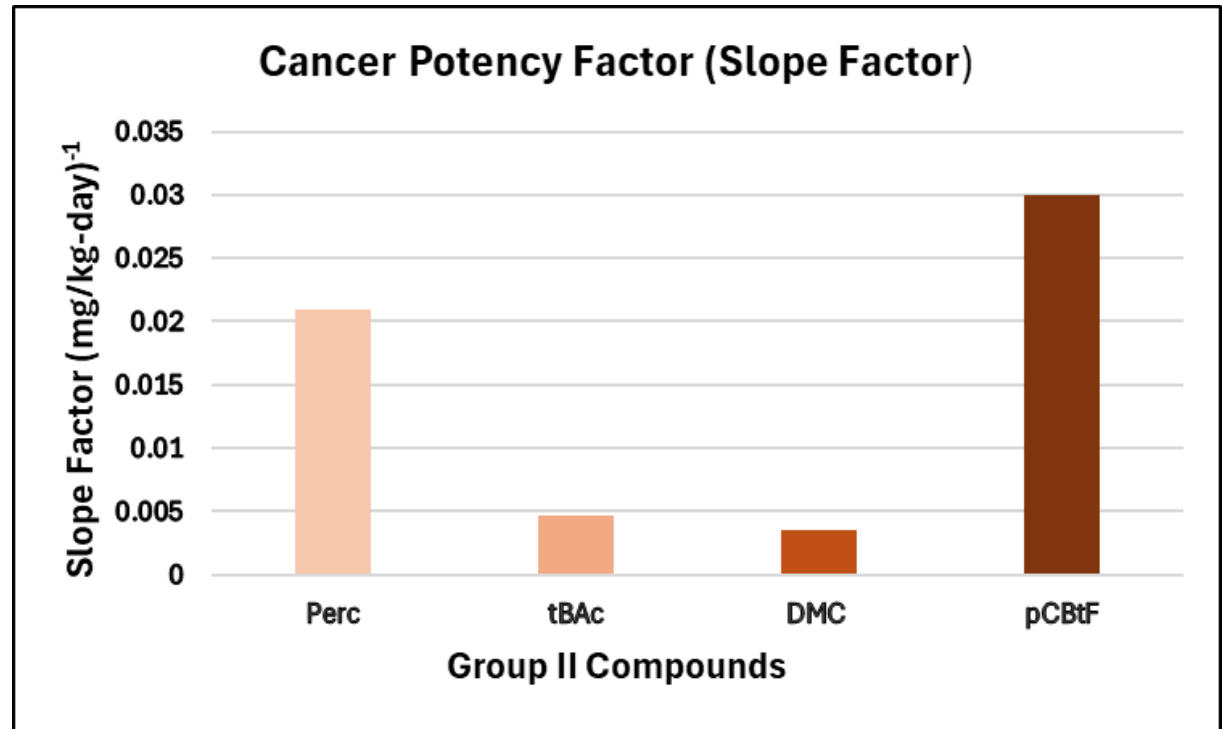
# Rule 1168 Amendment



- Staff considered several approaches to address toxicity concerns for pCBtF and tBAc
  - Remove the exemption but allow the use of the solvents
    - Approach would not necessarily reduce the use or toxic exposure of the solvents
  - Allow limited uses, e.g., outdoor applications
    - Modeling demonstrated the off-site health risk was high
- Staff compared the toxicity of other Group II solvents that are prohibited in VOC rules to the toxicity of pCBtF and tBAc

# pCBtF and tBAc Cancer Potency Factor Comparison

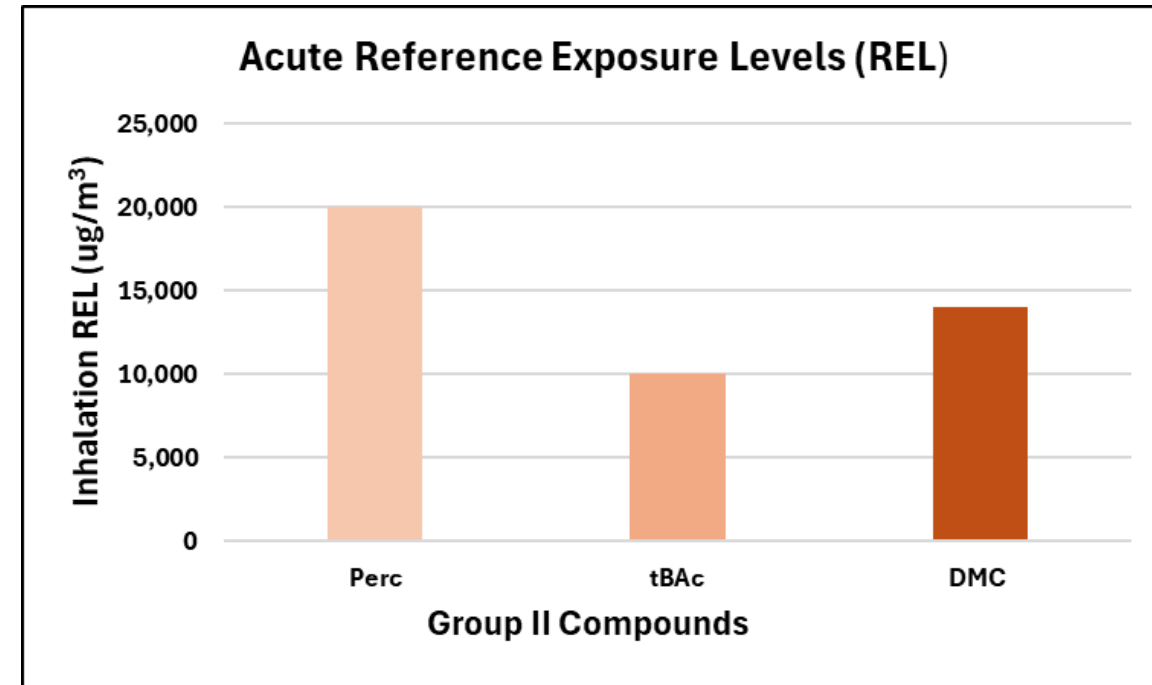
- Cancer Potency Factor (Slope Factor) for four Group II compounds is shown
- pCBtF has the highest Cancer Potency Factor of all Group II exempt compounds, almost 50% more than perchloroethylene



# Group II Compounds REL Comparison

## Acute Reference Exposure Levels (REL) for Group II Compounds

- Acute Health Impact (HI) has an inverse correlation with REL
  - tBAc has the lowest REL meaning the highest risk among Group II compounds
- Cancer Potency Factor for pCBtF is much higher than tBAc, perchloroethylene, and Dimethyl Carbonate (DMC), but there is no established REL for pCBtF

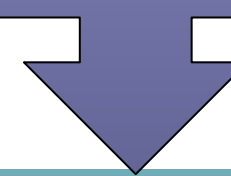


# Staff's Conclusions

Additional modeling supported the Stationary Source Committee's recommendation to remove the VOC exempt status of tBAc



OEHHA's assessment of pCBtF and tBAc shows compounds to be as toxic as many chemicals currently prohibited



Staff recommended prohibiting the use of pCBtF and tBAc

A 3D molecular model of a polymer chain, featuring blue spheres representing atoms and grey rods representing bonds. The structure is partially obscured by a dark blue horizontal band.

# Impacts on Rule 1401

# Rule 1401 Background

- Rule 1401– New Source Review of Toxic Air Contaminants is an “umbrella” rule that establishes requirements to ensure that new, modified, or relocated equipment or sources meet specific health risk levels for toxic air contaminants
- Rule 1401 Table 1 lists toxic air contaminants which are based on those identified by OEHHA

<b>CAS #</b>	<b>SUBSTANCE</b>	<b>EFFECTIVE DATE CANCER</b>	<b>EFFECTIVE DATE CHRONIC</b>	<b>EFFECTIVE DATE ACUTE</b>
75-07-0	acetaldehyde	December 7, 1990	September 8, 1998	September 10, 2010
60-35-5	acetamide	January 8, 1999		
107-02-8	acrolein		June 15, 2001	August 13, 1999
79-06-1	acrylamide (or propenamide)	December 7, 1990	**	
79-10-7	acrylic acid		*	August 13, 1999
107-13-1	acrylonitrile (or vinyl cyanide)	December 7, 1990	May 3, 2002	
107-05-1	allyl chloride	January 8, 1999		
117-79-3	aminoanthraquinone, 2-	January 8, 1999		
7664-41-7	ammonia		August 18, 2000	August 13, 1999
62-53-3	aniline	January 8, 1999		
7440-38-2	<b>arsenic and arsenic compounds (inorganic)</b> including, but not limited to: arsenic compounds (inorganic)	December 7, 1990	June 15, 2001	August 13, 1999
7784-42-1	arsine		September 10, 2010	August 13, 1999
1332-21-4	asbestos	June 1, 1990		
71-43-2	benzene (including benzene from gasoline)	June 1, 1990	August 18, 2000	August 13, 1999
92-87-5	benzidine (and its salts)	December 7, 1990	**	
100-44-7	benzyl chloride	September 8, 1998	**	August 13, 1999
7440-41-7	beryllium and beryllium compounds	December 7, 1990	May 3, 2002	
111-44-4	bis(2-chloroethyl)ether (DCEE)	December 7, 1990		
117-81-7	bis(2-ethylhexyl)phthalate (DEHP)	September 8, 1998	**	

- Lead state agency for the assessment of health risks posed by environmental contaminants
- Develops health-protective exposure levels as guidance for regulatory agencies and the public
  - Cancer risks: Cancer Potency Factors
  - Noncancer risks: Acute, 8-hour, and chronic Reference Exposure Levels (RELs)
  - Most updated list can be found on California Air Resources Board's (CARB) website\*
- Rule 1401 is periodically updated to reflect new compounds identified by OEHHA as toxic air contaminants

*[\\*https://ww2.arb.ca.gov/resources/documents/consolidated-table-oehha-carb-approved-risk-assessment-health-values](https://ww2.arb.ca.gov/resources/documents/consolidated-table-oehha-carb-approved-risk-assessment-health-values)*

# Proposed Amendments to Rule 1401

- Table 1 will be updated to include new compounds identified by OEHHA
- New compounds to be added include:

Compound Name	CAS Number
1-bromopropane	106-94-5
Trivalent chromium	16065-83-1
Parachlorobenzotrifluoride (pCBtF)	98-56-6
<i>tert</i> -Butyl Acetate (tBAc)	540-88-5
Hexamethylene Diisocyanate (HDI) (Monomer)	822-06-0
Polymeric Hexamethylene Diisocyanate	1221
Cobalt	7440-48-4
Trimethylbenzenes	25551-13-7

# Impacted Universe

Rule 1401 applies to facilities that submit a new permit application or a permit modification of existing equipment

- Existing permits with no further permit action are not impacted by Rule 1401
- Once Rule 1401 is amended, any new or relocated facility will have their usage of pCBtF and tBAc containing coatings significantly limited

Proposed amendments to Rules 1107, 1124, and 1136 will seek to phase out all coatings containing pCBtF and tBAc, as expeditiously as possible, to protect public health

- Once amended, the rules will initiate the phase out of pCBtF and tBAc containing coatings for all facilities



# Rule Developments to Address pCBtF and tBAc

# Past and Current Rule Developments to Address pCBtF and tBAc

- Rule 1168 set forth a path to phase out and prohibit the use of pCBtF and tBAc for VOC rules
- Proposed Amended Rule 1151 – Motor Vehicle and Mobile Equipment Non-Assembly Line Coating Operations is the second VOC rule to consider the use to pCBtF and tBAc
- Proposed Amended Rule 1171 – Solvent Cleaning Operations is also seeking to phase out pCBtF and tBAc
- Rule development is being initiated for:
  - Rule 1107 – Coating of Metal Parts and Products
  - Rule 1124 – Aerospace Assembly and Component Manufacturing Operations
  - Rule 1136 – Wood Products Coatings

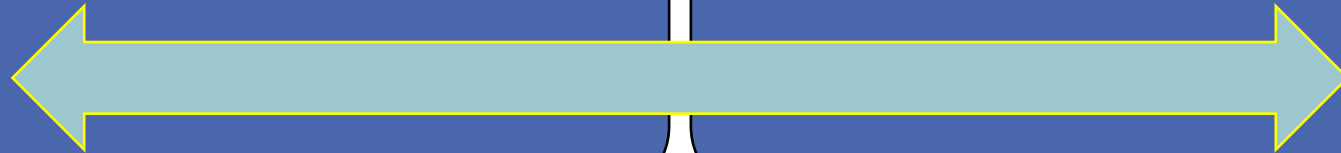
# Key Objectives of Rule Amendments



Evaluate VOC content  
limits and usage of  
pCBtF and tBAc



Phase out the use of  
- pCBtF (CAS#: 98-56-6)  
- tBAc (CAS #: 540-88-5)



# Rule 1151 Background

- Rule 1151 was adopted in 1998 and last amended in 2014
- Applies to all motor vehicles and mobile equipment non-assembly line coating operations
- Purpose of the rule is to limit VOC emissions from automotive coatings
- Rule development initiated in November 2023 to:
  - Phase out pCBtF and tBAc
  - Address South Los Angeles Community Emission Reduction Plan objectives



# PAR 1151

## Proposed Phase Out Approach



Allowing higher-VOC autobody refinishing coatings to be sold into South Coast AQMD upon rule adoption

- National or European VOC standards formulated without pCBtF or tBAc

Requiring pCBtF and tBAc to be phased out over time

Establishing lower-VOC limits that would go into effect at a future date

- BARCT assessment to evaluate technical feasibility and cost effectiveness of future effective limits

# Rule 1171 Background

- Rule 1171 was adopted in 1991 and last amended in 2009
- Applies to cleaning operations where solvents used to remove contaminants in a variety of industries such as textiles, electronics, chemical, lumber, printing, metal, and other miscellaneous manufacturing
- Purpose of the rule is to limit VOC emissions from solvent cleaning operations
- Rule development initiated in January 2024 to:
  - Phase out pCBtF and tBAc
  - Address South Los Angeles Community Emission Reduction Plan objectives



# Rule 1107 Background

- Rule 1107 was adopted in 1979 and last amended in 2023
- Applies to all metal coating operations except:
  - Aerospace assembly
  - Magnet wire
  - Marine craft
  - Motor vehicle
  - Metal container
  - Coil coating operations
  - Architectural components coated on site
- Purpose of the rule is to limit VOC emissions from the coating of metal parts and products
- Establishes VOC content limits and coating application methods



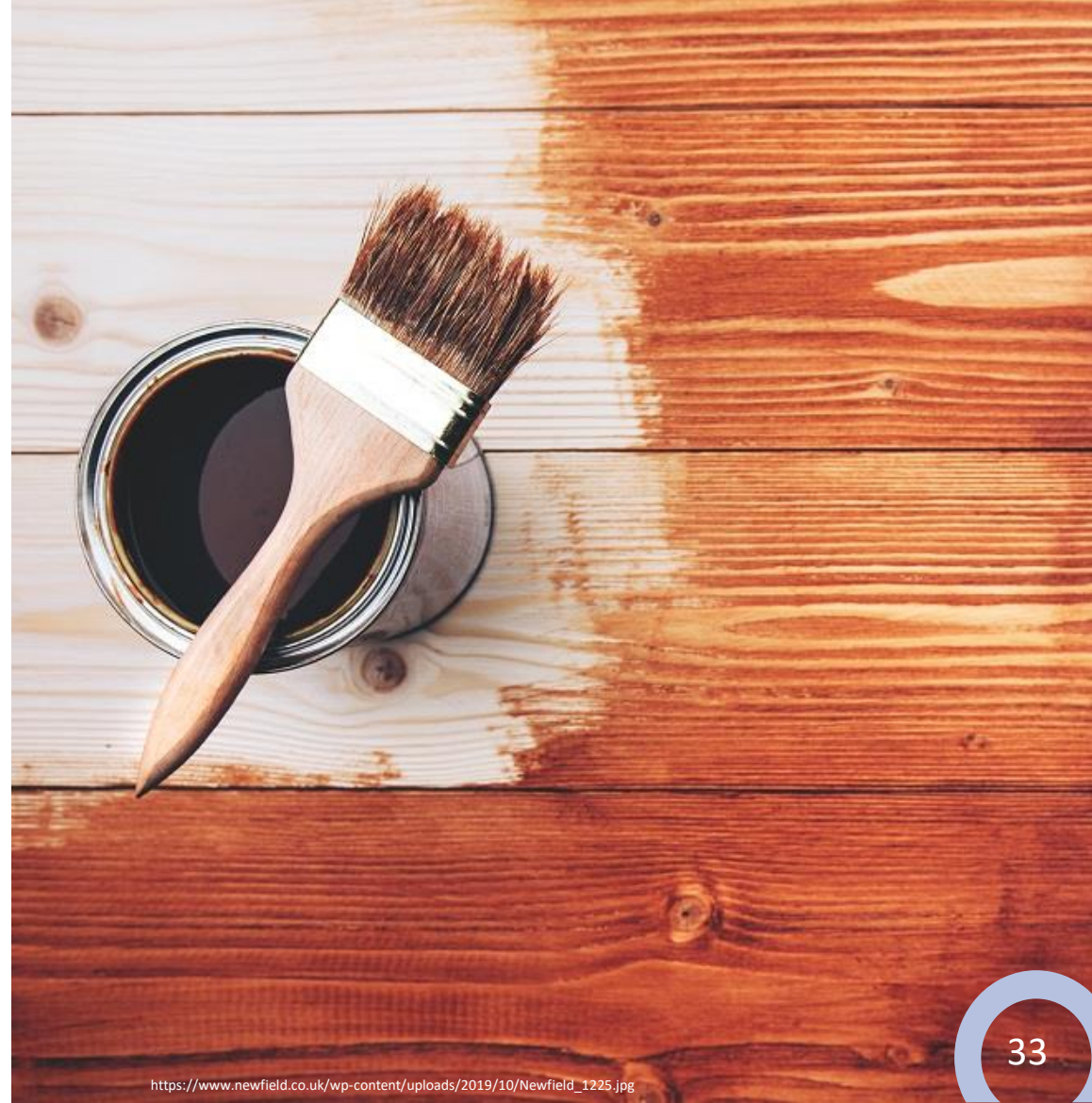
# Rule 1124 Background

- Rule 1124 was adopted in 1979 and last amended in 2001
- Applies to any operation associated with manufacturing and assembling products for aircraft and space vehicles
- Purpose of the rule is to limit emissions from aerospace assembly and component manufacturing operations
- Establishes VOC content limits for aerospace coatings, primers, adhesives, sealants, maskants, lubricants, cleaning solvents, and strippers



# Rule 1136 Background

- Rule 1136 was adopted in 1983 and last amended in 1996
  - Proposed to reduce 81% of VOC emissions by 2005
- Purpose of the rule is to limit VOC emissions from coatings or strippers and surface preparation of any wood products, including furniture, cabinets, shutters, frames and toys
  - Rule does not apply to residential non-commercial operations
- Establishes VOC content limits and coating application methods





# Stakeholder Survey



# Stakeholder Survey Objectives

Survey will ask coating manufacturers about all coatings sold into or within South Coast AQMD jurisdiction

- Will assist South Coast AQMD staff understand the extent to which exempt solvents are used to formulate compliant products
- Will not include coatings regulated under Rule 1151

Main compounds of interest are:

- pCBtF - CAS#: 98-56-6
- tBAc - CAS #: 540-88-5

Survey will help staff:

- Evaluate VOC content limits
- Propose feasible prohibition timelines for pCBtF and tBAc



# Stakeholder Survey Questions

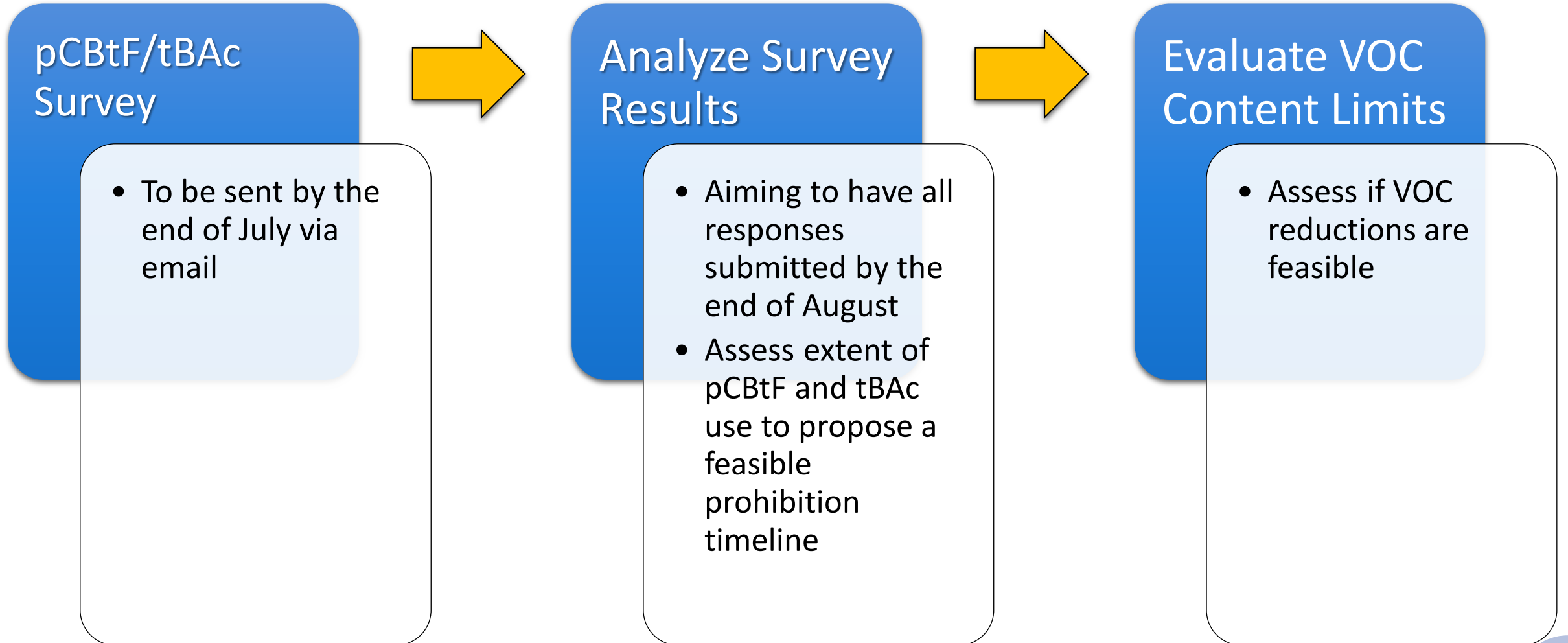
- The stakeholder survey will help staff gain a clearer picture of:
  - VOC content, percentage of pCBtF and tBAC used, and determining waterborne/solvent-based coatings for each category
  - The share of the overall coating market that contains pCBtF and/or tBAC
  - The share of the overall coating market that is solvent or water-based
  - Total volume of sales within South Coast
- Survey questions described are subject to change

LINE NO.	PRODUCT CODE & NAME	WATERBORNE (W/B) OR SOLVENT-BASED (S/B)?	TBAC WT %	PCBTF WT %	VOC Regulated Product (g/L) [Less water and exempt solvents]	VOC Material (g/L)	TOTAL ANNUAL VOLUME SOLD IN & FOR USE IN SOUTH COAST AQMD (gal)
1							
2							
3							
4							
5							
6							

SECTION (D): SOLVENT CLEANERS							
LINE NO.	PRODUCT CODE & NAME	WATERBORNE (W/B) OR SOLVENT-BASED (S/B)?	TBAC WT %	PCBTF WT %	VOC Regulated Product (g/L) [Less water and exempt solvents]	VOC Material (g/L)	TOTAL ANNUAL VOLUME SOLD IN & FOR USE IN SOUTH COAST AQMD (gal)
1							
2							
3							
4							
5							
6							

# Stakeholder Survey Timeline





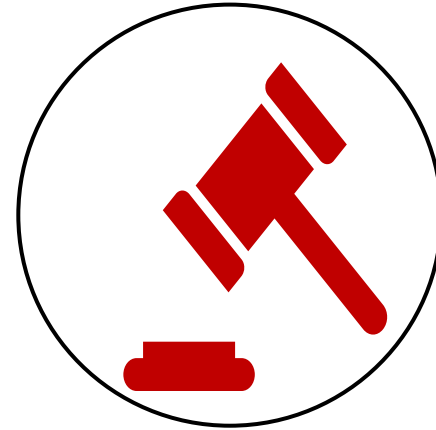
Next Steps



# Next Steps



Continue to hold Working  
Group Meetings and  
individual stakeholder  
meetings



Anticipated Public  
Hearings in 2025

# Working Group Materials

- Working Group materials for each Working Group meeting will be made available:

<https://www.aqmd.gov/home/rules-compliance/rules/scaqmd-rule-book/proposed-rules>

The screenshot shows the South Coast AQMD website. The header includes the AQMD logo, navigation links (Language, F.I.N.D., About, Contact, Grants & Bids, Online Services, I'm Looking For, Sign Up), and a search bar. A secondary navigation bar lists categories: AIR QUALITY, INCENTIVES & PROGRAMS, RULES & COMPLIANCE (highlighted), PERMITS, NEWS, WEBCASTS, & CALENDAR, TECHNOLOGY ADVANCEMENT, RESOURCES, and MEETING AGENDAS & MINUTES. Below the header, a breadcrumb trail reads: Home / Rules & Compliance / Rules / South Coast AQMD Rule Book / Proposed Rules. The main heading is 'Proposed Rules and Proposed Rule Amendments'. On the left, a sidebar menu contains: Proposed Rules, Guide to South Coast AQMD Rules, Archived, and Recent Actions. The main content area contains the following text:

This page includes a list of rules that are actively in rule development or have recently been proposed and/or amended.

Information regarding Working Group Meetings, Public Workshops, and supporting documents such as presentations, draft staff reports, draft proposed rules, comment letters received, and other information can be found by clicking the rule in the table.

Information associated with the rule development process for rules that were adopted or amended within the past five years can be found on our [Archived Page](#).

Please refer to the [South Coast AQMD Rule Book](#) to obtain the current list of adopted or amended rules and regulations.

For current rule forecast please see the monthly [Governing Board Agenda](#).

Rule Name	Description
Regulation III	Fee Rules
Rule 218.2 and Rule 218.3	Proposed Rule 218.2 - Continuous Emission Monitoring System: General Provisions Proposed Rule 218.3 - Continuous Emission Monitoring System: Performance Specifications

# Receiving Rulemaking Updates

- To receive email updates, sign up at South Coast AQMD sign up page

<http://www.aqmd.gov/sign-up>

- Enter email address and name
- Subscribe by scrolling down to “Rule Updates” and check the box for Rules 1107, 1124, and/or 1136 and click on the subscribe button at bottom of page
- An email will be sent to confirm
- Future meeting notices, links to documents, and any updates will be sent via email

During this difficult time, South Coast AQMD is committed to protecting air quality and public health. Please visit our COVID-19 page for the operational updates and latest information. [Learn more.](#)

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If you wish to receive daily pollution forecasts or alerts for specific pollution levels in your area, sign up for [Air Alerts](#).

For printed copies of South Coast AQMD publications that mailed to you, please visit [Subscription Services](#) (charges may apply).

Enter the following information:

Email Address:	Re-Enter Email Address:
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Subscribe by checking the box adjacent to the E-Mail List(s) you are interested in and then CLICK on the Subscribe button below.

General Notifications:

<input type="checkbox"/> Events & Conferences	List of stakeholders interested in events and conferences.
<input type="checkbox"/> Environmental Justice Conference	Interest in attending a South Coast AQMD EJ Conference (More Information - TBD)
Brief updates highlighting what is current at South Coast AQMD, such as	

## Rule Updates:

<input checked="" type="checkbox"/> Rule 1124	Aerospace Assembly and Component Manufacturing Operations
<input type="checkbox"/> Rule 1130	Graphic Arts
<input type="checkbox"/> Rule 1132	Further Control of VOC Emissions from High-Emitting Spray Booth Facilities

# Staff Contacts

## Rule 1107

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