Proposed Amended Rule 1124 - *Aerospace Assembly and Component Manufacturing Operations* (PAR 1124)

Working Group Meeting #5
November 19, 2025

South Coast AQMD

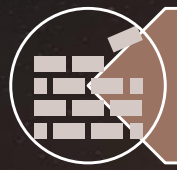
Join Zoom Webinar

https://aqmd.zoomgov.com/j/1601745757

Webinar ID: 160 174 5757

Teleconference Dial-In: +1 669 254 5252

AGENDA



PAR 1124 Progress Update

Proposed Rule Concepts

Initial Preliminary Draft Rule Language

Other Updates

Next Steps

PAR 1124 Progress Update

Summary of Rule Development Efforts

Summary of Working Group Meeting (WGM) #4

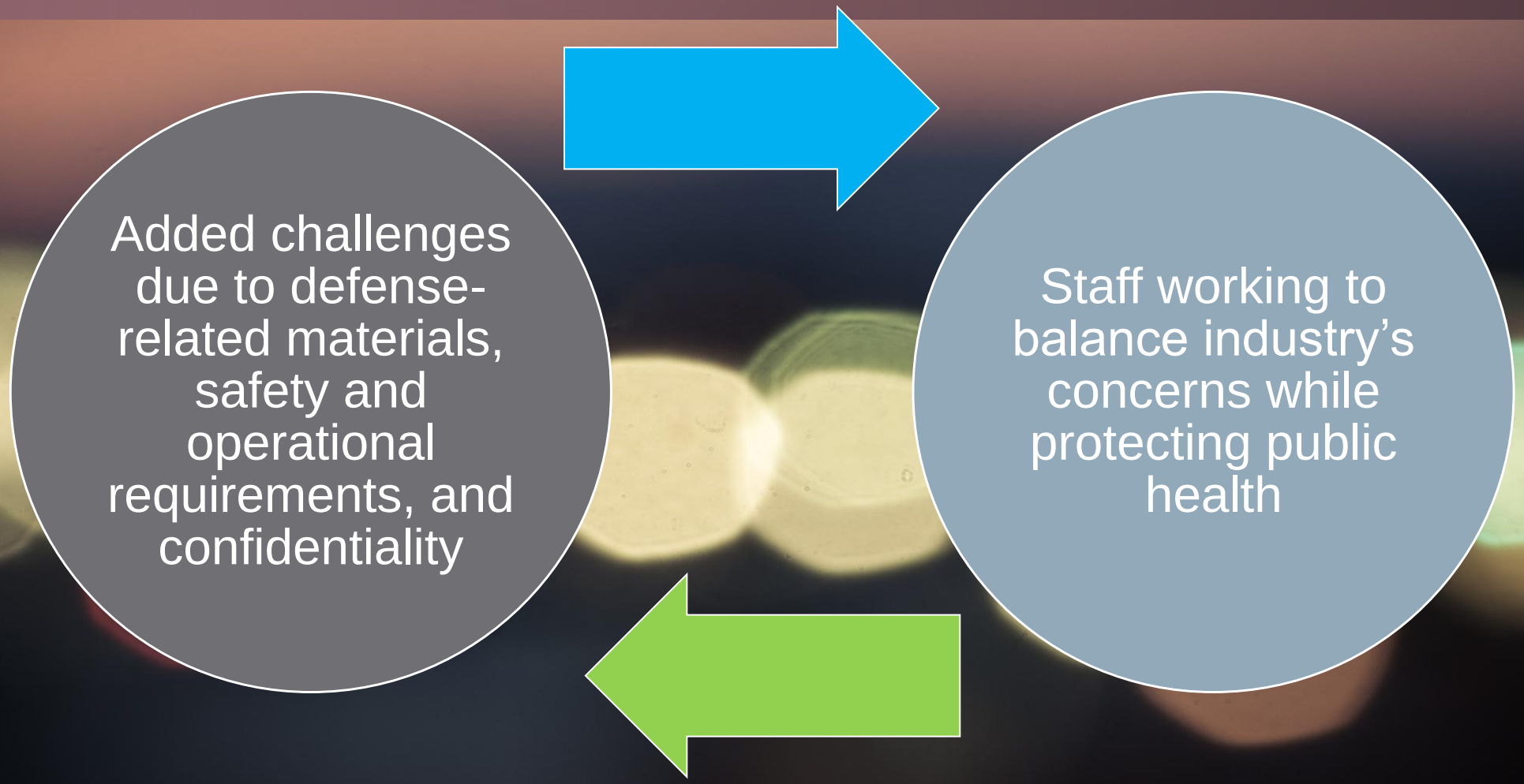
WGM #4 focused on introducing initial rule concepts

Rule Development Progress Since WGM #4

- Staff drafted rule concepts, including rule language
- Met with emissions control manufacturer

Proposed Rule Concepts & Rule Language

Aerospace Industry



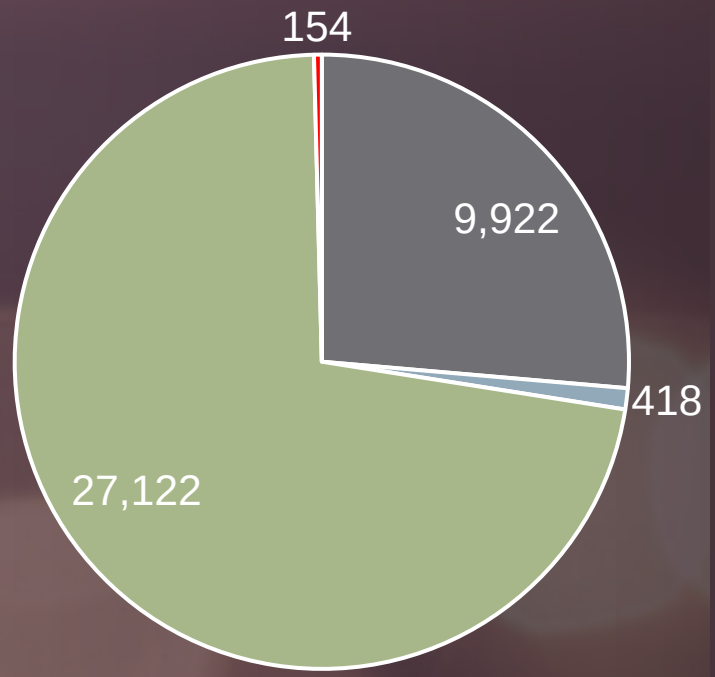
Rule Considerations

- Not all materials subject to Rule 1124 contain pCBtF or t-BAc
- Materials that do not rely on these compounds, or have readily available alternatives, can be phased out
  - Include sell-through and use-through provisions to allow for transition
- For materials that rely on pCBtF or t-BAc, compliance options available to facilities

Aerospace Materials

Weight Percentages of pCBtF from Manufacturer Survey

Category	Volume Sold (gal)	Range of wt % pCBtF	Average of wt% pCBtF
Topcoats	~ 9,922	0.7 – 26.7	~ 9.1
Adhesion Promoter	~ 418	31 – 96.3	~ 70
General Primer	~ 27,122	4.4 – 42	~ 21
Sealants	~ 154	0.5 – 10.8	~ 5.5



Maskants also use pCBtF in high concentrations, but did not submit survey (manufacturers reached out directly)

Two Level Phase Out Approach:

Level 1 Materials:

Materials that DO NOT rely on pCBtF or t-BAc:
Require full phase out

Level 2 Materials:

Materials that DO rely on pCBtF and t-BAc:
Facility will have three options

Level I Materials

MATERIALS THAT WILL BE REQUIRED TO PHASE OUT OF PCBTF AND T-BAC

Level I Materials

Categories that currently do not use pCBtF or t-BAc in their formulations:

The following primary categories and their subcategories

Adhesives	Lubricants	Cleaning Solvents and Strippers	Sealants

Level I Materials (*cont.*)

Categories that currently rely on pCBtF or t-BAc in their formulations; however, alternatives are relatively available:

The following primary categories and their subcategories

Adhesion Promoters	Maskants *

* Some maskants containing perc being applied at current facilities with controls. This amendment will not address perc usage.

Level I Materials

Phase out Initial Proposed Rule Language

Subdivision (f) – Prohibition of Possession, Specification, Sale, or Use

(ef) Prohibition of Possession, Specification, Sale, or Use

(1) Level I Material pCBtF and t-BAc Prohibition

No Person shall manufacture, supply, sell, offer for sale, market, blend, distribute, package, or repackage any Level I Material listed in Table 1 or Table 2 for use within the South Coast AQMD, nor shall any owner ir operator of a Facility possess or apply Level I Material, including any VOC-containing material added to the original Aerospace Material supplied by the manufacturer, that contains pCBtF or t-BAc in concentrations greater than 0.01 percent by weight that was manufactured after the applicable Prohibition Date in Table 4 – Level I Materials pCBtF and t-BAc Prohibition Schedule (Table 4).

(2) Level I Material Sell-Through and Use-Through

Any Level I Material that is manufactured prior to the applicable Prohibition Date in Table 4, that contains more than 0.01 percent of pCBtF and/or t-BAc, may be sold, supplied, or offered for sale until the applicable Sell-Through Date in Table 4 and may be used until the applicable Use--Through Dates in Table 4.

Level I Materials

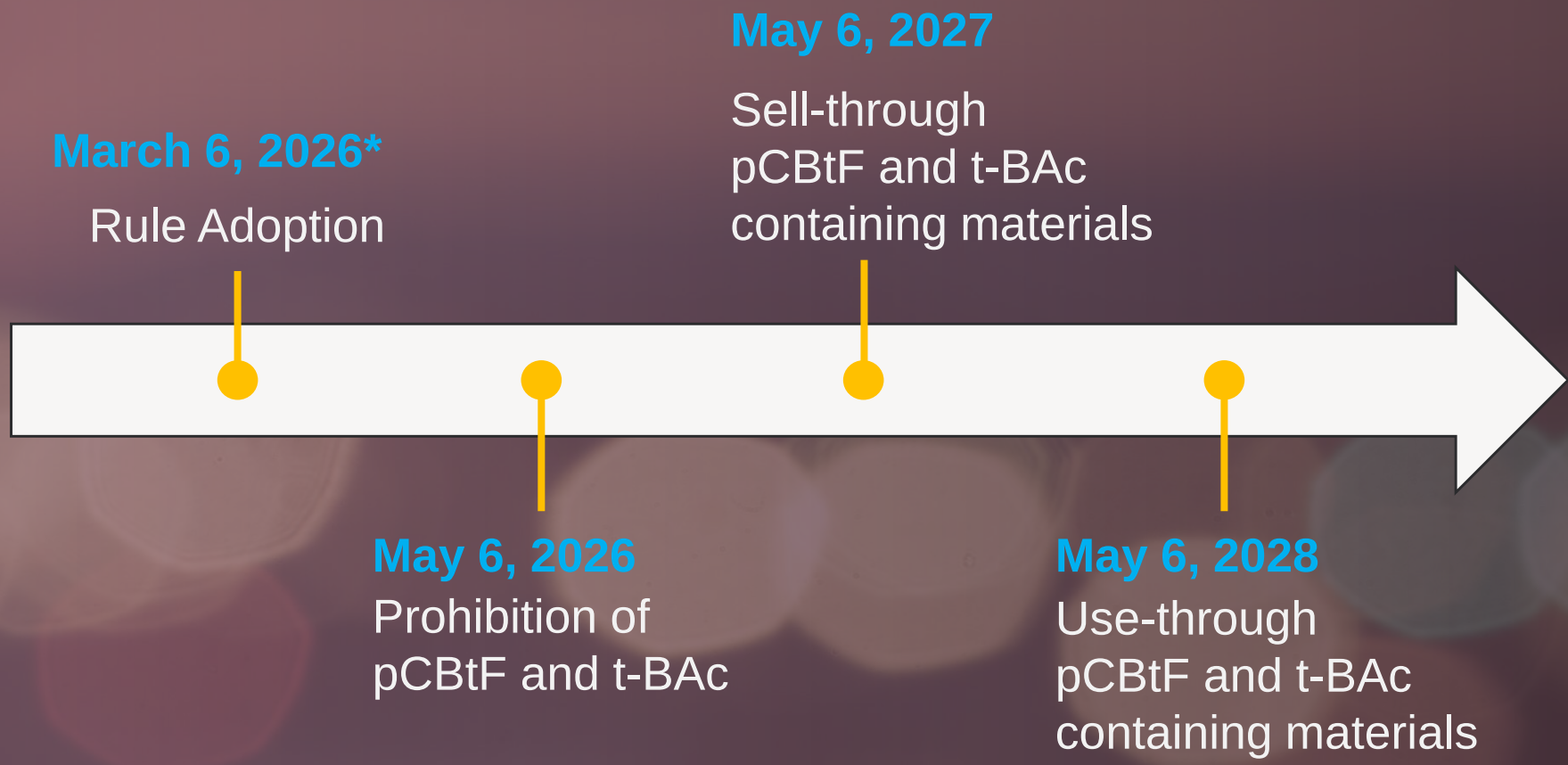
Phase out Initial Proposed Rule Language *(cont.)*

Subdivision (f) – Prohibition of Possession, Specification, Sale, or Use

Table 4 – Level I Materials pCBtF and t-BAc Prohibition Schedule

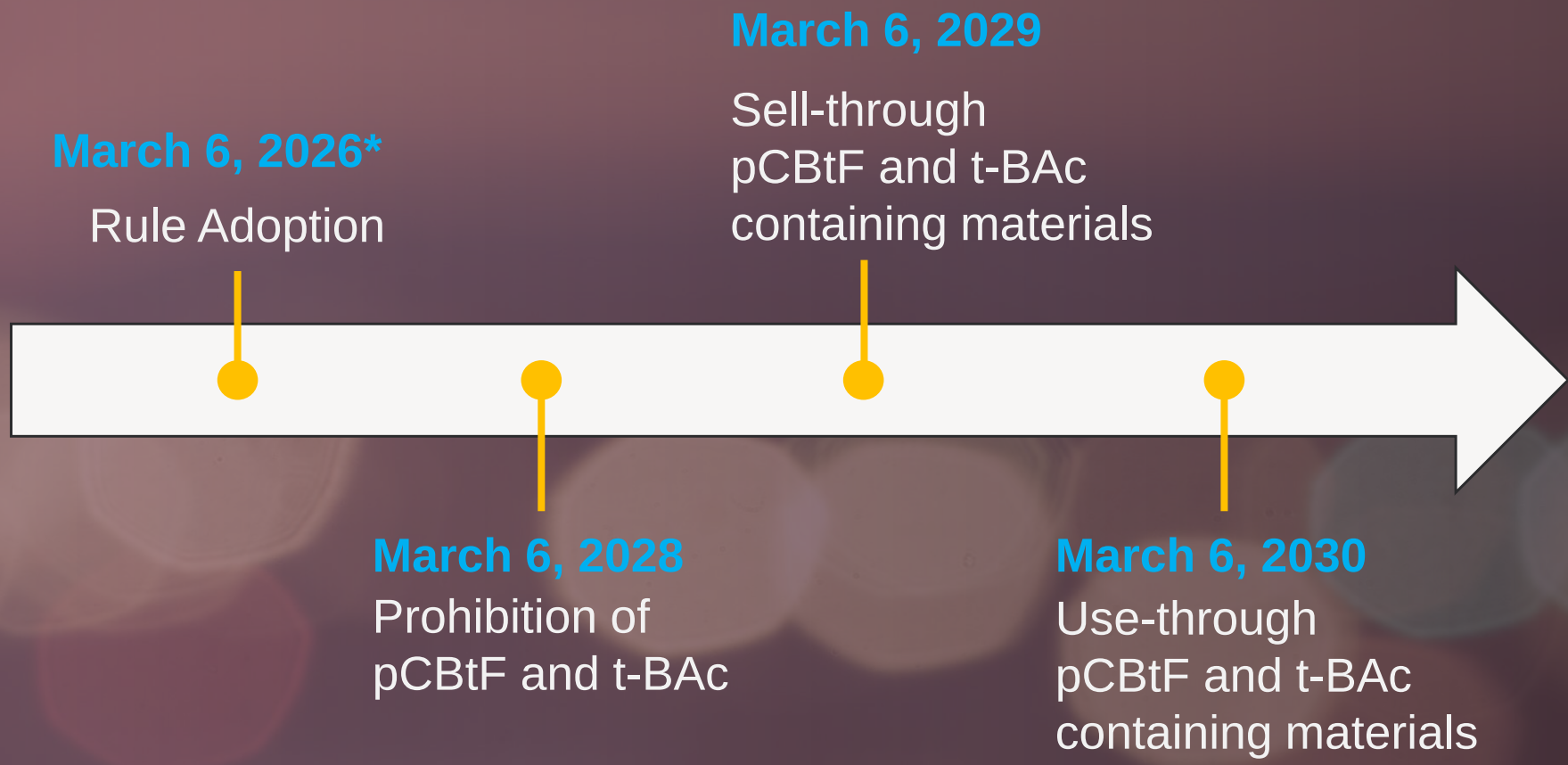
Categories and their Applicable Subcategories	Prohibition Date	Sell-Through Date	Use-Through Date
Adhesives Sealants Lubricants Cleaning Solvents Strippers Adhesion Promoters	*[Two Months from Date of Rule Adoption]*	*[One Year, Two Months from Date of Rule Adoption]*	*[Two Years, Two Months from Date of Rule Adoption]*
Maskants	*[Two Years from Date of Rule Adoption]*	*[Three Years from Date of Rule Adoption]*	*[Four Years from Date of Rule Adoption]*

Proposed Timeline – Level I Materials



**Subject to change*

Proposed Timeline – Maskants



**Subject to change*

Considerations for Adhesion Promoters

- Adhesion Promoters have very high pCBtF content/cancer exposure potential
  - Low-solids coatings with no readily available options for reducing VOC levels
    - VOC limit reduced from 850 g/L → 250 g/L in 2005, achieved with pCBtF
  - Low volume use, specialty category
- Rule 1151 phased out of pCBtF in Adhesion Promoters by increasing the VOC limits and allowing alternative MIR limits
  - Increased VOC limits on rule adoption to allow for early prohibition
- PAR 1124 to consider similar path

	Current Limit	Date of Rule Adoption	Effective January 1, 2028	
Adhesion Promoter	250 g/L	840 g/L	720 g/L or	2.00 g O_3/g Product

Adhesion Promoters

Initial Proposed Rule Language

Subdivision (d) – Requirements

(3) Adhesion Promoters

No Person shall manufacture, supply, sell, offer for sale, market, blend, distribute, package, or repackage any Adhesion Promoters for use within South Coast AQMD, nor shall any owner or operator of a Facility apply or solicit the use of any Adhesion Promoters on Aerospace Components, including any VOC-containing materials added to the original Aerospace Material supplied by the manufacturer, which contain VOC in excess of the applicable VOC limits specified in Table 3 where:

(A) Adhesion Promoters formulated to comply with the VOC limits effective [*Date of Rule Adoption*] and January 1, 2028 shall not contain more than 0.01 weight percent of either pCBtF or t-BAc; and

(B) In lieu of complying with the [*Date of Rule Adoption*] or January 1, 2028 Regulatory VOC limit, a Person may manufacture, supply, sell, offer for sale, market, blend, distribute, package, or repackage any Adhesion Promoters for use within South Coast AQMD, or an owner or operator of a Facility may apply or solicit the use of any Adhesion Promoters on Aerospace Components, including any VOC-containing materials added to the original Aerospace Material supplied by the manufacturer of the Adhesion Promoters, that complies with the Alternative PW-MIR VOC limit listed in Table 3.

Adhesion Promoters

Initial Proposed Rule Language *(cont.)*

Subdivision (d) – Requirements

Table 3 – Table of Standards for Adhesion Promoters

Regulatory VOC Limits (g/L) and Alternative PW-MIR VOC Limit (g O_3/g Product)

Category	VOC Limits and Effective Dates			
	January 1, 2005	[*Date of Rule Adoption*]	January 1, 2028	
	g/L	g/L	g/L	(g O_3/ g Product)
Adhesion Promoter	250	840	720	2.00

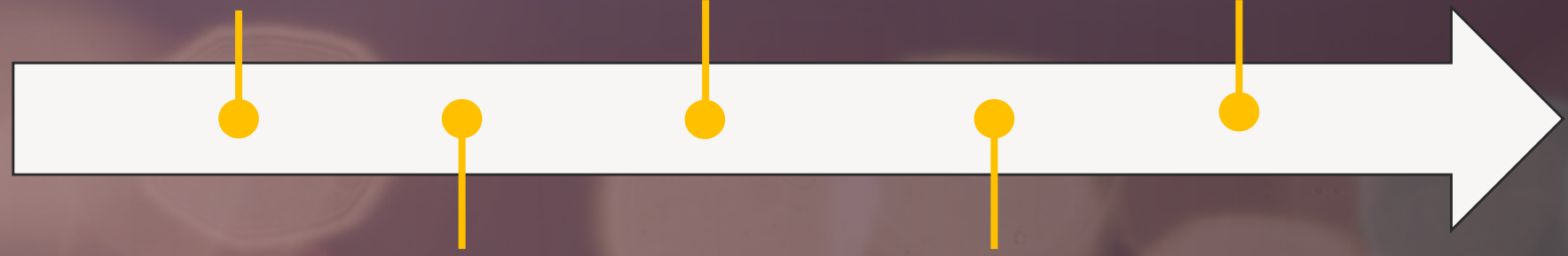
(4) Sell-Through and Use-Through for Adhesion Promoters

Any Adhesion Promoter that is manufactured prior to:

(A) [*Two Months after Date of Rule Adoption*] that contains more than 0.01 percent of pCBtF and/or t-BAc, may be sold, supplied, offered for sale, or used pursuant to the Level I Material sell through and use through dates in paragraph (f)(2); and

(B) January 1, 2028, with a VOC limit that exceeds 720 g/L or 2.00 g O_3/g Product) may be sold, supplied, or offered for sale until January 1, 2029 and may be used until January 1, 2030.

Proposed Timeline – Adhesion Promoters



March 6, 2026*

Rule Adoption
VOC limit
increase to
840 g/L

May 6, 2026

Prohibition of
pCBtF and t-BAc

May 6, 2027

Sell-through
pCBtF and t-BAc
containing adhesion
promoters

January 1, 2028

VOC limit
decrease to 720 g/L or
2 gO_3/g Product

May 6, 2028

Use-through
pCBtF and t-BAc
containing adhesion
promoters

**Subject to change*

Level II Materials

MATERIALS THAT RELY ON PCBTF OR T-BAC, REFORMULATION MAY NOT BE FEASIBLE

Level II Materials

Categories that rely on pCBtF or t-BAc to meet VOC limits, with no feasible alternative formulations:

The following primary categories and their subcategories

Primers (other than Adhesion Promoters)	Topcoats (Currently Called Coatings in Rule)

Compliance Pathway for Level II Materials

Proposed Pathways Summary

1. Air Pollution Control Device
2. Facility-Level Phase out
3. Low-Use Exemption

Option 1

Install Air Pollution Control System

Objectives of Option 1

Provide compliance pathway for facilities unable to substitute materials

Reduce exposure risk while maintaining aerospace operations

Permit Evaluation - VOC Limits at Large Facilities

Large companies

- 19 Title V facilities identified, primarily found in industrial areas
- Operate multiple spray booths with different VOC mass emission limits
- Mass emission limits determined in a facility situation or case-by-case basis

Variation in VOC limits

- Facility-wide VOC limits from ~100 lb/day to over 300 lbs/day
- Some facilities operate under monthly caps (e.g. ~800 lbs/month)
- Individual spray booths vary but limited to 20-100 lbs per day

Key Takeaway

- Carbon adsorbers are a feasible and effective control option for the VOC ranges observed at larger facilities

Meeting Takeaways – Carbon Adsorption System Manufacturer

Design Features

- Removes up to 99% of pCBtF emissions (design dependent)
- Capacity up to 40,000 CFM
- Sampling ports available
- Mist eliminator can be added to address humidity
- Carbon replacement most costly component (up to $200,000)

Typical System Example

- 20,000 CFM
- Diameter:12-24ft
- Height:10-20ft
- Cost: $80,000 – $150,000
- 45,000 lbs of carbon load

Carbon Change Out and Breakthrough Estimate*

- Illustrates potential carbon replacement frequency under permitted VOC limits (Conservative scenario)
- Example assumes spray booth with a VOC limit of 25 lbs/day, operating everyday at the limit

Calculation:

$$\left[\frac{25\ lbs\ VOC}{day}\right] * \left[\frac{1\ lb\ carbon}{0.2\ lb\ VOC}\right] * \left[\frac{365\ days}{1\ year}\right] = \frac{45{,}625\ lb\ carbon}{year}$$

- For a system with 45,000 lbs carbon capacity, implies ~annual replacement if operated continuously at the VOC limit
- Actual replacement frequency will vary depending on usage rates
- Will need to include source testing requirements

**Example only*

Usage Determination Inputs

Assumptions for HRA

- Controls Factor: 95%
- Meteorological data; KHHR – Northrop Field
- Spray booth without burner; 16ft ≤ stack height ≤ 24ft
- Operating hours: 24 hours/day, 7 days/week, 52 weeks/year
- Coatings modeled at 20% pCBtF, no other TACs
- Entire Facility
- Variable Distance

95% removal efficiency of pCBtF

Option 1 - Usage Limits for Level II Materials	
Distance from Receptor (m)	Proposed Usage (gal/yr)
25 or less	250
26 – 50	1,000
51 – 75	1,700
76 – 100	2,500
101 – 125	3,200
126 – 150	3,800
151 – 175	6,000
176 or greater	10,000

Potential Facility Usage

- Limits are case-specific, depending on distance to sensitive receptor
- Allowable usage can scale from 250 to ~10,000 gal/yr while remaining health protective
- Usage limits will be established during the permitting process
- Rule allows facility to opt for 250 gal/yr limit without demonstrating distance to nearest sensitive receptor

Rule Language Concepts

- Require facilities to submit a permit application within **six months** of rule adoption for the installation of carbon adsorption system on any spray booth that uses pCBtF and/or t-BAc
  - Facility could apply for permit at a later date if they have future plans to use pCBtF and/or t-BAc containing materials
- Establish a minimum device control efficiency of 95%
  - Usage limit based on sensitive receptor distance
  - Installation to be completed within 12 months of permit-to-construct issuance, with potential 12-month extension
  - Facilities demonstrate compliance through source testing and recordkeeping

Level II Materials Option I

Initial Proposed Rule Language

Subdivision (e) – Alternative Compliance Options

(2) Air Pollution Control Systems for Level II Materials

An owner or operator of a Facility may elect to install an Air Pollution Control Device in lieu of complying with the Level II Material prohibition in paragraph (f)(3) provided:

(A) No later than [*Six months after Date of Rule Adoption*], or effective [*Six months after Date of Rule Adoption*], prior to the use of any Level II Materials, the owner or operator of a Facility submits a complete South Coast AQMD permit application(s) to include a permit condition that:

(i) Requires an Air Pollution Control Device Efficiency of at least 95 percent, or equivalent mass emissions, demonstrated by a source test pursuant to subdivision (h);

(ii) Requires the use or curing of any Level II Materials to be conducted in an Air Pollution Control System that collects 100 percent of the emissions generated, as determined with a smoke test; and

(iii) Limits the use of any Level II Materials to:

(I) 250 gallons per year in each Air Pollution Control System; or

Level II Materials Option I

Initial Proposed Rule Language *(cont.)*

Subdivision (e) – Alternative Compliance Options

(II) The annual usage limits listed in Table A-1 in Attachement A of this rule, in each Air Pollution Control System, based on the distance to the nearest Sentitive Receptor.

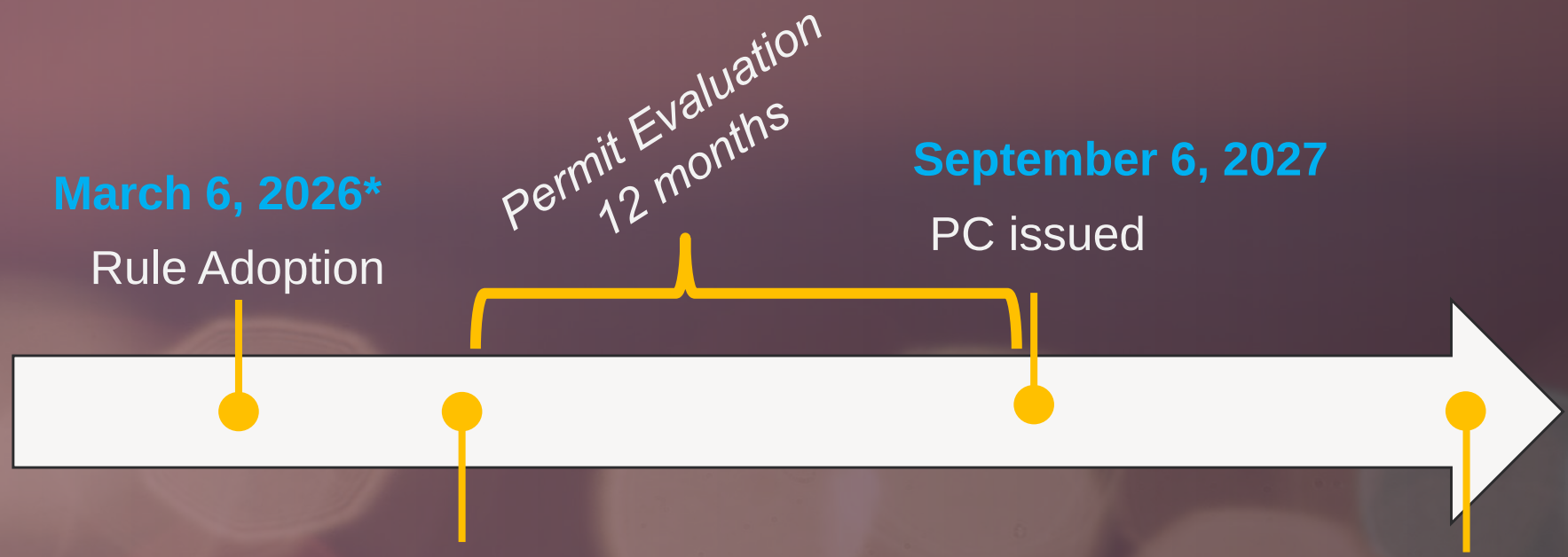
(B) The owner or operator of the Facility only uses Level II Materials in an Air Pollition Control System and operates in compliance with the facility permit usage limits within:

(i) 12 months following the date the permit to construct is issued, or

(ii) A time extension approved by the Executive Officer; and

(C) The owner or operator of the Facility performs maintenance and keeps records pursuant to paragraph (g)(2).

Proposed Timeline – Option 1



**Subject to change*

Level II Materials Option I

Initial Proposed Rule Language –

Backstop Provision

Subdivision (e) – Alternative Compliance Options

(3) Compliance Deadline for pCBtF or t-BAc Air Pollution Control Devices

An owner or operator of a Facility who elected to install an Air Pollution Control Device pursuant to paragraph (e)(2) but has not received an approved permit to operate for the Air Pollution Control Device within four years of submitting a complete South Coast AQMD permit application(s) shall no longer use Aerospace Materials that contain pCBtF or t-BAc.

Source Testing Requirements for Option 1

Initial Proposed Rule Language

Staff still refining Source Test Requirements

Subdivision (h) – Source Testing

(h) Source Testing

(1) Source Test Protocol

An owner or operator of a Facility required to conduct source tests pursuant to paragraph (h)(1) shall:

(A) Submit a source test protocol to the Executive Officer for approval within 90 days of permit to construct issuance;

(B) At least two weeks prior to the scheduled source test, notify the Executive Officer, in writing, of the intent to conduct source testing; and

(C) Conduct a source test according to the approved protocol.

(2) Unless requested by the South Coast AQMD, after the approval of the initial source test protocol, an owner or operator subject to this rule is not required to resubmit a source test protocol for approval unless the Air Pollution Control Device has been altered in a manner that requires a permit application submittal.

Source Testing Requirements for Option 1

Initial Proposed Rule Language *(cont.)*

Staff still refining Source Test Requirements

Subdivision (h) – Source Testing

(3) Source Test Schedule

An owner or operator of a Facility operating an Air Pollution Control Device pursuant to paragraph (e)(2), shall conduct source tests to determine the Air Pollution Control Device Efficiency according to the following schedule:

(A) Conduct an initial source test within 180 days from operating an Air Pollution Control Device or within 30 days from receiving an approved source test protocol pursuant to paragraph (h)(1), whichever is later; and

(B) Perform a source test every 36 months from the date of the most recent source test.

(4) An owner or operator of a Facility operating an Air Pollution Control Device pursuant to paragraph (e)(2) shall conduct all source tests:

(A) Using a South Coast AQMD approved source test protocol pursuant to paragraph (h)(1);

(B) During application of Aerospace Materials containing pCBtF or t-BAc; and

(C) Normal operating conditions.

Option 2

Facility-Level Phase Out of pCBtF/t-BAc Materials

Objectives of Option 2

Ensure facilities are not applying pCBtF/ t-BAc Materials unless it can be shown to be safe

Eliminates exposure risk to the community

Feasible option especially for non-defense Materials operations

Level II Materials Option 2

Phase out Initial Proposed Rule Language

Subdivision (f) – Prohibition of Possession, Specification, Sale, or Use

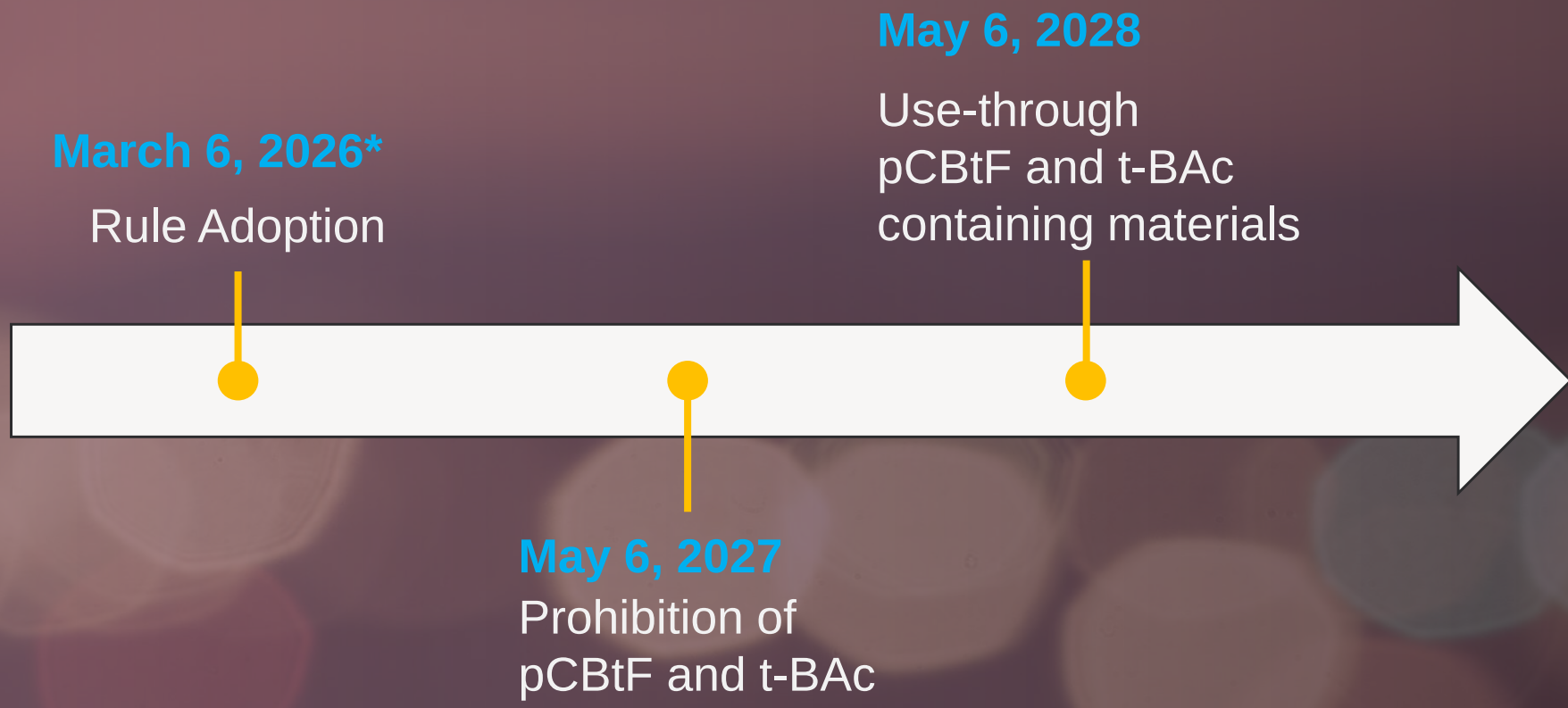
(3) Level II Material pCBtF and t-BAc Prohibition

Unless an owner or operator of a Facility has an alternative compliance option pursuant to paragraph (e)(2), approved by the Executive Officer, no owner or operator of a Facility shall possess or apply any Level II Materials, including any VOC-containing material added to the original Level II Material supplied by the manufacturer, that contains pCBtF or t-BAc in concentrations greater than 0.01 percent by weight that was manufactured after [*12 Months after Date of Rule Adoption*].

(4) Level II Material Use Through

Any Level II Material that is manufactured prior [*12 Months after Date of Rule Adoption*], that contains more than 0.01 percent of pCBtF and/or t-BAc, may be possessed or applied until [*24 Months after Date of Rule Adoption*].

Proposed Timeline – Option 2

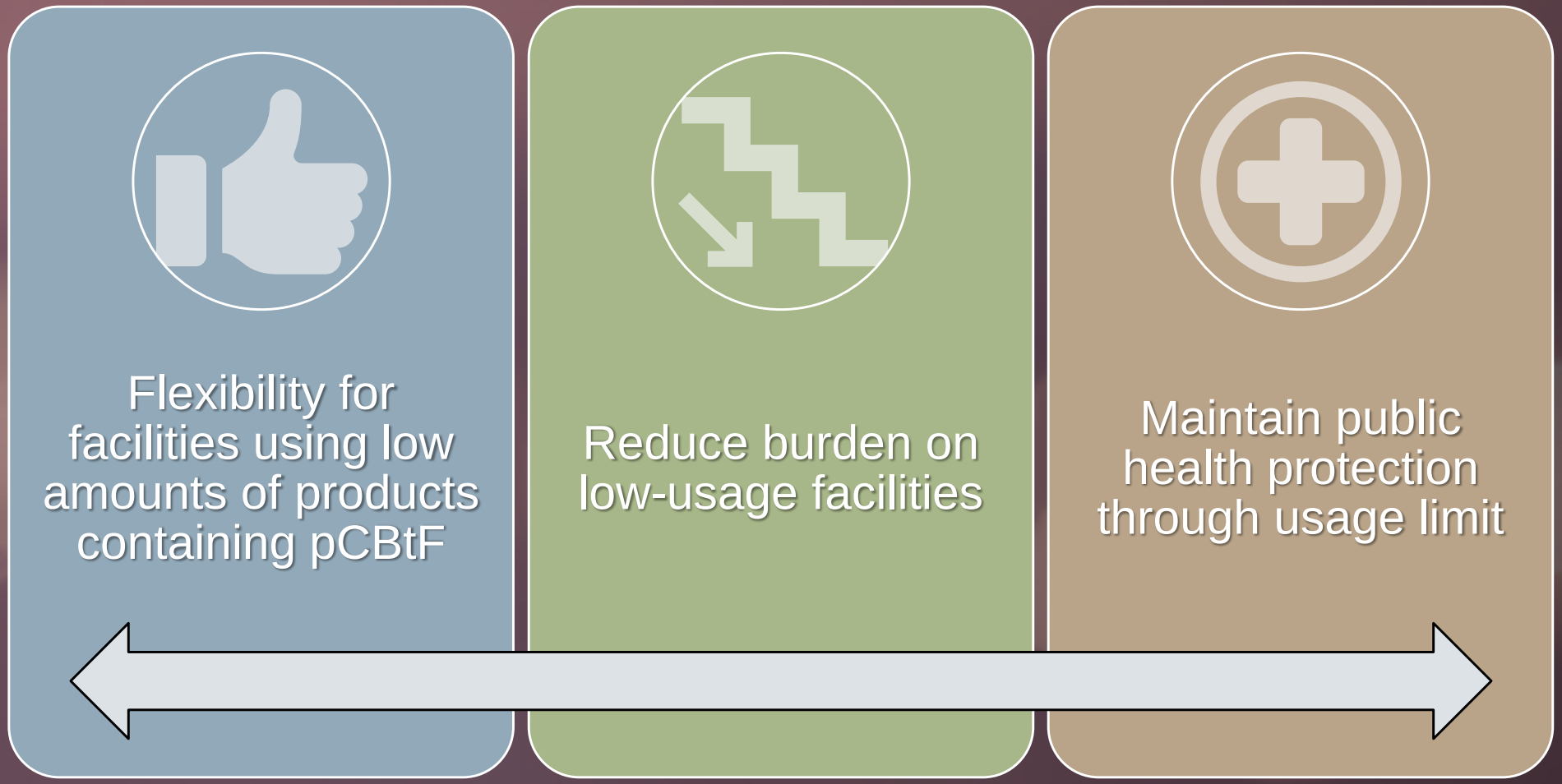


**Subject to change*

Option 3

Low-Use volume alternative

Objectives of Low-use Exemption



Assumptions and Input for low-use exemption

- No controls applied (0%)
- Meteorological data; KHHR – Northrop Field
- Spray booth without burner; 16ft ≤ stack height ≤ 24ft
- Operating hours: 24 hours/day, 7 days/week, 52 weeks/year
- No other TACs

Objective is to be Health Protective

pCBtF Emission Rate Estimation for HRA*

Assuming 10 gal/yr of primer used for a 20 wt% pCBtF primer

$$\left[\frac{10\ gallon\ of\ primer}{year}\right] x \left[\frac{11.45\ lbs\ of\ primer\ **}{gallon\ of\ primer}\right] x \left[\frac{0.20\ lb\ of\ pCBtF}{1\ lb\ of\ primer}\right] = \frac{22.9\ lb\ of\ pCBtF}{year}$$

$$\left[\frac{22.9\ lb\ of\ pCBtF}{year}\right] x \left[\frac{1\ year}{8760\ hours}\right] = \boxed{.0026\ \frac{lb\ of\ pCBtF}{hour}}$$

**Example Only*

*** Based manufacturer reported density of a common primer*

Results from HRA

Option 3 – Proposed Usage Limits for Level II Materials	
Distance from Receptor (m)	Usage (gal/yr)
25 or less	1.25
26 – 50	4.5
51 – 75	7.5
76 – 100	11
101 – 125	14.5
126 – 150	18
151 – 175	26.5
176 or greater	46

Potential Facility Usage

- Limits are case-specific, depending on distance to sensitive receptor
- Allowable usage can scale from 1.25 to 46 gal/yr while remaining health protective
- Usage limits will be established during the permitting process
- Rule allows facility to opt for 1.25 gal/yr limit without demonstrating distance to nearest sensitive receptor

Key Takeaways

- Risk depends on multiple factors including receptor distance, operating hours, coating formulation, and location
  - ↑ Greater receptor distance → more allowable usage

Considerations

- Option 1 will require a permit where application location will be considered
- Option 3 will follow a similar path to Option 1

Rule Language Concepts

- Annual Facility Usage Limit: Total volume limit applied not exceed the permitted limits
- Recordkeeping: The owner or operator to keep and maintain records of material usage and product content
- Compliance Verification: Facilities to make records available upon request to demonstrate compliance with the usage limitation provisions of this subdivision
  - Requirement will be added into next version of rule language

Level II Materials Option 3

Initial Proposed Rule Language

Subdivision (e) – Alternative Compliance Options

(4) Low-Use Provision for Level II Materials

An owner or operator of a Facility may elect to comply with a low-use permit condition in lieu of complying with the Level II Material prohibition in paragraph (f)(3) provided:

(A) No later than [*Six Months after Date of Rule Adoption*], or effective [*Six months after Date of Rule Adoption*], prior to the use of any Level II Materials, the owner or operator of a Facility submits a complete South Coast AQMD permit application for a permit conditions that limits the use of any Level II Materials at the Facility to:

(i) 1.25 gallons per year; or

(ii) The annual usage limits listed in Table A-2 in Attachement A of this rule, based on the distance to the nearest Sentitive Receptor; and

(B) The owner or operator of a Facility operates in compliance with the facility permit usage limits on and after the date the South Coast AQMD issues the permit to operate.

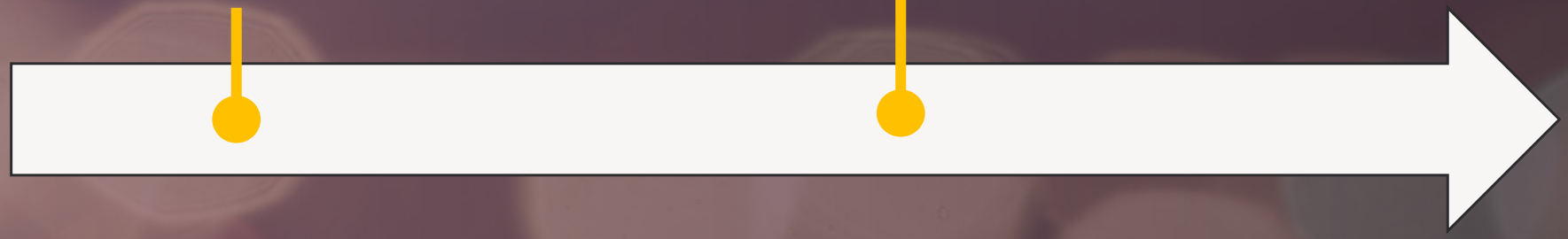
Proposed Timeline – Option 3

March 6, 2026*

Rule Adoption

September 6, 2026

Submit application to request permit condition limiting material usage



**Subject to Change*

Other updates

Unicoat Provisions

- **Rule includes separate requirements for the use of a Unicoat, defined as:**

  “UNICOAT is a coating which is applied directly to an Aerospace Component for purposes of corrosion protection, environmental protection, and functional fluid resistance that is not subsequently topcoated.”

- **Use a Unicoat, in lieu of applying a primer and topcoat, requires Executive Officer authorization**

- **Staff seeking feedback on if these coating are still being used**
  - **If yes, rule language may have to be amended to provide more clarification on the approval process**
  - **If no, could consider removing this coating category and approval requirements**

Requirements for using Unicoat

Initial Proposed Rule Language

Subdivision (d) – Requirements

(~~B~~5) Requirements for using Unicoat

Any Person or Facility that opts to apply a ~~unicoat~~Unicoat to Aerospace Components in lieu of applying a Primer and Topcoat ~~Documents~~ shall ~~be~~ provide~~d~~ documentation to the Executive Officer ~~or his designee demonstrating~~ justifying ~~that~~ the use of the ~~unicoat~~Unicoat ~~is being used in lieu of the application of a primer and topcoat~~, and ~~the applicant~~ must receive written approval for the use of ~~unicoat~~ Unicoat specifying the conditions of application from the Executive Officer ~~or his designee~~.

Air Pollution Control Devices

- Rule includes two existing and one new provision for air pollution control devices
- Existing provision for:
  - Control excess VOC emissions, e.g., exceeding VOC limits or transfer efficiency requirements
  - Controlling toxic emissions, e.g., using a coatings containing perc
- New provision
  - Controlling pCBtF and t-BAc
- Staff seeking feedback on if air pollution control devices are being used to control excess VOC emissions
  - If yes, staff will likely include some rule clarifications, including how to determine the required capture efficiency
    - Capture efficiency typically confirmed using smoke test, which demonstrate the ability to capture 100 percent of the emissions
  - If no, could consider removing this option

Air Pollution Control Device to Control Excess VOC Emissions

Initial Proposed Rule Language

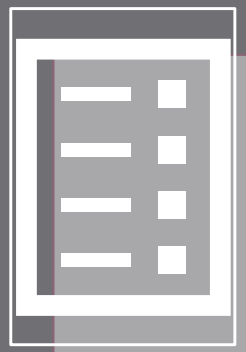
Subdivision (d) – Requirements

(48) Air Pollution Control ~~Equipment~~Device to Control Excess VOC Emissions An ~~Owners~~ owner ~~and/~~or operator~~s~~ of a Facility may comply with ~~provisions of~~ the VOC limits in paragraph~~s~~ ~~(c)(1)~~ (d)(1), (d)(2), and/or the transfer efficiency requirements in subparagraph ~~(c)(3)~~(d)(7) by using an approved ~~air pollution control equipment~~ Air Pollution Control Device provided ~~that~~ the VOC emissions from such operations and/or materials are reduced ~~in accordance with provisions of (A) and (B).~~as follows:

(A) ~~The control device shall reduce emissions from an emission collection system by~~Requires an Air Pollution Control Device Efficiency of at least 95 percent, by weight, or ~~the output of the air pollution control Device~~is less than 50 ~~PPM~~ parts per million by volume (ppmv) at the outlet, calculated as carbon with no dilution~~;~~ and

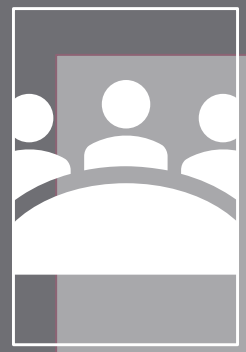
(B) ~~The owner/operator of a Facility demonstrates that t~~The Air Pollution Control ~~system~~ System collects ~~at least 90~~ 100 percent~~, by weight,~~ of the emissions generated by the sources of emissions, as determined with a smoke test.

Next Steps



Release preliminary draft rule language and support documents:

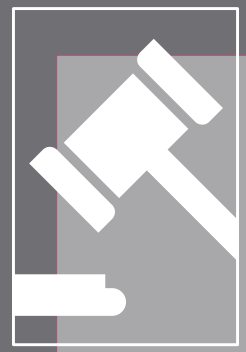
December 19, 2025



Anticipated Public Workshop:

January 2026

Continue meeting with individual stakeholders

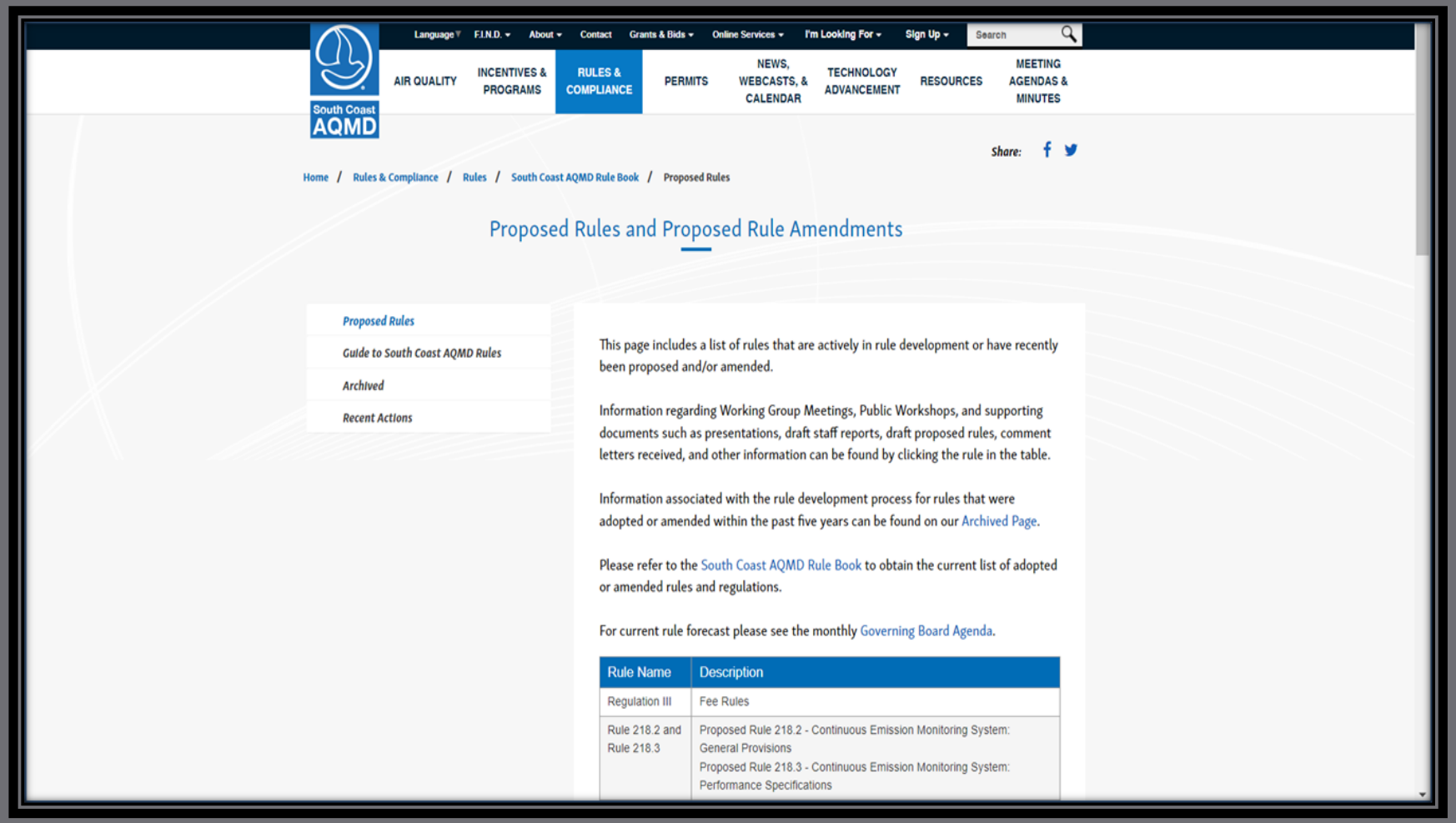


Anticipated Public Hearing:

March 2026 (*subject to change*)

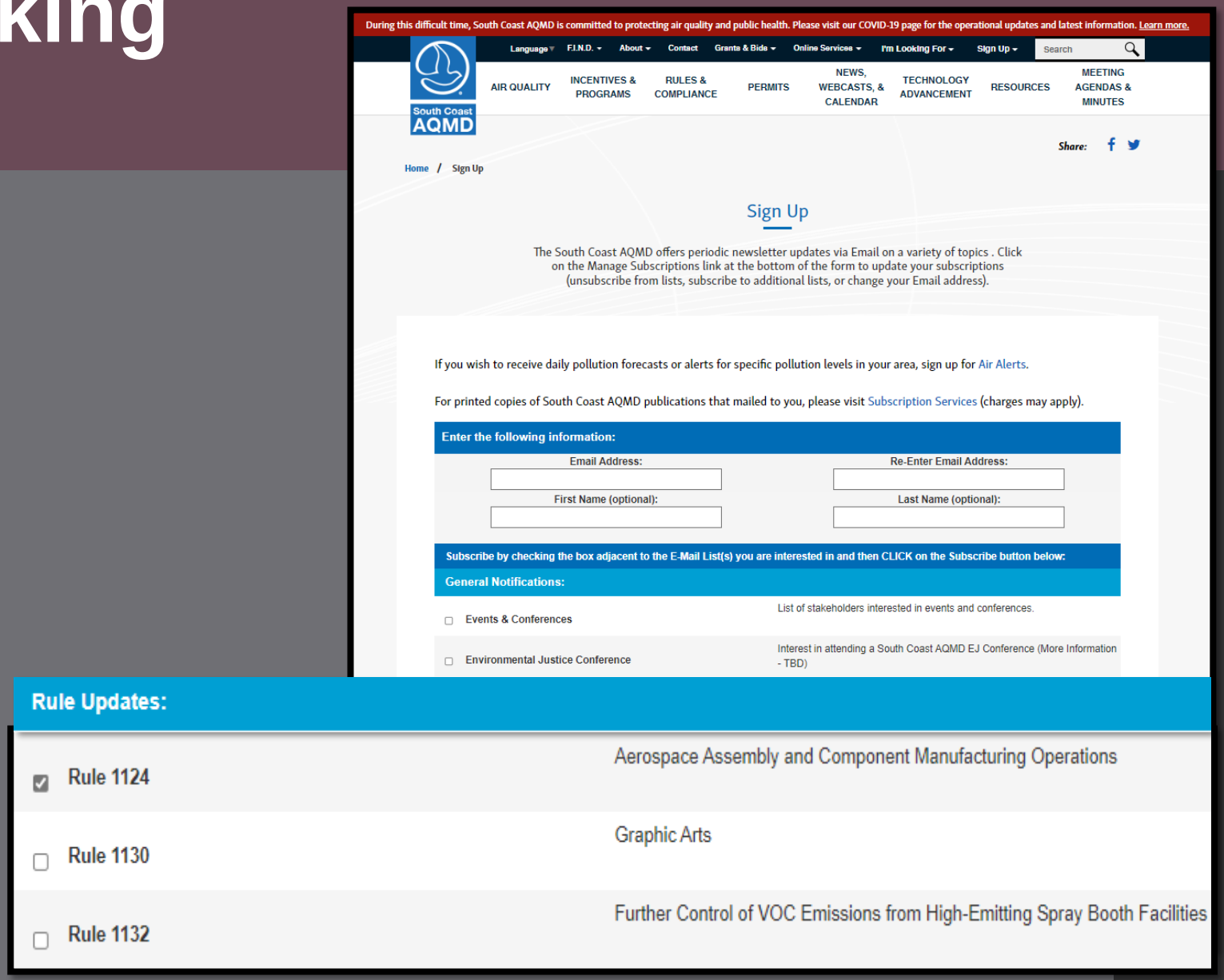
Working Group Materials

- 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



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 Rule 1124 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



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